

DETOXIFICATION, DISPLACEMENT AND DEFERRAL

The Democratic Failures of GM Regulation

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The implied promise of liberal democracies in a state of pluralism is that difference will be addressed. This article argues that this promise has not been met in the case of GM regulation, despite 30 years of discussion and debate. Rather than attribute this failure to the insurmountable logic of uncertainty, this article blames it on the strategies of detoxification, displacement and deferral employed by the legislature and the Gene Technology Regulator to avoid addressing substantive issues of social meaning in relation to GM technology. The article concludes that the Gene Technology Regulator has failed to fulfil the broad legislative mandate granted under the *Gene Technology Act 2000* (Cth), thereby rendering the Regulator's position largely irrelevant.

The Day of the Triffids, writes LJ Hurst, is about 'permanent horror ... an eternity of irrecoverable pain. The only way of escaping it is not to have it start.'¹ It is this sense of a lost moment, of risk fulfilled, of lessons unlearned, that the anti-Genetic Modification (GM) lobby continues to confront, even as many of us are rendered immobile by indecision, ignorance or ennui — the risk seems so distant, the uncertainty insuperable and the rhetoric (of both sides) unconvincing. Even the products of GM are uninspiring. No one believes GM food will solve world hunger (do they?). And replacing pesticides with GM crops is at best a good economic choice for some farmers. It is easier to paper over the twin fissures of risk and uncertainty with food labels and licensing regulations than to face the possible horror of an inescapable end. It is easier to discount terminator genes and food security as conspiracy theories than to consider what it might take to control them. Caught in this 'tragic individualisation', as Beck has called this lived experience of risk,² we do not know who to trust: the GM Regulator and expert committees; the anti-GM lobby, which has taken on the role of prime-time entertainment, warning the masses of 'frankenfoods' and the evils of Monsanto; or the pro-GM lobby, which has portrayed regulatory hurdles as safety guarantees ('GM plant varieties are more rigorously tested than non GM varieties'), plant quarantines as marketing strategies (organic food contains 'no more than 0.9 per cent GM material'), and genetic engineering as just another form of biotechnology (like yeast). Difference is obliterated in the rhetoric of choice, and the greatest choice of all is presented as an ethical one between rich city dwellers on the one hand and drought-affected farmers and the world's hungry on the other.

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¹ Hurst (2006).

² Beck (2006), p 8.

The fact that this debate continues today and in this form should be a cause for wonder. GM technology has been practised since the early 1970s, GM crops have been grown in Australia since the late 1980s, there have been commercial releases of GM crops since 1996, and GM foods have been on supermarket shelves for more than a decade. We could discount the GM debate as simply a difference of opinion, but this raises an important issue. The central GM regulatory instrument in Australia, the Commonwealth *Gene Technology Act 2000*, is almost a decade old and state moratoria against the release of certain GM plants have been imposed, lifted and reaffirmed during this time. The management of difference is the *raison d'être* of democratic institutions under conditions of pluralism and, whether one mobilises a liberal, republican or procedural model of democracy,³ the complex legitimacy claims of democratic decisions bear witness to one implied promise — not that you will agree with the decisions but that differences in matters of social value have been addressed in making those decisions.

Rather than accept that it is 'just a difference of opinion', commentators have tried to explain the experience of tragic individualisation and its relation to democratic decision-making in different ways. For Beck, tragic individualisation bears witness to the insuperability of uncertainty and the legitimacy claims of those experts who seek to overcome it:

As a consequence everyday life in world risk society is characterised by a new variant of individualisation. The individual must cope with the uncertainty of the global world by him or herself. Here individualisation is a default outcome of a failure of expert systems to manage risks. Neither science, nor the politics in power, nor the mass media, nor business, nor the law or even the military are in a position to define or control risks rationally. The individual is forced to mistrust the promises of rationality of these key institutions. As a consequence, people are thrown back onto themselves, they are alienated from expert systems but have nothing else instead ... responsibility for the decision on genetically modified foods and their unforeseeable, unknowable long-term consequences is ultimately dumped on the so-called 'responsible consumer'. (Consumer choice rules.) The appeal to 'responsibility' is the cynicism with which the institutions whitewash their own failure.⁴

As Beck argues, there is an inescapable logic of uncertainty, and no amount of scientific or mathematical calculation, risk assessment or risk management can avoid it. The fascination with uncertainty and the desire to overcome it might itself be called irrational, and any regulator who stakes a legitimacy claim on doing this is bound to fail.⁵

³ See Habermas (1998), pp 135–45.

⁴ Beck (2006), p 8.

⁵ Beck (2006), pp 7–8. To give an Australian example, when Monsanto argues that the discovery of GM canola on the roadside cannot be called 'contamination' because 'these events were anticipated by the [Federal] Government Regulator when they approved GM canola for use', the boundary between rationality and hysteria becomes blurred. See 'GM canola found on roadside: Cropwatch', ABC Western Victoria,

Francine Rochford takes this further: tragic individualisation, she argues, is not just a failure of expert systems but is also a risk-shifting strategy of the state:

The individualisation of risk is not only indicative of a ‘failure’ of expert systems (as Beck has suggested), but also consistent with risk-shifting strategies ... Individuals are called upon to be responsible for the risks of global calamity — potential risks of genetic engineering are thrown back on the ‘informed consumer’, the risks of global warming are the sum of market forces based on individual decisions to consume ... and so on.⁶

Rochford equates such risk-shifting with other individualisation strategies of the neo-liberal state and reminds us of the specifically legal way in which the lived experience of risk is created and maintained.

While Rochford focuses on the regulatory strategies of the state and the effects of regulation, Richard Hindmarsh’s excellent social history of the GM debate focuses on the substance of the debate, and looks at how social meaning and regulatory forms have been constructed around this debate. Utilising a private-interest analysis, Hindmarsh challenges the democratic legitimacy claims of regulatory decision-making in Australia on the basis that GM regulation excludes matters of social value from consideration, and that this exclusion results from the successful ‘agenda-setting’ strategies of a pro-GM ‘bioelite’.⁷ Drawing on earlier work with Charles Lawson, Hindmarsh also repeats his criticism of the Gene Technology Regulator on the basis that the scientific language used by the Regulator masks the value-laden nature of her decisions. Hindmarsh concludes his social history with a call for regulatory reform, which will usher in a new era of ‘biocivics’ characterised by greater consultation, accountability, transparency and environmental sustainability in GM decision-making.⁸ Like many private interest analyses, Hindmarsh’s social history does not specifically interrogate the agency of the state in making these decisions.

In this article, I bring the strategies of the state and the substance of the GM debate into closer relationship in seeking to understand the tragic individualisation of the lived experience of risk. I argue that the intractable nature of the debate bears witness to the incommensurability of two competing paradigms of risk: one in which risk is co-produced in the practices of industrial technology; the other in which risk is a reified and unavoidable challenge. I argue that, rather than endorsing either paradigm at the expense of the other (as a private-interest analysis might expect), the legislature has resorted to regulatory design, community confusion and political ‘buck-passing’ between the Commonwealth and the states to avoid responsibility for addressing this difference. In particular, the Commonwealth has established a regulatory structure that shifts responsibility for decision-making from the legislature to an independent regulator. I argue that, rather than use this

26 November 2008,
www.abc.net.au/news/stories/2008/11/26/2429844.htm?site=westernvic.

⁶ Rochford (2007), p 175.

⁷ Hindmarsh (2008) p 267.

⁸ Lawson and Hindmarsh (2006).

legislative mandate to create, express or realise a public purpose,⁹ the Regulator has instead used it to circumscribe the Regulator's own responsibility and accountability. These strategies of detoxification, displacement and deferral, as I call them, mean that the substantive issues of social value relating to GM technology still have not been addressed by the Commonwealth, the states (apart, arguably, from Tasmania) or by the Gene Technology Regulator, despite years of public debate. As a result, any legitimacy claims based on the passage of legislation arising from these debates are questionable.

Two Paradigms of Risk

In *Risk Society. Towards a New Modernity*,¹⁰ first published in Germany in 1986, the year of the Chernobyl disaster, Ulrich Beck provides one of our most enduring analyses of risk. In many ways, Beck's analysis of risk and the risk society has displaced those post-war stories of industrial fatalism, such as *The Day of the Triffids*, which found in the progress of science and technology the seeds of our own destruction. The following brief outline of Beck's analysis of the risk society will help us situate the substantive arguments of the GM debate and understand the different paradigms of risk employed by the pro- and anti-GM lobbies.

For the sociologist Beck, the threat of destruction is not the end of the matter but the beginning of the question. If the threat of destruction is immanent in the modes of industrial production, he asks, how does society sustain itself — how is it that the distribution of risk both challenges and maintains the social order?

Beck distinguishes risk from the older concept of dangers, or those hazards of bygone times. Hazards or dangers were once personal and external; they assaulted the senses or put demands on the soul (for bravery or courage, for example). They were calculable and attributable, and liability flowed from their cause. Risk, on the other hand, is a 'systematic way of dealing with hazards and insecurities induced and introduced by modernisation itself'; risks are '*politically reflexive*'¹¹ and come to us clothed in the theoretical and normative statements of knowledge communities.

Beck's analysis of risk transcends the dichotomy between the 'naïve realism of hazards'¹² (where risk is an identifiable, separate and measurable entity — defined as the product of the likelihood of an event and its possible impact) and the constructivist analysis of risk associated with Mary Douglas and Aaron Wildavsky, for whom risk is a 'social construction' informed by a personal sense of danger.¹³ While the naïve realism of hazards is frozen in the inescapable logic of uncertainty, the social construction of hazard evaporates in the subjectivity of perception.

Beck instead looks at the lived experience of risk — of who creates it, lives it, defines it, legitimates it and bears responsibility or liability for it. As Adam and Van Loon put it, in discussing Beck's contribution to risk analysis:

⁹ Fisher (2007) pp 28–30, citing Cook (1996), p 16.

¹⁰ Beck (1992).

¹¹ Beck (1992), p 21 (italics in original).

¹² Beck (1995a), pp 60–61.

¹³ Douglas and Wildavsky (1982); Douglas (1985).

It means that we need to go beyond the concept of risk and technology as mere social constructs and grasp instead how specific technologies are lived as future creating social praxis and in what way particular risks are experienced, perceived, defined, mediated, legitimated and/or ignored.¹⁴

Becks' lived experience of risk is contingent, ambivalent and open to other possible futures. In this, his analysis differs profoundly from those founding myths of modernity and of post-war fiction that repeat the horrors of industrial fatalism (which generates risk)¹⁵ and Weberian bureaucracy (which administers and disperses it).¹⁶ Rather, Beck insists that technological progress, risk and hazard must be received as mystified modes of social self-encounter and as signposts of our own history and 'its corrigibility':

Large-scale technological hazards can and must be apprehended and deciphered as mystified modes of social self-encounter, twisted outwards and reified. They are objectified memories of suppressed social-human imperfection and responsibility, projected onto nature and technology. It is not something external but itself that society encounters in the hazards that convulse it; and the reigning paralysis can only be overcome in so far as society apprehends the hazards as signposts of its own history, and to its corrigibility.¹⁷

This does not simply mean that the question of whether society 'needs' GM plants and food is contestable. More importantly, Beck insists that the debate about GM risk is a debate about people and social relationships rather than about an abstract form of technology that appears and operates in a social vacuum, apart from or external to the actors and social structures which experience, create, distribute and administer risk. As Elizabeth Fisher has said, for Beck, 'technological risks have become a focal point for arguing for more general reforms in how the state governs in a liberal democracy as well as one of the catalysts for the rise of the new social movements'.¹⁸

For the sociologist Beck, laws and regulations are complicit in the creation and maintenance of a social order that distributes and administers risk in a particular way. At times, he describes them as 'scandalous examples' of 'organised irresponsibility':¹⁹

¹⁴ Adam and Van Loon (2000), p 6.

¹⁵ Beck (1995a), pp 58–69. For Beck, the narrative of industrial fatalism not only avoids the question of what is produced, it also grounds and justifies a principle of 'organised irresponsibility' in relation to its effects: if society is to blame for the generation of risk, then nobody (or anybody) can be held responsible for its effects.

¹⁶ Beck (1995a), p 58 conjures 'Compte to Adorno, Marx to Luhmann, to name but a few'. See also Robins (2002).

¹⁷ Beck (1995a), p 159.

¹⁸ Fisher (2007), p 11.

¹⁹ Beck (1995a), p 63. For an application of the concept of organised irresponsibility in the Australian context, see Healy (2000) and Salleh (2006). For an excellent account of the relationship between common law concepts of liability and risk assessment, see

Laws ... constitute an assent, incomprehensibly condensed into paragraphs and authorities, to everything new in science, economics and technology. The pruning of details legitimates the main trend. There is no better way of symbolically detoxifying the reality of the danger, which precisely for this reason is rendered irreversible.²⁰

He points to the way in which laws and regulations simultaneously legitimate risk and delegitimize dissent in such a manner as to render all resistance idle:

It is not the specialist logic of technology that compels us to accept hazards, but the system of organised non-liability, which renders all resistance idle, ultimately turning that which controls the production of hazards — law, science, administration, policy — into its accomplice.²¹

It is easy to misunderstand Beck here. He is not suggesting that there is anything inherent in the form of laws and regulations that condemns them to irresponsibility and industrial fatalism — in fact, distributing risk and responsibility is one of the functions of law. Rather, he is insisting that it is law that distributes risk and responsibility, not something inherent in either technology or nature (which have other, different roles or effects — such as a capacity to spread, or reproduce or feed or fuel the planet).²²

I will consider the substantive issues raised by the GM debate against Beck's sociological description, but first I must consider the use of the terms 'pro-' and 'anti-GM lobbies', which I have already used somewhat crudely. As Latour has said, 'there are many contradictory ways for actors to be given an identity',²³ and instead of pro- and anti-GM lobbies I might have referred to 'seed companies and greenies', or 'GM and non-GM farmers', or 'growers and consumers', or 'regulators and stakeholders'. Any one of these figurations might have framed the question differently. However, by using the terms 'anti-GM' and 'pro-GM lobbyists', I have left the question of why they lobby in abeyance while still

Rochford (2007), p 183, who argues that although the courts have not adopted risk management strategies, 'the modern and pervasive ideas of risk subtly infuse our commonsense calculations of risk'.

²⁰ Beck (1995a), p 60. In this paragraph, Beck transcends the traditional distinction between law as facilitative and law as expressive. To the extent that regulatory structures both define the regulatory sphere and create the conditions for its acceptance, it is both facilitative and expressive. For a discussion of the application of this traditional distinction in regulatory theory, see Morgan and Yeung (2007), Ch 1.

²¹ Beck (1995a), p 160.

²² Compare Giddens (1999), p 10, who argues that: 'Where a society hasn't got effective means of dealing with organised irresponsibility, the result isn't always that no one is held responsible. On the contrary, the price of manufactured uncertainty is probably closely associated with the emergence of "litigious" society. Where a common "contract of responsibility" has broken down, culpability can be found anywhere. Here indemnity has effectively been separated from causality.' For Giddens (1999), p 5, risk arises when a decision has to be made; liability arises from the making of that decision.

²³ Latour (2005), p 22.

creating a shared field of debate (the use of GM technology) and a broad common audience (GM legislators and regulators).

The anti-GM lobby largely comprises organised groups — with Greenpeace, the GeneEthics Network and the Network of Concerned Farmers being the most visible in Australia. Each of these groups has a different focus. Greenpeace has grown out of the environmental movement, and organisation around GM (or genetic engineering, as Greenpeace calls it) is simply one branch of its activities. GeneEthics produces the ‘GM Free Zone’ notices one sees in cafes and restaurants and is ‘a non-profit educational network of citizens and kindred groups’. It addresses human, animal and plant GM, although food and plant GM remain its primary focus. Finally, the Network of Concerned Farmers is a small group of farmers, which promotes itself as a non-strident body concerned about the implications of GM technology for farmers.

All these groups produce, distribute and promote GM information, which is often internationally sourced. Although each group comes to the GM debate from a different direction, the issues they raise are remarkably similar. I shall therefore examine one of the most popular anti-GM films, *The Future of Food*,²⁴ as representative of the type of issues raised by the anti-GM lobby. In a review, Jason Silverman called this film ‘a comprehensive and chilling example of anti-GMO rhetoric’.²⁵

The concerns raised in the film can be grouped into three categories. The first covers the broadest socio-economic concerns relating to GM technology, including the control or ownership of food and genetic resources. Under this banner, questions of food security, the role of Monsanto Ltd, changes in agrio-cultural practices (such as the introduction of contract farming), the ‘commodification’ of life through patenting, and the influence of GM companies on research funding and academic freedom are raised.

The second category covers issues related to gene flow, threats to biodiversity,²⁶ the cost of GM containment and liability for GM contamination. ‘GM technology is the new cane toad’ is the catchcry for such concerns.

The third category of concerns relates to the alleged lack of utility of GM technology for either farmers or consumers,²⁷ the possible ill-effects of GM technology on plant and animal vigour, and problems relating to regulation. Under this category, food safety and human health issues can be raised but rarely are, although animal health is often discussed.

²⁴ This film is regularly screened by anti-GM lobby groups. The film was made by Lily Films and written, directed and produced by Deborah Koons Garcia, who ‘hoped it could be a combination of [Rachel Carson’s classic environmental text] *Silent Spring* and [Gino Pontecorvo’s 1965 film] *The Battle of Algiers*’: Silverman (2004b).

²⁵ Silverman (2004a).

²⁶ The argument is that GM contamination may lead to the destruction of certain land races, which in turn will have a negative effect on biodiversity.

²⁷ The argument is that GM crops are not tested for viability and effectiveness before release, and existing contractual and legislative provisions relating to misrepresentation are possibly ineffective.

It would be easy to dismiss the film and the breadth of issues it raises as a cynical exercise to garner support for the anti-GM cause from a broader range of people. However, I would suggest that, taken within the context of Beck's analysis of the risk society, the anti-GM position can be understood better as a coherent response to new technology that is at once a rejection of industrial fatalism, a call to be politically reflexive, a debate on the desirability, necessity, effectiveness and cost of GM technology, and an acceptance of the contingency of the lived experience of risk.²⁸ The effect of this complex construction of risk is that it shifts the focus of the GM debate away from an abstract concern with the form of the technology itself to the specificity of who benefits from the use and development of GM technology, who bears the risk of that technology, what the technology is used for and how that risk is managed.

Within this construction of risk, the role of Monsanto Ltd is central. Websites such as 'Monsanto Watch'²⁹ report on Monsanto activities, and there appears to be a level of demonisation about Monsanto Ltd, which probably heads the list of companies that anti-GM lobbyists love to hate. There is a rational reason for the anti-GM lobby's focus on this company. Monsanto Ltd owns the technology for 88 per cent of the total GM crop area in the world;³⁰ this technology is applied to two out of the world's five leading food crops;³¹ and the technology is almost exclusively used to make crops resistant to Monsanto-owned pesticides and herbicides, especially the world's leading herbicide, Roundup. Monsanto's decade-long promises to produce drought-resistant or other desirable pipeline products have so far come to nothing. For the anti-GM lobby, the question is whether the benefits achieved by Monsanto and individual farmers in using GM herbicide- and pesticide-resistant crops is outweighed by the risk of contamination and the social consequences of such use.³² The anti-GM lobby is always conducting something in the nature of a rough cost-benefit analysis of existing products and practices, and has a high level of disbelief in relation to promises of imaginary or pipeline products.

This concern with Monsanto and its products is reflected in the submissions received by the Gene Technology Regulator in relation to applications for licences

²⁸ This is not to deny that anti-GM organisations may have a private interest in maintaining an anti-GM stance in order to attract funds, donations and membership but, to the extent that they cannot exclude themselves from the risk society, they too will be subject to scrutiny and reflection.

²⁹ www.monsantowatch.org/

³⁰ Glover (2008), p 3. Glover relies on figures published by Monsanto and ISAAA, the International Service for the Acquisition of Agricultural Bio-tech Applications: http://km.fao.org/fileadmin/user_upload/fsn/docs/Glover%20thesis%20summary.pdf.

³¹ Monsanto produces GM soybean, maize, cotton and canola. The top five crops in the world are wheat, maize, rice, barley and soybean. Canola is one of the top 18 crops in the world. See Leff et al (2004).

³² As Anthony Giddens (1999) has pointed out, risk can be beneficial and benign, at least for some: GM technology in crops, for example, has proved to be of great benefit to Monsanto Ltd; today, it tops the World's Top Seed Companies at the expense of Pioneer Hi-Bred International, which has maintained its traditional plant-breeding techniques.

for release of GMOs, either for trial or commercial release. More submissions are made by the anti-GM lobby in regard to Monsanto Australia Ltd licence applications than similar applications by Bayer CropScience Pty Ltd or the Australian Commonwealth Scientific and Research Organisation (CSIRO), both of which have comparable numbers of licences.³³ More submissions are made by the anti-GM lobby in relation to food crops than to non-food crops such as carnations and cotton. Finally, more submissions are made by the anti-GM lobby in relation to herbicide- and insecticide-resistant traits than in relation to other traits which are in the trial stage only, such as drought resistance, water retention and the colour of carnations. For the anti-GM lobby, there appears to be a real difference between a blue GM rose and a food crop containing GM pesticides.

This pattern of submissions also indicates that the anti-GM lobby's position in relation to GM technology is more complex than the call to a 'GM Free Future' would suggest. Greenpeace, GeneEthics and the Network of Concerned Farmers all call for a GM Free Future, but they each emphasise different strategies for achieving it — from individual responsibility to institutional accountability to agricultural solutions. Thus Greenpeace supports consumer action against the consumption of GM foods, exhorts farmers 'not to plant GM seeds' and supports food labelling laws to promote consumer choice.³⁴ GeneEthics wants 'the precautionary principle, scientific evidence and the law rigorously applied to all proposed uses of genetic manipulation (GM) technologies and their products'.³⁵ It challenges the scientific claims of the Office of the Gene Technology Regulator on the basis that the office fails to establish standards and repeatability as part of its testing processes. The Network of Concerned Farmers is highly critical of the effectiveness of current risk-management strategies for maintaining crop identity as well as the lack of utility of current GM products. They demand better containment and segregation protocols as well as assessment and accountability for the (in)effectiveness and (in)utility of GM products. What unites these three organisations under the banner of a 'GM Free Future' is their belief that if individuals took responsibility for their futures, and if institutions acted accountably and transparently, and if the ineffectiveness of existing risk management strategies and GM products were recognised, then the world would indeed be GM free.

Some may accuse the anti-GM lobby of peddling fear in the spaces of uncertainty, but the irony of risk management makes fear a risky strategy — the more effective the anti-GM lobby is in demanding effective risk management which avoids catastrophic consequences, the more irrelevant they become in the eyes of

³³ As at 31 December 2008, Monsanto had 12 current licences for release into the environment including five commercial release licences plus seven surrendered licences; CSIRO had eight current and 10 surrendered licences; and Bayer CropScience had eight current, including two commercial release licences plus one surrendered licence. University of Queensland came next with only four current licences and one surrendered licence for release into the environment.

³⁴ See Greenpeace Australia Pacific's website: www.greenpeace.org/australia/issues/GE/solutions/corporate/ge-free and www.greenpeace.org/australia/issues/GE/powerholders.

³⁵ 'Our Vision', www.geneethics.org/about.

the public and the more prone to accusations of scaremongering they become.³⁶ The anti-GM lobby cannot rely on the generation of fear in the spaces of uncertainty without risking its own credibility.

The pro-GM lobby is structured quite differently from the anti-GM lobby. It comprises two distinct groups that do not work closely together, although there are obvious ties between them. The first group is the agricultural industry, which uses GM products. This includes research organisations funded by grower levies such as the Grains Research and Development Corporation (GRDC); private biotechnology companies; and industry bodies such as CropLife Australia, the National Farmers' Federation Ltd, the Grains Council of Australia and Agrifood Awareness Ltd (which was established specifically to promote GM technology). This group is highly organised and has successfully positioned itself as the leader in finding regulatory solutions to the 'GM problem'. GRDC, for example, developed industry-wide plans and protocols for managing crop segregation, and the grains industry organisations worked together to produce *Delivering Market Choice with GM Canola* (known as the 'Single Vision' document), which eventually formed the basis for lifting or partially lifting the GM moratoria in New South Wales and Victoria.³⁷

The second group of the pro-GM lobby comprises individual scientists, commentators and journalists who support GM technology, although they do not work directly with GM technology or use it. The group is consciously ideological in its approach, and one of the most prolific writers in this group is online journalist Jennifer Marohasy, who is a Fellow at the Melbourne-based Institute of Public Affairs and Director of the Australian Environment Foundation. The Institute of Public Affairs (IPA) is a well-known conservative think tank that claims to be the first ideologically based (free-market) think tank in the world. The Australian Environment Foundation (AEF) describes itself as an environmental organisation that takes 'an evidence-based, solution focused approach to environmental issues'.³⁸ They are committed to 'evidence, choice, technology, management, diversity and people', and were set up following an IPA conference in 2004. Although AEF has not succeeded in securing any government environmental grants as it had hoped to do at its inception,³⁹ it has since that time run conferences sponsored by Monsanto, Bayer CropScience, Auscott, Murray Irrigation Ltd and the Forest Industries Association of Tasmania. In addition, AEF has given environmental awards to the timber industry giant Gunns Ltd (and subsequently endorsed its contentious

³⁶ As Giddens (1999), p 5 points out, the debate in risk society always risks falling into accusations of scaremongering on the one hand and cover-ups on the other.

³⁷ An industry report prepared under the Single Vision Grains Australia process, published July 2007, www.afa.com.au/pdf/Delivering_Market_Choice_with_GM_canola.pdf. The process was named after Single Vision Grains Australia, an independent body funded by GRDC from 2005 to June 2007 to provide strategic leadership for major issues facing the grains industry, including GM technology. The primary document produced by the organisation was *Towards a Single Vision for the Australian Grains Industry 2005–2025*, March 2004.

³⁸ AEF website: www.aefweb.info/index.php.

³⁹ Personal communication with founding member.

Tasmanian timber industry developments) and to a hunters' organisation, Field and Game Australia, for activities undertaken by them in relation to their industrial activities.

Talking to members of AEF, it appears that their driving force is a belief that the environment must be managed 'more sensibly' ('less red tape'), and that people and industry must 'come first'. On this basis, the AEF endorses GM crops, the abolition of native vegetation legislation, decreased immigration and Japanese whaling while rejecting 'man-made' climate change and the Victorian Environmental Assessment Council's plan for the Murray-Darling basin. The AEF is registered as an environmental group for the purposes of receiving tax-free donations.

At first sight, it may appear that the AEF is a classic example of what Peter Drahos and John Braithwaite call an 'astroturf' (as opposed to a grass-roots) organization — that is, a corporate front group which presents itself as an NGO.⁴⁰ However, comments by current and past members of both the IPA and AEF, as well as the wording of party endorsements of biotechnology, suggest a more complex construction. Members of these groups tend to speak of GM technology in the abstract as just another form of new technology: 'This new technology' will help maintain Australian 'agricultural competitiveness', and it is 'wrong' for organisations 'such as Greenpeace' to stymie the development of 'this new technology'.⁴¹ Pro-GM commentators tend to conflate the concepts of GM technology and the broader concept of biotechnology (which includes technologies as old as yeast and beer-making) in a further act of abstraction. When asked why they would fight for a technology that is effectively controlled by one company, I was told: 'It is not who owns the technology but whether the technology is good or bad.' I was also told that the fact that Monsanto technology accounted for 88 per cent of global GM acreage was simply an indication of 'how good' the Monsanto products must be.

Organisations such as the IPA and AEF identify themselves as much in opposition to anti-GM groups as for GM technology *per se*. In some cases, this is because they portray themselves as better, more honest, more scientifically rigorous and rational environmentalists. In other cases, it is because they affect a stance of being anti-environment and committed to the hard business of running a country and economy. In addition, while the pro-GM lobby tends to avoid the concrete question of who benefits from owning and controlling GM technology, it does extol the benefits of GM products, actual and potential. Thus, in recent years, GM cotton growers have adopted a strategy of making submissions to the Gene Technology Regulator in support of licence applications for the release of GM cotton. More commonly, pro-GM lobbyists refer to the potential benefits of pipeline products such as drought-resistant wheat.

There are other important differences between the pro- and anti-GM lobby approaches. The pro-GM lobby relies on the narratives of industrial fatalism to

⁴⁰ Braithwaite and Drahos (2000), p 489.

⁴¹ Personal communications with AEF and IPA current and past members. Some early members report that they left the AEF because they did not agree with the ideological approach taken.

justify the inevitability of technological progress and its collateral damage. For the pro-GM lobby, technological progress represents a battle between nature and human ingenuity ... risk is a confrontation with uncertainty and risk taking is human ingenuity in action. In the rhetoric of the pro-GM lobby, risk is not something that is produced and distributed, but is something to be confronted. Risk might be minimised and managed, but the confrontation is inevitable so long as one is human. What is significant here is that, in the discourse of risk-taking, risk and uncertainty are reified, even fetishised, and their origins are obscured. Such reification also grounds the distinction between 'real' and 'perceived' risk that is mobilised to discount broader socio-political concerns relating to GM technology.

The discourses of the pro- and anti-GM lobbies represent two paradigms of risk. For the anti-GM lobby, risk is co-produced in the practices of industrial technology and the question of who benefits and bears the cost of this risk is central to the question of what should be produced and by whom. For the pro-GM lobby, on the other hand, risk is reified and unavoidable; our willingness to confront it is a sign of personal (moral) strength; and our duty to manage it is a call to human ingenuity. Paradoxically, as we shall see, the coexistence of these competing paradigms led to a surprisingly broad initial acceptance of the *Gene Technology Act 2000* (Cth) and the establishment of the Office of the Gene Technology Regulator.

Detoxification, Displacement and Deferral: The Avoidance Strategies of the Legislature

The call to address difference is the *raison d'être* of democratic decision-making, so it is not surprising that the passage of the *Gene Technology Act* was preceded by considerable public debate. The history of this debate and the passage of the legislation have been examined before, most recently and comprehensively by Richard Hindmarsh, so I will not repeat the exercise here.⁴² What is important to note, however, is that the passage of the legislation and the establishment of the Office of the Gene Technology Regulator were initially supported, to a surprising extent, by both the pro- and anti-GM lobbies. Both groups were in favour of a stronger, more independent regulator to replace the non-statutory, voluntary Gene Manipulation Advisory Committee (GMAC), which had been praised for its standard-setting but criticised for its inadequate monitoring and compliance procedures.⁴³ Significantly, both groups also initially agreed that licensing decisions made under the Act should be based on a 'risk assessment of the health and safety of people and of the environment', and that the Regulator should not consider 'marketing concerns', which were to be dealt with by the states — which retained the right to impose a moratorium on the release of certain GMOs on this ground.

This agreement was based on a misunderstanding, which arose from the fact that each side mobilised a different paradigm of risk and therefore understood the impact of the Act differently. Furthermore, it was based on an implied promise that substantive matters of social value could still be debated — either by the Office of

⁴² Hindmarsh (2008).

⁴³ House of Representatives Standing Committee on Primary Industries and Regional Services (2000), p 152. GMAC itself had replaced the voluntary codes adopted by research scientists and laboratories in the early years of GM research.

the Gene Technology Regulator or in the states. The anti-GM lobby appears to have assumed that a 'risk assessment' would provide a cost-benefit analysis of the risk and that the Regulator would therefore be led to conclude that any benefit from GMOs would be outweighed by the risk to the health and safety of people and the environment. In addition, it applauded the exclusion of 'marketing concerns' from the Regulator's mandate on the basis that this meant that the Regulator would not be influenced by the desire of companies such as Monsanto to benefit from exploiting GM technology. Conversely, the pro-GM lobby appeared to believe that the Regulator's risk assessment would only consider 'real' risk as opposed to merely 'perceived' risk, and therefore find that GM crops were safe in contradiction to both alarmist populist propaganda and apparent consumer resistance. Both the pro- and anti-GM lobbies were prepared to continue the debate on 'marketing concerns' at the state level.

The significance of this apparent agreement should not be under-estimated. Even today, it is common for the Commonwealth and the Regulator to base legitimacy claims on this 'agreement', which they represent as having emerged from more than a decade of debate and consultation with stakeholders and the community. This 'agreement', however, was illusory and the debate on substantive matters was never resolved — except, arguably, in Tasmania.

Within a traditional regulatory constitutional framework, the question of whether GMOs should be released into the environment is one that challenges the usual categorisations. As a complex and divisive social issue with numerous stakeholders and significant redistributive effects, the release of GMOs is typical of those issues that 'should' be dealt with by broad democratic and accountable bodies such as parliament. On the other hand, as a complex technical problem requiring expert evidence, standard-setting and monitoring, it is characteristic of the types of problems that 'should' be left to expert bodies and regulators.

These different characterisation of the GM debate are reflected in two ideal models of risk regulation, which Elizabeth Fisher has called the 'rational-instrumental' model and the 'deliberative-constitutive' model.⁴⁴ The rational-instrumental model construes public administration as an instrument of the legislature based on a transmission belt theory of administrative law. Under the rational-instrumental model, the Regulator is given discrete tasks within a narrow mandate with limited discretion. The deliberative-constitutive model, on the other hand, seeks to meet the complexities of risk regulation by granting significant discretion to an independent regulator, who 'helps to create, to express and to realise ... public purpose'.⁴⁵ Under the deliberative-constitutive model, the legislature sets out broad principles and constitutes a body that has responsibility for realising the public purpose expressed in these principles.

The regulatory structure established by the *Gene Technology Act* can be understood as an almost ideal type of deliberative-constitutive model. The functions of the Regulator are extensive and broadly defined under section 27. Not only is the Regulator responsible for issuing licences for dealing with GMOs, but is also required to draft policy principles and guidelines, codes of practice and technical

⁴⁴ Fisher (2007).

⁴⁵ Fisher (2007), pp 28–30, citing Cook (1996), p 16.

and procedural guidelines. The Regulator is required to perform an educative role for the public and other regulatory agencies, promote harmonisation of risk assessment across different agencies, and monitor international practice and maintain international links in relation to GM regulation. Rather than simply requiring the Regulator to be a technical expert in relation to gene technology, these functions constitute the Regulator as *the* key figure in all aspects of GM regulation, from policy development at a domestic and international level to public communication and good administrative practices, both now and in the future.

In relation to licensing, the legislative mandate of the Regulator is also broad. Section 51, for example, requires the Regulator to take into account '*any risks*, including any risks to the health and safety of people and the environment' when preparing a risk assessment (italics added). Furthermore, the Act does not define key terms such as 'risk', 'risk assessment' or 'risk management'. As the Explanatory Memorandum, Gene Technology Bill 2000 (Cth) stated: 'It is intended that the Regulator will issue detailed guidelines regarding the process for risk assessment and risk management, following extensive public consultation on these matters.'

Significantly, the Explanatory Memorandum recognised that the 'possible risks of the technology' included not only matters relating to health, safety and the environment but also 'broader, non-scientific concerns ... about the use of the technology including ethical, social and moral concerns relating to the impact of "humans playing God" by using gene technology'. The Explanatory Memorandum explained the objectives of the legislation as follows:

The objective of Government action is to protect the health and safety of people and to protect the environment by identifying risks posed as a result of gene technology and by managing those risks through regulating certain dealings (or activities) with GMOs.

Against the Government's broad goal, and to address the shortfalls in the current regulatory arrangements, the Government's objectives are to ... (inter alia) continue a science based approach to the assessment of risks but including capacity for formal consideration of broader issues such as ethics ...⁴⁶

In support of this purpose, the Act provided for the establishment of a number of committees, including a technical advisory committee, an ethics committee and a community consultation committee. In all matters, including licensing, the Regulator was required to consult widely.

What is striking about this regulatory structure is that it effectively deferred many of the policy decisions relating to these 'broader issues' and shifted responsibility for making them from the Commonwealth legislature to the new independent regulator. Furthermore, by delegating responsibility for defining the nature of risk, its assessment and management to the Regulator, the question of which paradigm of risk should be employed was not resolved. As we shall see in the next section, this deferral and displacement were not really effective — the Regulator has proved to be very adept at side-stepping these responsibilities.

⁴⁶ Explanatory Memorandum, Gene Technology Bill 2000 (Cth), p 14.

Perhaps the most audacious avoidance strategy employed by the legislature in relation to GM regulation, however, arises from the ‘buck passing’ between the Commonwealth and the states in the imposition and eventual lifting of state moratoria on the release of certain GMOs. Again, the history of this matter has been dealt with by others, and I will not repeat it here.⁴⁷ Suffice to say that the Constitutional limits on Commonwealth legislative power meant that the successful establishment of a national system of gene technology regulation was dependent on the states agreeing to pass corresponding state legislation. Tasmania, in particular, refused to agree to this unless it was given the power to prevent the release of GMOs in that state either by ‘opting out’ of the Commonwealth legislation or by imposing a moratorium on the release of GMOs in Tasmania. Such a power had the potential to subvert any perceived pro-GM position held by the Commonwealth government of the day.

The Commonwealth refused to provide for an opt-out clause, but did agree to allow individual states to impose limited moratoria on the release of GM crops. Under section 21 of the *Gene Technology Act*, the Ministerial Council was empowered to issue policy principles in the form of disallowable instruments relating to ethics and other matters. Section 57 provided that the Regulator was not entitled to issue a licence that was inconsistent with such a policy principle. Before the Bill was passed, section 21 was amended to specifically provide that the Ministerial Council could issue a policy principle recognising areas, if any, designated under state law for the purpose of ‘preserving the identity of ... GM crops and non-GM crops’ for ‘marketing purposes’: s 21(1)(aa). In due course, the Gene Technology (Recognition of Designated Areas) Principle (Cth) 2003 was issued.⁴⁸

Internationally, the coexistence of licensing systems and moratoria is one of the distinctive features of the regulation of gene technology, and distinguishes it from other environmental regulatory systems. Perhaps only nuclear energy has a similarly complex regulatory structure.⁴⁹ The Australian scheme reflects but reverses the European regulatory structure. While the relevant European Community Directives permit the licensing of GMOs for ‘marketing purposes’, the

⁴⁷ See Ludlow (2004).

⁴⁸ By tying the moratorium to crop identity and segregation for marketing purposes rather than allowing a general opt-out clause for states, the provision is thought by some to be consistent with Australia’s international obligations under the *Agreement on the Application of Sanitary and Phytosanitary Measures* included in Annex 1 of the Marrakesh Agreement establishing the World Trade Organisation opened for signature 15 April 1994 (entered into force 1 January 1995). See Senate Community Affairs Committee (2000), Ch 6 for a discussion of the ‘Tasmanian situation’ and the ‘opt-out’ option. See also the ‘EU biotech case’, *European Communities — Measures Affecting the Approval and Marketing of Biotech Products*, WTO Doc WT/DS291/R, WT/DS292/R, WT/DS293/R, 29 September 2006 (Final Panel Report) for the WTO’s position.

⁴⁹ Braithwaite and Drahos (2000), pp 287–321 argue that the international regulation of nuclear energy has always been directed at the control of its use in warfare. The environmental aspects of nuclear resources, on the other hand, are regulated by individual states.

safeguard measures under these directives allow individual Member States to impose a provisional moratorium on the basis of ‘health and safety concerns for people or the environment’.⁵⁰ Under the Australia scheme, by comparison, the Regulator may issue a licence for GM release if the release is found to be safe for the ‘health of people and the environment’, but the Act allows individual states to impose a moratorium for ‘marketing purposes’.

Despite the narrow wording of section 21(1)(aa), it was enough to keep the promise of a possible moratorium alive and the Commonwealth successfully avoided the political fallout of supporting either side of the GM debate. The question of whether GM technology *should* be endorsed or adopted was kept alive but in abeyance by deferring and displacing the locus of debate. However, except in Tasmania, this debate has still not happened — either in the implementation of the moratoria or in their eventual lifting.

State acts implementing moratoria were generally passed at the same time as the corresponding state legislation for the *Gene Technology Act*; their passage was based on political undertakings and election promises rather than on a rigorous debate about substantive matters and the purpose of the moratoria was explicitly about deferring the debate — the passage of the moratoria would ‘provide the community with time to evaluate the impacts of the introduction of GM crops on the marketing of non-GM crops’.⁵¹ Furthermore, their objects of legislation varied from state to state. While some states banned the release of GM canola or other prescribed crops, others banned GM food crops and others banned the release of GM plants generally.⁵² Queensland and the Northern Territory didn’t impose a

⁵⁰ In the European Community, the regulation of GM plants and food is covered by Directive 90/220/EEC (‘Directive 90/220’ published in OJ of the EC No L 117 of 08.05.1990, p 15) ‘On the deliberate release into the environment of genetically modified organisms’ (repealed on 17 October 2002) and Directive 2001/18 (‘Directive 2001/18’ published in OJ of the EC No L 106 of 17.04.2001, p 1) ‘On the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC’, which set out the administrative procedures for licensing GMOs for marketing in the European Community. Regulation 258/97 ‘Concerning novel foods and novel food ingredients’ (published in OJ of the EC No L 43 of 14.02.1997, p 1) lays down similar administrative procedures for granting authorisations for the placing on the market of foods and food ingredients containing or consisting of GMOs. Article 16 of Directive 90/220 and Art 23 of Directive 2001/18 provide limited safeguard measures that allow an individual Member State to impose a provisional moratorium on the release of GM products on the basis that it presents a risk to human health or the environment. This assessment must be based on ‘justifiable reasons’ (Art 16 Directive 90/220) or ‘new or additional information’ made available since the date of the consent and affecting the environmental risk assessment or reassessment of existing information on the basis of new or additional scientific knowledge (Article 23 Directive 2001/18).

⁵¹ Gene Technology (New South Wales) Bill and Gene Technology (GM Crop Moratorium) Bill Second Reading Speech: NSW, *Parliamentary Debates*, Legislative Council, Wednesday 21 May 2001, (Ian Armstrong, Minister for Agriculture and Fisheries).

⁵² *Gene Technology (GM Crop Moratorium) Act 2003* (NSW); *Control of Genetically Modified Crops Act 2004* (Vic); *Genetically Modified Crops Free Areas Act 2003*

moratorium at all. Not only was any hope of a national consensus defeated but the object of regulation and debate was being gradually fractured without debate.

From 2006 to 2008, the moratoria in New South Wales,⁵³ Victoria,⁵⁴ Tasmania⁵⁵ and South Australia⁵⁶ were reviewed (sometimes in a cursory fashion) and the moratoria were partially 'lifted' in New South Wales and Victoria, and maintained in Tasmania and South Australia. In Western Australia, the moratorium was 'relaxed' following a close state election in which the moratorium was a contentious issue. The Western Australian government has allowed limited trials of GM canola to take place, but all states other than Tasmania have allowed similar trials under their moratoria. The two major differences between those states that 'lifted' the moratoria and those that maintained them was how they defined their object of review and their terms of reference. For those states that maintained the moratoria, the object was broadly defined as 'GM technology in primary industry' (Tasmania) or 'GM crops' (South Australia), and the review extended to considerations of health and safety of people and the environment as well as marketing purposes. For those that lifted the moratoria, the object of review was limited to 'GM canola' (for which the registrar had issued a commercial licence in 2003) and the review was restricted to 'marketing purposes', defined as a question of 'choice'. In an ironic twist, which completed the circle of avoidance by the states and the Commonwealth, these states did not include issues relating to the health and safety of people and the environment on the constitutional basis that these were 'Commonwealth concerns' — even though, as we have seen, the Commonwealth had not addressed these issues substantively and nor, as we will see, did the Regulator.

The development and passage of the *Gene Technology Act* provides a lesson in detoxification, displacement and deferral. The apparent agreement between the anti- and pro-GM lobbies did not represent an accord between the two sides as to whether either GM technology was a 'good thing', but rather pointed to the incommensurability of their competing paradigms of risk. This difference was not overcome in the debates surrounding the passage of the Act, but was displaced and deferred in the deliberative-constitutive model of the legislation and in the promise of a state moratorium. In this process, it was not the risks of GMOs that were symbolically detoxified by the laws and regulations developed by the Commonwealth, but the GM debate itself. When Beck speaks of the 'industrial fatalism' of the risk society, this no longer means (if it ever did) that the social origins and consequences of GM technology are invisible or incomprehensible;

(WA); *Genetically Modified Crops Management Act 2004* (SA); *Genetically Modified Organisms Control Act 2004* (Tas); *Gene Technology (GM Crop Moratorium) Act 2004* (ACT).

⁵³ Independent Panel Report to the NSW Minister for Primary Industries (2007).

⁵⁴ Victorian Department of Agriculture, Food and Forestry (2007).

⁵⁵ Joint Select Committee, Parliament of Tasmania (2008).

⁵⁶ South Australia had a relatively small consultation which found 'no compelling reason to lift the ban': Press release, The Hon Ron McEwen, South Australian Minister for Agriculture, Food and Fisheries, Minister for Forestry, 17 April 2008.

rather, it means that the locus for the debate over these origins and consequences have been displaced and deferred.

Detoxification, Displacement and Deferral: The Avoidance Strategies of the Gene Technology Regulator

There have been three Gene Technology Regulators appointed under the *Gene Technology Act*. The current regulator is Dr Joe Smith, who took office on 23 March 2009. He replaced Ms Elizabeth Flynn, who acted in the position after the departure of the inaugural regulator, Dr Sue Meeks. Dr Smith released a new Risk Analysis Framework (RAF) on 20 May 2009, which replaces the Risk Analysis Frameworks of 2007 and 2005. The new RAF ostensibly gives a higher priority to protection,⁵⁷ prevention,⁵⁸ the precautionary principle⁵⁹ and the role of the Ethics Committee⁶⁰ than the 2005 and 2007 RAFs. However, the following analysis is based on the decisions of the Regulator made under RAF 2005 and 2007. Although three decisions have been made since the release of the new RAF, the fact that these decisions use the language of the old RAF instead of the new (eg 'hazard identification' is still used rather than the new 'risk identification') suggests that the impact of the new RAF so far has been negligible. I will note changes made by the new RAF as appropriate.

It could be argued that there is nothing unusual in legislatures sidestepping unpopular or difficult decisions by providing a broad discretionary legislative mandate to an independent regulator. As Mark Jamison has commented, 'regulators are sometimes scapegoats for unpopular policies and unavoidably become involved in shaping policies which they are supposed to implement'.⁶¹ It could even be argued that, in the case of GM technology, it is more appropriate for the Regulator to develop risk management and assessment procedures in accordance with international and industry standards than to leave this matter to a politically motivated legislature. Such arguments assume that independent regulators are by definition immune to popular or populist influence when determining the limits of their legislative mandate and that, if there is a problem of regulatory discretion, it is that the Regulator will overstep that limit rather than fail to realise it.⁶² However, this is not the problem that arose in relation to the Gene Technology Regulator.

Although stakeholders, lobbyists, academics and other interested parties originally participated enthusiastically in the decision-making processes of the Regulator,⁶³ it gradually became apparent that this participation was ineffective and that the range of issues that the Regulator excluded from consideration were legion.

⁵⁷ Office of the Gene Technology Regulator (2009), p 4.

⁵⁸ Office of the Gene Technology Regulator (2009), p 50.

⁵⁹ Office of the Gene Technology Regulator (2009), p 8.

⁶⁰ Office of the Gene Technology Regulator (2009), p 19.

⁶¹ Mark J Jamison (2005), p 1.

⁶² From *Discretionary Justice* on, the concern of commentators has primarily been to confine, structure and check discretionary power rather than to seek its effective exercise. See Davis (1969).

⁶³ Up to 127 submissions were made in relation to early contentious cases.

On the basis that they were ‘outside the scope’ of the inquiry, the Regulator excluded from consideration philosophical and ethical issues,⁶⁴ marketing issues,⁶⁵ the utility or benefits of GMOs,⁶⁶ the extension of agriculture into new areas,⁶⁷ the economic and environmental sustainability of areas,⁶⁸ ‘agrio-cultural practices’,⁶⁹ the difficulty or effectiveness of segregating GM and non-GM crops,⁷⁰ and health issues.⁷¹ Issues were also excluded on the basis that they were to be dealt with by another regulatory agency.

Some of these exclusions, although related to important substantive issues, were not considered contentious. For example, given that the object of the Act is to ‘protect the health and safety of people, and to protect the environment’,⁷² it was generally understood that issues relating to the control and ownership of food and genetic resources, the ethics of patenting ‘life’ and the extension of certain agrio-cultural practices such as contract farming might be excluded on the basis that, at least in Australia, they do not relate to the health and safety of people or the environment, except in the most tenuous fashion. In other countries, of course, these issues may go straight to the heart of food security and health, and some interested parties continue to make submissions regarding these matters even today.

On the other hand, other exclusions are contentious. The need to segregate GM and non-GM crops; the extension of new agricultural products into areas previously not used for these products; the fact that such extensions may cause harm to fragile

⁶⁴ For examples of ethical and philosophical matters being excluded, see 047/2003; 057/2004; and 058/2005.

⁶⁵ For examples of marketing matters being excluded, see 047/2003; 048/2003; 053/2004; 054/2004; 055/2004; 057/2004; 058/2005; 071/2006; and 077/2007.

⁶⁶ For examples of the utility and benefits of GMOs being excluded from consideration, see 059/2006; 063/2005; 071/2006; 071/2006; 067/2007; and 080/2007.

⁶⁷ For examples of agricultural extensions being excluded, see 067/2006; and 077/2007.

⁶⁸ For examples of issues of sustainability being excluded from consideration, see 081/2007, including increased herbicide: 069/2006.

⁶⁹ For examples of agrio-cultural practices being excluded from consideration, see 071/2006; and 078/2007.

⁷⁰ For examples of the matters relating to segregation being excluded, see 048/2003; 053/2004; 055/2004; 057/2004; 069/2006; 077/2007; 080/2007; and 081/2007.

⁷¹ For an example of a health matter being excluded, see 054/2004.

⁷² *Gene Technology Act 2000* (Cth), s 3. The definition of ‘environment’ under section 10 of the Act is narrow insofar as it doesn’t explicitly include references to social, economic and cultural matters, even though these are specifically included in the definition of ‘environment’ under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), s 528. Note, however, that the *Gene Technology Act* definition is an inclusive definition. Furthermore, the Act explicitly requires the Regulator to take these risks into account in preparing both risk assessments and risk-management plans. Section 47 provides that in preparing risk assessments the Regulator is required to take into account ‘risks posed by the dealing *including* any risks to the health and safety of people or risks to the environment.’ Section 51 provides that in preparing a risk-management plan (based on the risk assessment), the Regulator must ‘take into account the means of managing *any* risks posed by those dealings in such a way as to protect the health and safety of people; and the environment’. (italics added)

environments such as tropical savannah or threaten the environmental sustainability of agricultural land are all issues that appear to be clearly within the jurisdiction of the Regulator insofar as they relate to the health and safety of people and the environment. However, the Regulator has consistently excluded these issues from consideration on the basis that they are ‘economic’ issues or that they are not ‘unique’ to genetic technology. Both of these explanations are based on extremely restricted interpretations of the Regulator’s legislative mandate.

The Regulator has argued that ‘economic’ issues are excluded from consideration on constitutional grounds: ‘Constitutionally States have retained responsibility for economic development within their jurisdictions.’⁷³ In support of this argument, the Regulator refers to section 16 but this section does not exclude the Commonwealth from managing economic issues but rather provides that the states and Commonwealth have concurrent jurisdiction in this matter so long as the state has passed the necessary corresponding laws. Each state has done this. The Regulator also suggests that section 16 covers the state moratorium provisions (which are in fact covered by section 21, as we have seen above) and that to the extent that states have responsibility for marketing issues, any economic issues are excluded from the Regulator’s consideration.⁷⁴ Not only does this elide the issues of marketing and economics, it confuses the relationship between the Regulator’s jurisdiction and the ability of the states to impose a moratorium on GM release. Under section 57, the Regulator must not issue a licence that allows the release of GMOs in an area recognised by a policy principle as designated GM free by state moratoria — that is, section 57 limits the *geographical* extent of the GM licence; it is not designed to limit the extent of the Regulator’s inquiry in making a risk assessment. Most importantly, though, the Regulator’s exclusion of ‘economic’ issues ignores the fact that most, if not all, of the health, safety and environmental issues that the Regulator is required to consider will have an economic component or impact. The Regulator’s narrow interpretation of the legislative mandate means that it is not only matters that are ‘purely economic’ which are excluded from consideration (whatever that might mean), but that many important environmental, health and safety issues that have an economic component (such as the extension of agriculture into sensitive tropical savannah) have also been excluded.

Under the ‘uniqueness’ requirement, the jurisdiction of the Regulator has been limited by redefining the object of regulation through a radical abstraction. Instead of regulating GMOs, the Regulator has argued that what is being regulated is ‘genetic technology’.⁷⁵ In support of this radical abstraction, the Regulator points to the wording of section 3 of the Act, which provides that the object of the Act is to ‘protect the health and safety of people, and to protect the environment, by

⁷³ Office of the Gene Technology Regulator (2007), p 13. Compare Office of the Gene Technology Regulator (2009), pp 51 and 79, which also excludes economic issues from consideration but does not explain why.

⁷⁴ Office of the Gene Technology Regulator (2007), p 13.

⁷⁵ Although Office of the Gene Technology Regulator (2009), pp 4 and 36 does not refer to the concept of ‘uniqueness’ it does maintain the same principle by providing that the ‘focus of the assessment is whether modified properties of the GMO arising from gene technology increase the level of risk’.

identifying risks posed by or as a result of gene technology, and by managing those risks through regulating certain dealings with GMOs' (italics added). The Regulator has interpreted this in such a way as to restrict consideration to risks that are 'unique' to the GM status of the organism:

At a practical level this has implications for the risks which the Regulator can consider. For instance, many risks posed by GMOs to agriculture are not unique to gene technology, eg land or water use ... Similar risks may also be imposed by non-GM organisms.⁷⁶

Under this interpretation, risks relating to the effectiveness of crop segregation are excluded on the basis that crop segregation is important for many forms of agricultural practice and is not 'unique' to GM crops. The environmental effects of extending agriculture into marginal lands are excluded on the basis that the risk is not related to the 'unique' GM status of the organism. In applying the uniqueness requirement, the Regulator has ignored the fact that the consequences of crop contamination may vary according to whether the contaminating agent is or is not a GMO, or that it may be the specific gene modification in question that has allowed exploitation of marginal lands. If the pro-GM lobby fetishised risk, the Regulator has taken this further. The 'uniqueness' requirement allows the Regulator to transform genetic technology into an abstract quality of novelty, stripped of social and environmental consequences, and even of the object that carries it.

From a strictly legal viewpoint, it is difficult to support the Regulator's 'uniqueness' interpretation, which not only leads to absurdities but is inconsistent with the wording of the objects clause. The objects clause requires the Regulator to identify those risks 'posed' by gene technology as well as those 'resulting' from gene technology. To pose is 'to embarrass by a difficult question or problem',⁷⁷ to 'put [a person] at a loss; to confuse, perplex, puzzle, nonplus'.⁷⁸ Gene technology might be said to pose known and unknown risks; indeed, it might be said to pose a risk in itself. There is nothing to suggest that the risks posed by gene technology are not the same as the risks posed by other forms of technology, or that the risks posed by gene technology must 'result' from gene technology — in fact, the clause contemplates that the two are different. The risks posed by gene technology are those posed by technology generally — and the Act requires the Regulator to consider them all.

Applied in this way, the 'uniqueness' requirement leads to absurdities. If a GM plant is no weedier than its non-GM equivalent, then under the 'uniqueness' requirement the weediness cannot be managed because it is not 'unique' to the GM status of the plant. This is like saying that a Regulator cannot manage the pest-like qualities of a genetically modified cane toad if the gene modification only changes its colour. By abstracting the object of regulation in this way, the Regulator has

⁷⁶ Office of the Gene Technology Regulator (2007), p 13.

⁷⁷ *Macquarie Dictionary*.

⁷⁸ *Oxford English Dictionary Online*.

redefined the role and limited the accountability of the Regulator to the most scientifically narrow of considerations.⁷⁹

Perhaps the most contentious exclusions are those based on the utility of GMOs. The utility of GMOs arises in many contexts: Does the use of GMOs reduce the use of pesticides or increase the risk of pesticide resistance? Does a particular GMO have adverse or beneficial effects on the health of animals or plants? Does the GM modification really increase yield? Is the possible benefit of drought resistance outweighed by the threat to traditional agrio-cultural practices? These types of assessments and balances lie at the heart of Beck's risk paradigm, and many people from both the pro- and anti-GM lobbies may have assumed that one of the advantages of having an independent Regulator would be that these alleged benefits could be independently assessed.

However, the Regulator excludes consideration of the possible benefits (or lack of benefit) of GMOs from the risk assessment on the basis that, like economic issues, they are 'marketing issues' to be left to the state. Such an exclusion, the Regulator argues, is necessary 'to prevent economic considerations (eg cost-benefit analysis, market access and agricultural trade implications) from compromising the regulatory system's focus upon the scientific evaluation of risk'.⁸⁰

This is a striking claim. There is simply nothing in the Act that suggests the Act is to have a solely 'scientific' focus. In fact, scientific input is equated with consumer, health, environmental and industrial input under sections 100, 101 and 108 of the Act. The only other specific references to scientific knowledge in the Act occur in section 4 in relation to the precautionary principle (which provides that lack of full scientific certainty is not to be used as a reason to postpone effective measures to prevent environmental degradation) and section 50A (which provides that the gaining of scientific or technical knowledge may be one of the reasons for applying for an experimental licence). The Regulator, it seems, has confused the general regulatory principle that decisions be 'rational' with a personal preference for 'scientific' decision-making. This cannot be correct — it is one thing to say that the Regulator's decision must be 'rational'; it is quite another to suggest that the only rational decision is a 'scientific' one. Besides providing a dramatic example of a Regulator limiting the legislative mandate, such an interpretation casts doubts on the rationality and transparency of the Regulator's own decision-making processes.

Under the Regulator's interpretation, only 'adverse effects' can be considered in a risk assessment.⁸¹ This is unusual and out of step with international risk-assessment practices. Even the Regulator acknowledges that classical economic risk analysis models include a consideration of the 'benefit or utility against which the ultimate decision of acceptability of an action may be weighed against the risks of that action'.⁸² In addition, the risk analysis model of Standards Australia, *AS/NZ*

⁷⁹ The Regulator has also effectively imported the concept of substantial equivalence in food regulation into the field of environmental protection.

⁸⁰ See Office of the Gene Technology Regulator (2007), p 13. Compare Office of the Gene Technology Regulator (2009), p 12, which does not use the term 'utility' but also excludes cost-benefit analyses and only considers risks 'in terms of adverse outcomes'.

⁸¹ Office of the Gene Technology Regulator (2007), p 13.

⁸² Office of the Gene Technology Regulator (2007), p 13.

4360:2004, on which the risk assessment framework of the Gene Technology Regulator is based,⁸³ includes costs and benefits within its list of possible risk criteria.⁸⁴ By excluding benefits and utility from the risk analysis, the Regulator not only strips the GMO of its social meaning but strips the risk assessment of any meaningful measure of risk acceptability or unacceptability. This is a particularly denuded naïve realism of hazard — more limited than even the pro-GM lobby's reified risk as human challenge.

In practice, the Regulator must have some standard against which to determine whether a risk can be 'managed' in accordance with section 56. When I raised this issue with the Office, I was told that it wasn't a problem because 'in practice' the Regulator and the applicant keep negotiating to develop an acceptable risk-management plan until either agreement is reached or the applicant withdraws the application.⁸⁵ Such regulation by attrition is hardly consistent with the Act's ideals of accountability and transparency. Furthermore, it makes it extremely difficult for unsuccessful applicants to appeal a licensing decision.⁸⁶

Laws and regulations create new legal entities and associate old entities in new legal ways. When the legislature conferred a broad discretionary mandate on the Regulator to develop risk-evaluation instruments and strategies, the legislature did not simply detoxify the GM debate for itself, it also shifted power to a new legal entity: the Regulator and the Office. However, the Regulator did not exercise this power to 'create ... express (and) ... realise' the public purpose, as the deliberative-constitutive model of risk regulation might have expected, but instead used this power to circumscribe the Regulator's own responsibility and accountability.⁸⁷ When the Regulator excludes substantive matters on the basis that they are economic issues 'constitutionally retained' by the states or because the Regulator has radically transformed the object of regulation to those risks 'unique' to genetic technology, the Regulator does not simply avoid the embarrassment of difficult questions, of discussion and debate 'posed' by GM plants and food; the Regulator also avoids responsibility for deciding these questions. The cost of this strategy is that it renders the Regulator largely irrelevant — a sad state for one who has the legislative mandate to be the key figure in the GM debate.⁸⁸

The problem of GM risk is not simply an issue of the incalculable logic of uncertainty but raises substantive issues about the origins and consequences of using GM technology. If we feel abandoned in the tragic individualisation of risk, it

⁸³ As Beck has emphasised, risk evaluation is an international institutional practice created and legitimised by knowledge communities. The risk evaluation model adopted by the Regulator is thus claimed to be modelled on 'internationally recognised risk analysis practice' and based on the *Australian Standard AS/NZ 4360:2004 Risk Management*. See Office of the Gene Technology Regulator (2007), pp i, 13.

⁸⁴ *Risk Management, Australian Standard AS/NZ 4360:2004*, pp 4, 15.

⁸⁵ Communication with author.

⁸⁶ Under section 179, only an applicant has standing to challenge a licensing decision.

⁸⁷ Fisher (2007), pp 28–30, citing Cook (1996), p 16.

⁸⁸ This can most readily be seen in the decrease in the number of submissions to the Regulator over time. The anti-GM lobby in particular has almost stopped participating in the submissions process.

is because these substantive issues still have not been addressed by the Commonwealth, the states or the Gene Technology Regulator — the implied promise of the *Gene Technology Act* that they have been has proved false. Instead, the GM debate has been detoxified, deferred and displaced in the avoidance strategies of the legislature and the Regulator, whose legitimacy claims have come to nothing.

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