The Transatlantic Conflict over Biotechnology and the Hegemony of Physical Risk

Franz Seifert[1]

Abstract

This analysis of the current transatlantic trade dispute over genetically modified organisms and food draws on a Gramscian notion of hegemony. After discussing the conflict as structural antagonism between European and US political economies it stresses the eminent role of physical risk in the formation of discursive hegemony: although driven by structural disparities and a multitude of critiques, the debate persistently narrows down to one on biotechnology's physical risks which, in turn, becomes decisive in any kind of restrictive regulation, at national, supranational or international level. Two sources of physical risk hegemony are proposed. (1) At the level of international regulations risk counts as the only legitimate reason to curtail international trade with transgenic organisms and products since these regulations either function in the context of global trade liberalisation or environmental or health protection. (2) At the national level, constitutional principles impair the establishment of any restrictive criteria surpassing physical risk. As a consequence of physical risk hegemony scientific risk debates become the crucial conflict arenas. Science, however, does not conclude the conflict, but solely translates it into its own contested language. A final remark considers the possibility of a rupture in discursive hegemony.

Introduction

The transatlantic dispute over genetically modified (GM) food has its origin in the mid-1990s when, in the wake of the BSE crisis, a cascade of national mobilisations against agro-alimentary biotechnology caused a number of European governments to adopt rigorous postures against GM crops and food. The initially inner-European contention gained transatlantic scope when, in 1999, some Member States (MS) declared a unilateral ban on certain genetically modified organisms (GMOs) already authorised for the Common Market, and furthermore, to veto any further GMO approval.

For the US, the global leader in agricultural biotechnology, this 'political moratorium' is untenable. The US agro-industry already ascribes massive losses in sales to the blocked European market. Perhaps more important, the rigorous regulatory system set up by the EU creates a costly burden for US importers, which threatens to permanently diminish, even nullify, the profitability of their technologically upgraded products.

It was against this background that the Bush government, after years of forewarning, decided in spring 2003 to file suit against the EU moratorium at the World Trade Organisation (WTO). Much is at stake. The WTO is entitled to authorise countervailing import tariffs on EU goods in an amount equal to the potential revenue lost by the exporters. Yet, even in case of a negative ruling, it is highly improbable that the EU will give up its strict position regarding GMOs. Public and government pressure is too powerful so that, even as the GMO authorisation process is currently getting underway, its numerous precautionary requirements will continue to hamper new approvals, the harsh labelling regime enshrining the EU market will encumber importers with the task of segregating production pathways for GM and conventional crops.

The following examination of the transatlantic conflict on biotechnology aims to contribute to our understanding of power in international relations. Central to this understanding will be the concept of hegemony. Hegemony is commonly used to mean dominance or domination of nations over others, which is, however, not the meaning employed here. Following a Gramscian understanding, hegemony here focuses on the consensual and discursive aspects of power. In that vein, Robert Cox defines hegemony as:

> a structure of values and understandings about the nature of order that permeates a whole society, in this case a world society composed of states and non-state entities. In a hegemonic order these values and understandings are relatively stable and unquestioned. They appear to most actors as the natural order of things. They are the inter-subjective meanings that constitute the order itself. Such a structure of meaning is underpinned by a structure of power, in which most probably one state is dominant but that state's dominance is not sufficient by itself to create hegemony (Cox 1996, 517).

While encompassing the coercive and structural faces of power, the focus of hegemony, as it is employed here, lies rather on compromise and consent, the establishment of the 'rules of the game', made to appear as normal, logical, unalterable givens. While this investigation considers the structural conditions of transatlantic conflict, it considers these conditions only as basic analytical layers. Its focus rests on the *consensual* features of the debate, the determining of its legitimate arguments, the arrangement of its arenas and actors, the tacit choices made and languages spoken in striving to resolve it, in brief: its 'natural order of things'.

This focus will reveal a crucial feature of the conflict: the selection of debates on risks for human health and the natural environment ('physical risks' in the following) as the sole legitimate realms of conflict. It demonstrates that, although the conflict derives its passion from a multitude of critiques and involves a variety of actors, it persistently narrows to a debate on physical risks, which in turn, becomes decisive in any kind of restrictive regulation at national, supranational or international level.

Legal disparities

Officially, the US justifies the WTO complaint with the European stalemate in the authorisation process of GM foods and products. In particular, they point to national 'safeguard measures', marketing and import bans declared by various MS, and the EU-wide suspension of GMO authorisations since 1998, which, in 1999, has hardened to a moratorium bolstered by a blocking minority of national governments. Conversely, the Commission of the European Communities (CEC) stresses the provisional character of the moratorium. In July 2000 the Commission, equally eager to prove due legal practice *vis-à-vis* US and WTO authorities and facing a political *fait accompli* created by MS governments, had agreed on an 'interim approach' scheduling a relaunch of GMO authorisations as soon as new biotechnology regulations are in place. By autumn 2002, a crucial element of the emergent regulatory framework, the amendment to the Directive on deliberate releases of GMOs into the environment, was completed. By mid-2003, the European Parliament adopted directives laying down the rules for the

labelling of foods and animal feed and thus eventually finalised the new regulatory framework.[2] It was clear, however, that the acid test on whether the moratorium really had been lifted would be the approval of a live GMO. At least in a formal manner, the CEC passed this test in May 2004 by approving the so-called 'BT-11 maize' marketed by the Swiss firm Syngenta. This was followed by the second approval of Monsanto's 'NK603' maize for import and use as feed in July, and for human consumption in October.[3]

It should be stressed that the US WTO complaint solely challenges the deadlock of the EU approval system, not the system itself. Washington, however, has criticised the EU labelling and traceability proposals on many occasions. In fact, the divergence of the regulatory systems on both sides of the Atlantic are apt to be a permanent obstacle to American exports of GM products to the European market even after the regulatory machinery is set in motion and working. After the traumatic food crises European authorities cannot but defend a rigorous labelling regime. By contrast, authorities in the US, which over the past years remained comparatively unfazed by domestic public censure of GM food, decided as early as 1994 not to label GM food which, according to prevailing expertise, neither posed any risk to human health nor significantly differed from conventional products. Furthermore, there was concern labelling might stigmatise GM products and thus hamper market success—which is exactly what is to be expected now on the European market.

More crucial is the character of the European labelling regime. The traceability principle, upheld in recent legislation, requires any genetically modified product component to be identifiable at each stage of the food chain in order to ensure its withdrawal in case new evidence finds yet unknown health hazards. The fact that the principle also applies to importers obliges the US farming and food industry to reshuffle the entire production process and to design separate production processes for GM and conventional food constituents, which could, in effect, seriously impair the cost-efficiency of the high-tech production system (GAO 2001).

Another nuisance to US industry and regulators alike is the *precautionary principle* being a core principle of European biotech regulation (CEC 2000). The precautionary principle warrants preventive action, i.e. to prohibit or

remove a product from the market, if there are reasonable grounds for concern of hazards affecting the environment or human health. It does not, however, require scientific proof of these hazards. The precautionary principle can be understood as an approach to unprecedented, unforeseen and potentially catastrophic hazards such as climate change or BSE. Its objective is to prevent adversities that have not yet materialised and are not yet understood (Harremoës et al. 2001). By contrast, the US 'risk-based regulation' only focuses on dangers whose existence is scientifically proven. While the precautionary principle is sensitive to uncertainty and unpredictability, the US regulation starts out only from dangers already recognised. Since no such dangers could be demonstrated for biotechnology during three decades of rigorous scrutinising from a US perspective, the European precautions are based on and affirmative of a purely fictitious suspicion.

This spawns conflict primarily because the two regulatory systems entail tangible consequences for industry. The US risk regulation privileges innovators by presuming them 'innocent' until proven otherwise. The precautionary principle entitles authorities with the right to bar products as soon as there is some scientific evidence for them being a source of risk. The political utility of such a regulatory instrument is quite obvious. It both suits decision-makers to placate public unease on safety matters and gives them leeway to resort to restrictive action when tempted to fall back on protectionism. In denouncing the European regulation the USA stresses exclusively the latter aspect. In its view, the EU merely irresponsibly bows to irrational fears and protects, under the guise of human health and environmental protection, its own fragile domestic markets and feeble agriculture from international competition.

Structural disparities

Given the conflict of economic interests underlying the legal dispute, it is not surprising that pressure groups in the biotechnology, farming and food-processing sector, being at risk of suffering considerable losses from the European regulatory regime, urge the US government not only to contest the current political moratorium but the system itself.[4] But irrespective

of whether or not Washington will take this step, the current conflict by far surpasses narrow special interest politics. The legal dispute results only in part from recent European public-political developments. It also mirrors a structural antagonism deeply entrenched in US and European political economies and their overall strategies in agricultural policy and global trade.

US agriculture caters to the world market. World market orientation means competing with low-price suppliers, and thus, a steady urge to simultaneously decrease costs and increase productivity. Therefore, large-scale industrial, mechanised farming and the intensive use of fertilisers and herbicides prevail in US crop growing, and continual technological innovation is imperative. The demand for innovative products is met by the seed and agro-industry, which from the mid 1980s, concentrated its efforts on the creation of transgenic agricultural crops. This structurally conditioned world market strategy was and is sponsored by US policy. When, for instance, in the Reagan years, corporations started to focus their development strategies on GM crops in view of global agribusiness they were assisted by the establishment of regulatory conditions favourable to industry, the encouragement of industry-university co-operation and the extension of intellectual property rights to cover living creatures (Krimsky 1991, 181–204). Biotechnology had been identified as a key technology essential for US international competitiveness (OTA 1984). This, as well as accessible venture capital soon gave US biotechnology industries a crucial competitive edge.

This is not to say that all biotechnology corporations have their headquarters in the US. Among the giants only Pioneer/Dupont and Monsanto/Pharmacia are of US origin. Aventis is a German-French amalgamation, Syngenta a British-Swiss merger. Still, there is a conjuncture of interest between these multinationals of non-US origin and the influential US biotechnology and producer lobbies as well as US policy in converting the innovatory edge into profit. And even though this powerful corporate-political complex suffered a hard setback in the late 1990s, in part due to the European anti-biotechnology wave, in part because of a debt crisis of industry, there is no alternative to the US further pursuing its world market strategy.

The overall strategy of the EU contrasts with US global market alignment. Though export subsidies and import restrictions shelter agriculture on both sides of the Atlantic,[5] the EU Common Agricultural Policy (CAP) faces global market competition rather by price stabilisation, redistribution and protectionism than by technologically fostering productivity for export. The 1990s already ushered in the abandonment of CAP's former productivity approach. Ultimately, Commissioner Franz Fischler's reform of the CAP determined this course by definitely decoupling subsidies from productivity. The reform suggests solutions to a variety of intricate inner-European problems: the necessity to restructure a system of cash incentives which had become notorious for the wine and milk lakes and butter mountains it created, the budgetary strains from EU enlargement, the increased safety demand from a EU-wide food production system, the need to restore consumer confidence, the precarious situation of small holders which represent the majority of European farmers, the increased prominence of the environmental agenda, and finally, the international pressure to dismantle protectionist barriers to world trade.

Clearly, these structural conditions reduce the incentives for technological innovation used to promote agricultural productivity. The EU, for instance, can afford to ban growth hormones for boosting meat and dairy production that are widely used in the US. Officially, Brussels defends the ban by alleging possible health risks. Yet, the ban can just as well be explained in terms of its socio-economic dispensability, in fact, undesirability, in Europe's surplus producing agriculture. Many, though not all, biotechnology applications are also of minor importance.

Global repercussions

Considering the transatlantic structural disparities, neither the legal difference between Europe and the United States nor their current collision is a surprise. Indeed, anything else would be surprising, and even in the event of a WTO ruling unfavourable to the EU, the Union's giving up, or merely watering down, its rigorous regulatory system is highly

improbable. Public and political pressure is simply too strong. But a European surrender is probably not even what Washington expects. In all probability, the thrust of the complaint is, firstly, directed at developing countries, which are to be deterred from taking the European regulation as an example and, secondly, it is intended to establish a world order in the biotechnology field tailored to US demands.

Since industrial biotechnology is globally expanding, particularly into the developing and newly industrialising world, and its regulation is largely being decided at the international level, the current conflict constitutes a crucial episode in setting the course for the formation of this world order. While the developing world, which represents the major future production site and market for agro-alimentary biotechnology, will be subject to this emerging order, it only marginally takes part in its shaping. The roles of the countries in these regions are determined by their position in the world economy and their dependencies from one of the powerful antagonists.

Hence, some countries joined the US. Argentina, Canada and Egypt went along with the US to file suit at the WTO against the European moratorium and Australia, Chile, Columbia, El Salvador, Honduras, Mexico, New Zealand, Peru and Uruguay supported the complaint. These countries are either agro-exporters or they belong to or intend to join a US-dominated free trade zone. The US is the world leader in GMO cultivation, followed by Argentina and Canada. Together the three countries account for 90% of the global transgenic crop area.[6] Australia is a major agro-exporter in the pacific area, Mexico is in the North American Free Trade Agreement (NAFTA), and the remaining Latin American supporters are aspirants to the US-dominated Free Trade Area of the Americas (FTAA).

The EU also has some bearing on its periphery by setting the terms of trade within its spheres of interest. Not only North Americans but also all other prospective importers must comply with its burdensome labelling and traceability regime. Exporting nations of the developing world are obliged to comply with EU regulations, in proportion to their dependence on the European market, which might drive these countries to adopt a European regulatory model, to the woe of US interests.

The hegemony of physical risk in international regulations

A background picture of the current legal confrontation at WTO level highlights a structurally determined struggle for regional, if not global, shaping of the field of agro-alimentary biotechnology. Assets and bargaining power in this struggle are unequally distributed, with the US clearly holding a leading position. Yet, the fact that the world leader in agro-alimentary biotechnology—keen to reap the harvest of decades of costly high-tech development—is aggressively defending this lead position testifies to its delicate state. While the power structure underneath the global expansion of agro-alimentary biotechnology has its major pillar in the US political economy, it is not monolithic. The sophisticated regulatory system of the EU, running counter to US interests by retarding, separating and singling out GM products, thus making them vulnerable to consumer moods, is currently its biggest challenge.[7]

Even so, there is considerable common ground between the conflicting parties. Over the years an ample body of international agreements has accumulated pertaining to international trade with GMOs and commodities derived from them, which now provides the legal basis for international disputes on these matters. In their litigation at the WTO, the US and its allies have referred to international legislation originating from the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), namely the Agreement on Technical Barriers to Trade (TBT) and the Agreement on Sanitary and Phytosanitary Measures (SPS).[8]

The TBT Agreement encourages the development of international technical standards in packaging, marking and labelling. It also concedes to WTO Members the right to implement their proper standards, which, however, must not create unnecessary obstacles to international trade. The SPS Agreement[9] regulates the adoption by WTO Members of measures designed to protect human or animal health from risks arising from internationally traded food or feed, but equally requiring these risks to be assessed on the basis of scientific evidence and the measures taken to be the least trade restrictive.

Another major body of international biotechnology regulations is anchored in UN agreements and institutions. The Codex Alimentarius Commission, established as a joint effort of the World Health Organization (WHO) and the Food and Agriculture Organization (FAO), is the United Nations advisory body on food safety. While being voluntary, Codex standards are the most influential food standards worldwide so that, even in WTO disputes, they are decisive in assessing whether national standards are scientifically vindicated or disguised trade barriers.

The Cartagena Protocol on Biosafety (or Biosafety Protocol) was adopted in early 2000 as a supplement to the Convention on Biological Diversity (CBD). It became effective in September 2003 and has been ratified or accessed by 103 states so far.[10] Being the only international regulation exclusively focusing on GMOs, it aims to protect biological diversity and human health from adverse effects arising from the transboundary movement of living GMOs.

Considering the differing goals of international legislation under WTO and UN regimes it is small wonder that conflicting parties—the EU and the US, but also several other emerging players in the global biotech field—selectively refer to one or the other. While the US and its allies draw on WTO law, giving priority to free trade, Europe but also developing countries concerned with losing sovereignty in regard to low-cost agricultural imports place their hopes on UN regulations, all the more so as recent decisions strengthen the European position.

By mid-2003, for instance, the Codex Commission adopted international guidelines for assessing the health risks from GM foods. Much to the dismay of the US, these broadly affirm the European stance by not only including pre-market safety evaluations of GM products, but also demanding these products to be monitored at a post-market stage and to be traceable back to their origins.[11]

The Biosafety Protocol runs counter to US interests by its very design. It makes reference to the precautionary approach contained in Principle 15 of the Rio Declaration. With its Advance Informed Agreement (AIA) the Protocol reaffirms the right of countries to be informed of any intention to conduct a GMO import, and to deny approval of it if judged harmful to human health or biodiversity. In

accordance with these requirements, the Protocol finally demands that shipments of transgenic commodities intended for use as food, feed or for processing be identified as 'may contain living modified organisms' and as 'not intended for intentional introduction into the environment'. While Europe finds itself vindicated by the wide reaching agreement, the US, although not party to the Protocol,[12] could be critically affected. This is the reason why the US strove to obstruct the preparation of the Protocol throughout the 1990s and now, as the UN act has gained ground, to get the Protocol CBD subordinated to WTO legislation.[13]

Lasting tensions between bodies of international law notwithstanding, however, they have a basic and broadly unquestioned principle in common. All the international agreements and institutions mentioned offer the same motive to legitimate restrictive measures against the cultivation of and global trade with GMOs: the protection against risks to human health and the environment stemming from these organisms.

In view of the plausibility and apparent benevolence of a regulation designed to safeguard against physical risk it should be stressed that there is no logical necessity *excluding* alternative or additional restrictive principles. On the contrary: Particularly developing nations, destined to be both major production sites and markets for biotechnology, have strong incentives to guard against the technology's *socio-economic risks*, incentives which go beyond the protectionist motive of preventing the effects of liberalised global agricultural trade on segments of domestic subsistence farming and food markets (Gupta 2004). Developing nations have good reasons to beware of changes within the productive sphere, which are likely to result from the introduction of biotechnology-based production modes. The rationale of biotechnology companies to ensure the profitability of their costly developments leads them to tighten control over both production sites and markets in target countries. Therefore, corporations tend to integrate all steps from GM seed production to marketing, to buy up distributive infrastructures in target countries and to foster legal and technical means to ensure sustained exploitation of GM products, as intellectual property rights or the notorious 'terminator technologies'. It is clear that, for affected countries, this corporate grip accompanying biotechnology stands for externally enforced social change, or in others words, socio-economic risk.

Yet, there is no room for tackling these risks under international regulations. In the case of legislation under WTO auspices the exclusion of socio-economic considerations is hardly surprising since WTO rule aims at minimising any distortion of free trade beyond a consensual minimum of upholding man's and nature's intactness. Likewise, the Codex Alimentarius' *raison d'être* is to lay down food standards, which both protect human health and facilitate international trade. But also the Cartagena Protocol, as a sub-agreement of the CBD, concentrates on the preservation of biological diversity and human health.[14] Likewise, the unwieldy EU regulatory system, a major stumbling block to GMO free traders, is warranted as a shield against presumed biotechnology hazards to man and ecosystem. When it comes to negotiations on the conditions of international trade with GMOs, GM food, feed and other commodities, it is solely physical risk that delineates their realm, admits and denies the types of arguments deemed legitimate, channels their outcomes. Meanwhile, the complex set of motives driving the international biotechnology conflict sketched above disappear inside the blind spot of a discursive construction centred on the notion of physical risk. To put it in Gramscian terms: In international biotechnology regulations physical risk is hegemonic.

The hegemony of physical risk in the public sphere

But there is more to hegemony than legitimacy derived from international law. Beyond international agreements, the hegemony of physical risk is also rooted in the construction of biotechnology in the public sphere, thus indeed, permeating 'a whole society' and constituting the 'natural order of things' (Cox 1996). It is a commonplace that risk forms a pivotal element in public debates on biotechnology. In three decades of public controversy on genetic technologies in the US and Western Europe suspected physical dangers springing from them recurrently became the major attractors of media attention and focal dispute matters. This is not to say public debates on biotechnology revolve solely around risk. Such controversies typically contain a multitude of discursive threads, often conveying

general social critiques.[15] Nevertheless the topic regularly gains prominence. A major reason resides with the functioning of the attention economy of modern publics. Unable to represent 'reality as such' mass media need to select issues for representation, and being broadly market-driven, select what predictably attracts broadest attention. Catastrophic risk, as commonly attributed to biotechnology, easily gains currency within the attention economy. Then again, the mass media's inclination to highlight risk reverberates with the social dynamics of public debates. Vocal critics strive to benefit from media attention. They might renounce biotechnology for various reasons but since the public obligation to protect human health and the environment is indisputable, constitutionally taking precedence over the potential benefits of a new technology, protest concentrating on physical risk creates best chances of achieving political impact.

The normative hegemony of physical risk

This is one reason why all the European countries which passed legislation on genetic engineering during the 1980s and 1990s, exclusively established physical hazard as the criterion for restricting the technology. Still another explanation has to do with the normative constitution of the state under the rule of law. Experiences with past normative innovations, which turned out ineffectual, are revealing. In the 1980s, under the impression of intense public controversies, tendencies had gained ground to expand the scope of restrictive principles beyond the technical sphere. In Germany, for example, the concept of '*Sozialvertraeglichkeit*' ('social compatibility') was being discussed as a principle designed to guard against the detrimental social effects of biotechnology. It never found its way into biotechnology legislation. Instead, risk to health and environment remained the sole statutory restriction. Characteristically, such 'higher order risks' did not achieve a legally binding status in any country.[16]

The same holds for EU regulations. The demand for a wider, socio-economic criterion gained shape in the context of discussions surrounding the EU-wide regulatory framework for biotechnology in the early 1990s.

The European Parliament was vocal in calling for such a 'fourth hurdle' in biotechnology regulation. In addition to standard criteria used in pharmaceutical legislation—quality, safety and efficacy—an assessment of social impacts of GM products should take account of, for instance, consumer concerns, farming interests, concerns regarding animal welfare or the problem of unwelcome productivity increases in Europe. The CEC, however, refused such an assessment as an element of statutory product approval procedures. It never found its way into Community legislation (Cantley 1995, 639–640).

The normative arguments that were raised against '*Sozialvertraeglichkeit*' draw light on the legal-constitutional underpinnings of the hegemonic status of physical risk thus reaffirmed in national as well as supranational legislation. Wolfgang van den Daele (1993a, b), a major critic of the concept, stresses that such a broadening of the meaning of risk simply means overstressing the term. According to van den Daele, the body politic neither is able to fully anticipate nor to control options arising from new technology. While such political steering is feasible with, for instance, nuclear energy, which is state controlled and implies undeniable physical *and* social risks, biotechnology enters society via the market and independent innovators. But even if political management of biotechnology was possible, it is not the task of the legislator to determine whether a technology is needed or desirable.[17] Not all supposed social impacts of a technology can be translated into legally relevant risks, warranting state interference into entrepreneurial innovation guaranteed by basic right. Moreover, apart from the amount of scientific effort required for assessing such social consequences there is hardly an objective method for normatively evaluating them.

Just another arena

While the transatlantic divergence is doomed to last, the hegemony of physical risk seems to offer a chance for resolution. All regulations—national, supranational and international—stipulate the scientific nature of risk assessment. By allocating risk assessment to science, decisions

regarding the global spread of GMOs and GM products gain a technical, objective quality, appear to take place far away from the entanglements of international politics and seem to be determined not through power but truth. And as there is only one truth, science even promises consensus in the long run.

History, however, proves this expectation wrong. In three decades of policy evolution no lasting scientific consensus about the physical risks of biotechnology has been established. Many examples illustrate that point. For instance, the divergence of risk assessment approaches *within* the EU due to wide differences in the *normative* evaluation of lasting uncertainty and acceptability (Levidow et al. 1996). Or the enduring international contest over 'risk models' like 'familiarity' (OECD 1992) versus 'exotic species' (Sukopp & Sukopp 1993) for the assessment of GMOs to be released into the environment, or the contested meanings of 'substantial equivalence' for the assessment of GM food (Karner 2004; Millstone, Brunner & Mayer 1999). What becomes apparent from these examples is that, while the hegemony of physical risk relocates the conflict into the scientific sphere, science does not resolve it. It only perpetuates the conflict by transferring it into its own arena.

The consumer as new hegemon?

One might wonder about the permanence of physical risk hegemony. The possibility of a rupture in the hegemonic order arises when one considers the proximate causes of the current transatlantic confrontation, the recent European anti-biotechnology wave. Beyond the structural divergence of the political economies on the two sides of the Atlantic the almost synchronous mass mobilisation against agro-alimentary biotechnology in numerous European publics (Seifert 2003) was undoubtedly crucial in bringing about both the political ban on further GMO approvals and the stiffening of the EU biotechnology regulation. And, undoubtedly, the key mechanism accounting for the unprecedented intensity and unison of this pan-European mobilisation was the mobilisation of the European consumer.

This development drew its major impetus from the BSE crisis in early 1996 in the wake of which US imports of non-labelled GM soya and maize arrived in European harbours. For anti-biotechnology activists the staging of threats emanating from GM food proved particularly well suited to arouse emotions and mobilise public pressure. Derogatory neologisms like 'frankenfood' or 'malbouffe' soon gained currency. Retailers anxious not to lose consumer confidence banned food possibly containing GM soya from the shelves by arranging special contracts with GM-free suppliers from overseas. Despite comprehensive labelling rules, labelled GM food is scarcely to be found in European stores until the present day. (While soya as a protein source for animal feed continues to be imported as a matter of pure economic necessity since soya is not grown in Europe.) Under pressure from national publics and Member States, vigorous NGOs and corporate actors, and faced with a general crisis of legitimacy, the Commission had no choice but to comply with consumer demands. The moratorium and the radical amendment of the EU regulatory system are the immediate outcomes of this development. Thus, contemplating the transatlantic, even global repercussions of these outcomes one can measure the enormous political leverage of 'the consumer', once politically mobilised. Has 'the consumer' become a new hegemonic principle rivalling physical risk?

A comprehensive answer to this question is beyond the scope of this article. A preliminary response, however, is negative. While the recent European developments certainly constitute one of the most consequential political manifestations of 'the consumer', consumer choice per se has not become a guiding principle in EU regulation. Both the current ban on GMO approvals and the tightening of EU biotechnology regulation derive their public justification and—as far as EU regulation is concerned—legal legitimacy from the concern for human health and environmental protection. The same holds for other influential international agreements, standards and regulations. Therefore, the—yet again—unsettled question of physical risk is at the heart of the ongoing WTO case, and the burdensome regulatory system of the EU as a possible future bone of transatlantic contention, derives its main justification from a now officially reaffirmed, precautionary vision of physical risk, presuming the existence

of yet unknown hazards to man and nature. The physical risk of biotechnology is still hegemonic. Even if it is, as US experts contend, nothing but a European illusion.

Notes

1 Supported by the Austrian Science Fund, FWF (P16403-G04). First versions of the argument brought forward in this article were presented at the 3rd Annual IAS-STS Conference, Graz, February 23–24, 2004 and the 45th Annual ISA Convention, Montreal, Quebec, Canada, March 17–20, 2004.

2 The Directive on deliberate release into the environment (2001/18/EC) is fully applicable since 17 October 2002. To date (February 2004) only 6 Member States have transposed the Directive, namely the United Kingdom, Denmark, Sweden, Portugal, Ireland and Italy. Regulations on GM food and feed (EC 1829/2003) and traceability and labelling (EC 1830/2003) have been adopted by the Council and EP in autumn 2003 and are to be applied by April 2004. For a comprehensive review of the new regulatory system see Christoforou (2004).

3 In all cases, however, the CEC had to grant approvals by using a legal default procedure since MS governments did not reach a common decision within the Directive's 'comitology'. Hence, a considerable portion of countries remained opposed to the decision. For a consideration of the democratic dilemma embodied in such a decision mode see Hervey (2001).

4 Alden, Edward, Jan. 15, 2004, 'US farm group rejects trade deal', in: *The Financial Times UK*. In fact, a second trial against the EU approval system is a possibility currently considered by many close observers. Ferriére, Jean (CEC, DG Trade, Brussels) (2004), Personal Communication, Sep. 28.

5 The 2002 US New Farm Act, for instance, provides farmers with marketing loans, direct payments, and counter-cyclical payments intended as emergency market loss assistance. In relation to producers from the developing world these subsidies function as protectionist trade distortions.

6 In 2003, the US grew 42.8 million hectares (63% of global total), followed by Argentina with 13.9 million hectares (21%), and Canada with 4.4 million hectares (6%) (James 2003, http://www.isaa.org).

7 Furthermore, other actors emerge from the newly industrialising world who will render the global dispute ever more complicated. Whereas in 2002, the US, Argentina and Canada accounted for 99% of land under GM cultivation, in 2003, due to the embracing of agricultural biotechnology by Brazil (4%), China (4%) and South Africa (1%), their portion has decreased to 90% (James 2003). In years to come, more will depend on the strategic orientation and behaviour of such rising powers in the field of agricultural biotechnology.

8 Furthermore the plaintiffs referred to the GATT and the Agreement on Agriculture (WTO 2003).

9 To be in tune with the workings of the International Office of Epizootics (IOE) and the International Plant Protection Convention (IPPC).

10 By the end of October 2004. (Accessions included) Source: http://www.biodiv.org/biosafety/.

11 For a detailed analysis of the CEC's current engagement in Codex standard setting pertaining to biotechnology see Poli (2004).

12 While the US has signed the CBD, without however ratifying it, it has not signed the Biosafety Protocol.

13 Since the US is not a member of the agreement, proxies usually act on its behalf in negotiations. In a recent conference in the context of the Cartagena Protocol in Kuala Lumpur in February 2004, for instance, it was Canada, Mexico, Brazil and Argentina who pushed for defusing labelling and information resolutions and subordinating the Protocol's trade regulations to WTO rule.

14 Even though the agreement's normative impetus exceeds these objectives to some extent: Article 26 of the Protocol concedes to countries the right to refer to socio- economic considerations when deciding on the introduction and use of living GMOs on their territory. The agreement, however, specifies these considerations as claims of indigenous and local communities to share in the economic benefits derived from genetic knowledge about traditionally used plants and animals. Although the principle, indeed, establishes a notion of social justice as regards socio-economic change brought about by industrial biotechnology, it considerably narrows down the scope of possible negative socio-economic impacts, normalising a wide range of further social risks.

15 A striking example for physical risk hegemony broken in the public sphere is the French Confedération Paysanne fighting agricultural biotechnology (Heller 2002).

16 Only Austria's Genetic Engineering Act mentions '*Sozialvertraeglichkeit*'. Yet, in regulatory process no reference was ever made to '*Sozialvertraeglichkeit*'. Instead, 'national safeguard' measures against various types of GM maize, illegal by EU standards, were justified scientifically with yet unrecognised, environmental and health risks (Seifert & Torgersen 1997). Today, the only national legislation comprising substantial restrictive criteria beyond physical risk is the Norwegian Gene Technology Act of 1994. The law, which is generally considered highly restrictive, stipulates that the approval of manufacture and commercialisation

of GMOs be contingent on their sustainability, social utility and ethical acceptability. There is, however, increasing concern about the urge to adapt national legislation to new EU regulation to which Norway is obliged under the Economic Area Agreement (EEA). Furthermore, there is concern that the restrictive Norwegian policy will be perceived as a trade barrier leading other countries to introduce countermeasures to Norwegian fish exports (Kallerud 2004, 102–103).

17 As is suggested by Norwegian legislation.

References

Cantley, Mark F. (1995), 'The regulation of modern biotechnology: A historical and European perspective', in Dieter Brauer (Ed.), *Biotechnology. 2nd Edition. Vol. 12, Legal, Economic and Ethical Dimensions*, Weinheim: VCH: 505–681.

CEC (Commission of the European Communities) (2000), Communication from the Commission on the precautionary principle, Com (2000) (1) Feb. 2nd 2000.

Christoforou, Theofanis (2004), 'The regulation of genetically modified organisms in the European Union: The interplay of science, law and politics', *Common Market Law Review* 41: 637–709.

Cox, Robert W. (1996), 'Multilateralism and world order', in Robert W. Cox and Timothy J. Sinclair, (Eds.), *Approaches to World Order*, Cambridge: Cambridge University Press: 494–523.

GAO (United States General Accounting Office) (2001), *International Trade: Concerns Over Biotechnology Challenge U.S. Agricultural Exports*, GAO-01-727, Washington DC: United States General Accounting Office.

Gupta, Aarti (2004), 'When global is local: Negotiating the safe use of biotechnology', in Sheila Jasanoff and Marybeth Long-Martello (Eds.), *Earthly Politics, Worldly Knowledge: Local and Global in Environmental Governance*, Camebridge: MIT Press.

Harremoës, Poul, David Gee, Malcolm MacGarvin, Andy Stirling, Jane Keys, Brian Wynne and Sofia Guedes Vaz (2001), *Late Lessons from Eearly Warnings: The Precautionary Principle 1896–2000*, Environmental Issue Report 22, Copenhagen: European Environment Agency.

Heller, Chaia (2002), 'From scientific risk to paysan savoir-faire: Peasant expertise in the French and global debate over GM Crops', *Science as Culture* 11 (1): 5–37.

Hervey, Tamara K. (2001), 'Regulation of genetically modified products in a multilevel system of governance: Science or citizens?', *Review of European Community and International Environmental Law* 10 (3): 321–333.

Egil, Kallerud (2004), 'The ambiguity of progress—Biotechnology in Norway', in Marja Häyrinen-Alestalo and Egil Kallerud (Eds.), *Mediating Public Concern in Biotechnology. A map of sites, actors and issues in Denmark, Finland, Norway and Sweden. Rapport 2/2004*, Oslo: Norwegian Institute for Studies in Research and Higher Education: 83–112.

Karner, Sandra (2004), 'On the safety assessment of modern biotechnology: The importance of substancial equivalence', in Arno Bammé, Günter Getzinger and Bernhard Wieser (Eds.), *Yearbook 2004 of the Institute for Advanced Studies on Science, Technology and Society*, München: Profil: 245–259.

Krimsky, Sheldon (1991), *Biotechnics and Society. The Rise of Industrial Genetics*, New York: Praeger.

Levidow, Les, Susan Carr, René von Schomberg and David Wield (1996), 'Regulating agricultural biotechnology in Europe: Harmonisation difficulties, opportunities, dilemmas', *Science and Public Policy* 23 (3): 135–157.

Millstone, Eric, Eric Brunner and Sue Mayer (1999), 'Beyond substantial equivalence', *Nature* 401: 525–526.

OECD (1992), *Safety Considerations for Biotechnology: Scale-Up for Crop Plants*, Paris: OECD.

OTA (U.S. Congress, Office of Technology Assessment) (1984), *Commercial Biotechnology: An International Analysis*, Washington DC: U.S. Government Printing Office.

Poli, Sara (2004), 'The European Community and the Adoption of International Food Standards within the Codex Alimentarius Commission', in *European Law Journal* 10 (5): 613–630.

Seifert, Franz (2003), 'The synchronisation of European publics. The case of biotechnology', in Arno Bammé, Günter Getzinger and Bernhard Wieser (Eds.), *Yearbook 2002 of the Institute for Advanced Studies on Science, Technology and Society*, München: Profil: 181–206.

Seifert, Franz and Helge Torgersen (1997), 'How to keep out what we don't want. An assessment of Sozialverträglichkeit under the Austrian Genetic Engineering Act', *Public Understanding of Science* 6: 301–327.

Sukopp, Herbert and Ulrich Sukopp (1993), 'Ecological long-term effects of cultigens becoming feral and of naturalization on non-native species', *Experientia* 49: 210–218.

Van den Daele, Wolfgang (1993a), 'Sozialverträglichkeit und Umweltverträglichkeit. Inhaltliche Mindeststandards und Verfahren bei der Beurteilung neuer Technik', *Politische Vierteljahresschrift* 34 (2): 219–248.

Van den Daele, Wolfgang (1993b), 'Hintergründe der Wahrnehmung von Risiken der Gentechnik: Naturkonzepte und Risikosemantik', in Bayrische Rück (Ed.), *Risiko ist ein Konstrukt*, München: Knesebeck: 169–189.