sciencewise
EXPERT RESOURCE CENTRE

University of East Anglia

Sustainable participation?

Mapping out and reflecting on the field of public dialogue on science and technology

Dr Jason Chilvers
University of East Anglia

Contents

About the author	2
1. Time to reflect	3
2. An emerging UK dialogue network	7
3. The shifting public dialogue landscape	9
4. Actors, roles, relations	14
5. Public dialogue expertise	26
6. Professionalise or democratise democracy?	29
7. Learning and reflection	33
8. Dialogue futures	40
Annexes	43
Notes	45

This report should be cited as:

Chilvers, J. (2010) *Sustainable participation? Mapping out and reflecting on the field of public dialogue on science and technology*, Harwell: Sciencewise Expert Resource Centre.

About the author

Jason Chilvers is a Lecturer and social scientist in the School of Environmental Sciences at the University of East Anglia. His work spans governance, appraisal, public understanding, and public participation relating to science, technology and environmental risk issues. For over a decade he has conducted research, practice and teaching on public dialogue and deliberative public engagement in the areas of sustainability, energy, waste, and emerging technologies. This has included the development of innovative approaches (such as collaborative work on Deliberative Mapping), evaluation, and initiating critical studies of participation in science and the environment including one of the first ever studies of public engagement experts and the networks, roles and relations they form around public dialogue. He has published widely on these themes in books, policy reports, and peer-reviewed international journals such as *Science, Technology, and Human Values*, *Environment and Planning A*, *Geoforum* and the *Journal of Risk Research*. He is the director of a two-year ESRC seminar series on 'Critical public engagement' and sits on the Royal Society Kohn Award Panel for Excellence in Engaging the Public with Science.

Dr Jason Chilvers
School of Environmental Sciences
University of East Anglia
Norwich, NR4 7TJ
jason.chilvers@uea.ac.uk

1. Time to reflect

Developments in science and technology occur at an ever increasing pace, generating much excitement but also important social and ethical questions. In many ways, changes in UK public engagement with science have been just as rapid. Over the past 25 years the emphasis has shifted from the public being on the receiving end of scientific communications[1], to being engaged in dialogue with science[2], to being involved further upstream in potentially influencing the directions of emerging science and innovation.[3] The past decade has seen an intensive drive - by governments, scientific institutions, academics, non-governmental organisations (NGOs), consultants and many others - to deliver new forms of public engagement with science, including deliberative and dialogue based approaches.

This fast moving situation often leaves little time to reflect on the current state of the public participation field in this domain, how it got to this point, and how it should develop in the future. The following chapters report on a project that contributes to this end. In early 2009, 21 of the UK's key thinkers, practitioners and policy makers on public engagement with science and technology related issues (see Box 1) were asked to down their books, keyboards, pens, flip charts, and post-it notes for half an hour or more, and take a step back to map out and reflect on the UK public dialogue field.

Box 1 – Interview participants

Participant 1	Kerry Leslie | Research Councils UK*
Participant 2	Darren Bhattachary | BMRB (British Market Research Bureau)
Participant 3	Researcher | think tank
Participant 4	Clare Matterson | The Wellcome Trust*
Participant 5	Lindsey Colbourne | Lindsey Colbourne Associates
Participant 6	Kathy Sykes | University of Bristol*
Participant 7	Participatory practitioner | private consultancy
Participant 8	Clive Margetts | Futurefocus
Participant 9	Cath Brooks | Environment Agency
Participant 10	Rhion Jones | The Consultation Institute
Participant 11	Helen Wallace | Genewatch
Participant 12	Richard Wilson | Involve*
Participant 13	Andy Stirling | SPRU, University of Sussex*
Participant 14	Karen Folkes | Department for Business, Innovation and Skills (BIS)*
Participant 15	Academic social scientist
Participant 16a/b	Two representatives | COI (The Central Office of Information)
Participant 17	Viki Cooke | Opinion Leader
Participant 18a/b	Sue Hordijenko and Nigel Eady | British Science Association
Participant 19	Policy maker | Government department

* Member of the Sciencewise Expert Resource Centre Steering Group

This research builds on earlier work carried out by the author in 2001-2003 which involved participatory practitioners, social scientists, scientists, and policy makers in reflecting on developments at a relatively early stage in the turn to 'new' forms of public dialogue on science and technology.[4] It was one of the first pieces of research (in the UK at least) to study social scientists, participatory practitioners and other public engagement experts involved in developing deliberative public engagement, the networks that they and other actors form around such practice, the roles that they play, and how they relate to each other.

A huge amount has changed in the UK science and society arena since these earlier insights. The current study provides an excellent opportunity to develop a longitudinal perspective on such matters and the institutionalisation of public dialogue within Government and beyond. For comparative purposes a similar network approach was used to map out the UK public dialogue network. A few of the twenty-one participants had also been involved in the earlier study, adding further continuity. Interviews were conducted over the phone rather than in person, but considered some similar themes. More details on the research methodology are given in Annex 1.

The focus of the project, and participants' reflections, centred on the following themes:

- *Key developments* - including trends towards increasing institutionalisation, commercialisation and professionalisation of public dialogue;
- *Networks, roles, relations* – understanding the character and structure of UK public dialogue networks, the motives and roles of different actors, and relations between them;
- *Dialogue expertise* – involving mapping the range of UK public dialogue expertise, which raises questions about who counts as an expert on public participation in science, the underlying meanings of dialogue expertise, and how they vary;
- *Learning* – concerning the extent to which networks and institutions associated with public dialogues are learning about and learning from participation.

Weaving these strands together provides insights into whether public dialogue on science and technology related issues is sustainable, both as an end in itself - in terms of sustaining meaningful democratic engagement with science and innovation - and as a means to an end - in terms of making science and related institutions more socially, ethically and environmentally responsive, responsible and accountable.

This study has been commissioned by the Sciencewise Expert Resource Centre for Public Dialogue in Science and Innovation (Sciencewise-ERC). The Centre, launched by Government in May 2008, aims to 'develop the Government's ability to carry out high quality dialogue and to ensure that the best ways of doing this are incorporated into the way Government makes policy in the future'.[5] It follows on from the Sciencewise Programme initially set up in 2005, which has its roots in the commitment to public dialogue and 'upstream' engagement in the Treasury's 10 year Science and Innovation Investment Framework 2004-2014[6] and was given extra impetus by The Council for Science and Technology's 'Policy Through Dialogue' report in 2005, which recommended that Government should develop a 'corporate memory' about how to do dialogue well.[7]

Sciencewise-ERC seeks to do this through: providing co-funding for Government departments to develop and commission dialogue projects in key areas of science and technology policy; a web-based knowledge hub providing 'best practice' guidance and

case studies on public dialogue; and support services aimed at those commissioning and delivering dialogues, such as a helpline, training and mentoring, and knowledge exchange networks, events and workshops. The Centre is guided by a steering group representing a range of policy, research and practitioner interests. It is supported by a team of experts in public dialogue called 'Dialogue and Engagement Specialists' (DES).

The questions addressed in this project are of direct relevance to Sciencewise-ERC. At a very immediate level, in order to be credible, legitimate and effectively perform its roles as an 'expert centre' it is necessary to better understand and acknowledge the range of expertise relating to public dialogue on science and technology within the UK and beyond. The mapping of dialogue expertise within this project provides intelligence on this. It also provides insights into the processes and effectiveness of networking and learning in the public participation field - both core ambitions of Sciencewise-ERC. At a broader level, an overview of networks, institutional arrangements and structures associated with public dialogue supports wider consideration of the role and appropriateness of the Centre in its current form. Insights at each of these levels should also be of relevance to other organisations and centres of excellence working on public participation in science and technology related issues.

The study amounts to much more than an instrumental mapping of networks and expertise however. It offers potential contributions to learning and reflection, by making space for a range of actors to reflect on public dialogue and systematically drawing across these situated perspectives to offer critical insights. Going beyond the usual way of understanding participation through individual case studies, the current project offers a broader analysis of the state of the public dialogue field. This includes evidence that might not otherwise have been gained on the structures and contexts that shape participatory governance. And whilst the findings directly relate to the domains of science, technology and the environment, they may also be of relevance to public participation in other sectors.

Importantly, the project directly contributes to an underexplored area in social science research. Studies of science and its relations to governance have tended to focus on natural and physical science rather than social science itself. This is especially the case when it comes to public participation practitioners and researchers, their networks, roles and relations, the nature of public dialogue expertise, and its increasing institutionalisation and professionalisation. At the time of the earlier study noted above there was a distinct lack of research addressing these themes, apart from work in the context of international development in the global south.[8] Over the past two years or so there have been encouraging signs of others initiating work in this area, including research on deliberative consultants and the commercialisation of deliberative democracy[9] and reflections on the roles of social science in public dialogue.[10]

The project has been framed in terms of 'public dialogue', partly due to its use by Sciencewise-ERC and its prevalence as a term to describe institutional forms of public engagement with science-related issues. In a broad sense dialogue is generally taken to mean two-way or multi-way communication between the public, science and policy (as opposed to one-way science communication). Over the years it has been associated with a range of approaches to deliberative public engagement and consultation - including consensus conferences and citizens' juries[11] - but not limited to such event-based initiatives.[2] In its guiding principles Sciencewise-ERC adopts a more specific definition of public dialogue as:

> "a two-way conversation with members of the public, to inform… decision-making on science and technology issues… [It] is a process during which members of the public interact with scientists, stakeholders (for example, businesses and pressure groups) and policy makers to deliberate on issues likely to be important in future policies."[12]

The ambition is to explore public views, aspirations and concerns about emerging areas of science and feed these into decisions over the governance of science and innovation. These conversations are distinctly policy-oriented, most often at the national level, where participants are invited to take part in a managed dialogue organised by Government (or another decision-institution). In this report we interpret 'public dialogue' more broadly than Sciencewise-ERC's specific definition. Interview participants inevitably adopted their own meanings of the term, which were often synonymous with deliberative public engagement more broadly and at times extended to multi-way 'dialogue' that occurs in the context of informal, citizen-led or uninvited spaces of public engagement with science-related issues.

In the chapters that follow, key findings from the original study of the UK dialogue network are presented in Chapter 2 which provides the background to consider in Chapter 3 how the field has recently evolved and changed. Against this backdrop the contemporary character of this participatory governance network, the roles of different actors within it and relations between them is explored in more detail in Chapter 4. This leads on to an analysis of the varied nature and meanings of 'public dialogue expertise', the tensions and implications associated with its increasing professionalisation, and an assessment of the extent to which UK institutions and networks associated with participatory governance of science and technology are learning about and learning from public dialogue. The report concludes by considering the future prospects for public dialogue on science and technology related issues and highlights key challenges and recommendations important to the sustainability of the field as a whole.

2. An emerging UK dialogue network

On 23 February 2000 the House of Lords Select Committee on Science and Technology published its highly influential report on 'Science and Society', stating that 'direct dialogue with the public should move from being an optional add-on to science-based policy making… and should become a normal and integral part of the process'.[2] It came at a time when public trust in scientific advice was being questioned in the wake of controversies over BSE, genetic modification and nuclear waste. This, along with similar advice from other official bodies[13] and the academic social science community, sparked a series of initiatives to engage the public in dialogue on science and technology. It was at the dawning of this 'new mood for dialogue' that the initial mapping of the UK dialogue network and public engagement expertise took place.[4]

This **original study** identified a network of dialogue experts that was in its early stages but rapidly emerging. Although many actors laid claim to expertise on public participation, network analysis showed most capabilities to be centred in a much smaller core group. This was comprised of academic social scientists and participatory practitioners operating independently or linked to charities and public participation consultancies (an indicative list of actors identified, from only one stage of this earlier research, is shown in Annex 2). Most NGOs, technical consultants, market research and public relations companies were deemed to lie outside this core group. Social scientists and participatory practitioners were providing advice to and working on behalf of policy makers. Organisations in Government and industry were increasingly influential in commissioning dialogues but generally lacked internal capabilities for public dialogue.

These actors represent a specific type of what British sociologist Nikolas Rose has called 'experts of community'[14] who specialise in interactive deliberative and dialogue processes as opposed to public opinion surveys and opinion polling. They were shown to be taking up increasingly central and powerful roles as intermediaries mediating relations between science, society and policy, enacting various 'technologies of participation', and offering advice to policy makers on this basis. Core expertise centred on the design, facilitation and evaluation of public participation processes, and the articulation of public understandings and social concerns relating to science and the environment.

In this sense the network resembled an 'epistemic community'[15], in other words a network of professionals recognised for particular forms of expertise and knowledge. Within this wider network were specific 'communities of practice'[16] associated with different styles or contexts of deliberative engagement practice. The network was seen to be evolving across a wide range of science and technology related issues. The emphasis in 2001-2003 was on environmental risk issues such as nuclear power, waste, GM crops and other developments in biotechnology. Many dialogue experts were working across and actively moving between these issue areas.

The emergence of the network and associated dialogue practices was being driven by different motivations for engagement. These ranged from *ethical* (also called normative) arguments that participation enriches our democracy and empowers citizens to have a say in decisions that affect their own lives; *instrumental* arguments that it is a means of achieving particular ends such as enhanced trust, credibility and acceptance of institutions and policies; through to *substantive* arguments that it builds in a wider range

of knowledge, leading to more robust and socially intelligent science and policy.[17] These rationales don't map neatly onto different experts or cases of public dialogue and tend to coexist or interact in complex ways. But, as Andy Stirling notes in a Sciencewise-ERC sister publication 'The Road Ahead'[18], it was evident that instrumental reasons often prevailed in the outcome focused world of decision institutions, whereas academics and practitioners more often associated themselves with ethical or substantive arguments for participation.

This earlier mapping of the UK dialogue network is described in detail elsewhere.[19] For now it is important to highlight three key insights into its structure and character at the time.

- A defining characteristic of the network was its intense **fragmentation** and compartmentalisation into specific groupings of dialogue specialists. A particularly entrenched division existed between academic social scientists and participatory practitioners, even though both sets of actors recognised this as a false distinction given that their respective roles in the science and society arena often overlap. Another key distinction was between actors holding alternative visions and versions of the public and participation. For example, different groupings were evident between those advocating a stakeholder model of participation (engaging citizens who represent the interests of others in groups to which they belong) as opposed to a public model (involving individual citizens who represent only themselves and who have little prior interest and engagement with the issues in question[20]). Groupings were also forming around disciplinary perspectives, specific decision institutions, and particular science and technology related issue areas.

- The network also exhibited highly **competitive** relations between actors. It formed part of an emerging public dialogue industry where researchers and practitioners were developing deliberative tools and services in a marketplace of methods. Some went as far as protecting their participatory techniques through copyright[21] and pushing their own approaches irrespective of appropriateness to particular social or policy contexts. Demand from decision institutions fuelled the market, which grew rapidly. But whether motivated by profit, competitive advantage, or intellectual kudos, rivalry between actors was seen to be limiting the exchange of ideas, practices, and experiences. This - coupled with the highly localised and experiential nature of knowledge about public participation and a relative lack of formal mechanisms such as evaluations to cascade knowledge through the network - was deemed by some to be undermining innovation, capacity-building and learning about dialogue.

- Related to this emerging commercialisation of public dialogue was an acute awareness of its increasing **professionalisation** and institutionalisation. Some participants in the original study saw professionalisation and the creation of institutions to build capacity, network, coordinate, and create a legacy, as being crucial to the future sustainability of the field. They pointed to organisations such as the International Association for Public Participation (IAP2) that was established in the US in 1990 and now operates in many countries globally. Others expressed concerns that an 'institution of participation' would go against the very ethos of participation by promoting centralised and exclusive forms of organisation and control. Indeed, the exclusive nature of the professional dialogue network emerging in the UK highlighted that, while leadership is necessary, there was also a need to democratise dialogue expertise and promote more informal citizen-led processes.

3. The shifting public dialogue landscape

Moving forward to 2009, developments in the governance of science and society present something of a paradox. On the one hand public engagement with science and technology has 'changed beyond measure', yet at the same time many aspects have 'stayed the same' (Participant 17). In reflecting on the public dialogue field this and many other tensions and contradictions were a recurring feature of participants' talk in the recent interviews. In this chapter we gain an overview of the shifting UK dialogue landscape in terms of the key developments and recurring trends. The themes introduced here are further elaborated throughout the remainder of the report.

Moving 'upstream'

A significant change, and key turning point, came in 2004 when public engagement began to shift further 'upstream' driven by the coalescence of a number of influential initiatives. In announcing a new ten-year strategy for science and innovation the UK Government expressed its commitment 'to enable [public] debate to take place 'upstream' in the scientific and technological development process'.[6] In the context of nanotechnology a report by The Royal Society and Royal Academy of Engineering echoed these sentiments[22] and was closely followed by an influential pamphlet from the think-tank Demos that stressed the need 'to articulate the visions, promises and expectations of the technology at an earlier stage, and make them the focal point of upstream public engagement'.[3] The issues forming the focus of public dialogues soon shifted in emphasis from 'downstream' risk issues such as GM and nuclear waste to also encompass other matters of concern relating to emerging areas of science and innovation, including nanotechnology which became a focus for investment and experimentation.[23] This reflects the initiation in a shift from an emphasis on 'risk governance' to also include 'innovation governance', in the terms of the European Commission Expert Group on Science and Governance.[24] It is in this context that Sciencewise was first established in 2005.

Institutionalisation

Another major development over the past half decade is that the institutionalisation of public dialogue has continued apace. For interview participants, it has in many ways 'become part of policy', more embedded within decision-making institutions, with more dialogue occurring in a wider range of settings. In certain quarters there is also increasing recognition from policy makers of the value, validity, and legitimacy of public engagement and of listening to public concerns. A number of sites of institutionalised public participation with science, technology and the environment have sprung up in Government, Government agencies, the Research Councils, and universities through the Beacons for Public Engagement.[25] With this has grown an ever-expanding public engagement infrastructure including new institutions and organisations involved in commissioning dialogue through to capacity-building, coordinating, networking and overseeing the field. This has heralded a new breed of actor adopting these roles of which Sciencewise-ERC is one example, alongside others such as the National Coordinating Centre for Public Engagement (NCCPE), Involve, the Consultation Institute and other 'institutions of participation'.

Commercialisation and professionalisation

Closely related to this is the professionalisation of the field, which was already evident in 2001-2003 and has intensified considerably since. A striking development has been the increasing commercialisation of participation and the rapid growth of a burgeoning public engagement industry involved in a global exchange of techniques, services, people, and skills. Demand from an increasing number of commissioning organisations and the UK tendency to outsource public dialogues to external consultants has helped establish and grow this 'dialogue market'. Amongst the trends in this market, two are particularly evident. Independent facilitators and organisations practicing stakeholder dialogue who previously worked on environmental issues have moved further upstream into science and technology related issues. Increased funding has also attracted new players, with the most notable addition being market research companies and professional social research agencies that have 'moved in', developed some dialogue capabilities and - in the eyes of a few interview participants - 'taken over'.

Extended meanings of dialogue

Modes of participation are also in flux. Interview participants noted a relative increase in the number and diversity of practices associated with public dialogue on science-related issues. With this, meanings of 'public dialogue' are being extended. Three main meanings were evident in interviews. As shown in Box 2, these can be understood by bringing together the distinction between 'invited' and 'uninvited' public engagement, that has been made in development studies and science and technology studies,[26] with the distinction between 'micro' and 'macro' public dialogue often made in writing on deliberative democracy. [27]

Box 2 – Meanings of public dialogue and participation in science and technology related issues

Invited micro public dialogue – where members of the public are invited to participate (in interaction with stakeholders, scientists and policy makers) in highly structured and managed group dialogue organised in terms of a host decision-making institution.

Invited macro/informal public engagement – open, unstructured public engagement (which can incorporate forms of dialogue) that occurs in wider public arenas beyond formal decision-making institutions (but can be initiated by them) in directly shaping public understandings and policy more indirectly.

Uninvited public engagement – organic, spontaneous public engagement (which can incorporate forms of dialogue) initiated and organised by citizens themselves rather than decision institutions, which may be directed at their own actions and/or challenging formal institutions.

The popular meaning and dominant notion of public dialogue, as identified by all interview participants, was one of heavily managed and structured micro[27] spaces of deliberation connected to policy-making (see Box 2). These are 'invited' dialogues in that 'such events are often orchestrated [and] convened in the terms of their host institutions'.[28] This meaning is the closest to the Sciencewise-ERC definition of public

dialogue (outlined in Chapter 1) and includes a range of approaches to deliberative public engagement.[29]

Key trends in recent years include moves to 'upscale' micro level dialogue by expanding intensive deliberative approaches to include larger numbers of participants, and to integrate them with extensive forms of public engagement using a range of electronic media, survey techniques, and so on.[30] The field is also responding to opportunities presented by the growth of the internet, Web 2.0 and the e-democracy agenda.[31] Having reached a recent 'tipping point', online and electronic forms of consultation and dialogue are experiencing rapid growth, including data mining techniques which analyse people's already existing online conversations, framings, and patterns of use rather than seeking to elicit brand new ones.[32]

The latter development is indicative of a broadening of notions of dialogue to also include that which occurs in the context of informal macro[27] level engagements (Box 2). While such processes can be initiated by decision institutions, they take place beyond them in the wider public sphere. They are not necessarily decision-oriented but can influence policy in more indirect ways. Examples identified by interview participants included events that initiate wider public debate and dialogue through art, performance, new media and more traditional forms of science communication[33], through to deliberation associated with pro-environmental behaviour initiatives that empower citizens to develop their own innovations and responses to issues such as energy and climate change.[34]

In extending these categories further, many interview participants highlighted more empowering designs that 'give people the skills to do [dialogue] themselves' (Participant 12), such as DIY citizens' juries.[35] These initiatives begin to blur the boundaries between invited and 'uninvited' spaces of engagement (see Box 2).

This distinction between invited and uninvited engagements is based on who is responsible for organising public dialogues. Uninvited engagements are initiated and organised by citizens mobilising themselves independently of formal decision institutions.[36] Some interview participants (including social scientists, certain practitioners, and those from CSOs or participation institutions) went as far as recognising that forms of 'dialogue' occur in these wider uninvited spaces of engagement, if often unacknowledged as such. This includes public engagement associated with social movements, special interest groups, instances of citizen science including lay epidemiology, and sites of distributed innovation such as open source movements, Pro-Am science and so on.[37]

Dialogue associated with informal and uninvited engagement often varies from that promoted by Sciencewise-ERC (and most activity within the UK dialogue field for that matter) which is limited to formal invited public dialogue. It is important to note that dialogue occurring in the context of informal or uninvited engagement is often not formally structured and facilitated in an attempt to ensure 'inclusive' deliberation. Interview participants maintained, however, that it opens up alternative framings and perspectives on science-related issues and needs to be acknowledged as a legitimate area of public debate and distributed innovation. In certain quarters at least, then, we are seeing a broadening in accepted practices of participation in science and technology, and associated meanings of what counts as public dialogue expertise, as explored further in Chapters 4 and 5.

Enduring themes

Despite these sweeping changes and transformations in the character of UK dialogue networks, many features of the public dialogue field evident at the very beginning of the twenty-first century still endure today. Most interview participants agreed that the network is expanding - not least to include actors associated with 'extended' meanings of public dialogue introduced above - but continues to be centred around a similar core group comprising 'many of the same people'. In this sense it remains a relatively small network. A similar range of academic social scientists are central to the network even though some interview participants see their roles as having shifted in emphasis over the past decade from practising dialogue to taking a more analytical and critically reflective stance.

Fragmentation

Almost all interview participants viewed fragmentation to be an enduring feature of the network. For some this remains deeply entrenched. For others it feels 'slightly less extreme' and, as Participant 7 notes below, there are signs that the field is maturing, with more communication occurring between groups.

> "I don't think there is any one network, I think people hook up in different ways. I think there are a lot of barriers still … I suspect you have these little pockets of people talking to each other." (Participant 17)

> "so what's happening is it's still fragmented because we're all ploughing away our own furrow." (Participant 5)

> "there's more communication between the people who are doing things, they're not all stuck away in their corners doing their own thing." (Participant 7)

Identified groupings within the wider network continue to highlight distinctions between: academic social scientists and practitioners/policy makers; deliverers and sponsors of dialogue; and those advocating alternate styles of participation or holding different visions of 'the public'. While the outsourcing of dialogue and increased volume of activity has exacerbated the split between deliverers and sponsors in certain contexts, in other locations this distinction is increasingly blurred. Alternative models of relations between dialogue expertise and those commissioning dialogues have emerged through the internalisation of dialogue expertise and internal capacity-building in a number of institutional settings, including those relating to Sciencewise-ERC.

Competition

The continuing professionalisation and commercialisation of public dialogue related activities has maintained intense competition within the network. This is not necessarily a problem for some; it drives innovation and demands that you 'raise your game'. Others highlight downsides. It can stifle learning and possibilities for meaningful democratic engagement. Most interview participants see high levels of competition, with the exception of participant 16 in the last of these statements.

> "there's more competition between us I think than we've experienced before… we're somehow making life still a bit difficult for each other, in our need to look more professional." (Participant 5)

> "you sort of think at the moment there is a competitive advantage to be one of the players who's doing a lot of this... protection is a horrible word but it is almost that, thinking 'I'm not going to show you mine yet' and I hope that will start to break down soon." (Participant 17)

> “it’s a big market, there’s a lot going on. I don't see overt competitiveness… I don't see people absolutely fighting tooth and nail for every bit of work and not being willing to talk to their competitors as a result, it’s not that cut-throat.” (Participant 16)

When considering the overall trends introduced in this Chapter it is important to recognise that the UK public dialogue landscape is a diverse patchwork. It varies greatly in the forms of dialogue evident, the motivations, institutional settings and commitments relating to them, network characteristics, and the roles played by different actors. The following chapters explore these complexities in more detail.

4. Actors, roles, relations

During interviews most participants took time to step back and map out the range of UK dialogue expertise, in terms of the actors (individuals and/or organisations) they deemed to be dialogue experts or influential in the public dialogue field. In doing this participants adopted and clarified their own meanings of 'public dialogue expertise' in an unconstrained way. Broader qualitative interpretations of the structure and character of contemporary UK dialogue networks added to the robustness of the mapping. Taken together these forms of evidence underpin the analysis in this chapter of the key actors involved in UK public dialogue networks, their relative roles and areas of expertise, and relations between them.

The emphasis is on mapping the *range and diversity* of actors and the roles that they play. This is in no way intended to be a complete or definitive mapping but rather an indicative insight that should be read as being provisional and conditional in nature. Having said this it employed a rigorous and well-tested methodology. Interview participants were carefully selected to reflect the full range of actors involved in the UK public dialogue field (see Annex 1).

In identifying dialogue experts, interview participants often located them in terms of their position, identity, or affiliation. Each actor was seen to have a dominant identity in this regard, even though some held more than one position. A number of dialogue actor-types were evident in interview participants' talk - including dialogue practitioners, academic social scientists, commissioners/policy makers, scientists, think tanks, participation institutions, CSOs, and so on. Table 1 summarises the range of actors identified, mapped out in relation to their dominant actor-type. Of course, there is much complexity here. For example, the academic-practitioner distinction is highly simplistic. Many academics practice and practitioners do research. 'Academic-practitioners' and 'practitioner-researchers' would be a more accurate description in a number of cases.

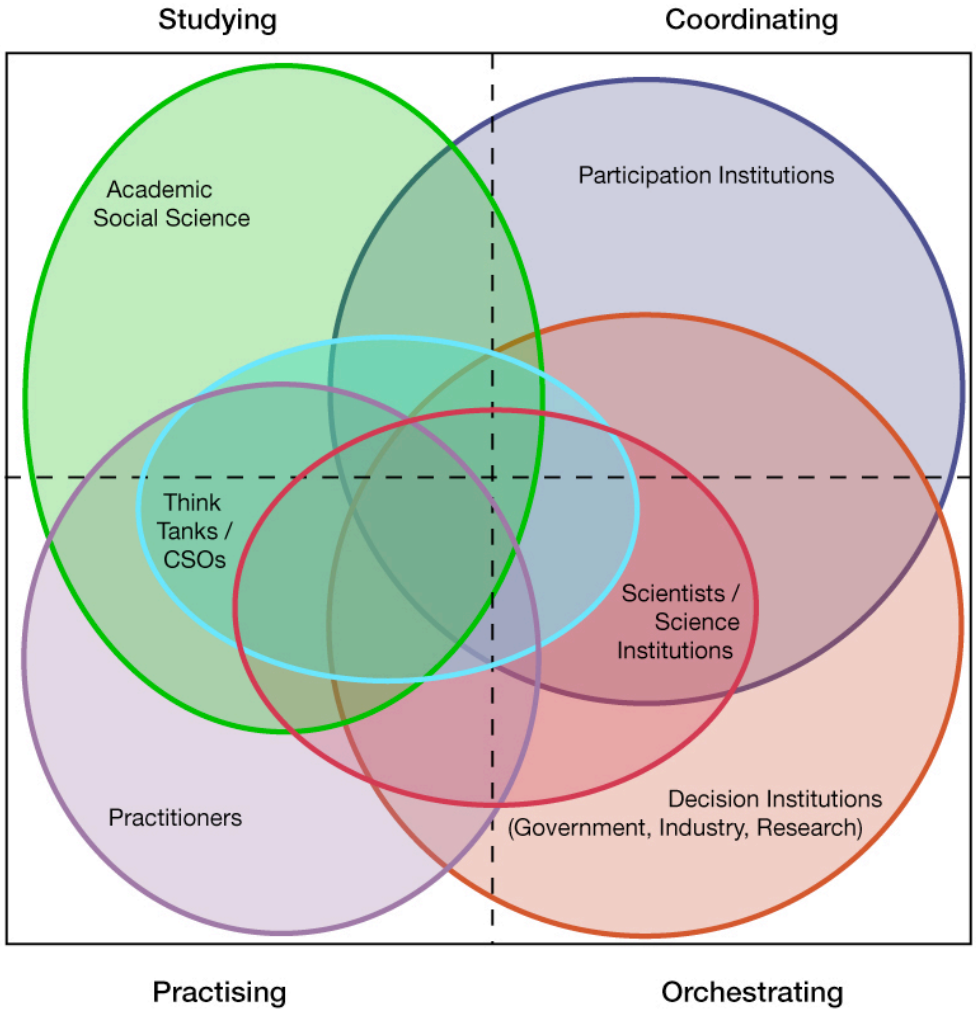
It is possible to account for this. When mapping actors, interview participants also talked about their particular forms of expertise, activities and roles in relation to public dialogue. In other words the range of things they actually do in a functional sense and, in some cases, their intentions and purposes. It is the norm for these to be multiple, often ambiguous, and sometimes contradictory. Most individuals wear many hats at different times and in different places. Four main areas of expertise or roles in relation to public dialogue were evident: (i) *studying*, which includes researching, theorising, and reflecting; (ii) *practising*, which includes designing, delivering, and implementing; (iii) *orchestrating*, which includes commissioning, initiating, and policy-making; and (iv) *coordinating*, which includes networking, capacity-building, and institutionalisation. Figure 1 illustrates how some of the main actor-types map on to these areas of expertise. It shows considerable overlap in roles between different types of actor. Each category of actor will now be taken in turn to explore associated areas of expertise, roles and relations in more detail.

Table 1. Individuals and organisations identified in the mapping exercise, listed in relation to actor type.

Dialogue Practitioners		
3KQ Andrew Acland AEA Technology Rob Angel ARUP Darren Bhattachary (BMRB) Jeff Bishop (BDOR) BMG Research British Market Research Bureau (BMRB) Lindsey Colbourne Community Development Foundation Brenda Cook Viki Cooke (OLR) Barry Creasy Cragg Ross Dawson	Alison Crowther (Sciencewise-ERC) Dialogue by Design GHK Consulting Richard Harris (3KQ) Rowena Harris (BJ Associates) Headshift Fraser Henderson Pippa Hyam (Dialogue by Design) IPSOS-MORI Davy Jones Suzannah Lansdell Market Research Society My Society Office for Public Management (OPM) Opinion Leader Research (OLR)	Ben Page (IPSOS-MORI) Participle People, Science & Policy Carl Reynolds Melanie Smallman (Think-Lab) Steve Smith (Icarus Collective Ltd.) The Environment Council Think Public Vis-a-Vis Penny Walker Diane Warburton (Shared Practice) Lynn Wetenhall Wilson Sherriff Y Touring
Academic Social Scientists		
BIOS (LSE) Harriet Bulkeley (Durham University) Karen Bultitude (University of the West of England) Kevin Burchell (BIOS, LSE) Jacquie Burgess (UEA) Danny Burns (University of the West of England) Paul Burton (University of Bristol) Jason Chilvers (UEA) Kevin Collins (Open University) CSEC (Lancaster University) CSERGE (UEA) Patrick Devine-Wright (University of Manchester) Rob Doubleday (University of Cambridge) John Dryzek (Australian National University)	John Durant (Massachusetts Institute of Technology) ESRU (UCL) Sarah Franklin (LSE) Robin Grove-White (Lancaster University) Ian Hargreaves (Cardiff University) Henley Centre Alan Irwin (Copenhagen Business School) Richard Kingston (University of Manchester) Vivien Lowndes (De Montfort University) Phil Macnaghten (Durham University) Susan Owens (University of Cambridge) PEALS (Newcastle University) Judith Petts (University of Birmingham)	Nick Pidgeon (Cardiff University) Lawrence Pratchett (De Montfort University) Ortwin Renn (University of Stuttgart) SPRU (Sussex University) Andy Stirling (SPRU, Sussex University) Jerry Stoker (University of Southampton) Tom Wakeford (Newcastle University) Emma Weitkamp (University of the West of England) Leroy White (University of Bristol) Clare Wilkinson (University of the West of England) Brian Wynne (Lancaster University)
Dialogue Commissioners and Policy Makers		
Agriculture & Environment Biotechnology Commission (AEBC) Biotechnology & Biological Sciences Research Council (BBSRC) British Nuclear Fuels Ltd. Central Office of Information (COI) Committee on Radioactive Waste Management (CoRWM) Council for Science and Technology (CST) Department for Business, Innovation and Skills (BIS)	Department for Communities and Local Government (CLG) Department of Energy and Climate Change (DECC) Department for Environment, Food and Rural Affairs (Defra) Department of Health (DoH) Engineering and Physical Sciences Research Council (EPSRC) Environment Agency Karen Folkes (BIS) Food Standards Agency (FSA) Future Focus	Garry Kass (Natural England) Medical Research Council (MRC) Ministry of Justice Natural Environment Research Council (NERC) Nuclear Decommissioning Authority (NDA) Brian Parry (COI) Planning Aid Research Councils UK (RCUK) Sustainable Development Commission Unilever Simon Wilde (MRC) Fiona Wood (COI)

Scientists/Scientific Institutions		
Academy of Medical Science British Science Association (BSA) Cafe Scientifique Matthew Harvey (Royal Society)	Richard Jones (University of Sheffield) Royal Society Jack Stilgoe (Royal Society)	Kathy Sykes (University of Bristol) Wellcome Trust James Wilsdon (Royal Society)
Participation Institutions		
Consultation Institute Interact International Association for Public Participation (IAP2)	International Association of Facilitators (IAF) Involve	NCCPE and the Beacons for Public Engagement Sciencewise-ERC Richard Wilson (Involve)
CSOs/NGOs		
Genewatch	Green Alliance Greenpeace	Steven Hale (Green Alliance)
Think Tanks		
Anna Coote Demos Food Ethics Council	Institute for Public Policy Research (IPPR) Charles Leadbetter	New Economics Foundation Geoff Mulgan (Young Foundation) Young Foundation

Figure 1. A map of the main actor types in the public dialogue field in relation to their range of roles and areas of expertise.



Dialogue commissioners and policy makers

Much of the wide range of UK public dialogue activity is still initiated and orchestrated by science and policy institutions that commission, fund and sponsor invited spaces of engagement in order to inform policy-making and enhance science-society interaction. This demand has driven the growth of the public engagement industry. The most influential organisations identified by participants in this actor category, as shown in Table 1, were Government departments, Government agencies and the Research Councils. There is a clear public sector emphasis with only a handful of industry or private sector organisations identified.

The default position of sponsors has been to outsource or buy-in dialogue expertise. This is still prevalent and a number of decision institutions are yet to develop internal capabilities in practicing dialogue. This includes parts of Government and most of the Research Councils for example. In these institutional contexts, actors adopt a relatively narrow range of roles, located in the bottom right of Figure 1, including: commissioning, managing and overseeing dialogue processes (as well as research and strategic advice) and translating outcomes into policy. Some interview participants viewed this as a form of dialogue expertise in itself requiring intimate understanding of dialogue practices and how they connect with institutions.

Where it exists, this model creates an 'advisory culture' of dialogue experts separate from science and policy institutions. Contractors brought in for a limited time during one-off events may lack close understanding of the institutional contexts in which they operate. The tendency for some sponsors to go back to the same experts who they know and trust mitigates this somewhat, but may also limit the range of dialogue expertise drawn on. In some instances network relations associated with outsourcing are being formalised through commissioning agencies (such as COI, the Environment Agency, and others) introducing framework contracts.

With the institutionalisation of public engagement a major development has been the increasing number of commissioning and decision-making institutions developing internal capabilities through capacity-building and/or internalising dialogue expertise. Although not situated within Government departments, Sciencewise-ERC directly assists them through a number of initiatives (introduced in Chapter 1) to build capacity, to support the commissioning and delivery of dialogues, and to organise closer interaction with 'external' expertise through the DES team. Interview participants noted other examples across Government (including Future Focus and the Ministry of Justice 'community of practice'), the Environment Agency's programme to build capacity and generate 'internal consultants', and the Wellcome Trust which employs a resident social scientist who acts as a 'go between' between client and contractor. This offers up a range of more internalised or interactive models of the relations between dialogue expertise and decision institutions. Institutional actors take up an expanded range of roles, to also include those in the upper right and lower left of Figure 1, including: capacity-building, translation, networking, process design and delivery.[38]

Dialogue practitioners

A key category of actors whose main focus is on practicing, designing and delivering public dialogue processes are often referred to simply as 'practitioners'. This includes independent facilitators, small specialist consultancies, right through to large multinational companies; all with varying backgrounds in public and stakeholder participation, science communication, social research, and so on (see Table 1). These actors are central players in the public dialogue market and account for the delivery of

most invited spaces of engagement. Practitioners were primarily identified for their expertise in designing, facilitating, and managing participatory processes and understanding public perceptions and concerns about science and technology. In many ways this remains the enduring popular notion of a 'public dialogue expert'. Some practitioners also adopt a much wider range of roles and responsibilities, however, that touch upon all areas of Figure 1, including: providing a direct link with decision-making; evaluation; research and writing (including books, reports, guidance); developing new participatory techniques, training, offering strategic advice, and coordinating networks.

Interview participants recognised coherent groupings of practitioners, often with their own functioning networks. The grouping associated with an 'invited stakeholder' vision of participation identified in the original study was still evident. Often viewed as a 'consensus driven model' this includes approaches such as stakeholder dialogue, conflict resolution, mediation, and consensus building. Actors identified in this grouping include Andrew Acland, Pippa Hyam and Dialogue by Design, Jeff Bishop, Lindsey Colbourne, Alison Crowther, Richard Harris and 3KQ, Suzannah Lansdell, along with other independent facilitators. Their background is very much in sustainability and environmental decision making contexts. They often work in partnership having previously formed an active network around The Environment Council (TEC) and then Interact. Many in this group have moved upstream into science and technology contexts, taking up central roles in Sciencewise-ERC and the DES team.

Another recognised practitioner grouping includes market research companies (MRCs) and professional social research agencies. From a position of not holding recognised dialogue expertise relating to the area of science and technology in the pre-2004 mapping, companies such as the British Market Research Bureau (BMRB), IPSOS-MORI, Opinion Leader Research (OLR), and the Office for Public Management (OPM) have rapidly developed capabilities in deliberative processes and delivered a large number of public engagement projects. Some interview participants cited this as a major development. Whereas in the original mapping those holding an 'invited public' vision of participation included independent consultants, small consultancy companies and social scientists, big MRCs have now moved into this space. These companies have been attracted by increased funding and the opportunity to innovate in the area of public dialogue. They have been better placed than smaller consultancies and sole traders to take advantage of the scaling up of public dialogue and demand for large multidisciplinary teams, which is potentially reinforced by framework contracts.

Other practitioners were not talked about in terms of belonging to particular groupings but were identified as engaging in related activities. This includes those involved in e-democracy and forms of online dialogue and engagement, such as Dialogue by Design and My Society, through to organisations such as Headshift innovating data mining approaches. Others were identified as coming more out of the traditional science communication community, such as Think-Lab and People, Science and Policy. Practitioners acting as evaluators were fewer in number. Diane Warburton of Shared Practice was the main person identified, having been involved in most evaluations of Governmental public dialogues in recent years. Other practitioners are beginning to take on this role, however, as evaluations increasingly become a formal requirement of funded dialogue projects.

Academic social science

Many forms of public dialogue are rooted in qualitative and participatory research methods developed in the social sciences. In this sense the dialogue practitioners and consultants described above are applied social scientists practising forms of 'regulatory social science'. When discussing social science, however, almost all interview participants referred to academic social scientists. Academic social science is still viewed as core expertise within the UK dialogue network. As shown in Table 1, many key social scientists identified in the original study (see Annex 2) are still of central importance in this regard. In this sense core social scientific expertise has not changed much. Some interview participants questioned whether any 'new talent' was coming through, although additional social scientists were identified in the latest mapping. Those outside the social science community see it as a functioning network with well-established systems of knowledge production and exchange. Internal divisions do exist, however, between social scientific disciplinary areas for example.

Academic social scientist expertise and roles in relation to public dialogue are complex, multiple, and often ambiguous. While mainly located in the top left of Figure 1 their roles span all areas of the diagram, including: developing new participatory methods; evaluation; studying, analysing and theorising public dialogue, public understandings, governance, and the politics of science and technology; providing strategic advice and encouraging institutional reflection; process oversight and steering committee membership; education and training; designing and facilitating dialogue processes; networking; and providing overviews of the field.

Individual social scientists will not necessarily adopt all of these roles, and will take on different roles in different times and places. Yet while this full range of expertise has always been apparent, most interview participants recognised that over the past decade there has been a shift in emphasis from social scientists being actively engaged in innovating and experimenting with public dialogue practices to taking up a more critical, analytical, and in some cases removed stance.

> "we started off with social scientists doing some of the delivery because there was no-one out there and now… we're all focused on our critical analysis of what's going on, but some of us haven't actually delivered for some time now." (Participant 15)

As Participant 16 noted, 'it's a much more crowded field' with 'a lot of disciplines now claiming [the] territory'. But rather than social scientists being crowded out of practising public dialogue, the above statement from Participant 15 suggests this is a more considered move. It broadly reflects the evolution of academic research on public participation in science and the environment through 'three waves', shifting in emphasis from developing practice, to evaluation, to critical studies.[39] Most participants acknowledged this shift when discussing the value of social science expertise in 'integrating reflection within organisations or processes' (Participant 6), offering 'a critical eye' (Participant 9) and 'asking challenging questions' (Participant 11). But for many the role of social science expertise remains highly ambiguous and very much an open question.

> "are [social scientists] supposed to be a step away and kind of providing the critical friend role, or should they be more linked into the practitioner community?" (Participant 18)

> "I think social scientists are actually now seeing that they have perhaps a bigger role to play but they need to work out what that role is." (Participant 14)

Concerns over where to be situated on a spectrum from intervening in shaping practices, actively challenging the system, through to being distantly critical, have long occupied debates over the public value and policy relevance of the social sciences.[40] Part of the dilemma that social scientists and others face is whether to be critical and challenging in the hope of enhancing reflection in the longer term but at the risk of being irrelevant, ignored, and vilified. Or to be more supportive and helpful with the possibility of immediate influence while risking co-option and capture in serving the interests and instrumental motives of others.[41]

In reflecting on this, interview participants talked about certain social scientists who are really good at being critical and challenging science and policy institutions but who tend to be viewed as unconstructive and difficult. They 'get people's backs up' and their messages often fall on deaf ears without really changing things. Other social scientists were seen as more helpful and supportive, being more patient and empathetic. They 'know how far you can push', 'try get best out of the situation', and as a result often get heard. But at what cost? We pick up these issues in the next section and in Chapter 7. For now it is worth emphasising that most interview participants saw the need to maintain a diversity of roles and strategies at the social science – policy interface.

The social science – policy/practitioner interface

Divisions between academic social scientists and other actors, including practitioners and policy makers, evident in 2001-2003 continue to be a major feature of the UK dialogue network. If anything this has been exacerbated by academics adopting a more critical stance. Of course the nature of this boundary varies, but it resembles a total disconnect in certain contexts. This has been observed, for example, within the Research Councils where ESRC funded academic research was not always effectively translated into the organisation's very own public dialogue initiatives.

> "[T]he Research Councils have the Economic and Social Research Council and social scientists are experts on this but… there was not enough translation from the social science to get that expertise into helping other parts of the research councils and other practitioners. The ESRC, working with Research Councils UK and others, have now introduced mechanisms to ensure that their research is translated" (Participant 1)

The social science – policy interface in the realm of public dialogue is at times rewarding, productive, and constructive but is most often highly challenging and problematic. This is often founded on mutual suspicion and misunderstanding between academics and practitioners as to their respective roles, motives, and practices.

> "I think practitioners can be very dismissive of academics and academics can be quite sneery about practitioners… I know how practitioners see academics… there's quite a level of anxiety that they'll be rubbished and so their practice will be rubbished." (Participant 7)

The view that social scientists are unconstructive and overly critical of practice was a common concern of non-academic participants in interview. This often promotes a defensive response from practitioners. Where practitioners recognise the value of social science it can be ignored if they don't have the necessary skills and time to engage with it. Language issues were seen as important here. Practitioners 'often find the kind of language that some of the social scientists use is quite dense' (Participant 18). The opaqueness of 'social science speak' can make it difficult for others to see its relevance to the realms of practice and policy-making.

Furthermore, academics and practitioners work to very different timescales. Practitioners often struggle to get a response from academics 'because they're so ingrained into the research process, it's difficult to step away' (Participant 14). Social science and policy worlds in the context of public dialogue are very much 'two cultures'[42] each associated with different institutional contexts, motives, and timescales. There is a real sense that both groups are 'talking past each other' and these 'lost opportunities' mean that the field is yet to realise its full potential (Participant 2).

A number of interview participants saw the responsibility for these problems lying with the social scientists. They highlighted a lack of knowledge transfer and exchange of social science research on science in society issues. Academics were seen as reluctant to talk beyond their core audience, to get involved, and 'get their hands dirty'. Proposed solutions again lay with social scientists: to communicate their work more effectively; to simplify, summarise and make it more understandable; and to take a shorter view on timescales so as to meet with practitioners' requirements. As Participant 3 noted, there is 'huge unpacked potential' here. But most social scientists would contest whether their work should be limited to applied or regulatory science relating to public dialogue practices. What gets lost in translation? Or under what circumstances can more critical forms of social science be applicable and used constructively?

Against this backdrop a smaller number of interview participants emphasised the positive, helpful, and influential role played by social scientists in public dialogue. A few academics, such as Judith Petts and Andy Stirling, were noted as being highly successful in crossing over between academia and policy contexts and having a positive influence. Such boundary work, if it is to be successful, demands being patient and listening just as much as being critical and challenging. Again the public dialogue field is shown to be full of contradictions. Most agree, however, that there is no single response to building more constructive relations at the social science – policy/practitioner interface with strategies for policy engagement being many and varied. Implications of this and possible ways forward are considered further in Chapter 7.

Think tanks

Think tanks have had a long-standing presence in the field of participatory democracy and new forms of democratic engagement, including the work of organisations such as IPPR, the New Economics Foundation, and Demos since the mid-1990s. These organisations and others (see Table 1) are still seen as influential in the field of public dialogue. Think tanks tend to cover the centre ground in Figure 1, taking on roles in all areas at different times but often not to any great degree. Most have 'dabbled in practice', having experimented with public dialogue. They have also undertaken research, although not to the same levels as most academic social scientists.

Some of the main roles of think tanks and their recognised areas of expertise include knowledge transfer, advocacy, providing strategic advice to decision makers, and influencing policy. Part of this role involves think tanks acting as intermediaries in tackling some of the challenges of the social science – policy interface outlined directly above. In this sense they can be seen as translators of social science ideas, highlighting their strategic relevance, and making them usable for policy audiences. Demos has developed a strong track record of doing this in the area of science policy since 2003, for example through working with and translating ideas of academics from the

'Lancaster School' of thought, such as Brian Wynne, Phil Macnaghten, and Robin Grove-White.[3]

Civil Society Organisations/NGOs

In a similar way to the earlier mapping exercise, CSOs and NGOs were deemed to have an important but often indirect role in public dialogue. In 2001-2003 CSOs had not become involved in initiating, designing and facilitating public dialogue processes. There have been some developments in this area since then – such as Greenpeace's involvement in the Nanojury process.[43] For the most part, however, CSOs don't have the resources (time and money) to initiate process on their own (Participant 11). One of their main roles in dialogue processes, as noted by interview participants, is as an expert witness or provider of specialist knowledge. Other roles include research on, and advocacy about, public engagement. While CSOs will have a main campaign focus on a particular science or environmental issue, many also actively lobby for better democratic governance of science and technology. CSOs and NGOs also relate in more complex ways to informal and uninvited spaces of engagement, as considered in the final section of this Chapter.

Scientists and scientific institutions

It is a truism that scientists and scientific institutions should be situated at the heart of public dialogue processes. Not only are they central to the development of the sciences and technologies under discussion, they often form the assumed target for reflecting on the social and ethical implications of science. Scientific institutions like the Royal Society and the British Science Association (BSA) were seen by some interview participants as continuing to play an influential role in the area of public dialogue. Important activities include the Royal Society's dialogue programme or the BSA science communication conference and a series of projects experimenting with new forms of public dialogue. The main roles adopted by these actors (see Figure 1) span: networking, overseeing and capacity-building, through to organising public engagement processes.

Individual scientists were talked about and identified much less in the recent mapping. This is most likely a reflection of interviews being framed in terms of 'public dialogue' on science and technology as opposed to 'public engagement with science' per se, including more traditional forms of science communication - such as exhibitions, public lectures, blogs, media coverage, and other forms of outreach - in which scientists engage more routinely. In this sense most interview participants viewed scientists more as participants in public dialogue rather than organisers. Scientists were identified mainly for their interactional expertise in contributing to public dialogue as 'specialists', expert witnesses, translators, collaborative analysts and so on.[44]

Scientists were not seen as forming networks centred on the subject of public dialogue. It is something they tend to engage in from time to time. Exclusivity associated with the professionalisation of public dialogue expertise, in addition to issues of reward and recognition, can have the effect of marginalising scientists. Instead they should be at the centre of innovating new forms of public participation in science and technology related issues, as the following participants argued.

> "there's a whole mass of scientists, some of whom are becoming increasingly involved in dialogue processes and play obviously a really key role in their legitimacy and in helping them to be understood by the rest of the research community and policy makers and others." (Participant 6)

> "[S]cientists should be enrolled as a group of innovators themselves." (Participant 3)

Participation institutions

An important development over the past half decade has been the rise of 'institutions of participation', dialogue and engagement. This new breed of actor has evolved in the UK dialogue network in response to earlier calls to institutionalise and 'join-up' public participation in the face of fragmentation, along with the drive to professionalise it, promote it, and increase its recognition. In terms of mapping dialogue expertise such organisations were recognised for their various roles in speaking for, overseeing, coordinating, and institutionalising the public participation field as well as networking, knowledge transfer, developing guidance, training, and building capacity. As shown in Table 1, interview participants saw key actors in this regard to include Involve, the Consultation Institute, and the NCCPE. Organisations that fulfil such roles on an international scale are increasingly developing active 'local' networks within the UK, including IAP2 and the International Association of Facilitators (IAF). Sciencewise-ERC has also adopted such roles.

As described in Chapter 1, these activities within Sciencewise-ERC include one-to-one support on dialogue projects, networking, capacity-building, training and generally attempting to 'grow the number of possible people who can do [public dialogue] well' across Government (Participant 6). The NCCPE is similarly 'trying to capture good practice, share it, and join things up' (Participant 6), in this case in the context of university scientists' direct engagements with the public rather than policy-oriented dialogue. Taking a broader focus across the public participation field as a whole, Involve was set up to 'undertake useful practical policy ready research', 'support innovation in practice' and 'support networking' (Participant 12). It very much takes the form of a 'think and do tank' cutting across most areas in Figure 1. The Consultation Institute, which 'set out quite deliberately to professionalise this business' and develop 'the sense of professional community' (Participant 10), has more of an emphasis on training and capacity-building.

These participation organisations have a physical location, supporting infrastructure and resources around which to build networks, institutionalise dialogue and represent the field. Other forms of dedicated networks or 'communities of practice' have also emerged in recent years. These tend to be less formal, crosscut different organisations, and depend on members being motivated to participate. Participant 5 mapped out three main types of these networks. The first involves public participation professionals and 'people who do facilitation and that stuff for a job', such as Interact and the Ministry of Justice 'community of practice'. The second type involves 'people who have other day jobs but who want to do a bit of participation well and want to learn about it and practise it and help each other to learn', such as Interact Networks and local facilitation networks. A third type is based on 'building a network within an organisation', such as recent initiatives within the Environment Agency.

Informal/uninvited engagements

As discussed in Chapter 3, interviews provided evidence that meanings of public participation and dialogue are broadening within the UK public dialogue field. There is increasing acknowledgement of the importance of informal and uninvited spaces of engagement, as defined in Box 2. These were often referred to as 'bottom-up' processes as opposed to 'top-down' modes of participation associated with invited micro spaces of engagement. In this sense, a number of interview participants held

extended notions of who counts as an expert on public participation. Dialogue expertise was also seen to be held by non-professionals in instances were they have more of a say in framing and mediating their own participation. These informal and uninvited spaces do not fit so neatly with the actor categories discussed so far in this chapter. Actors involved in initiating these processes tend to be drawn from across these groupings and wider society.

Interview participants were aware that such practice is occurring but direct identification of actors, who often operate beyond the professionalised world of public dialogue, was more difficult. The mapping was therefore much more hazy. Dialogue expertise was associated with the following areas.

- 'Invited macro' spaces of engagement that are informal, 'more bottom up', not strictly decision-oriented, but contribute to the fabric of public debate. This includes actors involved in more extensive forms of public engagement with science and various forms of media, performance, art and theatre, such as Y Touring.

- Invited or uninvited spaces of public engagement linked to distributed science, innovation and pro-environmental behaviour change at the level of individuals, communities and other groups in society.

- Citizen-led public dialogues where participants have a greater say in designing, framing, and facilitating the process, which have been developed by: researchers such as Tom Wakeford and colleagues at PEALS in the case of DIY citizens' juries[35]; think and do tanks such as the New Economics Foundation through their participatory card game Democs[45]; and the field of community development where these sorts of processes have a long history promoted by organisations such as the Community Development Foundation.

- Uninvited spaces of public engagement in science and technology-related issues linked to social movements, activism, citizen science, civil society organisations, and so on, which are initiated and controlled by a particular group for the purposes of their own internal decision-making or in challenging decision institutions. Rather than identifying specific actors, interview participants tended to refer to examples in the wider literature when discussing uninvited engagement.[37] It is important to note that such forms of engagement often tend to be exclusive to the groups that initiate them, which is inconsistent with the principles of openness and inclusivity espoused by many models of participatory deliberation and dialogue.

Uninvited spaces of engagement are often viewed as a problem or threat by decision institutions. It is often assumed that dissent can be quashed by welcoming these alternative perspectives into invited dialogues or silenced by minimising connection with managed dialogue processes. This was certainly evident in 2001-2003. What we are seeing in the current study is an acknowledgement by some that it is impossible to include all views, framings and uncertainties within invited public dialogues. There is increasing recognition that uninvited and informal spaces of engagement include alternative framings and definitions of 'public issues' that are just as legitimate and important to understand.

This raises a number of questions. What is the role of social scientists, practitioners, and other actors in the network when it comes to informal and uninvited engagements? Should they analyse them from a distance or attempt to intervene in actively helping,

encouraging and promoting these alternative spaces of engagement, offering dialogue resources, and providing access to expertise? What are the relations and connections between invited and uninvited dialogues? Do they offer an area of creative tension and future innovation in public dialogue? One thing is clear. Invited and uninvited spaces of engagement offer competing framings of public issues. Within institutionalised spaces of public participation, uninvited dialogues are still seen as incompatible, threatening, risky, too open-ended, and framed in ways that are not useful or relevant to policy makers.

> "that sort of process is pretty scary for Government departments. I think for scientists it's quite scary when people have the space and licence to shape things how they want and to address the issues they're interested in… if [these processes] spring up, they spring up around an issue people are particularly concerned about." (Participant 18)

> "what you've got to balance up here I think is the fact that we're spending public money. Citizen led, citizen framed discussions are great but they've got to have a purpose and they've got to have a meaning to them and so if we're spending public money, we can't have something that goes on for too long or costs too much in a way. It's got to be about balance and fitness for purpose between getting the job done, understanding what people think and getting their voice heard, but at the same time spending the money in a way that couldn't be criticised." (Participant 16)

Considerable challenges need to be overcome if decision institutions are to move to a position of mapping and learning from alternate framings that emerge across invited *and* uninvited public dialogues on science and technology related issues in a range of different contexts.

5. Public dialogue expertise

The notion of public participation expertise has received relatively little scholarly and practical attention, conceptualisation and reflection. Yet it has become a clearly established category routinely used in the science and society arena. The Sciencewise Expert Resource Centre and its associated Dialogue and Engagement Specialists, various expert advisory panels and steering committees, institutional framework contracts with lists of recognised contractors, to mention a few, are sites where judgements are continually being made over who is an expert on public dialogue and the participatory governance of science and technology. By way of a starting point in understanding these forms of expertise, this chapter explores the grounded meanings of public dialogue expertise evident in interview participants' talk.

The previous chapter mapped out forms of dialogue expertise in terms of the roles and activities undertaken by actors in the network. The popular notion of a dialogue expert, and the dominant meaning ascribed by participants in interview, is a 'facilitator' or 'mediator' who possesses core expertise in process design, moderating dialogue, analysing public responses, and connecting with decision-making. Evaluation, in terms of its method, design and implementation, has fast become a core aspect of dialogue expertise. Critical social science study, analysis and theory that lies beyond instrumental forms of delivery and evaluation was seen by many participants as crucial expertise in, amongst other things, understanding the context (political, economic, cultural and institutional), politics, and governance arrangements that condition public dialogue.

Depending on your perspective, public dialogue expertise can be much more than this. Commissioning and sponsoring participatory processes was seen by some interview participants as a form of dialogue expertise in itself. So too were emerging skills in networking, capacity-building (training, mentoring and coaching) and overseeing the public participation field. Increasing acknowledgement of informal and uninvited spaces of engagement represents a significant step in recognising non-professional forms of dialogue expertise. In some instances control over the organisation, design and mediation of public deliberation is being handed back to the people or being led by them in the first place. So, it seems that meanings of public dialogue expertise are broadening out somewhat. There is not one expertise but a range of expertises. Rather than narrow down possible forms of dialogue expertise, this suggests a need to acknowledge its diversity and allow different aspects to relate in more constructive ways.

Explicitly or implicitly, when mapping out dialogue expertise, participants talked about the qualities that define its nature and character. These do not relate simply to the areas of expertise noted above and mapped out in Chapter 4. Some characteristics cut across all of these areas, including uninvited public dialogues, whereas others are more specific. These underlying qualities are now briefly considered in turn.

Experience

In the same way as the earlier study, experience was seen to be an essential component of dialogue expertise. In identifying dialogue experts a majority of interview participants emphasised their range and amount of experience in different forms of public dialogue. Track record of success in past cases is one of the key considerations

for those commissioning dialogue. And while formal training over time and grounding in theory is important, participants again stressed the relative importance of experiential *learning by doing* gained through practising in the various areas of expertise summarised above.

Translation

The actors, institutions and technologies of public dialogue take the form of intermediaries working at the boundaries between science, policy and society. Most interview participants retained a strong sense that *translational and interactional expertise* is a crucial aspect of public dialogue. It is relevant at a number of levels including: the interactions between the public, scientists and other stakeholders in dialogue processes; the translation of specialist knowledges held by experts, including scientists and facilitators; translations between spaces of dialogue and decision-making; and also connections at the social science - policy interface.

Understanding science

For a smaller subset of interview participants there was a strong sense that public dialogue experts should have a close *understanding of the 'vagaries of science'* including the specific areas of science being debated, their governance, and wider contexts. For Participant 15, 'you need to have that familiarity and know how to go about it if you don't have it' including 'the skills set of breaking down a science area with which you are not familiar'. Some dialogue practitioners might lack this necessary expertise, especially if they have moved from other domains such as working on environmental issues. Participant 3 went on to add that 'one of the things that has got lost is the distinctiveness of having these conversations about science'.

Understanding institutions

It follows from this that detailed *understanding of the institutional or organisational context* is also a key aspect of dialogue expertise. As Participant 15 again noted 'the degree of understanding that you have of a body is really quite important.' This includes 'knowledge of the wiring of Government' (Participant 8), 'organisational and strategic understanding' and 'learning how decisions get done and how [public dialogue] embeds into policies' (Participant 2).

Transforming institutions

While it is important to know about institutional context, most interview participants felt that this remains limited without the ability to *transform institutions*. Important aspects of dialogue expertise in this sense include ensuring dialogue is 'locked into the wider decision context' (Participant 2) and working to 'actually help organisations make sense of it' and 'think differently' (Participant 3). This was seen by some as being much more difficult than the 'basic' facilitation and process design expertise held by most practitioners. As Participant 7 warned: 'there are other people who are really good facilitators, who will really run a group well, but don't have the experience of the whole policy influencing process'.

Political intelligence

For a smaller number of interview participants (comprising social scientists, CSOs and some practitioners) attempting to understand and transform institutions is not enough in itself. A key aspect of public dialogue expertise involves understanding the 'bigger picture', *appreciating 'the politics of it'*, the processes by which public dialogue is conditioned and framed, and 'how engagement links with everything else' (Participant 7). For Participant 11 it is important to 'accept that there's a lot of politics behind the

scenes' which needs to be understood and exposed, including why a sponsor might be running 'this particular dialogue at this time, with this framing, with these actors'. Awareness of the intentions and motivations of those organising a dialogue process is key, as well as the ability to open this up to wider scrutiny and inputs from others at an early stage.

Humility and openness

Closely associated with this, and identified by a similar subset of participants, was the view that participatory expertise depends on qualities not often associated with expertise as classically defined, including humility, openness, pluralism and opening up with respect to one's own assumptions and those of others. This was nicely summed up by Participant 13.

> "I think the qualities that are important are to not be an expert… non expertise… humility, tolerance, pluralism with respect both to other variants of the expertise as well as to those outside… respect for the responsibility of the expert being to acknowledge the contingencies that are attached to their expertise… and that in turn means recognising the role that other constituencies might play, the roles of different knowledges."

'It depends…'

These underlying qualities of public dialogue expertise are underlain by a general condition which states that it very much depends on context. In this sense 'it's not about who would do [public dialogue], it's about the context in which they would do it' (Participant 13), and the ends to which the public dialogue is served. Public dialogue expertise has to be explored and understood in terms of the different contexts that condition it. For example, dialogue expertise applied in the context of nanotechnology to find solutions to environmental problems would be viewed very differently if it was also found to be oriented to the development of military applications. A number of participants noted credibility and reputation as important aspects of public dialogue expertise, but again this is very much dependent on institutional context and the ends to which the expertise is directed.

Most researchers and practitioners will not possess the full range of dialogue expertises introduced in this chapter. However, some interview participants suggested that people with only part of this range do a pretty poor job and that many practitioners only have half the necessary expertise. It is therefore inevitable that dialogue experts will work in partnership. We have seen this with the trend towards large consortia and collaborative teams running public dialogues. As Participant 16 adds 'good, deliberative engagement requires a multi disciplined team, so no one sector will have all the skills necessary'. How inclusive current arrangements are of expertise relating to openness, institutional dimensions, and the politics of participation is questionable however.

6. Professionalise or democratise democracy?

The professionalisation of public dialogue has continued at a rapid pace over the past half decade, closely linked with issues relating to the institutionalisation and commercialisation of the field. This gives rise to a series of tensions and contradictions, as observed in the earlier study, which remains highly divisive and if anything has intensified. While professionalisation was viewed by some as inevitable and essential, others highlighted serious concerns over its implications for the democratic governance of science and technology. Most interview participants conceded, however, that there is a dual need for professional leadership and the democratisation of public dialogue expertise.

Box 3 – Possible benefits and potential problems of the professionalisation of public dialogue

Possible benefits of professionalisation

- Promoting and building capacity in public dialogue
- Institutional culture change to recognise the value of public engagement and listening to social and ethical concerns
- Ensuring good practice and the quality of public dialogue
- Furthering the innovation, reach and 'scaling up' of public dialogue

Potential problems of professionalisation

- It is exclusive and elitist, can alienate people, and pose a barrier to participation
- It narrows down possible forms of dialogue expertise and homogenises public dialogue
- It favours centralised control and top-down institutional framings of public dialogue
- Increasing commercialisation means public dialogue practice and democratic engagement more broadly could be compromised by commercial interests
- Public dialogue becomes decontextualised and disembedded through an emphasis on techniques
- It can cause actors and institutions to lose sight of the purposes and politics of participation in science and technology related issues

At least half of the interview participants, predominantly practitioners and sponsors of public dialogue, were positive about the professionalisation of the dialogue field and maintained that it is necessary and essential (see Box 3). No matter how the field develops there will always be a 'need to have skilled people who know what they're doing' (Participant 2). Professionalisation is needed to ensure good practice because, as Participant 6 noted, 'there's a lot of really [poor] engagement going on and it's doing damage'. It was also seen as crucial to changing institutional cultures to gain recognition of the 'value of doing this sort of work' and of listening to social and ethical concerns, without which 'you're going to stop doing it' (Participant 4). Others, such as Participant 17, saw the professionalisation and commercialisation of public dialogue as indispensable if we are to properly 'scale up' public engagement in science and technology related issues.

> "there are a lot of people feeling very proprietorial about this and so they will say 'it's awful that people are making money out of it', well why is it, because that's the way of the world and if we want this to be a serious growth way of connecting people in the kind of big issues of our day, then we do need structure and rigour and scale."

Concerns about possible problems and negative implications of professionalising public dialogue were raised by a number of interview participants, as summarised in Box 3. While professionalisation and commercialisation were not always seen as bad things in themselves, they can have negative implications or accentuate existing problems in the field of public engagement. These views can also be seen as a comment on the evolution of the UK dialogue network more broadly.

An obvious concern was that professionalising public dialogue expertise and building a professional community of dialogue experts is *exclusive and elitist*. One possible implication is that this alienates and disempowers others from orchestrating, framing and designing public dialogues and presents a number of barriers to wider involvement. This can be the case for other professionals, even within similar organisations, as Participant 1 explained.

> "Professionalisation is essential to ensure expertise … however it can sometimes have the impact of turning people off [dialogue], of people thinking 'right, that's what they do, we don't need to do this'… and that's not helpful at all, we want this to be something that everybody feels that they can do."

Similarly there is the possibility that 'the professionalisation of all of this stuff… disempowers scientists from getting involved' (Participant 3), as considered in Chapter 4. In this sense professionalisation could actually undermine one of the very things that it is seeking to do in terms of promoting and growing dialogue practice. As was already apparent in the original study[4], the emerging layer of dialogue expertise also tends to omit non-professional actors, including the public.[46] In this sense procedural rights in public dialogue, and the governance of science and society more broadly, remain decidedly 'top-down'. Although, as we have seen, these boundaries could be being broken down somewhat with increasing recognition of informal and uninvited spaces of engagement within the UK dialogue network.

There is the further possibility that professionalisation *narrows down the possible forms of dialogue expertise*, and thus the forms of public deliberation, that are legitimate and acceptable. While handbooks, training courses, and 'best practice' guidelines can serve to improve practice, they actually present a particular vision of what models of

participation are acceptable. To date this has privileged formal invited micro spaces of dialogue – squeezing out the development of other forms of engagement and other ways for citizens to connect with future science and technology.

> "so we've got this privileging of experience and knowledge, not overtly, it's almost happening subconsciously I think… It also enables you to set aside certain amounts of resource for doing that. It also means that you can start privileging certain forms of skills sets… [It would be] interesting to actually know amongst the DESs for example, whether they only ever find themselves doing particular types of dialogue." (Participant 15)

Professionalisation can be seen to contribute to the *homogenisation* of this thing called 'public dialogue' and engagement. If anything this is being 'locked in' by structural relations within the UK dialogue network (discussed in Chapter 4). To take one example, the introduction of framework contracts by some commissioning organisations was seen by a few interview participants as playing to the strengths of large consultancies and MRCs over small outfits and sole traders, possibly stifling the diversity and flexibility of available dialogue expertise.[47] From another perspective, these relations associated with commissioning processes were seen to exacerbate the *centralisation and control* of public dialogue around particular institutions and their framings.

> "Sciencewise was providing grants to run projects whereas it's obviously changed its focus significantly and now a project is commissioned by a policy maker… whether that sort of links with the professionalisation… Obviously many people would perceive Government therefore taking a much firmer grip on what a process may look like… I think there's definitely a sense of top heavy power dynamics." (Participant 18)

Increasing commercialisation linked to the professionalisation of dialogue raised questions about whether the motives that shape dialogue processes and the field as a whole will be compromised. Will it lead to such decisions being driven by commercial interests rather than an ethical commitment to building more meaningful democratic engagement in science and technology related issues? Does it limit practitioners' space for reflection, challenge, criticism and therefore learning given their dependency on clients for their livelihood and future work? This is before considering the possible impact of competition on knowledge transfer and learning within the network, as highlighted in Chapter 3.

Professionalisation tends to divert attention onto the technical aspects of public dialogue – including techniques, methods, and their effectiveness. This can serve to *decontextualise and disembed* dialogue. One implication is that certain practitioners might market and push their own methods into contexts where their application may be inappropriate. Perhaps of greater concern for a number of participants was that professionalisation and technicalisation can lead the actors and institutions involved to *lose sight of the politics and purposes* of participation in science and technology related issues. Professionalisation can therefore compound the problem of 'concealed instrumentality', where dialogue is used as a means of justifying decisions while the real purposes remain hidden, as the following interview participants argued.

> "it's become more professionalised in the sense of techniques and processes and so on… [Where people] have most concerns, isn't about how polished the process is or which particular technique you use but the kind of political context and the context in which it's used and how it's framed". (Participant 11)

> "people think too much about the method and so they lose sight of why we're doing this. They might not clarify that rationale or they might just sweep some things under the carpet that are actually the other reason that they're doing this in the first place". (Participant 3)

> "The problem is when those aims are not declared or when actually those that are declared are different to those being practised. And where that's the case then the hurly-burly of politics is a way to unfold those things and make them explicit. That in turn is inhibited by the professionalisation of the field… and if we don't distinguish those fundamentally different contexts and imperatives, then we're being dishonest with ourselves and with the society we're supposedly informing." (Participant 13)

Despite these downsides and possible negative implications, some interview participants appreciated the benefits of professionalising *and* democratising public participation. They adopted a mediating position in acknowledging that the requirements of both should be held in creative tension.

> "we had exactly the same arguments in community development, you should not professionalise community development, community development is about enabling people to organise, to get to social change so you've sort of gone through all these arguments in the 70s and I just think, I don't see why you can't have both. And why shouldn't there be really good professional people helping other people to organise us." (Participant 7)

> "we did get probably a similar range of views that you got before, which were about you'll lose the creativity if you try and formalise systems and various other things, but also that unless there is an element of credibility and professional approach to it, you will never get the sort of cultural and institutional change that's needed in order for it to work properly." (Participant 14)

7. Learning and reflection

A central claim associated with public participation and dialogue on science and technology related issues is that it enhances learning at may levels. Transformational changes potentially occur to participating publics, stakeholders, organisations and institutions in the ways they frame and think about such issues, their acknowledgement of each other's understandings, visions and concerns, and their responses to the social (and other) implications of science.[48] As we have seen, there are now an increasing number of initiatives within the UK dialogue network which have the specific aim of enhancing learning in relation to public dialogue. In light of interview participants' reflections, this chapter considers the ways in which, and the extent to which, the UK public dialogue field is learning from and learning about participation. The emphasis is on institutional and network based learning, building on insights into network relations discussed so far in this report.

'Building capacity'

A number of interview participants talked about learning in terms of promoting, growing, institutionalising and building capacity in public dialogue practice. This is often based on the premise that the argument for dialogue is still to be won. From this perspective the possibility that participation will actively shape the governance of future science and technology is assumed rather then questioned. For some this form of learning remains a huge challenge.

> "[There is] still a skeptical authority out there in terms of the value or importance of some of this work and there still is a sort of hearts and minds and some of that is probably… around convincing case stories or lessons or whatever." (Participant 4)

Most agreed, however, that learning in the form of capacity-building is not a problem and felt that 'there are enough organisations out there who know enough now to actually do pretty good work' (Participant 2). Capacity-building was seen as the main emphasis of learning activity in the UK dialogue network with significant efforts already occurring on many levels, including activities undertaken by Sciencewise-ERC, the Beacons and NCCPE, and other participation institutions. The sorts of activities noted by participants included raising awareness, incentive and reward structures, training, mentoring, coaching, peer group meetings, role models, champions, and culture change initiatives within organisations.

There is no doubt that these forms of learning are essential and important. They remain crucial to culture change and any attempt to distribute public dialogue expertise beyond a relatively small group of professionals. The question remains, however, what capacities are being built and why? In terms of the range of dialogue expertise mapped out in Chapter 5, these initiatives currently concentrate on a relatively narrow subset focusing on methods, practices and how to do public dialogue. Within this focus on method, the emphasis is on micro invited spaces of dialogue – in other words building 'more of the same' forms of participation. Furthermore, this emphasis on promoting and growing practice can obscure other forms of learning.

> "I think it's learning about how to do it more because we're doing it more, so it's learning about practice. I think we're still not learning about the impact, the outcomes." (Participant 15).

'Better practice'

Another existing form of learning within the network is focused on improving the quality of public dialogue. Here the emphasis is on developing 'best practice' through learning from and sharing experiences, systematically evaluating dialogue processes and outcomes, producing guidance on what counts as effectiveness, and innovating practice. Such forms of learning were shown to be largely absent from the field during the earlier study in 2001-2003. Linked with the process of professionalisation, evaluation has become embedded and is now an expected feature of dialogue processes.

> "we had absolutely no scrutiny before or accountability or evaluation… Personally, as a practitioner, I feel much better that I have to think much more carefully… I think it's much more robust as a result of that." (Participant 5)

> "what we do see is a genuine desire to improve best practice, it's very common." (Participant 16)

> "I think it's probably a case of pockets of best practice all over the place… but whether that best practice is joined up and learnt from, I don't know." (Participant 19)

Sciencewise-ERC, the Beacons and NCCPE, Research Councils UK, the Environment Agency, COI, Involve, the Consultation Institute, and many other organisations have been involved in developing mechanisms to encourage and formalise learning about better practice. These range from: guidance on doing and evaluating dialogue (including 'living guidance' that is continually updated within organisations and online resources such as People and Participation.net); capturing and communicating case studies and experiences (including shared electronic repositories within organisations), and the facilitation of networking, sharing and exchange between practitioners through meetings or online discussion groups. Innovation in dialogue practice is also promoted in some cases through competition within the network. This often occurs 'unconsciously' in response to changing contexts and pressures, where people are 'doing different things… [but have not] stopped long enough to realise they're doing different things' (Participant 12).

Whilst this learning infrastructure has no doubt developed rapidly it is far from reaching its full potential. Again we can ask the question: better practice in what and why? Take the evaluation of public dialogue process effectiveness, which is one of the main ways in which the field learns about better practice. Apart from the odd research exercise, the majority of evaluations are undertaken for instrumental reasons to check if a contractor meets best practice guidelines, to demonstrate the quality of the process, or defend its credibility and legitimacy. Almost all evaluations are required to report soon after a dialogue process has finished, thus missing important longitudinal perspectives and emergent outcomes.[49] Evaluation can easily become a rubber-stamping exercise wrapped up in a cycle of justification and audit cultures of decision institutions. As Participant 7 explained, the learning potentials of evaluation are thus being constrained.

> "evaluation tends to stop with writing an evaluation report and I'm finding it more and more that people just want an evaluation report because you've got to have an evaluation report, it's almost 'we don't really care what it says'."

Current network relations mean that the possibility for reflection in these evaluation processes is being lost. Learning about practice is only ever instrumental.

Reflection

Both forms of learning considered so far - which are the main forms of learning in the UK public dialogue field - are instrumental only. This is perhaps to be expected because, as the European Commission Expert Group on Science and Governance have observed, there is a 'deeply-entrenched habitual tendency in science and governance to imagine possible learning as instrumental only'.[24] The Expert Group, drawing on the reflexive ideas of learning developed by Donald Schon[50], stress the need for institutionalised science and policy to develop other forms of learning, namely 'reflective' and 'relational'. Reflective learning concerns 'insight into the assumptions which tacitly shape our own understandings and interactions', whereas relational learning involves learning about the 'independent integrity of others'.[24] Here we consider these forms of learning in the specific area of public participation in science related issues, which can be seen as an area of science and innovation in itself. It is embedded in, but only part of, the broader systems of science, innovation and governance to which the Expert Group's statements are directed.

The overwhelming sense of interview participants was that reflection and reflective learning is largely absent from the UK public dialogue network and related institutional contexts. In terms of *learning from public dialogues*, science and policy institutions were not seen to be listening and responding in potentially changing the ways that they frame and think about key issues. This includes a lack of reflection on their own assumptions and the social (and other) implications of emerging science and innovation, as well as how the public relate to these issues.

> "[Government] sees public dialogue largely as an evidence gathering exercise, rather than as a way to engage in its own reflection and a reflection of the scientists with whom it deals. So I think public dialogue can help initiate that process of opening up but I think largely Government are often unwilling for it to play that role". (Participant 3)

> I think there are situations where it has made a difference but… maybe this is always the case and partly to do with the nature of power and how much organisations want to concede to criticism in some cases, but yeah there's still plenty of examples where a dialogue hasn't really changed anything. (Participant 11)

The implication is that opportunities to challenge existing framings of problems and open up the pathways of future science and technology are being sidestepped. Furthermore, reflective *learning about participation*, including the innovations, assumptions, visions and trajectories of public dialogue and democratic engagement with science related issues is also lacking.

> "no-one's actually having enough time to stand back and look at what's going on… I'm not sure we've got any cleverer about analysing what's going on... I think that's partly because government isn't actually interested in knowing does it work and how good is it, they're just interested in now delivering it to tick the boxes." (Participant 15)

Part of this requires individuals and institutions to actively acknowledge, reflect on, and openly express to others their underlying assumptions, motives, and politics relating to public participation, rather than treating dialogue and engagement (and learning for that matter) as a homogeneous thing.

> "the more that these things are explicitly unpicked in the way we talk to each other and the way that we conduct exercises and represent ourselves as conducting the exercises, then the more we would learn. So we're not going to learn about the differences between… motivations if we don't even recognise and identify these in our own motivations or in the design of exercises, so we could be learning a hell of a lot more." (Participant 13)

As discussed in Chapter 4, the social science community has moved to a more critically reflective stance in relation to public dialogue over the past five years or so which emphasises elements of reflective learning. Critical perspectives touch on the framing effects of organisers which can dictate the findings of dialogues[51], the overly consensual nature of many dialogue practices which plays into the hands of the most powerful actors[52], the tendency for many dialogues to close down rather than open up wider debate and possible pathways of future science and technology[53], and warn that institutional failures to recognise public concerns expressed in dialogues are likely to lose rather than regain public trust.[54] However, a disconnect remains between these critiques and the contexts of policy and practice.

This is not to say that academic social scientists are somehow inherently more reflexive than practitioners and other actors within the network. Individuals, whatever their position, are often highly reflective about public dialogue in specific instances. This was demonstrated in the original study of the UK dialogue network where certain practitioners, policy makers, and scientists were aware, for example, of the dangers of overly consensual dialogue and the need to open things up.[55] The significant difference is the institutional settings in which they work and the prevailing objectives, motivations, discourses and cultures associated with these contexts. Academic discourses have the potential to be more reflective "because they're more fragmented and so they are not ... under the control in quite such a direct fashion as the contracted professional" (Participant 13).

It appears, then, that individually reflective actors in science and policy institutions thus come up against the constraints of prevailing unreflective institutional discourses and practices, in addition to a lack of time and other resources. Existing structural relations in the UK dialogue network – for example, formalised commissioning processes that outsource one-off decision-oriented dialogues to consultants who then quickly move on – serve to reinforce this pattern. No doubt individual actors could take more responsibility for themselves and others being more reflective about democratic engagement. But this will mean little without collective action where many actors simultaneously do this in conjunction with broader structural changes to encourage reflection within the network. This is perhaps not as daunting is it first sounds. As we have seen in this chapter, a widespread and growing learning infrastructure is already in place, albeit one directed towards instrumental ends. This needs to be brought to life by being infused with more reflective and relational forms of learning in order to make it 'more effective, robust, inclusive and sustainable'. [24]

Interaction

An underlying feature of the UK dialogue network shown throughout this report is its fragmentation. Disconnects between different groupings are limiting interaction, exchange, debate and challenge between actors. Almost all interview participants agreed that, despite the best efforts of a number of initiatives, effective networking is still not happening in the field. This is preventing widespread exposure of actors to other's understandings, perspectives, and assumptions about democratic engagement,

including those of fellow professionals as well as publics and other groups that reside beyond the professional community.

This current situation is undermining relational forms of learning and arguably the sustainability of the field as a whole. Interview participants considered a number of ways to respond to this, which are explored in this section. It is important to note that the emphasis should not be on aiming for consensus in the network where everyone comes to a similar view, on what counts as best practice for example. Interaction should expose actors to alternative perspectives, challenge and debate, in exchanges that may at times be uncomfortable and difficult to resolve. Such spaces of learning are largely absent from the UK public dialogue field.

As discussed in Chapter 4, much effort has gone into the active formation and facilitation of networking and exchange, by organisations such as Sciencewise-ERC, NCCPE, and Involve, as well as less formal initiatives. Closely linked to the professionalisation and institutionalisation of public engagement, these networking activities have centred on promotion, capacity-building and best practice. Aside from offering insights into their emphasis on instrumental rather than reflective learning, recent experience of these initiatives shows that networking, exchange and interaction is actually very difficult to achieve.

> "there's no sense of networking in the classic reason why you network, which is about sharing and learning from each other." (Participant 7)

> "To be honest with you we could have made more progress on the networking side of things for various reasons… Government has noticed a need for national centres, to give it its credit… It's hard to say, is it them that are failing or is it the sector that's too busy to prioritise it?" (Participant 12)

> "we found [the networking] just didn't work in that people don't have enough time or resources or leadership or coordination to make that actually work, so that model has been proven to be, you know, not that sustainable." (Participant 5)

As Participant 12 went on to express, a number of national centres for public participation in various sectors and, in his view, the organisation Involve itself, have largely failed on the networking side. As we have seen in earlier chapters, competition and intense fragmentation suggests unification of the field is an unrealistic and unattainable ambition – with groupings of actors having wildly different and sometimes incompatible motives, institutional contexts, visions, and cultures of public participation. Indeed fragmentation is not a problem in itself. It increases diversity and independent perspectives. But the possibility of relational learning is greater if these perspectives interact. The evidence from interviews indicates a series of barriers to achieving this. As Participant 5 explains above, while public participation networks have proved hugely valuable in the time that they exist they often lack the necessary time commitment, resources, and dynamic leadership to sustain them. Add to this a lack of engagement with social science, one of the main sites of systematic and sustained critical reflection, and the prospects for the sustainability of the field look bleak.

Despite, or perhaps because of, these experiences many interview participants stressed the need for renewed leadership on networking, exchange, interaction and reflection in the area of participatory governance. There were suggestions that whichever body, network or collective takes these roles on, it would need an element of independence from Government and other vested interests. Interview participants cited

emerging spaces of interaction and reflection such as a recent workshop at LSE[10] and an ESRC funded Seminar Series on critical public engagement.[56] Also, BSA science communication conferences increasingly encourage interaction between social scientists, practitioners and policy makers. Obviously, however, there are limits to one-off fora. On returning to their place of work those that turned up can just say 'that was nice, now we'll go back to the day job' (Participant 2).

From across the interviews came calls for a more concerted effort at knowledge transfer and exchange within the network, which might be born out of these emerging interactions. This depends on building a diversity of social science and other knowledge transfer initiatives, which might include: more effective translation, communication and access of critical social science insights; academic researchers 'getting their hands dirty' through working in partnership with practitioners; academic social scientists spending time within science and policy institutions on secondments; placements within academia for practitioners and policy makers; and recognising the role of universities in skills transfer through training people with a holistic appreciation of the many aspects of public dialogue expertise.[57] There are many more possibilities besides these. The emphasis should be on multiple strategies rather than a set model of interaction and exchange.

Of course there has to be a certain reciprocity to these exchanges. Any attempt at knowledge transfer should not be viewed in terms of a linear model of diffusing social science insights and innovations in democratic engagement out into society. Academics have just as much if not more to learn from these interactions, not least about the practical realities, concepts, and grounded criticisms of public dialogue. As noted above, critical reflection by academics often results from the prevailing institutional context rather then them necessarily being inherently more reflexive as individuals. The value of academic engagement is that it - depending on the strategy, circumstances and personalities involved - potentially allows these perspectives to circulate and develop in other parts of the public dialogue field.

Extending this point further, reflective and relational learning could also be promoted by making time and space for reflection *in all contexts* where public dialogue experts reside and act, including the heart of practitioner and decision institutions. Given discussions in earlier chapters and this one, it stands to reason that this would involve individuals and organisations reflecting back on their own motivations and the politics of participation, as well as considering the perspectives and assumptions held by others.

Something that does not readily occur in the public dialogue field, which arguably could or should, is for such reflection to also be anticipatory and occur *in advance* of new developments in participatory governance. As we have seen, various approaches to public dialogue can be viewed as forms of science and innovation in themselves, which are increasingly being commercialised as part of a growing economy of deliberative goods and services. It is perhaps time 'upstream questions', that have been asked of nanotechnology and other emerging areas of science and technology, are also directed at these technologies of public participation: 'Why this technology? Why not another? Who needs it? Who is controlling it? Who benefits from it? To what ends will it be directed?' What are its possible social (and other) implications?[3] The broader analysis undertaken in this study has certainly shown that developments in public dialogue have favoured certain 'pathways' of democratic engagement with science and technology over others – i.e. invited micro spaces of engagement over more distributed, informal and uninvited forms of engagement.

In terms of learning about others and their differences in relation to our own assumptions about public participation, it is also important, then, to consider the perspectives of non-professionals including stakeholders and members of the public. One might assume this occurs automatically in specific instances of public participation. It does in some cases and to differing degrees. But as we have seen, the very people that are supposed to be being given a voice in shaping future science and technology are largely excluded from the professionalised world of public dialogue expertise. Furthermore, public dialogue experts hold many assumptions about what the public think about and want in relation to participation, but to what extent are these assumptions openly questioned and reflected upon?[58] There is an urgent need to reflect upon these assumptions and visions of the public but also, within obvious practical limits, attempt to make the design, control and governance of public participation in science and technology more open to those that it seeks to empower.

8. Dialogue futures

For a country that has historically lacked experience of broad public engagement in science and policy[59] the UK has developed a leadership position in this area in a relatively short space of time. This has involved a widespread shift in emphasis from one-way communication to two-way or multi-way dialogue that increasingly occurs further upstream, at least rhetorically. Such progress has produced an expanding network of actors involved in participatory governance of science and technology, a burgeoning public engagement industry, and an active field of research in this area. Undoubtedly significant shifts have occurred in relations between science and society, which in some instances have become more interactive.

Yet the findings of this report suggest that public participation in science and technology related issues has reached a critical moment in more ways than one. The above analysis and interview participants' own reflections raise important questions and challenges relating to the future sustainability of the field: in terms of sustaining meaningful democratic engagement that has the potential to make science and innovation more socially, ethically and environmentally responsive and responsible.

Recent advances in the field have created a great deal of diversity and heterogeneity over where people stand in relation to public engagement. Areas remain where arguments for public engagement and understanding social concerns are still to be won. In instances where the argument has been won, the initial drive to embed engagement can become obsessive, often to the exclusion of other views. Where engagement has become embedded critical perspectives often begin to emerge. This complexity is such that even within single organisations these stages can coexist.[60]

This complex tapestry makes it difficult for those seeking to progress the field. Critical reflection is essential but rare, not least because critiques can easily be appropriated by those that never wanted wider participation in the first place. Amid all the debate, rationales for participation have largely been taken at face value in the absence of detailed empirical evidence as to its real value.[61] Without such evidence, it is difficult to resolve differences or respond to inevitable backlashes. Overcoming these challenges not only demands better understanding of the value and effects of participation and building critical reflection and interactive learning into the field. It also requires leadership[62] and collective action that allows the sorts of reflections evident at the level of individuals to transform wider institutions.

Overlying this complexity, the rapid professionalisation and commercialisation of public participation in science raises further questions about the future state of the field. The trends observed in this report are not limited to science and technology in the UK and form part of broader processes observed in many sectors across many countries globally.[63] Looking forward, interview participants imagined at least two possible futures. One sees the market as a way of facilitating the expansion, scaling up, and the reach of public dialogue without compromising its ethical integrity. The other sees continuing professionalisation and commercialisation contributing to a new layer of expertise that, through homogenising and disembedding dialogue, loses touch with those it seeks to empower, the politics of participation, and why it was even done in the first place. In most instances, however, few doubt the need for professional leadership and the democratisation of dialogue expertise to coexist. Given the emphasis on the

former to date, concerns raised about professionalisation in Chapter 6 of this report need to be taken seriously.

Perhaps unsurprisingly given the timing of interviews, public dialogue futures were seen to be dependant on prevailing economic and political conditions as much as anything else. Many interview participants felt that recent growth in public engagement will face significant challenges through the economic downturn, with fewer resources being available for dialogue or at least additional pressures to demonstrate its value. There are signs that the economic climate may also influence the strategic direction of the field, with the search for efficiencies favouring online dialogues or an emphasis on building 'in house' dialogue expertise perhaps. More than one interview participant recalled that the recent upturn in public participation is not without precedent, having happened in the 1970s - albeit mainly at the local scale - before waning through the 1980s.

> "In the 70s you got lots of stuff around participation and planning, community development - at local level, not at national level - but lots and lots of engagement and it really became part of the system in a way that you never thought it could go and then Thatcher came in, the whole focus shifted to the private sector and nobody cared what communities thought anymore. It doesn't take a huge amount to lose all of that and I think certainly it could easily happen again… It is incredibly fragile." (Participant 7)

In historical perspective, waves of public engagement can be seen to go in cycles, linked, amongst other things, to changes in political regimes and the ideologies of ruling political parties.

Whatever the future holds, this project highlights the following **recommendations and challenges** which are of crucial importance to the future sustainability of the field.

- Notions of what counts as 'dialogue expertise' are extending to include a wider range of actors who are seen to be adopting a greater diversity of roles and responsibilities in relation to participatory governance. It is increasingly important to acknowledge different forms of dialogue expertise, to be aware of the meanings, assumptions and purposes held by others, and build translations between them.

- The democratisation of dialogue expertise to non-professionals and increasing recognition of informal and uninvited spaces of engagement is an emerging trend that looks set to continue. Informal or macro level engagements have the potential to engender constructive science and society relations at wider scales. Instead of posing a problem or threat, some actors acknowledge uninvited spaces of engagement as sites that produce alternative views on science-related issues that need to be actively understood and learned from.

- This latter point demands approaches that are capable of mapping out divergent perspectives and uncertainties relating to alternative pathways of future science and innovation[64], and new institutions and governance structures able to map framings and social concerns that emerge across different contexts of public participation, dialogue and debate, whether it be invited or uninvited, micro or macro, formal or informal.[65]

- The qualities that define 'dialogue expertise' are most often stated in terms of an individual's experience in practising and evaluating participatory approaches. Greater appreciation of a wider range of dialogue expertise is needed, for example in existing structures for learning and capacity-building, which considers essential

qualities such as: humility and openness, acknowledging the politics and purposes of participation, translational expertise, and understanding science and institutions.

- The UK public dialogue field has innovated along a rather narrow pathway, compared with the many possible forms of democratic engagement in science-related issues. The emphasis has been on 'one-off' invited micro dialogues relating to specific decisions that are orchestrated by a relatively closed professional community. Professionalisation is not necessarily a bad thing in itself and offers crucial leadership. However, the shape of the field and its network relations are largely dictated by resourcing and strategic decisions, which remain centralised in key decision institutions. One means of opening up other pathways of democratic engagement in science is to make the resourcing and control of dialogues more distributed in science and society.

- There is an urgent need to build reflective and relational forms of learning in UK participatory governance networks, which can 'bring to life' existing instrumental learning processes. This includes creative, experimental and action-oriented attempts to make learning from and learning about public dialogue more: *situated* through creating time and space for individuals and institutions to reflect on their own perspectives, assumptions, and purposes, as well as those held by others; *anticipatory* through considering upstream questions about emerging technologies of public participation, their social implications, potential impacts and effects; and *public,* by reflecting on one's own assumptions of the public and making participatory governance of science and technology more open to those that it seeks to empower.

- Learning also needs to become more *interactive* through building closer connections and exchange between different actors in the UK public dialogue field, in order to expose them to alternative perspectives, challenge and debate. The field remains fragmented despite the recent emergence of participation institutions and networking initiatives. There is considerable enthusiasm for a new initiative or body (or, perhaps more appropriately, partnerships between existing ones) devoted to creating spaces of interaction, networking, and exchange in this way.

- Related to this ambition, overcoming disconnects and building more constructive relations at the social science – policy/practitioner interface is a major challenge. Multiple strategies of social scientific and other knowledge transfer and exchange are needed, ranging from better communication of social scientific insights, action research, transdisciplinary networks, partnership working, placements, and so on. Such activity could form part of a dedicated network or centre of excellence funded by the Research Councils and other stakeholders.

- In doing this it is important not to blunt the critical edge of social scientific research by reducing it to a form of regulatory science exclusively centred on delivering public engagement. A number of actors recognise the value of critical social science research in realising more meaningful democratic engagement in science related issues. This calls for research that: reflects critical social science concepts back on to the spaces of participation that social scientists and practitioners have been involved in creating; studies the wider participatory governance system, its political economy, institutions and discourses; and provides a deeper understanding of the prevailing cultural, economic, and political conditions that shape science and society relations.

Annex 1 | Methodology

The methodology employed in this project was similar to that used in the original study of the UK public dialogue network.[4] It involved qualitative in-depth interviews integrated with a network mapping approach where part of the interview was devoted to eliciting quantitative and qualitative data on the nature and character of participatory governance networks, the actors involved, and the relations between them.

The twenty-one interview participants involved (see Box 1, Chapter 1) represented key players in relation to public dialogue in the UK and were ideally placed to provide overviews of the field. They were carefully selected to ensure diversity: across the main actor types involved in public dialogue (i.e. participatory practitioners, academic social scientists, scientists, policy makers, participation institutions, think tanks, and CSOs/NGOs); and sectors (e.g. public, private, academic research, charity/third sector). The interview panel included the Chair and some other members of the Sciencewise-ERC Steering Group, which in itself was formed to represent a range of interests in the UK science and society arena.

Interviews were conducted over the telephone and lasted for between 30 minutes to just over one hour. Participants were sent a short briefing note prior to interview that: introduced the aims and scope of the project; briefly outlined key findings from the original study; and detailed the themes to be explored in interview. The interview was open and conversational being loosely based around the main themes of the research introduced in Chapter 1, namely: key developments; networks, roles and relations; dialogue expertise; and learning.

During the interview most participants undertook a brief network mapping exercise. Part of this involved participants identifying actors (individuals and/or organisations) they deemed to be dialogue experts or influential in the public dialogue field. Most participants gave a 'top of mind' indication of the range of expertise rather than a comprehensive listing. They could potentially identify an unlimited number of actors but this was inevitably limited in some interviews due to time constraints. Three participants did not feel comfortable naming specific actors in this way: two because of commercial or reputational reasons and one because of the highly conditional nature of dialogue expertise. All participants offered broader qualitative assessments of the structure and character of dialogue networks, actors' roles and areas of expertise, and relations between them.

All interviews were audio recorded, fully transcribed, and subjected to coding analysis using Atlas.ti qualitative analysis software (see http://www.atlasti.com).

Annex 2 | The original mapping

Table 2. Actors identified in one stage of the earlier 2001-2003 mapping exercise, shown in relation to actor type (adapted from Chilvers, 2004[4]).

Academic Researchers
Centre for the Study of Environmental Change + Robin Grove-White + Brian Wynne + Jane Hunt + Phil Macnaghten (Lancaster University)
Environment & Society Research Unit + Jacquie Burgess (University College London)
The Centre for Social and Economic Research on the Global Environment + Tim O'Riordan + Ian Langford + Nick Pidgeon (University of East Anglia)
Judith Petts (University of Birmingham)
Jerry Ravetz (Research Methods Consultancy)
John Durrant (Science Museum)
Patsy Healy (University of Newcastle)
Alan Irwin (Brunel University)
Jim Skea, Policy Studies Institute (University of Westminster)
Bill Sheate (Imperial College London)
Andy Stirling (Science Policy Research Unit, University of Sussex)
Chris Woods (Manchester University)
Participatory Practitioners
The Environment Council
Pippa Hyam + Andrew Acland (Dialogue by Design)
CAG Consultants + Roger Levitt
Pat Delbridge (Pat Delbridge Associates)
Richard Harris (Independent Facilitator)
Alan Hickling (Independent Facilitator)
InterAct
Alison Millward (Independent Facilitator)
Projects in Partnership
UK Centre for Economic and Environmental Development (UKCEED)
Technical Specialists / Scientific-experts
Environmental Resources Management + Gev Eduljee
Enviros Aspinwall + Rod Aspinwall + Hugh Carl-Harris
ECOTEC
Institute for Environmental Management and Assessment
Paul Scott (Independent Environmental Consultant)

Notes

[1] Bodmer, W. et al. (1985) *The Public Understanding of Science*, London: The Royal Society http://royalsociety.org/displaypagedoc.asp?id=26406
[2] House of Lords (2000) *Science and Society*, London: The Stationery Office.
[3] Wilsdon, J. and Willis, R. (2004) *See-through Science: why public engagement needs to move upstream*, London: Demos.
[4] Chilvers, J. (2004) *Participatory environmental risk policy-making in an age of uncertainty: UK actor-networks, social learning and effective practice*, Unpublished Ph.D thesis, University of London. Chilvers, J. (2008) 'Environmental risk, uncertainty, and participation: mapping an emergent epistemic community', *Environment and Planning A* 40: 2990–3008.
[5] Sciencewise-ERC (2008) *What is the Sciencewise-ERC?* London: DIUS.
[6] HM Treasury (2004) *Science and Innovation Investment Framework 2004 – 2014*. London: The Stationery Office.
[7] CST (2005) *Policy through dialogue: informing policies based on science and technology*, London: the Council for Science and Technology.
[8] Singh, K. (2001) 'Handing over the stick: the global spread of participatory approaches to development', in M. Edwards, J. Gaventa (Eds) *Global Citizen Action*, Boulder, CO: Lynne Reiner, p.175-187. Cornwall A, Pratt G, 2003 *Pathways to Participation: Reflections on PRA*, London: ITDG Publishing.
[9] Hendriks, C.M. and Carson, L. (2008) 'Can the market help the forum? Negotiating the commercialization of deliberative democracy', *Policy Sciences*, 41: 293–313.
[10] Jung, C. (2009) 'Towards more confidence: about the roles of social scientists in participatory policy making' *Poiesis and Praxis*, 6: 125–129. Burchell, K and Holden, K (eds.) (2009) *The roles of social science in public dialogue on science and technology: report of a one-day stakeholder workshop*, London: BIOS, LSE.
[11] POST (2001) *Open Channels: Public Dialogue in Science and Technology*, Parliamentary Office of Science and Technology Report No. 153, London: POST.
[12] DIUS, (2008) *Sciencewise Expert Resource Centre. Guiding Principles for Public Dialogue on Science and Technology*, London: Department of Innovation, Universities and Skills.
[13] RCEP (1998) *Royal Commission on Environmental Pollution 21st Report: Setting Environmental Standards*, London: The Stationery Office.
[14] Rose, N. (1999) *Powers of Freedom: Reframing Political Thought*, Cambridge: Cambridge University Press.
[15] Haas, P.M. (1992) Introduction: epistemic communities and international policy coordination. *International Organization* 46(1): 1-35.
[16] Wenger, E. (1998) *Communities of Practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.
[17] Fiorino, D. (1990) 'Citizen participation and environmental risk: a survey of institutional mechanisms', *Science, Technology and Human Values* 15: 226-243.
[18] Stirling, A. (2009) 'Engaging futures: Opening up choices on science and technology', In Stilgoe, J. (Ed.) *The Road Ahead: Public Dialogue on Science and Technology*, London: DIUS, p.19-30.
[19] Chilvers, J. (2008) 'Environmental risk, uncertainty, and participation: mapping an emergent epistemic community', *Environment and Planning A* 40: 2990–3008.
[20] Lezaun, J. and Soneryd, L. (2007) 'Consulting citizens: technologies of elicitation and the mobility of publics', *Public Understanding of Science* 16: 279-297.
[21] Following others including, perhaps most famously, Ned Crosby's decision to copyright the citizens' jury technique: Crosby, N. (1999) 'Using the citizens' jury® process for better environmental decision making'. In Sexton, K. Marcus, A., Ester, K.W. and Burkhardt, T. (eds.) *Better Environmental Decisions* (Washington D.C.: Island Press) pp. 401-418.
[22] Royal Society, (2004) *Nanoscience and nanotechnologies: opportunities and uncertaint*ies. Report of a Royal Society Working Group. Royal Society, London. 29th July 2004.
[23] Gavelin, K., Wilson, R. and Doubleday, R. (2007) *Democratic technologies?*

The final report of the Nanotechnology Engagement Group (NEG), London: Involve.
[24] Felt, U. and Wynne, B. (2007) *Taking European Knowledge Society Seriously*. European Commission.
[25] The Beacons for Public Engagement is an initiative funded by the UK Higher Education Funding Councils, Research Councils UK and the Wellcome Trust, and includes the National Coordinating Centre for Public Engagement (NCCPE).
[26] Leach, M., Scoones, I. and Wynne B. (eds.) (2005) *Science and Citizens: globalization and the challenge of engagement*, London: Zed Press. Wynne, B. (2007) 'Public participation in science and technology: performing and obscuring a political–conceptual category mistake', *East Asian Science, Technology and Society: An International Journal* 1: 99-110.
[27] The distinction between micro and macro levels of public deliberation is well established in writing on the theory and practice of deliberative democracy, such as the following: Dryzek, J.S. (1990) *Discursive Democracy*, Cambridge: Cambridge University Press; Goodin, R.E. and Dryzek, J.S. (2006) 'Deliberative impacts: The macro-political uptake of mini-publics', *Politics & Society* 34: 219-244; Hendriks, C.M. (2006) 'Integrated deliberation: Reconciling civil society's dual role in deliberative democracy', *Political Studies* 54(3): 486–508.
[28] Leach, M., Scoones, I. and Wynne B. (eds.) (2005) *Science and Citizens: globalization and the challenge of engagement*, London: Zed Press.
[29] By way of example, recent invited micro public dialogues funded or part funded by Sciencewise include: Stilgoe, J. (2007) *Nanodialogues: Experiments in public engagement with science*, London: Demos, http://www.demos.co.uk/publications/nanodialogues; Bhattachary, D. (2008) *Stem Cell Dialogue*, final report for MRC, BBSRC and Sciencewise-ERC, http://www.bbsrc.ac.uk/society/dialogue/activities/stem_cell_final_report.pdf. Examples directly commissioned by UK Research Councils include: Ipsos MORI (2007) *Energy Research Dialogue: A public dialogue on UK energy research priorities*, final report for Research Councils UK, http://www.rcuk.ac.uk/cmsweb/downloads/rcuk/scisoc/morienergydialogue.pdf; BMRB (2008) *Nanotechnology for healthcare*, final report for the Engineering and Physical Sciences Research Council, http://www.epsrc.ac.uk/CMSWeb/Downloads/Other/ReportPublicDialogueNanotechHealthcare.pdf. Furthermore, interview participants often saw invited micro public dialogue as synonymous with deliberative public engagement, including traditional approaches such as citizens' juries and consensus conferences.
[30] Examples of scaling up invited micro public dialogue (often in an attempt to make them less 'micro' or more 'representative') have existed for some time, including Deliberative Polling pioneered by James Fishkin: see Fishkin, J (2009) *When the People Speak: Deliberative Democracy and Public Consultation* Oxford: Oxford University Press. Within the Sciencewise programme, examples of intensive public dialogue processes being linked with more extensive survey or online techniques include: Drugsfutures and the Human Fertilisation and Embryology Authority's (HFEA) public and stakeholder consultation on hybrids and chimera embryos: see OPM (2007) *Drugsfutures: Public engagement on the future of brain science, addiction and drugs*, Report for the Academy of Medical Sciences, May 2007, available from www.sciencewise-erc.org.uk; HFEA (2007) *Hybrids and Chimeras: A report on the findings of the consultation*, London: Human Fertilisation and Embryology Authority, http://www.hfea.gov.uk/docs/Hybrids_Chimera_review.pdf. Scaling up also takes the form of bringing large numbers of participants together in simultaneous facilitated deliberation with real-time electronic polling technology, as demonstrated by Opinion Leader Research when translating techniques pioneered by America Speaks into the UK context in the 'Your Health Your Say' consultation in for the Department of Health in 2005 and in the context of science and technology-related issues in the 2007 nuclear consultation. These issues are discussed further in the Sciencewise-ERC strategic research report on scaling up public dialogue: see Acland, A. and Hyam, P. (2009) *Widening Public Involvement in Dialogue*, London: BIS/Sciencewise-ERC.
[31] See, for example, Ferguson, R., Griffiths, B., Miller, L. (2007) *Digital Dialogues: Second Phase Report*, London: Hansard Society, http://www.digitaldialogues.org.uk/.
[32] For example, a UK organisation referred to by more than one interview participant in this regard is Headshift: see http://www.headshift.com.
[33] An example from Sciencewise funded projects is 'Risky Business', a theatre programme which engaged secondary school and post-16 students in the assessment of risk in science and

technology, carried out by the Centre for Science Education at Sheffield Hallam University: see Finegold, P. (2007) *Reduce, recycle, re-think? Young People's Views on Climate Change*, available from http://www.sciencewise-erc.org.uk.

[34] An example here is EcoTeams, a community pro-environmental behaviour change programme developed by Global Action Plan, which involves participants in small group dialogue within a broader programme of engagement: see Nye, M. and Burgess, J. (2008) *Promoting Durable Change in Household Waste and Energy Use Behaviour*, Project report to Defra, http://www.uea.ac.uk/env/cserge/pub/ext/evaluating_ecoteams.pdf.

[35] See for example: PEALS / DIY Jury Steering Group (2003) *Do-It-Yourself Citizens Jury* Newcastle upon Tyne: Jury Verdict, http://www.peals.ncl.ac.uk/assets/publications/diyfinalverdict.pdf

[36] Wynne, B. (2007) 'Public participation in science and technology: performing and obscuring a political–conceptual category mistake', *East Asian Science, Technology and Society: An International Journal* 1: 99-110.

[37] Uninvited public engagement existed long before the recent growing interest in invited public dialogue, and will inevitably remain a continuing response to the actions of formal science and policy institutions. A number of classic examples have been documented in science and technology studies and risk research over the years, including: Stephen Epstein's study of AIDS activists and patient groups who played an active role in the reform of scientific research conducted in US clinical trials (Epstein, S. (1995) 'The construction of lay expertise - AIDS activism and the forging of credibility in the reform of clinical-trials', *Science Technology & Human Values* 20, 408-437) and Brown and Mikkelsen's portrayal of lay epidemiology where local community members mobilised themselves to investigate concerns over links between childhood leukaemia and toxic waste in Woburn, Massachusetts (Brown, P. and Mikkelsen, E (1990) *No Safe Place*, Berkeley: University of California Press). Emerging forms of collective and distributed innovation highlight different ways in which interested citizens or concerned groups organise and engage with science. This is opening up new arenas of dialogue between science, innovation and society. Often cited examples include Open Source Software, where a wide range of actors and users cooperate in quite informal ways to co-develop the software, as well as patient associations in health research, and farmers' seeds movements. For further description of these processes see: Felt, U. and Wynne, B. (2007) *Taking European Knowledge Society Seriously*, European Commission.

[38] A number of Government departments and other decision-institutions are expanding their roles in this way. For example, COI is increasingly seeking to take on many if not all roles including practising and commissioning as well as developing guidance, networking and capacity-building.

[39] Chilvers, J. (2009) 'Deliberative and participatory approaches in environmental geography'. In Castree, N., Demeritt, D., Liverman, D., Rhoads, B. (Eds.), *A Companion to Environmental Geography*. Oxford: Blackwell, p.400–417.

[40] Burawoy, M. (2004) 'Public sociologies: contradictions, dilemmas and possibilities', *Social Forces* 82(4): 1603-1618.

[41] Webster, A. (2007) 'Crossing boundaries - Social science in the policy room', *Science Technology & Human Values* 32: 458-478. Wynne, B. (2007) 'Dazzled by the mirage of influence? - STS-SSK in multivalent registers of relevance', *Science Technology & Human Values* 32: 491-503. Burchell, K and Holden, K (eds.) (2009) *The roles of social science in public dialogue on science and technology: report of a one-day stakeholder workshop*, London: BIOS, LSE.

[42] Snow, C. (1964) *The Two Cultures* London: Cambridge University Press.

[43] See http://www.nanojury.org.uk/

[44] These roles have been explored in the Sciencewise-ERC strategic research project on the use of expertise in public dialogue: Lansdell, S. (2009) *The Use of Experts in Public Dialogue*, London: BIS/Sciencewise-ERC.

[45] Democs is a part card game, part policy-making tool that can be used by anyone and includes guidance for participants to self-facilitate the process. Although developed previously, Democs has formed the focus of a Sciencewise funded study: see NEF (2008) *Just like a bed of roses: Democs and discussion based learning in the classroom*, London: New Economics

Foundation, available at http://www.sciencewise-erc.org.uk.

[46] This is a general point about the relative absence of non-professionals and publics from strategic decisions over the governance of the public dialogue field and decisions over participatory process design. Of course, the network is not entirely impermeable to non-professionals. Some dialogue experts have moved from fields such as activism and community engagement, which is a bottom up process in itself so to speak. Furthermore, instances do exist where explicit attempts are made to engage participants in the design of individual participatory processes.

[47] This view was strongly held by these participants, although it should be noted that a number of framework contracts drawn up by commissioning organisations include both large and small suppliers from a range of disciplines.

[48] Webler, T., Kastenholz. H. and Renn, O. (1995) 'Public participation in impact assessment: a social learning perspective', *Environmental Impact Assessment Review*, 15: 443-463. Wynne, B. (1992) 'Risk and social learning: reification to engagement'. In Krimsky, S. and Golding, D. (eds.) *Social Theories of Risk*, Westport: Praeger, p.275-297.

[49] Owens, S., Rayner, T. and Bina, O. (2004) 'New agendas for appraisal: reflections on theory, practice, and research', *Environment and Planning A* 36: 1943-1959. Bull, R., Petts, J. and Evans, J. (2008) 'Social learning from public engagement: dreaming the impossible?' *Journal of Environmental Planning and Management* 51: 701-716.

[50] Schon, D.A. (1983) *The Reflective Practitioner: How professionals think in action*. New York: Basic Books.

[51] Irwin, A. (2001) 'Constructing the scientific citizen: science and democracy in the biosciences', *Public Understanding of Science* 10: 1-18.

[52] Pellizzoni, L. (2001) 'The myth of the best argument: power, deliberation and reason', *British Journal of Sociology* 52: 59-86.

[53] Stirling, A. (2008) ''Opening up' and 'Closing down' - Power, participation, and pluralism in the social appraisal of technology'. *Science Technology & Human Values* 33: 262-294.

[54] Wynne, B. (2006) 'Public engagement as a means of restoring public trust in science - Hitting the notes, but missing the music?' *Community Genetics* 9: 211-220.

[55] Chilvers, J. (2008) 'Deliberating competence - Theoretical and practitioner perspectives on effective participatory appraisal practice' *Science Technology & Human Values* 33: 155-185.

[56] The ESRC funded 'Critical perspectives on public engagement in science and environmental risk' seminar series - organised by researchers from the University of East Anglia, Durham University, the University of Birmingham, and the University of Sussex – is bringing together academic social scientists, scientists, policy makers and practitioners in a series of workshops during 2008-2010. For further information see: http://www.uea.ac.uk/env/esrcsems

[57] These suggestions from interview participants mirror recommendations made in recent reports by The British Academy, the Academy of Social Sciences, and in responses to the UK Government's Science and Society strategy consultation in 2008: The British Academy (2008) *Punching our weight: the humanities and social sciences in public policy making*, London: The British Academy; Benyon, J. and David, M. (2008) *Developing Dialogue - Learned Societies in the Social Sciences: Developing Knowledge Transfer and Public Engagement*, Final Report to the AcSS and ESRC, London: Academy of Social Sciences; BIS (2009) Science and Society: *Summary of Consultation Responses*, http://interactive.dius.gov.uk/scienceandsociety/site/wp-content/uploads/2009/01/scienceandsocietyresponsesummarytextonly.pdf

[58] Surprisingly little effort has gone into understanding these assumptions and how the public view public engagement, although with respect to the latter see: Felt, U. and Fochler, M. (2008) 'The bottom-up meanings of the concept of public participation in science and technology', *Science and Public Policy*, 35(7): 489-499; Michael, M. (2009) 'Publics performing publics: of PiGs, PiPs and politics', *Public Understanding of Science*, advance online publication, doi:10.1177/0963662508098581.

[59] Jasanoff, S. (2005) *Designs on Nature: Science and Democracy in Europe and the United States*, Princeton: Princeton University Press.

[60] One implication of this complexity is the importance of not over simplifying or homogenising decision-institutions, as some academic accounts have a tendency to do, but to recognise and understand their diversity, variability, pressures and constraints.

[61] This lack of evidence and how it might be addressed has been considered in the Sciencewise-ERC strategic research project on evaluation: Warburton, D. (2009) *Evidence Counts - Understanding the Value of Public Dialogue*, London: BIS/Sciencewise-ERC.

[62] Not least to continually rehearse the arguments for taking seriously public understandings and the social implications of science in the first place. Such messages can get forgotten or marginalised by decision institutions, and therefore need constant reiteration, as observed by a number of social scientists in response to the UK Government's Science and Society strategy consultation in 2008. See Times Higher Education (2008) 'Social scientists call for a revision of 'flawed' government consultation', http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=403958&c=1

[63] In a recent paper, Carolyn Hendriks and Lyn Carson have shown (in the context of deliberative democracy across a range of sectors) how the trends towards the commercialisation of deliberative services and the rise of participation consultants observed in the current study are being replicated in Australia and other western democracies. See Hendriks, C.M. and Carson, L. (2008) 'Can the market help the forum? Negotiating the commercialization of deliberative democracy', *Policy Sciences*, 41: 293–313.

[64] Such as open space, deliberative mapping, multicriteria mapping, and Q methodology. For further explanation of 'opening up' approaches see: Stirling, A. (2009) 'Engaging futures: Opening up choices on science and technology', In Stilgoe, J. (Ed.) *The Road Ahead: Public Dialogue on Science and Technology*, London: DIUS, p.19-30.

[65] This resonates with the Royal Commission on Environmental Pollution's call for new institutional arrangements that build open and adaptive systems of governing nanotechnology and other novel materials, part of which involves moving "beyond one-off public engagement 'projects' to recognise the importance of continual 'social intelligence' gathering and the provision of ongoing opportunities for public and expert reflection and debate." (Royal Commission on Environmental Pollution (2008) *Novel Materials in the Environment: The case of nanotechnology*, Norwich: TSO.) It is important that such 'social intelligence' gathering takes account of these different contexts of public dialogue and debate, and that public attitudes, values and knowledges are not viewed as static but emergent and open to transformation through dialogue wherever it occurs.

Sustainable Participation?

The field of public participation in issues relating to science, technology and the environment is booming. To date much effort has gone into developing new participatory approaches and their evaluation, while most of what we know comes from individual case studies of engagement. This report builds on one of the first ever studies of public participation experts, their networks, roles and relations, to present a broader analysis of the UK public dialogue field as a whole. It draws on a recent project that involved 21 of the UK's leading thinkers, practitioners, and policy makers in this area reflecting on the following critical questions.

- What is the nature of participatory governance networks and the roles and relations of different actors within them?
- Who counts as an expert on public participation and how are these meanings changing over time?
- What are the implications of increasing institutionalisation, commercialisation and professionalisation of public dialogue?
- To what extent are UK science and policy institutions learning about and learning from public dialogue?

Taken together, these insights indicate that the field of public dialogue on science and technology has reached a critical moment and highlight a series of challenges and recommendations for its future sustainability.

Sciencewise-ERC
Email: enquiries@sciencewise-erc.org.uk
Tel: 0870 190 6324

Dr Jason Chilvers
School of Environmental Sciences
University of East Anglia
Norwich, NR4 7TJ
Email: jason.chilvers@uea.ac.uk