

Facilitating Public Participation in Toxic Waste Management Through Engaging ‘The *Object of Politics*’

Stephen Anthony Healy

Received: 15 November 2009 / Accepted: 26 October 2010 / Published online: 27 November 2010
© National Science Council, Taiwan 2010

Abstract This paper uses the experience of local community involvement in the disposal of the world’s largest stockpile of toxic hexachlorobenzene waste, at Botany in Sydney, to refine insights regarding strategies for facilitating public participation in such challenging scientific and technological problems. Recent research focussed upon the politics of such issues is used to clarify a critical epistemological role for non-expert community stakeholders building upon an earlier analysis of this case study. This public input can help resolve issues that escape traditional political and/or technical control by enhancing the participatory process and facilitating further attention to the contextual dimensions of planned outcomes. These are then couched in terms of a collectively agreed set of objectives whose integrative character is more conducive to effective outcomes than the traditional, narrower focus upon technical options.

Keywords Toxic waste · Public participation · Lay epistemology · Deliberation · Governance

This paper uses experience of the public participation process surrounding the management and disposal of the hexachlorobenzene (HCB) wastes stored at *Orica’s* Botany site in Sydney to address the challenges of implementing such processes. HCB is an odourless white crystalline and highly toxic chemical controlled under the Stockholm Convention on persistent organic pollutants. The Botany stockpile consists of approximately 60,000 drums (10,500 tonnes) of HCB kept in a storage shed plus a significant amount of low-level waste, mixed primarily with soil, encapsulated in a plastic shroud and buried beneath an onsite car park.¹ Botany is a mixed residential/industrial area, and much of the concern surrounding this issue

¹The *Journal of Environmental Management* 2009 special issue, ‘Toxic Risk and Governance: The Case of Hexachlorobenzene’, 90 (4), contains exhaustive further detail.

S. A. Healy (✉)
School of History and Philosophy, UNSW, Kensington, Sydney 2052 NSW, Australia
e-mail: s.healy@unsw.edu.au

results from the proximity of this hazardous industry to residential dwellings and other significant sites of recreational and commercial activity.² This is a legacy issue, focussed by the cleanup of the toxic legacy of past industrial activities, which remains a common problem in developed industrial economies. Botany's mixed character also, however, reflects issues characteristic of less developed economies making this case study of relevance to economies across East Asia.

After Australia failed to establish a high temperature incinerator to destroy the national stockpile of intractable chemical wastes in the 1970s and 1980s (McDonnell 1997), a National Strategy for the Management of Scheduled Waste was adopted in 1994, entailing the development of a Waste Management Plan for the Botany HCB wastes. This involved a community consultation programme comprising of initial meetings with key stakeholders (Botany Council, *Orica* (then *ICI*) and local community organisations) followed by a series of local public forums during 1995 and 1996. The resultant HCB Waste Management Plan was endorsed in November 1996 and established the Community Participation and Review Committee (CPRC). This provides for 'ongoing public participation and review' of the management and disposal of the HCB wastes (ANZECC 1996: 17) and brings together *Orica*, other industry representatives, Botany Bay City Council, local residents, and observers from academia (including the author), the government and peak environment groups. The Waste Management Plan gives the CPRC a remit to oversee and advise on the management of the HCB wastes with an emphasis on finding a technological solution to dispose of them safely.

The empirical basis of this article is that period of the CPRC's history focussed upon the Geomelt option for disposing of this waste, which was the subject of an earlier analysis (Healy 2009), and is briefly outlined here.³ *Orica* announced Geomelt as its chosen onsite HCB disposal technology at the October 2000 CPRC meeting after exploring various other HCB disposal options in consultation with the CPRC. This resulted in the preparation of a mandatory Environmental Impact Statement, which was released for public comment in July 2001 and on which a Ministerial decision was expected by November 2001. However, as is not unusual in such developments, the Minister announced a Commission of Inquiry on November 5, 2001 to examine *Orica's* proposed facility (Jensen-Lee 2009), which, in mid-2002, recommended that the proposal should proceed. No decision was forthcoming, however, until the Minister convened a three-person Independent Review Panel in late 2003 to further examine the proposal. The Panel's report, supporting Geomelt but at a remote location rather than at *Orica's* Botany site, was submitted to the Minister in July 2004 and presented to the CPRC in September 2004. In 2006, the

² The site is immediately adjacent to the residential suburb of Hillsdale. The car park wastes are situated tens of metres away from a well-used sports field and just across the road from 'Eastgardens', the major shopping mall for this part of Sydney (See <http://www.oricabotanytransformation.com/?page=15&project=74>).

³ Geomelt involves passing an electrical current through a material to produce a vitreous melt whose off-gases have to be captured and purified. Never previously used for HCB disposal, the 'inert' vitreous material left behind after HCB disposal would reportedly be suitable for use as 'road base'. Previous use of Geomelt for the in situ disposal of radioactive waste at the former nuclear testing range at Maralinga in outback Australia was curtailed after an unexplained explosion in one in situ pit. While the operators blamed discarded munitions lay CPRC members seized upon their inability to prove this to point to potential shortcomings with Geomelt.

Independent Review Panel gave up the search for a suitable remote location (Wright et al. 2006: 6). Most recently, the potential for exporting the HCB waste for destruction offshore has been pursued.⁴

The earlier analysis of these events (Healy 2009) concluded that lay involvement in the CPRC was constrained, rather than facilitated, by the Habermasian assumptions framing it. In practice, the idea that open, un-coerced forms of communication would facilitate equitable participation became little more than a rationale for giving all legitimate stakeholders a seat at the table. As a result, significant underlying impediments to public involvement, notably asymmetries in knowledge and power, and deficits in trust, between stakeholders, remained unaddressed and unresolved. In particular, the highly complex and technical character of the HCB disposal problem, and of the solutions proposed to it, favoured the more powerful institutional actors, notably *Orica* who pay-rolled all the expertise involved, and disadvantaged local residents and environmental groups who didn't trust *Orica*, and others, because of historical, and ongoing, site incidents. Deficit model beliefs were a significant feature of these unresolved problems with non-lay CPRC members tending to assume that community opposition to the preferred options of *Orica*, and others, was based on a lack of understanding of their technical content. Community opposition characteristically, however, was based on a doubt that the faith other stakeholders placed in technical options would translate into safe, risk-free operations because their experience of ongoing operations at the *Orica* site proved otherwise. This opposition was fuelled by the inability of community members to communicate these concerns effectively to other CPRC members.

Over time, and despite the complex character of CPRC deliberations, lay members of the CPRC did, however, succeed in having their views and interests integrated into CPRC deliberations and decisions. This achievement was contingent upon a number of, mostly incidental, contextual factors and occurred despite the many underlying impediments that lay CPRC members faced (see Healy 2009: 1651–1652).⁵ The character of the growing influence of lay CPRC members closely reflected Irwin and Michael's notion of 'lay epistemology':

'Lay people may not only possess knowledge, but have knowledge of how they know: they are able to reflect upon why they take on board some "scientific facts" but not others; they are competent in accounting for why they prefer some sources of knowledge (e.g. personal experience) over others; and they can justify why they trust some expert authorities and are suspicious of others' (Healy 2003: 28).⁶

⁴ While finalising this article, initial approval was granted for export to Denmark (See http://www.mim.dk/Nyheder/Pressemeddelelser/20100615_HCB_affald.htm).

⁵ In Healy (2009: 1651) I summarise these 'contextual factors' in terms of: "the range of aid, assistance and advice available to resident CPRC members; the quality of the CPRC chair; external, including political, factors; and, not least, the sustained and energetic commitment of lay CPRC members."

⁶ I'm indebted to an anonymous reviewer who suggested I should further emphasise the role of 'lay epistemology' in the analysis developed here.

This was particularly evident in the importance lay CPRC members placed on the legitimacy of technical claims, and on the credibility and trustworthiness of sources of information (Healy 2009: 1646–1647).

The earlier analysis (Healy 2009) of these events concluded that future participatory processes needed to equitably integrate lay and expert perspectives through the creative combination of divergent perspectives. In particular, lay knowledge ‘deficits’ should be addressed via an ‘epistemological pluralism’ that respects public knowledge and facilitates its integration with the formal insights of expertise, thereby facilitating the resolution of asymmetries in power, resources and trust among stakeholders. The present study builds upon this analysis, employing insights developed by Marres (2005, 2007), de Vries (2007) and Latour (2007)⁷ and outlined in the following section. Their work helps shed light on how an epistemologically pluralist stance, countering the anti-democratic tendency for scientific and technological participatory processes to focus narrowly upon specific technically defined outcomes, can be facilitated by embracing ‘lay epistemology.’ The object of ‘epistemological pluralism’ then becomes a matter of ensuring the quality of the participatory process and, thereby, of outcomes through drawing attention to significant contextual matters, which then become prerequisites for choices about technical options rather than secondary considerations.

1 Issues and ‘the Object of Politics’

Marres (2005, 2007) promotes an ‘issue-oriented’ perspective on public involvement in societal controversies around science and technology. She argues that public involvement is most fundamentally motivated by, and focussed upon, ‘the articulation of contested entities such as roads and epidemics’ (Marres 2007: 760), which she calls ‘the objects of politics.’ This was witnessed by how resident CPRC members were motivated by long-standing concerns with toxic legacy issues at *Orica’s* Botany plant that the HCB management and disposal problem provided a focus for. For Marres, issue definition and articulation are not simply discursive, but ‘socio-ontological,’ a term denoting the dynamic configurations of linked material and social entities underpinning scientific and technological problems. In the HCB case, such an emphasis directs attention to not only material concerns, such as the details of Geomelt technology, but also, more critically, to the interdependencies between them and matters such as the changing status and profile of lay CPRC members and their claims, which were pivotal to the way the HCB issue developed and evolved over time (e.g. see footnote 3).

Marres argues, drawing upon the early twentieth century Dewey–Lippmann debate, that it is deeply contested issues, such as that regarding HCB, which conventional authorities cannot resolve that require and focus public involvement. Reflecting Dewey and Lippmann’s contention that public involvement is an essential element in resolving such issues, Marres (2005: 212) asserts that it is when ‘issues risk being deserted by the agencies that should attend to them, the public steps in as a caretaker of these affairs.’ She, however, goes further: ‘[i]ssues call a public into

⁷ Marres’ (2005, 2007) arguments were developed in her PhD research supervised by Latour and de Vries.

being, and public involvement in politics stands in service of these' (2005: 216), and it is this argument that issues can, of themselves, act as 'an organizing principle of the public' (Marres 2007: 769) that is taken up here. Particularly notable in this regard was how public concern, and influence regarding the 'contested entity' that is HCB waste, was manifested in the long-delayed institutional decision regarding Geomelt, witnessed in the trajectory from the 2001 Environmental Impact Statement, to Commission of Inquiry and thence Independent Review Panel, which reported in 2004. For Marres, public involvement with issues is constituted through 'attachments' 'characterized by both 'active commitment and 'dependency'' (774). These are inextricably a part of issues unlike the sets of ideas, values or understandings through which public involvement is characterized in, more common, frame analysis. Many such intimate 'attachments to things and people' (775) were evident in the HCB case such as those of resident CPRC members to the local community and to the Botany area.

Marres' ultimate argument that 'public involvement in politics ... is occasioned by issues and dedicated to their articulation ... involv[ing] contestation of institutional issue definitions, in controversies... likely to transcend procedural settings' (775) resonates with the intervention, at the Geomelt Environmental Impact Statement (EIS) launch, by a lay CPRC member that undermined the EIS by highlighting conflicts of interest in the sources of information central to it (Healy 2009: 1649). This argument augments the author's original identification of this attack on the credibility of the EIS's sources of information with 'lay epistemology' by underscoring how the exercise of 'lay epistemology' can illuminate the failings of existing institutional processes. She further notes that her analysis problematises the concern of many existing studies of public participation, which typically overlook the public articulation of issues, with the optimization of 'procedural settings' informed by ideas such as those of inclusion and representativeness. Marres' analysis, however, leaves open questions regarding how an 'issue-oriented' perspective might inform public participation in scientific and technological decision-making in practical terms. de Vries (2007) helps pursue this agenda but returns to Aristotle to help further interrogate the limitations of current conceptions of politics.

1.1 A Return to Aristotle

de Vries (2007) is concerned with 'sub-politics' 'the complex, expert knowledge-intensive and distributed political issues that technological societies have to deal with outside official political institutions and arenas' (806). He fears that '[m]isguided by assumptions about what politics is, that is by an inadequate conception, we may start looking in the wrong places, follow the wrong threads, and fail to raise appropriate questions' (784). To this end, echoing Foucault's well-known contention that we have not chopped off the king's head, he argues that contemporary politics has simply replaced the principle of monarchical sovereignty with that of individual sovereignty. On this basis, de Vries argues that contemporary democracies amount to little more than a 'community of mini-kings', because their primary concern is with the aggregation of the preferences of individuals. This explains why matters such as inclusion and representativeness, designed to empower individuals, take centre stage in contemporary political discussion. He notes that from this perspective, '[t]he role of

experts...is...a key problem, because experts introduce different notions of legitimacy.. [that]...endangers the sovereignty of “we the people” (de Vries 2007: 791), and is particularly concerned that science and technology studies (STS) has tended to take this ‘off the shelf’ conception of politics for granted. de Vries returns to Aristotle’s ideas in order to reveal the limitations of this ‘community of mini-kings’ conception of politics.

Aristotle distinguished between *poiesis*, instrumental action to achieve external ends, and *praxis*, in which the activity of concern is both a means and an end. For Aristotle, politics was most fundamentally a matter of *praxis*—a concern with the conduct of politics rather than with the ends it might produce so that ‘the point is [then] in the act’, which de Vries illustrates through the example of a ‘good discussion’ (2007: 792). For de Vries, the ‘community of mini-kings’ emphasis on achieving instrumental ends through aggregating the preferences of *subjects* reflects *poiesis*, while he identifies ‘the *object* of politics’ with a *praxis* focus upon political conduct. While for Aristotle ‘the *object* of politics’, constituted in political *praxis*, was the ‘highest good’, today ‘the *object*...aimed at in *praxis*...circulates in a *polis* that is constituted by appropriate social and material technologies’ (de Vries 2007: 795), reflecting a ‘socio-ontological’ emphasis like that of Marres. To illustrate his argument, de Vries retells a case study centred on the emergence of maternal blood screening tests for birth defects in the Netherlands in ‘Aristotelian’ terms. This ‘Aristotelian’ account focusses upon the constitution of a new *object*, prevention of severe birth defects by prenatal screening (PBDPS), whose success involved ongoing dynamic associations of personnel, groups and techniques that transcended existing institutions and formal political control:

‘PBDPS is not a goal for public health politics, a future end; it is what circulates in an association with an appropriate constitution, it is what the people involved in prenatal screening (doctors, nurses, pregnant women, laboratory personal, quality supervisors, and so on) aim at when they engage in a practice that is constituted by appropriate techniques’ (2007: 797).

So, whereas for Aristotle, a focus on political *praxis* involved attending to the quality and conduct of political discussion, today, such a focus involves attending to the dynamics of complex ‘socio-ontological’ *objects* such as ‘PBDPS.’ de Vries’ identification of the success of ‘PBDPS’ in *praxis* focussed terms contrasting radically with the traditional *poiesis* characterisation of success as the outcome of contestation between the aims, and/or preferences, of different groups and/or individuals conceived in ‘community of mini-kings’ terms.

An ‘Aristotelian’ reading of the evolution of the CPCR is illuminating. An initial *poiesis* like focus on instrumental outcomes, in the form of preferred technical options, with limited opportunity for substantive public involvement, eventually evolving into a *praxis* like embrace of more inclusive deliberation. This change started with a notable shift in the effective authority granted lay CPCR members over the period prior to, and over which, the Geomelt option focussed CPCR attention.⁸ Some of the earliest CPCR meetings the author attended, in 1999, were

⁸ The author was a regular attendee at CPCR meetings, held quarterly, from 1999 to 2004, and is still a registered observer and keeps abreast of current developments.

notable for both the lack of attention paid and lack of opportunity for substantive public involvement in discussion and deliberation. The lay intervention in the 2001 launch of the Geomelt EIS, discussed above, provided a turning point in this although the exercise of 'lay epistemology' had also been evident prior to this (see Healy 2009: 1649). This intervention not only signalled the legitimacy and power of lay CPRC members' views, and how non-lay CPRC members could not afford to ignore them, but also initiated a period over which the CPRC, and complementarily lay involvement in it, gained ever-greater recognition and authority. Some highlights of this period are briefly described below.

Community members requested and obtained an extension to the Commission of Inquiry submission period, as they had previously done for the Environmental Impact Statement, of 60 days. The Commission of Inquiry Commissioner's findings required *Orica* to not only consult with the CPRC but also to fund them to the tune of A\$20,000 p.a. during the commissioning stage, and at A\$10,000 p.a. for the life of the plant to pay for 'independent expert' advice, reflecting long-standing lay CPRC members' demands. The ensuing Independent Review Panel marked a further turning point with one of its three members nominated by CPRC resident members after they had roundly rejected an original nominee. The Independent Review Panel met with the CPRC five times during their deliberations on Geomelt, adopting both the community member's long-standing demand that an environmental bond be placed on *Orica* and further recommendations regarding public involvement.

Notable in all these developments was that, as residents concerns were increasingly addressed, and gained profile and legitimacy, the emphasis of residents on ensuring that their views were accounted for was reproduced in the increasing attention that the Commission of Inquiry and Independent Review Panel paid them and, as a result, the increasingly sophisticated attention residents' concerns were given in the recommendations these bodies made. Within the CPRC itself, deliberation became more inclusive as not only were some key fundamentals for this established, such as the credibility and legitimacy of 'lay epistemology', but also, although sometimes somewhat reluctantly, other important fundamentals gained ground such as the development of mutual trust and respect among CPRC members. This increasing concern with *praxis*, that is, the conduct and character of the CPRC process, departing considerably from the earlier, more conventional *poiesis* focus upon instrumental outcomes such as the specifics of Geomelt technology. So, echoing Marres' arguments, residents' concerns started to take centre stage in the ongoing attempt to resolve the HCB issue, involving, as de Vries' argues, greater attention to CPRC *praxis* in contradistinction to the earlier, more myopic, *poiesis* focus upon the details of specific HCB disposal technologies. The *object* of politics then becoming a broad-based approach to the problem of HCB disposal, involving not just the details of specific HCB disposal options but also the conduct of the CPRC and a broader raft of residents' concerns.

de Vries' assessment of existing STS work on 'sub-politics' is that it remains 'firmly within the confines of the 'community of mini-kings' conception of politics'. While he was more sympathetically inclined toward Bruno Latour's Actor Network Theory, he ultimately concludes that Latour's 'experimental metaphysics' (2004) is still focussed by the notion of sovereignty and so 'effectively closes off the quest for the object of politics'. Latour's response to this criticism was comprehensive.

1.2 Latour's Politics 1–5

Latour (2007) is critical of de Vries' return to Aristotle and revisits the basis of Marres' (2005, 2007) arguments in the ideas of Dewey and Lippmann but concentrating on the 'trajectory' that issues take in contrast to Marres' concern with their public 'articulation.' For Latour, science studies has underlined 'that politics has always been *issue-oriented*' (2007: 815, italics in the original) and so:

the key move is to make all definitions of politics turn *around* the issues instead of having the issues enter into a ready-made political sphere to be dealt with. First define how things turn the public into a problem, and only then try to render more precise what is political, which procedures should be put into place, how the various assemblies can reach closure, and so on. (Latour 2007)

The key question is then, 'how does [politics] turn around [the issues]' (Latour 2007), and, in a retrospective analysis of de Vries' maternal blood screening case study, Latour identifies five 'totally *different* meanings of the *same* issue' (816), shown in Table 1.

Political-1 is focussed on the 'socio-ontological' associations of people and things emphasised by Marres with Latour using the term 'cosmograms' for these after Isabel Stengers' pioneering description of this form of politics as 'cosmopolitics' (1997).⁹ Latour identifies political-2 with 'Lippmann and Dewey's beautiful argument that the public is always *a problem*', which occurs '[w]henver an issue generates a concerned and unsettled public' (Stengers 1997). So, whereas, political-1 refers to any occasion bringing together new associations of people and things, political-2 only occurs when these stimulate public concern and attention. Latour uses the term political-3 to describe conventional political attention to an issue 'when the machinery of government tries to turn the problem of the public into a clearly articulated question of common good and general will, and fails to do so' (Stengers 1997).

With political-4, Latour identifies that point in the trajectory of an issue when, '[f]ully conscious citizens, endowed with the ability to speak, to calculate, to compromise and to discuss together, meet in order to "solve problems" that have been raised by science and technology' (817). Unlike de Vries, Latour argues that:

[t]his Habermasian moment is not an absurd way of dealing with issues; it's simply what happens when issues have stopped being political-3 or -2, and have been metabolized to the point when they can be absorbed by the normal traditions of deliberative democracy (Tresch 2005).

Latour does qualify this, however, by noting that this is not a necessary way of addressing issues but rather 'a *plausible* way for an issue to leave one arena (the public as a problem) and enter into another one (the public as a solution)' (Tresch 2005). Political-5 occurs when 'an issue has stopped being political-4, -3, or even -2, at least for a while, because it has become part of the daily routine of administration

⁹ Cosmopolitics is the term Latour, following Stengers, uses to describe the politics attaching to particular 'socio-ontological' associations (such as that surrounding Geomelt in the Botany case study). Latour borrows the term 'cosmograms' from Tresch (2005) to denote particular 'socio-ontological' assemblages (such as de Vries' 'PBDPS' at a particular point in time).

Table 1 Politics 1–5 according to Latour (2007: 818)

Meanings of ‘Political’	What is at stake in each meaning	Examples of movements that detected it
Political-1	New associations and cosmograms	STS
Political-2	Public and its problems	Dewey, pragmatism
Political-3	Sovereignty	Schmitt
Political-4	Deliberative assemblies	Habermas
Political-5	Governmentality	Foucault, feminism

and management’ (Tresch 2005). While some feminists may dispute Latour’s judgment that this is true of the ‘naturalisation’ of ‘the distribution of gender roles’ (Tresch 2005), his association of political-5 with Foucault’s notion of governmentality is less contentious.¹⁰

Latour comments that ‘most discussions around the question of technical democracy have been limited to only one segment in the life history of issues, to political-4 public participation, which is certainly not the most widespread’ (Tresch 2005). He goes on to suggest that this is why STS work on public participation ‘often has such an unrealistic tone’ (Tresch 2005), underlining that ‘[n]ot having to participate should remain the ideal’ (819). He does, however, note that it is as equally unrealistic to expect that ‘new issues’ can be dealt with by political-3—politics-as-usual. Ultimately, he argues that ‘[e]ach new issue deserves its own protocol... each assemblage deserves its assembly’ (Tresch 2005).¹¹

So Latour, who is ‘sure that there exist many more stages in the natural history of issues’ (818), provides an insightful audit of different ‘political’ forms and how they can apply to matters of an STS character. This shows how an issue’s ‘natural history’ can embrace various of these ‘political’ forms while underlining how STS analyses commonly attend to only elements, or just an element, of this, in particular politics-4—public deliberation. Although insightful, and a constructive adjunct to further research, the veracity of Latour’s arguments are not all so clear-cut, however. Latour’s inference of a progressive trajectory from political 1–5 does not accord with the CPRC experience, for example. In this case: political-1, centring on the generation of new socio-ontological associations; political-2, involving public attention to these new issues; political-3, conventional political attention, and political-4, conventional public participation, have all tended to run together. The increasing power of political-4, in this case, the CPRC, paralleling ongoing political-3, politics-as-usual, attention. Also, while the HCB problem has never become ‘routine’, in the sense of political-5, it is certainly more ‘routine’ today than during the period of the Geomelt proposal and it is conceivable, if, for example, the current ‘export option’ for waste disposal were achieved (see footnote 4), that it could become even more ‘routine’. This would likely, however, still parallel ongoing attention in political-3, politics-as-usual, and political-4, public

¹⁰ ‘Governmentality’ is ‘[t]he ensemble formed by the institutions, procedures, analyses, and reflections, the calculations and the tactics that allow the exercise of this very specific albeit complex form of power’ (Foucault 2002: 219).

¹¹ Latour (2004) delineates, abstractly, just such a ‘protocol’ and ‘assembly’.

participation, terms. So, while issues do have a ‘natural history’, these may be more complex than Latour allows and involve multiple, overlapping, concurrent forms of ‘politics’.

Perhaps most problematically, Latour’s identification of the ‘natural history’ of issues with existing ‘off the shelf’ conceptions of politics might act to delimit future conceptions of governance relevant to them. Ultimately, by pushing the analysis of issues “into...ready-made political sphere[s] to be dealt with” (815) this analysis might be less helpful than those of Marres and de Vries in illuminating how public involvement can overflow and problematise these ‘spheres’. While Latour is likely right in claiming that ‘cosmopolitics’ should be used as the generic title for politics-1 to -5 (818), it is not clear that this agenda would not be better progressed by reformulating the framing criteria for decision-making along *praxis* lines by focussing upon the *object* of politics, as de Vries infers. The following section uses the ‘Aristotelian’ reading of the CPRC Geomelt experience, outlined above, to draw out the form such ‘framing criteria’ might take.

2 ‘Lay Epistemology’ and ‘the *Object* of Politics’

Marres’ (2005, 2007) ‘issue-oriented’ emphasis upon the public articulation of ‘contested entities’ (Marres 2007: 760), such as that of HCB waste disposal, underlines the importance of attending to these *objects* of politics. Her analysis resonates with the HCB case in a number of ways illuminating, in particular, how the exercise of ‘lay epistemology’ by community CPRC members exposed the failure of existing institutional processes. de Vries’ return to Aristotle shows how the turn to more substantive public involvement resulting from this departed from the conventional *poiesis* focus upon instrumental outcomes by establishing an increasing concern with the deliberative *praxis* of the CPRC. This section explores the implications of this departure from an instrumental focus upon the preferences of *subjects*, to a concern with issues as the *object* of politics and, particularly, to the role of ‘lay epistemology’ in articulating these *objects*. This is then used to suggest how future participatory exercises such as the CPRC might be better framed and structured.

2.1 The ‘Socio-Ontological’ Character of Issues and ‘Lay Epistemology’

While there is great merit in the Lippmann–Dewey position that ‘issues summon up their publics’, both the HCB case and de Vries’ ‘PBDPS’ focussed case study suggest that complex challenges such as these ‘summon up’ far more than just ‘their publics’. These case studies centre upon complex ‘socio-ontological’ assemblages bringing together not only interested ‘publics’ but also broader institutional attention and material entities and technical protocols shaped and focussed by the issue of concern. In both the HCB case and de Vries’ case study, this ‘socio-ontological’ character was revealed through the broader interest and attention these issues received. However, this character was not brought to the fore by formal institutions, whose attention tended to be *poiesis* focussed on instrumental ends, but rather primarily through the quality of community concern and attention.

So, rather than ‘issues summon[ing] up their publics’, it is the public articulation of issues, as Marres points out, that is pivotal to bringing their ‘socio-ontological’ character to the fore. ‘Lay epistemology’ is particularly concerned to reveal and understand this character. Lay concern regarding the social and institutional dimensions of the technical options promoted by others being a classic example. While these dimensions are critical to the effectiveness of technical options, they are still commonly marginalised through a narrow *poiesis* focus on technical criteria. In the CPRC case, the ‘lay epistemology’ focussed contestation of Geomelt illuminated the failings of the CPRC process to that time and resulted in far greater attention to the facilitation of effective public involvement in CPRC processes. This affected not just the CPRC but also its relationship with other bodies such as the Commission of Inquiry and Independent Review Panel.

de Vries uses the term ‘appropriate’ (2007: 797) to describe the ‘PBDPS’ ‘socio-ontological’ assemblage but gives few further clues as to how desirable assemblages might be constituted, other than through his emphasis upon *praxis*. One thing is evidently significant, and Marres is certainly right in this regard, both the de Vries’ and the HCB case study were marked by sustained public but, also, broader collective attention. In each case, the attempt to configure the issue in *poiesis*, ‘community of mini-kings’ terms failed and sustained public engagement with these issues in all their ‘socio-ontological’ complexity ultimately resulted in a configuration better suited to common, collective objectives. In the CPRC case, ‘lay epistemology’ was central to this achievement. The explicit facilitation of ‘lay epistemology’ might, thus, help bring attention to bear on the ‘socio-ontological’ dimensions of other issues and ensure better processes, both in terms of the facilitation of more effective public involvement and in terms of ensuring the ultimate quality and sustainability of outcomes. This then begs the question of how ‘lay epistemology’ might be focussed in such circumstances, a matter explored below through the lens of the CPRC experience.

2.2 Public Involvement as *Praxis*

‘[F]or Aristotle, politics is first and foremost a matter of *praxis*: *praxis* within a polis that “aims for the highest good”’, with the ‘highest good’ interpreted in various ways: ‘the good life, the “perfect and self-sufficing” life, a noble life, well-being and happiness’ (de Vries 2007: 793). While STS is rarely concerned with ‘the highest good’ in abstract, philosophical terms, the resolution of matters such as maternal blood test screening and the disposal of toxic chemical wastes does require a focus upon collectively optimal outcomes. de Vries defines ‘PBDPS’ as a ‘common good’ (2007: 798), presumably on the basis that this collectively settled *object* is optimal in this sense. Similarly, once ‘lay epistemology’ had helped refocus non-lay stakeholders away from *poiesis* focussed criteria, notably those of Geomelt, to *praxis* focussed ones—namely making the CPRC ‘work’ more inclusively—the outcomes then considered were optimal in the sense that they were collectively conceived and agreed upon. Both de Vries’ and the HCB case study thus share a focus upon a ‘common good’: ‘PBDPS’ in the de Vries case and, in the HCB case, more effective CPRC processes resulting in a collectively agreed conception of outcomes.

In each case, ‘common good’ resulted because *praxis* overflowed the traditional *poiesis* focus on technically defined instrumental outcomes because of broad and sustained collective attention. However, while in the ‘PBDPS’ case this was contingent upon the actions of many people and things, ‘lay epistemology’ was particularly pivotal in the CPRC case. As ‘lay epistemology’ gained legitimacy, it caused non-lay stakeholders pause for thought on many things they had previously tended to take for granted, such as potential conflicts of interest in the sources used for technical information and data. Lay CPRC members were also, however, particularly attentive to the situated and contextual elements of technical proposals that otherwise tended to remain implicit and to matters of process such as communication strategies. Rather than the, typical, focus of non-lay stakeholders with technological and scientific criteria, community members were always keen to clarify what these meant in terms of onsite practises and processes. They would, for example, raise concerns with matters such as contaminated work clothes and how they might be dealt with. They were also particularly concerned with the procedural aspects of proposed operations, and matters such as monitoring, which was a distinct contrast with the tendency for other stakeholders to act as if technical specifications, which commonly overlooked these things, spoke for themselves.

So, as a result of ongoing attention to CPRC praxis, the character and content of the outcomes under consideration changed as they came to take on more of the character of a ‘common good’. By the time of the Independent Review Panel’s 2004 Report, long-standing resident concerns had become institutionalised:

‘the panel is unable to assert with confidence that the plant can be operated at all times in a *predictable, reliable manner* compatible with local land-use. On the contrary, some forms of externally detectable operating upsets or incidents are entirely possible during the life of the project....The Panel also found considerable local community and business disquiet about the project....Given the level of mistrust, the potential is high for any operating incident to result in community alarm that is amplified beyond the effect of the incident’ (2004: vi, *italics* in original)

This report, which recommended Geomelt but at a remote location, can be seen as part of a move toward defining outcomes in terms of a collectively agreed set of objectives regarding them that is as attentive to contextual as it is to technical matters. The Independent Review Panel’s sensitivity to community ‘disquiet’ and ‘mistrust’ being a particularly notable example of this attention to ‘common good’. These, essentially aspirational, objectives integrated the conventional concern with technical criteria with a focus upon the character of outcomes, the qualities they should meet and maintain, and are suggestive of the activities this might all require. The Independent Review Panel, for example, developed a complex protocol for choosing potential host communities that integrated technical, socio-economic, infrastructural and other contextual considerations. Such a collective aspiration is distinctly different from the *poiesis* focus of conventional processes. These, most commonly, focus on technical outcomes, which, if subject to deliberation, are settled by ‘community of mini-kings’ means, delimiting both the range of outcomes considered, and ensuring the adversarial character of the process of choice regarding them.

2.3 Summary

As Marres points out, public, and broader collective, attention is important in bringing the ‘socio-ontological’ content and complexity of issues to the fore. When this complexity escapes the ability of formal political and institutional bodies to manage them, this attention can be critical to achieving a new configuration meeting collective aspirations. de Vries’ case study valuably underlined that such a ‘common good’ is achieved through collective *praxis*, rather than via the *poiesis* focussed objectives of ‘mini-kings’, while the CPRC case illuminated an important role for ‘lay epistemology’ in this *praxis*. Rather than being:

‘concerned with exercising formal criteria by which to determine what is true and what is false..[lay epistemology]..is concerned with the way that people are engaged in a complex of judgements about trustworthiness, credibility, usefulness, power—judgements which reflect, for example, social identity, practical circumstance, personal responsibility and community autonomy’ (Irwin and Michael 2003: 28).

‘Lay epistemology’ is thus well placed to reveal and illuminate the complex of contextual considerations traditionally ‘swept under the carpet’ by an insistence that only a narrow range of technical criteria count and matter. Enabling ‘lay epistemology’ can, therefore, facilitate processes in which the quality and sustainability of outcomes are underpinned by effective public involvement. In the CPRC case, the renewed and sustained attention to CPRC *praxis* resulting from the exercise of ‘lay epistemology’ changed the character and content of the outcomes under consideration. This involved the development of a collective aspirational set of objectives integrating conventional technical criteria with a focus upon the character of outcomes, the qualities they should meet and maintain, and suggestive of the activities they might require. Lay CPRC members, for example, ensured that matters such as the character and content of onsite practises, processes and procedures, which had tended to remain implicit in the previous narrower concern with technical criteria, were brought to the fore. This lay-inspired interrogation of previously taken-for-granted expert perspectives embraced a variety of matters of significance such as the community questioning of the use of the notion of ‘acceptable risk’ (Healy 2009: 1649–1650), widely used in quantitative risk management. All in all, the CPRC experience suggests that analogous processes should endeavour to facilitate ‘lay epistemology’ with the aim of helping forge a ‘common good.’ Collectively agreed objectives regarding outcomes as attentive to broader contextual considerations as to traditional technical criteria being one specific form this might take.

3 Conclusions

Marres (2007: 776) concludes by noting that: ‘STS research can... [illuminate]... the mobilisation of socio-ontological associations that mediate actors’ involvement in the issues... and enrich the study of the social-technical arrangements that facilitate public involvement’. This study has attempted to both advance this agenda and to

examine the ‘questions for both our conception of democracy and for the way STS-style analyses may contribute to democracy’ that de Vries posed in his concluding comments (2007: 807). One conclusion of this study being that the author’s prior espousal of ‘epistemological pluralism’ as a means to understand the evolution of the CPRC (Healy 2009) echoes many STS analyses in assuming a ‘community of mini-kings’ conception of politics. This study rather suggests that such a strategy should be focussed by a pluralist *praxis* through, most notably, the facilitation of ‘lay epistemology.’

This study shows that Marres, following Dewey and Lippmann, is right that sustained public, and broader institutional, attention can be critical to the resolution of problematic issues that overflow the ability of conventional institutions to manage them. However it also shows, as de Vries (2007) points out, that outcomes focussed by a ‘common good’ are best facilitated by framing processes in terms of *praxis*, as with the later CPRC, rather than in conventional ‘community of mini-kings’ *poiesis* terms, which, like the early CPRC, are more likely to generate contested technocratic outcomes. The CPRC example suggests that such processes should attempt to explicitly harness the contextual sensitivity of ‘lay epistemology’ to help forge a collective aspirational set of objectives regarding outcomes encompassing broader contextual in addition to narrower technical considerations. There are, however, a number of significant prerequisites for such processes including: mutual trust and respect, equitable access to knowledge and expertise, and the effective facilitation of collective deliberation (Healy 2003, 2009).

Such processes are only likely to develop and prosper within governance frameworks attuned to them, and one means to this end would be to reframe governance processes in *praxis* terms. For example, while, on one level, the HCB Waste Management Plan paid significant attention to ‘Community Participation and Access’, this section of the Waste Management Plan, section 10, shared page 17, of the 22-page Plan with section 9 ‘Reporting’. It was thus accorded secondary status relative to the technocratic emphases of the rest of the Plan in line with a *poiesis* framing which, at least partially, anticipated technical outcomes envisaged as primarily the domain of expertise.¹²

HCB, however, did become a ‘public problem’ because the public actively and aggressively contested the original *poiesis* framing of the CPRC that had initially accorded them little more than the role of observers. Over time, this resulted in a *praxis* reframing. While this has set some precedents, such as in the role accorded the CPRC by the Commission of Inquiry and Independent Review Panel, these may not stand the test of time and/or be reflected in future exercises, unless supported by practical measures and/or through further examples of similar practise. This is unlikely to occur without decision-makers and public participation practitioners’ further attending to the ongoing tendency for bodies such as the CPRC to be framed in terms that, in practice, result in public involvement being subordinated to

¹² The 11 sections of the report are: ‘1 Definitions’; ‘2 Scope of this Management Plan’; ‘3 HCB Analyses’; ‘4 Storage, Handling and Transport’; ‘5 Emergency Procedures’; ‘6 Destruction and Disposal of Scheduled HCB Waste’; ‘7 Car Park Waste’; ‘8 Time Lines for the Management, Destruction and Disposal of Scheduled HCB Waste’; ‘9 Reporting’; ‘10 Community Participation and Access’; and ‘11 Review Period’. There is also a reference section and 3 appendices (ANZECC 1996).

technical criteria. STS research and analysis has a particularly important role to play in countering this tendency.

References

- Australian and New Zealand Environment and Conservation Council (ANZECC) (1996). Hexachlorobenzene waste management plan.
- de Vries, G. (2007). What is political in sub-politics? How Aristotle might help STS. *Social Studies of Science*, 37(5), 781–809.
- Foucault, M. (2002). Governmentality. In J. D. Faubion (Ed.), *Power: essential works of Foucault 1954–1984, volume three* (pp. 201–222). London: Penguin Books.
- Healy, S. (2003). Public participation as the performance of nature. In B. Szerszynski, W. Heim, & C. Waterton (Eds.), *Nature performed: environment, culture and performance* (pp. 94–108). Oxford: Blackwell (The Sociological Review Monograph Series).
- Healy, S. (2009). Toward an epistemology of public participation. *Journal of Environmental Management*, 90(4), 1644–1654.
- Independent Review Panel (2004). Independent review—HCB waste destruction.
- Irwin, A., & Michael, M. (2003). *Science, social theory and public knowledge*. Maidenhead: Open University Press.
- Jensen-Lee, C. (2009). When unequals are treated equally: the 2002 Commission of Inquiry into Orica's Geomelt proposal. *Journal of Environmental Management*, 90(4), 1613–1621.
- Latour, B. (2004). *Politics of nature: how to bring the sciences into democracy*. Cambridge: Harvard University Press.
- Latour, B. (2007). Turning around politics: a note on Gerard de Vries' paper. *Social Studies of Science*, 37(5), 811–820.
- Marres, N. (2005). Issues spark a public into being. A key but often forgotten point of the Lippmann-Dewey debate. In B. Latour & P. Weibel (Eds.), *Making things public. Atmospheres of democracy* (pp. 208–217). Cambridge: MIT.
- Marres, N. (2007). The issues deserve more credit: pragmatist contributions to the study of public involvement in controversy. *Social Studies of Science*, 37(5), 759–780.
- McDonnell, G. (1997). Scientific and everyday knowledge: trust and the politics of environmental initiatives. *Social Studies of Science*, 27, 819–863.
- Stengers, I. (1997). *Power and invention*. Minneapolis: University of Minnesota Press.
- Tresch, J. (2005). Cosmogram. In M. Ohanian & J. C. Royoux (Eds.), *Cosmograms* (pp. 67–76). New York: Lukas and Sternberg.
- Wright, T., Court, J., & Smith, G. (2006). *Orica HCB waste stockpile: safe interim storage and destruction, independent review panel*. Sydney: NSW Government.