

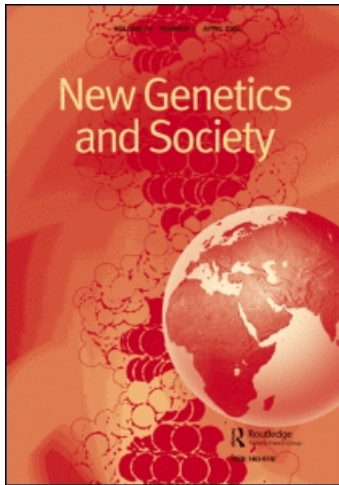
This article was downloaded by: [University of Waikato Library]

On: 7 June 2009

Access details: Access Details: [subscription number 907696412]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



New Genetics and Society

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title-content=t713439262>

The privatization of public talk: a New Zealand case study on the use of dialogue for civic engagement in biotechnology governance

Karen Cronin ^a

^a Integrative Research for Sustainability Group, Institute of Environmental Science and Research (ESR), Wellington, New Zealand

Online Publication Date: 01 September 2008

To cite this Article Cronin, Karen(2008)'The privatization of public talk: a New Zealand case study on the use of dialogue for civic engagement in biotechnology governance',*New Genetics and Society*,27:3,285 — 299

To link to this Article: DOI: 10.1080/14636770802326950

URL: <http://dx.doi.org/10.1080/14636770802326950>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

The privatization of public talk: a New Zealand case study on the use of dialogue for civic engagement in biotechnology governance

Karen Cronin*

Integrative Research for Sustainability Group, Institute of Environmental Science and Research (ESR), Wellington, New Zealand

The highly politicized genetic engineering debate in New Zealand in 1998–2002 led to a government-funded trial of “dialogue” communication methods to improve relations between “science and society”.¹ Significant breakthroughs were achieved in reducing conflict, identifying common ground, and articulating social values and preferences for future science and technology. While “dialogue” was initially recognized as a deliberative practice with potential for shaping science policy, government attention became focused on enhancing scientists’ communication skills in their interactions with relevant communities. As a result, “dialogue” was more easily embraced as a strategy for managing relationships with local publics, than as a mechanism for public input to science and technology decision-making at the national level. “Dialogue” had the potential to open up new platforms for civic engagement in biotechnology governance, but was discursively reconstructed, reducing the influence of citizen concerns in governance of the life sciences.

Keywords: genetic engineering; governance; dialogue

Introduction

Over the past 10–15 years, emerging “life science” technologies such as genetically modified food, pharmacogenetics, stem cell research, and bio-nanotechnologies have generated new dimensions in science and society relations, and new practices for technology governance. This has stimulated interest in civic policy styles, including a growing emphasis on public engagement in science, particularly through “dialogue” (Allen *et al.* 2003, Goven and Wuthnow 2004, Hindmarsh and Lawrence 2004, Lyall and Tait 2005). But how is “dialogue” being constructed, can it be effective in an applied setting, and how does it translate into public decision-making about science and technology?

This paper reviews a recent experiment in “science and society” dialogue and contributes a critical analysis to the international understanding of biotechnology governance.²

*Email: karen.cronin@esr.cri.nz

It describes a “dialogue” communication program initiated by the New Zealand government in 2002–2005 to respond to growing tensions between “science and society”, particularly around new biotechnologies such as genetic engineering (GE). I begin with a review of the policy and legislative context in which the program was developed and note how “dialogue” has emerged as a generic theme in risk communication theory and practice, particularly for controversial technologies. I then describe an action research project funded under the dialogue program involving scientists and community participants in the New Zealand GE debate and review the outcomes of that project, critically assessing how dialogue was related to national science policy objectives for the development of biotechnology.

When it was first promoted “dialogue” was seen as a new form of deliberative engagement that would enable greater citizen involvement in policy and decision-making (Innes and Booher 2003, Gastil and Levine 2005). Over time, however, the objectives for dialogic communication appeared to change in response to the emerging framework for biotechnology governance in New Zealand. Ultimately, the concept of “dialogue” itself was discursively reconstructed and repositioned in the science domain. I suggest that the pursuit of “dialogue” may not necessarily disrupt wider patterns of biotechnology governance but may lead to new forms of governmentality.³

Transitional times: genetic modification, governance and public engagement in New Zealand

The early development of biotechnology research in New Zealand, as elsewhere, was not subject to legal control. Voluntary codes of practice were initiated by scientists themselves in the 1980s but it was not until 1996 that the New Zealand government passed the Hazardous Substances and New Organisms (HSNO) Act, making it illegal to import, develop, field test, or release a genetically modified organism (GMO) without statutory approval. The Act set up the Environmental Risk Management Authority (ERMA), a quasi-judicial expert panel operating independently of the government, to regulate GMOs. The Authority takes account of public submissions but works from a technoscientific methodology based on the assessment and control of risks (ERMA 1998).

Reflecting social reactions elsewhere in the world, by the late 1990s the GE issue in New Zealand had become highly politicized with the Authority’s approval process for GMOs attracting strong public objections and legal appeals. Following the political experience in Europe with bovine spongiform encephalopathy (BSE) or “mad cow disease”, and with GE, the New Zealand government became aware that public trust in “risk management”, in ERMA and in science itself could be rapidly eroded (NZ Council for Educational Research 2001). In 2000, the government set up a Royal Commission on Genetic Modification (RCGM), which attracted enormous public response, predominantly against the technology.⁴ The Commission supported further development of GM but recommended “proceeding with caution”, and with improved communication and public engagement (Royal Commission on Genetic Modification 2001). In response,

the government established Toi te Taiao: the Bioethics Council in 2002 to “engage” New Zealanders with the social, cultural, and ethical issues.⁵

These policy initiatives proved insufficient to overcome growing public dissatisfaction about the governance of biotechnology in New Zealand. The government ordered a review of ERMA which raised questions about the Authority’s organizational culture and its management capability (New Zealand Government 2003a). The reviewers concluded that “the success of the Authority would ultimately be judged on its ability to make decisions that were trustworthy”. They criticized the Authority for not taking “opportunities for dialogue” with stakeholders and called on it to develop skills in interdisciplinary collaboration with an emphasis on “dialogue rather than debate.”

“Dialogue” was now becoming a feature in the governance discourse around science. The government established a “science and society” initiative in the Ministry of Research, Science and Technology (MoRST), and in 2002 the Ministry published a background paper, *Supporting dialogue on science related issues*, setting out why dialogue was needed to improve science and society relationships, particularly around forms of technology which raised concerns such as GE (New Zealand Government 2002a). This was followed by a second paper, *Engaging with New Zealanders on science related issues*, which indicated how the government wanted to proceed with the promotion of dialogue communication (New Zealand Government 2002b) and led to the funding of a Dialogue Programme in MoRST in 2002–2005 to,

develop pilot programmes that engage communities in discussion over science and technology related issues that are, or may become, a cause of tension between science and society; and to build improved relationships between scientists and the community.⁶

The Dialogue Programme was seen as a significant step forward in science communication, moving from the traditional focus on science promotion and education into new forms of practice based on two-way communication that emphasized “listening to” as well as informing the public. This was an advance on earlier approaches focused on a “deficit” in public understanding of science (Irwin and Wynne 1996). At the same time, a national biotechnology strategy was developed (New Zealand Government 2003b). Further initiatives resulted including a biotechnology roadshow education project and a biotechnology research roadmap (New Zealand Government 2006), to direct future investment in the technology.

This paper describes one of four action research projects funded under the MoRST Dialogue Programme in 2003–2004. Entitled *Hands across the water*, it trialed three dialogue communication methods, involving GE scientists and members of the community.

Dialogue and science communication

Early proponents of dialogue, including Buber (1958) and Bohm (1996), stressed the power of this form of communication to transform interpersonal and social relations. The etymology of “dialogue” refers to “dia” not as an exchange between “two” subjects, but rather “dia” is about “reaching across” two subject positions. Authentic dialogue is

intimate, interpersonal communication in which participants come to see part of themselves in the “other” (Bohm 1996; Innes and Booher 2003). It is a transformational process that enables participants to recognize their common humanity through a face-to-face conversation based on empathy and mutual respect (Bohm 1996). Dialogue therefore serves as a medium of exchange that can bring to the surface deeply held views and beliefs, arising from “life world” concerns, grounded in human values and ethics (Habermas 1987).

The promotion of “dialogue” is now widely evident in organizational communication. Grunig and Grunig (1992, p. 39) described a trend away from “asymmetrical communication”, which an organization uses to get what it wants, toward “two-way symmetrical communication” using “research and dialogue to manage conflict, improve understanding and build relationships with publics”.

Science organizations are also advocating the use of dialogue, particularly to deal with public controversies over some forms of science and technology. The social, cultural, and psychological drivers behind public perceptions of technological risks are well documented in the risk communication and the science, technology and society (STS) literature (Krimsky and Golding 1992, Slovic 2000). Over the past 30 years the theory and practice of risk communication have moved through several distinct phases: from the advocacy of expert “risk assessments”, to analyzing and managing public “risk perceptions” based on the deficit model, towards engaging the public in two-way communication and “dialogue” (Leiss 1996, Fischhoff 1998, Renn 1998). The use of “science communication” as a science policy instrument reflects growing pressure on governments to profile the benefits of public investment in research, science and technology (R,S&T), and to mitigate public aversion to novel technologies (Weiss and Tschirhart 1994, Bemelmans-Videc *et al.* 1998, Treise and Weigold 2002).

A dialogue experiment around GE

In the *Hands across the water* project funded under the MoRST Dialogue Programme (Cronin and Jackson 2004), dialogue methods initially developed for interpersonal conflict resolution were applied in a public space around a science and technology conflict over genetic modification. This involved a translation of “relational” forms of interpersonal dialogue into a “deliberative” dialogue process focused on public policy issues.

The project tested three dialogue methods including adaptations of “Appreciative Inquiry” (Cooperrider *et al.* 2003), “The Civil Conversation” (Chasin *et al.* 1996), and a new approach called “Issues Mapping” (Cronin and Jackson 2004). It explored the value and limits of dialogue communication, using face-to-face interviews and facilitated workshops involving GE scientists and science managers (from public and private organizations) and community stakeholders from a range of interest groups with concerns about GE forms of biotechnology.

Drawing on the methods above, the workshop participants were encouraged to interact with one another as private individuals rather than in terms of the conflicted organizational roles they occupied in the public debate. Interaction was facilitated by a

commitment to anonymity and confidentiality among all participants, by the size of the groups (6–10 participants), and through one-to-one conversations and the sharing of a meal. With the use of personal narrative and questions of inquiry,⁷ participants were able to explore the values and motivations of others and to discover areas of “common ground”. The issues mapping method developed a spatial metaphor by using graphic software to generate a conceptual “map” of the central issues in the GE debate, highlighting those areas of the technology where scientist and community risk acceptances overlapped.

The findings suggested that “dialogue” methods hold significant potential for reducing conflict between participants in risk disputes. Even in what was a short experiment in dialogue, breakthroughs were achieved. Participants moved beyond “argument”-based communication, that is, the advocacy of set positions to create a “winner” and a “loser” (Tannen 1998). New conversations emerged about shared expectations around the social and environmental end-use of GM biotechnology and applications that were acceptable to scientists, science managers and community stakeholders.

Participants discovered common interests in questioning the commercial drivers around new technologies and the role of the news media in fostering conflict, and in regard to the importance of civic engagement in technology decision-making. Many of those who took part were interested in the purpose and timing of the MoRST Dialogue Programme. They raised questions about why it had not been used earlier in the policy process, and how such methods could be used to avoid similar technology conflicts in the future.

The Dialogue Programme and Biotechnology Policy

All four projects funded under the MoRST Dialogue Programme were found to be successful not only in reducing conflict between participants, but also in identifying common technology preferences and innovations that could contribute to economic development and improved “science and society” relations (Winstanley *et al.* 2005). Recommendations for further dialogue – from participants, the researchers, and the Programme Evaluation Panel – were not however taken up by the government at the national policy level. How might this be explained?

What had been initially framed as a pilot program was brought to a close in 2005. The government saw future action on dialogue as the responsibility of scientists and their institutions rather than central government. References to “dialogue” began to diminish, as the government put renewed emphasis on “science communication” through public education projects such as “roadshow” displays, information packs and websites (New Zealand Government 2003b). Dialogue became re-positioned as a communication process largely between scientists and local publics, rather than as a process to support citizen input to life sciences governance at the national level. The public deliberative attributes of dialogue, which enable greater citizen input to policy signaled at the beginning of the initiative, were largely displaced by the private “relational” elements. “Dialogue” was re-channeled into the local tributaries of community management rather than occupying a potentially influential position in the mainstream of national science policy.

In a review of the outcomes of the Dialogue Programme in 2006, there was little expectation that dialogue could be applied to biotechnology decision-making in the national policy arena.⁸ How and why did this happen? I suggest that the emergence and promotion of dialogue was caught up in a wider policy context, in which the officials had to manage competing objectives for science and technology: promoting the economic benefits of the development of biotechnology, while also pursuing social outcomes of improved public trust in science.

While the first MoRST background paper had identified “dialogue” practices as potential “avenues for citizens to participate more fully in public policy making” (New Zealand Government 2002a), in the second background paper setting out the government’s intentions, “dialogue” was defined more narrowly to “improve relationships between scientists and the community” (New Zealand Government 2002b). Government officials interviewed about the Dialogue Programme in 2006 said it was seen as a way of getting scientists to think about “how they communicated . . . [The idea being] to get everyday scientists working the challenging areas, to work with the public, to go forward”. Officials indicated that they were aware of how “dialogue” might be used to encompass deliberation about science and technology policy, but this was not pursued in New Zealand “at the formal, policy stylised level”. The role of the policy sector was not to engage in dialogue about GE with the public, but rather “to equip scientists with the processes to communicate with a public audience”, whereby scientists “would still remain ahead at the scientist-public level. This was its real strength” (cited in Cronin 2007, p. 220). Reflecting government priorities, there was little potential for using dialogue in the biotechnology policy or regulatory process:

The [dialogue] programme wasn’t aimed at regulatory agencies and the results weren’t aimed at them. It was at the science community and their interaction at the community level . . . The Minister saw it operating at the level of scientists, not with implications of how it might operate at the level of government. (Cronin 2007, p. 219)

In effect, “dialogue” was discursively reconstructed between 2002 and 2006. It was reassigned to function as an operating style among individual scientists, to cultivate community “understanding” and support for science projects already rolling out under the national biotechnology strategy. Deliberative public discussion of the strategic or normative dimensions of research, science, and technology development was closed off in the policy arena. It was these very issues, however: the social, cultural, and spiritual implications of GE (especially the cultural and spiritual implications for the indigenous Māori people), that had driven much of the societal response to GE in the first place.

The rise and fall of dialogue in the New Zealand policy sphere

The fate of the Dialogue Programme, particularly the hollowing out of the deliberative dimensions, illustrates some important dynamics in contemporary science and society discourse and raises critical issues about the social outcomes of this form of communication. The following analysis of the texts of government documents indicates a series of

discursive shifts and turns in the approach to dialogue. This was driven by fundamental tensions in the policy context which raise issues about both the governance and the governmentality of the life sciences.

The government's first background paper, *Supporting dialogue on science related issues*, set out why dialogue was needed to respond to social concerns around science (New Zealand Government 2002a, pp. 3–5). It clearly identified dialogue as a deliberative practice, stating that “it has never been more important to make the decision-making process as open and participatory as possible”. There was a “need to engage New Zealanders early in developing new technologies”. This would provide a wider source of information and perspectives and “potential solutions”, and “the quality of decisions should also be improved”. Dialogue was seen as a way to “communicate with New Zealanders”, “engage” them around ethical and safety issues, and “allow” them to “become more involved in setting the agenda for research and technological development”.

Dialogue was thus seen as a deliberative policy mechanism for public engagement in science decision-making. The background paper suggested dialogue went beyond “consultation” about predetermined options to instead seek “input into the development of a decision” (ibid., p. 6). The paper also stressed the need to design dialogue processes so that the outcome was clear and recognized that there was “a danger that the process is simply legitimizing decisions already made and is actually a sophisticated public relations exercise” (ibid., pp. 6–7).

The second paper, entitled *Engaging with New Zealanders on science related issues* (New Zealand Government 2002b), presented “dialogue” more as an instrumental strategy to support the promotion of science and technology, than as a deliberative mechanism to open up science policy to public debate. MoRST noted that it had now been requested by the Minister to advise on, “the best ways to encourage dialogue on science issues in New Zealand”. The outcome for this process was clearly stated, “to create greater trust and confidence in science research and technological developments” (ibid., p. 1). While recognizing that “dialogue” could be used to “inform decision-making . . . at the policy or research institute level”, it was also important to “engage with stakeholders to develop a favourable environment so that effective research can be completed”, and for “enabling a better understanding of science related issues that are causing tension between science and society” (ibid., p. 2). This text reveals the underlying policy tensions that came to surround the “dialogue” initiative.

In this second paper, “dialogue” is discussed as a strategy to reduce conflict (relational), a way to manage audiences and create a favorable operating environment for science (instrumental), and as a technique to allow public input into decision-making by Crown Research Institutes (CRIs),⁹ as well as at the national policy level (deliberative). While pursuing the objective of creating “trust and confidence in science”, the paper noted that this did not have to “equate with automatic acceptance” of new technologies; rather it was about creating “an environment in which such issues can be addressed and in which the nature and direction of research is responsive to its societal context” (ibid., p. 3).

Ideally, a deliberative dialogue approach to governance (Gastil and Levine 2005, Rogers-Hayden and Pigeon 2007) would see it used to assist citizen input to

decision-making on national policy directions, in supporting early engagement on strategic options in the science sector and the selection of socially acceptable uses of biotechnology (Schot 2001). Instead, the approach taken by the New Zealand government was to refocus “dialogue” on local communication while directing the central policy sphere to concentrate primarily on the goals of growth and innovation. Biotechnology researchers, working in publicly owned research institutes in the regions, were assigned the role of “engaging with community groups” and “building positive connections”.

At the national level, there was a residual reference to “dialogue”. The government had set up Toi te Taiao: the Bioethics Council with the role of enhancing New Zealanders’ understanding of the cultural, ethical, and spiritual issues around biotechnology and promoting dialogue among members of the public. Significantly, this did not constitute a dialogue process between the public and science policymakers. The Council is only an advisory body; it has no statutory powers to direct input to the design of biotechnology policy or the approval of individual biotechnology applications.

The government renewed its effort on the promotion and development of the biotechnology sector. It began new initiatives to promote public “engagement” in biotechnology through science communication programs and to consolidate future investment in the biotechnology industry. By May 2003, in its Biotechnology Strategy the government stated that New Zealand had to “aggressively” promote the biotechnology sector, to “keep abreast of developments”, build capacity, fund the research, promote investment and commercial growth, foster global linkages and ensure a workable regulatory regime (New Zealand Government 2003b). At the same time, it would deal with “risks and uncertainty” by “fostering community awareness of and engagement in” biotechnology. This would produce greater community “involvement” and confidence in regulation. Moreover, this should not be regarded as “a brake on biotechnology” but as a “crucial part of the way ahead if biotechnology [was] to advance”. The government stated its commitment to “ongoing dialogue between the community, the [science] sector and the Government so New Zealand [could] achieve a growing sector that the public trusts”. It concluded that, “constructive community engagement and effective regulations are goals that can underpin biotechnology growth and development” (New Zealand Government 2003b, p. 9).

By 2006, the government’s *Biotechnology research roadmap* document was being developed. The roadmap process (also applied to nanotechnology, energy, and the environment) set out the government’s position on how science capabilities in the sector should develop, and how to “wisely allocate” resources to “best meet New Zealand’s needs into the future” (New Zealand Government 2006, p. 9). The *Roadmap* was prepared without widespread public consultation and with limited input from the Bioethics Council,¹⁰ even though the Bioethics Council had earlier made a plea for public engagement on biotechnology, with the former Chair stating that “decisions about biotechnology are too important to be left solely to government, business or science”.¹¹ The Council stated that “a country’s citizens have a role to play in decision-making about whether to implement certain technologies”.¹²

The audiences for the *Roadmap* consultation were instead listed as agencies who invested public funds in biotech, the scientific research community, the biotech sector, and other industry sectors that would “benefit from or otherwise be affected by the uptake of biotech research”, along with government agencies with “an interest in the application and implications of biotechnologies” (ibid., p. 11). The *Roadmap* noted that biotechnology applications “sometimes raise cultural and ethical issues”. This was to be dealt with by assigning those issues as topics for “ongoing research” (ibid., p. 9), rather than creating opportunity for them to enter the strategic policy domain. It also included a brief section on the use of social research to “gauge how New Zealanders respond to emerging technologies” (ibid., p. 22). Social research would be concentrated on the study of social impacts and public responses, rather than on technology engagement and policy deliberation. An earlier report commissioned by MoRST had questioned this orientation. Wynne (2003) had called for social research to be moved “upstream” so that it could be “integrated at the earliest possible stages of scientific and technical research and innovation”. It should focus less on polarized, propositional conflicts and more on “productive and constructive ways of shaping both research and policy discourse” (ibid., pp. 6–7).

The *Roadmap* recognized the need to “balance the drive for economic transformation with the need for effective regulation and engagement with the wider community”. Community “engagement” was equated with providing information to be achieved by a traveling biotechnology roadshow, developed in association with the national museum, Te Papa (ibid., p. 11). The roadshow was an opportunity to “better understand the issues and impacts when making the decisions of tomorrow”.¹³ But it was not clear who was making the decisions, where they were being made and who was involved. The biotechnology roadshow toured around 41 community locations with displays and commentary. In effect, the process of “dialogue” was reduced to a private space where audience members could passively compare their views with those of others provided as exhibit texts or tape recordings.

The Dialogue Programme started in 2002 and ended in 2005 with scientists being encouraged to take the initiative in dialogue with the public. The biotechnology roadshow completed its tour of the regions by early 2006. The biotechnology strategy was set in place and expected to be current for the following 5–10 years (New Zealand Government 2006b, p. 60). In effect, biotechnology “dialogue” was sent on a tour around the byways of the provinces, while biotechnology policy was being driven down the main highway at the center.

Biotechnology governance and governmentality

The New Zealand Dialogue Programme is an example of the “rhetorical shift” by many states to “a style of scientific governance based on public dialogue, transparency and democratic engagement” (Irwin 2006, p. 300). It was developed in response to public concerns about the risks of biotechnology, particularly GE technologies, and the perceived inadequacy of the biotechnology governance system.

The governance of biotechnology in New Zealand includes a policy process in which MoRST develops objectives for the promotion and funding of the biotechnology sector, supported by a regulatory process in which ERMA approves the introduction of GMO applications. Under the HSNO Act (1996) the government delegated its decision-making power on the introduction of GMOs to New Zealand to ERMA. This moved the locus of consideration away from the policy sphere and sheltered government ministers from the heat of political controversy, at least for a time. While the ERMA process included hearing public submissions, it was focused on individual GMO applications, rather than addressing the strategic or normative dimensions of the technology itself (ERMA 1998).

The HSNO Act is “performance-based” legislation, which starts from the assumption that activities should be allowed to proceed if appropriately “managed”; it is not a public intervention process to select and direct future technology pathways. GMOs can and will be introduced to New Zealand provided there are sufficient controls on their effects. Furthermore, any effects have to be “significant” and based on measurable “scientific evidence” before they can enter the decision arena (ERMA 1998). This model reflects contemporary practices of governance predicated on reducing the scope and costs of public management, separating consideration of policy goals from operational concerns, and light-handed environmental regulation (Memon and Gleeson 1995). As Stoker (1998) points out, these governance models are not without their structural tensions. Issues can surface around a perceived lack of social responsiveness in unelected technical boards, coupled with the reduced political accountability of ministers; both those factors became relevant in the New Zealand context.

The emergence of “dialogue” in New Zealand science policy discourse, and the outcomes of the Dialogue Programme identified in this paper, illustrate the tensions, shifts in emphasis, and contradictions identified internationally in “new” forms of life sciences governance (Irwin 2006, p. 301, also Rayner 2003). The experience of dialogue narrated above is consistent with neoliberal models for managing the social conflicts generated by fundamentally opposed economic interests, including conflicts around science and technology (Mouffe 2000). From this perspective, “dialogue” is seen as carrying the patina of public participation while maintaining underlying economic policy commitments.

“Dialogue” in New Zealand was initially described as a “deliberative” process, creating an opportunity for citizen consideration of alternative positions on an issue coupled with input into science policymaking. However, it was later defined primarily as an exchange between individual scientists and communities about particular research projects. This shift in emphasis has left an uncontested space at the center of national politics in which the strategic and normative assumptions about the role of biotechnology, now intrinsically tied into future economic development in a knowledge economy, remain relatively undisturbed.

The story of GE dialogue in New Zealand can also be considered in relation to the Foucauldian concept of “governmentality”, which highlights a range of control techniques applied not only to processes of government, but also to sets of ideas people in certain positions adopt, and through which power is manifest. This concept enables a

critical focus on how we govern, how we are governed and how we govern ourselves, or, as Foucault expressed it, “the conduct of conduct”. It draws attention to “the government of human conduct in all contexts, by various agencies, and authorities, invoking particular forms of truth and using definite resources, means and techniques” (Dean 1999, p. 3).

When first articulated, “deliberative dialogue” was potentially a new technique of governmentality. It was a form of communication that promised to open up the technical arena of public policy to wider citizen concerns, which, in the case of GE biotechnology, included attention to control of the body, food, personal and family health, as well as fairness, informed choice, ethics, spirituality, and social and cultural identity. At this point, “deliberative dialogue” had the potential to constitute a new source of discursive power, a new mentality of government. It was then reconfigured into a technique of individual conduct rather than developed as a new technique for social deliberation. The field of action was therefore moved from the center to the periphery; with dialogue participants such as scientists and community organizations invited to simply self-govern (in the neo-liberal tradition). Dialogue was thus re-embodied in private scientists and citizens, rather than embedded in the governance machinery of the state.

Conclusion

Dialogue practices have the power to be genuinely transformative at the personal and societal level. After taking part in the *Hands across the water* “dialogue” workshops, participants could see a way forward, not only in terms of improving their interpersonal communication and reducing conflict, but also in terms of the conduct of the public GE debate and the way policy issues might be addressed in the future. At the interpersonal level, the gap between protagonists in the GE conflict started to look very small, and the options for future agreement came starkly into view. Along with the other projects funded by MoRST, this project illustrated the potential of “science and society” dialogue – not only for reducing social conflict but also in generating policy agreements and identifying forms of biotechnology that could be both socially and economically successful (Winstanley *et al.* 2005).

The New Zealand government’s Dialogue Programme represented an initiative at the leading edge of best practice in science communication. Reflecting international trends towards greater public involvement in life sciences governance, the program initially included a focus on enhancing public input to decision-making. As it developed, however, the emphasis moved predominantly towards supporting engagement between individual scientists and communities in local environments. While this was an advance on earlier practices that presumed a “deficit” in public understanding of science (Irwin and Wynne 1996), the “dialogue” initiative went through a series of discursive shifts, which ultimately limited the influence of citizen (and scientist) preferences for science policy and the selection of biotechnology science trajectories.

The government had initiated “dialogue” communication to reduce tension between “science and society” rather than relying on traditional science promotion techniques. At the same time, it made a substantive commitment to a New Zealand biotechnology

strategy aimed at rapidly expanding biotechnologies, with significant public funding, as a key platform for innovation and growth in the national economy. The transformational potential of dialogue was thus displaced by overriding national priorities for “economic transformation”, seen as essential in securing New Zealand’s prospects in the global economy. An emergent social perspective on the management of science and technology in New Zealand was thus individualized and re-privatized, leaving public policy about biotechnology to be shaped largely by international practices of governance.

Irwin (2006, p. 318) has argued that the emergence of new models for “public talk” against the backdrop of neoliberal trends in governance represents “a worthy focus for social scientific investigation”. While the global context was not the focus of this paper, it appears to be relevant to the development of “dialogue” in New Zealand. International market forces were key factors in shaping New Zealand’s commitment to biotechnology, as evidenced in the *Biotechnology strategy* and the *Biotechnology research roadmap*. The approach taken in New Zealand to citizen engagement in biotechnology governance was highly consistent with that taken by other governments (see Europta 2000, House of Lords 2000, OECD 2001) and recommended by international agencies (OECD 2006).

Other factors affecting the outcome of the “dialogue” initiative may have included the reliance on regulation as a key policy instrument, and in particular on technoscientific forms of risk management and risk communication. In the policy sector, the focus on policy development, rather than on operational programs, may have contributed to the expectation that “science and society” engagement was primarily a task for individual scientists and their research institutions rather than officials in a small ministry. After a continuous policy effort around biotechnology since 1996, including substantial commitments to the Royal Commission process, there may have been little appetite for opening up the fundamentals of GE policy to further public debate and little expectation that the discussion would contribute anything other than continuing acrimony. As a result, the outcomes of the New Zealand Dialogue Programme varied little from other international programs for public engagement in science, which still tend to focus citizen input on responding to downstream effects. Such programs provide limited opportunities for public participation in upstream policy and decision-making and few opportunities for policymakers to engage personally in dialogue with scientists, industry, and other interest groups (Hunt *et al.* 2003).

Governance of the life sciences in this case can therefore be seen as subject to processes reproduced across the global landscape, which support the expression of an international network of predictable and controllable policy outcomes, but which may be inhibiting the emergence of innovative local traits and new civic policy designs.

Notes

1. The terms “genetic modification” (GM) and “genetic engineering” (GE) are given technical or political meanings by discourse participants in different contexts. In this paper, “GM” refers to the scientific process of modifying living organisms, and “GE” is used to reflect the social and political dimensions evident in the public debate.
2. Governance relates to the role of private mechanisms, such as the market or the community, along with formal public authorities in government (Hajer and Wagenaar 2003, Gottweis 2005, p. 189).

3. "Governmentality" implies a relational model of power, in which sources of influence arise not only from the state but also from global economic interests and through discursive processes, which shape individuals and their conduct (Gottweis 2005).
4. The Commission received 10,861 public submissions and most submitters (9695) suggested avoidance of genetic modification. Available from: <http://www.mfe.govt.nz/publications/organisms/royal-commission-gm/appendix3/section-3-14.pdf> [Accessed January 2008].
5. See: <http://www.mfe.govt.nz/issues/organisms/other-work/index.html> [Accessed January 2008].
6. Four projects were funded: two on biotechnology, one on waste water treatment technologies, and one on pest control technologies. Available from: <http://www.morst.govt.nz/current-work/science-in-society/dialogue/fund/> [Accessed September 2007].
7. For example, participants were encouraged to ask "why" questions rather than stating their positions.
8. This included in-depth interviews with key policy and regulatory officials on the objectives and outcomes of the Dialogue Programme (Cronin 2007).
9. Government-owned and funded research institutes (formerly part of the core public service).
10. Staff made comments but there was no formal submission by Council members (John Pennington, NZ Bioethics Council, personal communication, February 2007).
11. Sir Paul Reeves (media release, 13 February 2004). Available from: www.bioethics.org.nz [Accessed June 2006].
12. Available from: <http://www.bioethics.org.nz/dialogue/why-dialogue-is-needed.html> [Accessed October 2006].

References

- Allen, W., *et al.*, 2003. Involving the public in science and technology decision-making: a review of national and international initiatives. Working Paper for the MoRST Dialogue Programme Cross-Case Study Learning Group. Prepared for the New Zealand Ministry of Research, Science and Technology, Wellington.
- Bemelmans-Videc, M., Rist, R., and Vedung, E., eds., 1998. *Carrots, sticks and sermons – policy instruments and their evaluation*. New Brunswick, NJ: Transaction Books.
- Bohm, D., 1996. *On dialogue*. Ed. L. Nichol. London: Routledge.
- Buber, M., 1958. *I and thou*. New York: Scribner.
- Chasin, R., *et al.*, 1996. From diatribe to dialogue on divisive public issues: approaches drawn from family therapy. *Mediation Quarterly*, 13 (4), 323–344.
- Cooperrider, D., Whitney, D., and Stavros, J., 2003. *Appreciative inquiry handbook: the first in a series of AI workbooks for leaders of change*. Bedford Heights, OH: Lakeshore Publishers.
- Cronin, K. and Jackson, L., 2004. *Hands across the water: developing dialogue between stakeholders in the New Zealand biotechnology debate*. A project for the Ministry of Research, Science and Technology (MoRST) "Dialogue" Programme, School of Earth and Ocean Sciences, Victoria University of Wellington, September 2004.
- Cronin, K., 2007. Risk communication and dialogue: a critical exploration of communication practices in the management of technological risk. Unpublished PhD thesis. Victoria Management School, Victoria University of Wellington, Wellington, New Zealand.
- Dean, M., 1999. *Governmentality: power and rule in modern society*. Thousand Oaks, CA: Sage.
- ERMA, 1998. *Annotated methodology for the consideration of applications for hazardous substances and new organisms under the HSNO Act 1996*. Wellington, New Zealand: ERMA.
- Europa, 2000. *European participatory technology assessment: participatory methods in technology assessment and technology decision-making*. Copenhagen: The Danish Board of Technology.
- Fischhoff, B., 1998. Risk perception and communication unplugged: twenty years of progress. In: R. Lofstedt and L. Frewer, eds. *The Earthscan reader in risk and modern society*. London: Earthscan, 133–145.

- Gastil, J. and Levine, P., eds., 2005. *The deliberative democracy handbook*. San Francisco: John Wiley and Sons.
- Gottweis, H., 2005. Emerging forms of governance in genomics and post-genomics. In: R. Bunton and A. Petersen, eds. *Genetic governance: health, risk and ethics in the biotech era*. London: Routledge, 189–208.
- Goven, J. and Wuthnow, J., 2004. Challenging scientific legitimacy: citizen participation in technoscience. In: K. Dew and R. Fitzgerald, eds. *Challenging science: issues for New Zealand society in the 21st century*. Dunedin: Dunmore Press, 51–67.
- Grunig, J. and Grunig, L., 1992. The effects of worldviews on public relations theory and practice. In: J. Grunig, ed. *Excellence in public relations and communications management*. Dunedin: Lawrence Erlbaum, 31–64.
- Habermas, J., 1987. *The theory of communicative action*. Vol. II. Boston: Beacon Press.
- Hajer, M. and Wagenaar, H., eds., 2003. *Deliberative policy analysis: understanding governance in the network society*. Cambridge University Press.
- Hindmarsh, R. and Lawrence, G., eds., 2004. *Recoding nature: critical perspectives on genetic engineering*. Sydney: University of New South Wales Press.
- House of Lords, 2000. *Science and society*. 3rd Report House of Lords Select Committee on Science and Society, UK. London: HMSO.
- Hunt, J., Littlewood, D., and Thompson, B., 2003. *Developing participatory consultation – a review of learning from four experimental dialogue processes*. CSEC Report No. RISKCOM deliverable 4.10, CSEC, Lancaster University. Prepared for RISKCOM II August 2003 [online]. Available from <http://www.lancs.ac.uk/fass/centres/csec/pubs.htm> [Accessed April 2008].
- Innes, J. and Booher, D., 2003. Collaborative policy making: governance through dialogue. In: M. Hajer and M. Wagenaar, H., eds. *Deliberative analysis: understanding governance in the network society*. Cambridge University Press, 33–59.
- Irwin, A. and Wynne, B., eds., 1996. *Misunderstanding science? The public reconstruction of science and technology*. Cambridge University Press.
- Irwin, A., 2006. The politics of talk: coming to terms with the “new” scientific governance. *Social Studies of Science*, 36 (2), 299–320.
- Krimsky, S. and Golding, D., eds., 1992. *Social theories of risk*. Westport, CT: Praeger.
- Leiss, W., 1996. Three phases in the evolution of risk communication practice. *Annals of the American Academy of Political and Social Science*, 545 (May), 85–94.
- Lyllal, C. and Tait, J., eds., 2005. *New modes of governance: developing an integrated policy approach to science, technology, risk and the environment*. Aldershot: Ashgate.
- Memon, P. and Gleeson, B., 1995. Towards a new planning paradigm? Reflections on New Zealand’s Resource Management Act. *Environment and Planning B: Planning and Design*, 22 (1), 109–124.
- Mouffe, C., 2000. *The democratic paradox*. London: Verso.
- New Zealand Council for Educational Research, 2001. Commonsense, trust and science. Report for the New Zealand Ministry of Research, Science and Technology, Wellington. Available from www.morst.govt.nz/current-work/science-in-society/new-zealanders-attitudes/ [Accessed August 2008].
- New Zealand Government, 2002a. *Supporting dialogue on science related issues*. Wellington, New Zealand: Ministry of Research, Science and Technology.
- New Zealand Government, 2002b. *Engaging with New Zealanders on science related issues*. Wellington, New Zealand: Ministry of Research, Science and Technology.
- New Zealand Government, 2003a. *A review of the capability of the Environmental Risk Management Authority (ERMA) relating to the risk management of new organisms*. Wellington, New Zealand: Ministry for the Environment.
- New Zealand Government, 2003b. *New Zealand biotechnology strategy: a foundation for development with care*. Wellington, New Zealand: Ministry of Research, Science and Technology.
- New Zealand Government, 2006. *Biotechnology research roadmap: draft*. Wellington, New Zealand: Ministry of Research, Science and Technology.

- OECD, 2001. *Citizens as partners – information, consultation and public participation in policy-making*. London: OECD.
- OECD, 2006. *The bioeconomy to 2030 – designing a policy agenda*. Paris: OECD [online]. Available from: <http://www.oecd.org/dataoecd/7/51/37504590.pdf> [Accessed June 2006].
- Rayner, S., 2003. Democracy in the age of assessment: reflections on the roles of expertise and democracy in public sector decision making. *Science and Public Policy*, 30 (3), 163–170.
- Renn, O., 1998. The role of risk communication and public dialogue for improving risk management. *Risk, Decision and Policy*, 3, 5–30.
- Rogers-Hayden, T. and Pidgeon, N., 2007. Moving engagement “upstream”? Nanotechnologies and the Royal Society and Royal Academy of Engineering Inquiry. *Public Understanding of Science*, 16, 345–364.
- Royal Commission on Genetic Modification, 2001. *Report of the Royal Commission on Genetic Modification*. Wellington: Department of Internal Affairs, New Zealand Government.
- Schot, J., 2001. Towards new forms of participatory technology development. *Technology Analysis and Strategic Management*, 13 (1), 39–52.
- Slovic, P., ed., 2000. *The perception of risk*. London: Earthscan Publications.
- Stoker, G., 1998. Governance as theory: five propositions. *International Social Science Journal*, 155, 17–28.
- Tannen, D., 1998. *The argument culture: stopping America's war of words*. New York: Ballentine.
- Treise, D. and Weigold, M.F., 2002. Advancing science communication: a survey of science communicators. *Science Communication*, 23 (3), 310–322.
- Weiss, J. and Tschirhart, M., 1994. Public information campaigns as policy instruments. *Journal of Policy Analysis and Management*, 13 (1), 82–119.
- Winstanley, A., et al., 2005. *From “dialogue” to “engagement”? Learning beyond cases*. Final report of the Cross-Case Study Learning Group for the MoRST Dialogue Programme. Ministry of Research, Science and Technology, Wellington, New Zealand.
- Wynne, B., 2003. *New Zealand social research on impacts of genetic modification and related biotechnologies: an international strategic review*. Report prepared for the New Zealand Ministry of Research, Science and Technology, Wellington, New Zealand [online]. Available from: <http://www.morst.govt.nz/publications/a-z/nz-social-research-on-impacts-of-gm/> [Accessed October 2006].