A clear achievement of more than two decades of research into public engagement has been to shift attention to the ways in which 'the Public' has been constructed in public engagement. A public imagined as ignorant and hostile was the impetus for many of the science communication activities in the 1980s and 1990s, and though this transformed into more sophisticated ideas of engagement with multiple 'publics' for science and technology, such publics were often still imagined as 'concerned', 'anti-scientific' or 'obstructions' to innovation (House of Lords, 2000; Owens, 2000). As Barnett et al. (2012: 47) have recently argued, "the construction and expert control of public concern invites interactions framed in terms of expert reassurance rather than mutual exchange and engagement". There is a sense among institutions that have experimented with engagement that exercises are hampered by publics that are far from 'ideal' citizens (Lezaun and Soneryd, 2007). Stage-managed spaces of engagement preclude the potential for 'uninvited publics' to engage with science and technology and widen the interaction and scope for reflexivity (Wynne, 2011)...

Emerging agendas of responsible innovation

A consequence of the dynamics described in this special issue is that public engagement has become a means in search of an end. Confusion or deliberate obfuscation of broader political discussion in an attempt to make public engagement procedurally comfortable has meant that the deficit models we thought were dead are continually reinvented (Rayner, 2004; Bauer et al., 2007). The much-touted move from deficit to democracy has perhaps been hampered by a continued focus on The Public. It has been relatively easy to make the first part of the argument that monologues should become conversations. It has been harder to convince the institutions of science that the public are not the problem. The rapid move from doing communication to doing dialogue has obscured an unfinished conversation about the broader meaning of this activity. It is not simply a matter of science providing a microphone as well as a megaphone. The need for institutional reflexivity (Wynne, 1993) fundamentally challenges who should be doing engagement and why.

A new term recently put forward in an attempt to move beyond this pathologising of the public comes with the enthusiasm for 'responsible innovation' (or 'responsible research and innovation') (von Schomberg, 2011; Stilgoe et al., 2013). This builds on ideas of anticipatory governance, Real-Time Technology Assessment, Constructive Technology Assessment, value-sensitive design and open innovation that all incorporate ideas of public and user engagement (see, variously, Rip et al., 1995; Friedman, 1996; Guston and Sarewitz, 2002; Chesbrough, 2003; Barben et al., 2008). At the European Commission, areas of work that would previously have been called 'science in society' are now talked about as 'responsible research and innovation'. The term has superficial political (and indeed corporate) appeal, which means it runs all the same risks of instrumentalism that 'public engagement' has suffered from (Owen et al., 2012).

Diverse civic epistemologies

As Jasanoff argues in this issue, it is now time to re-open our ideas about publics and science. Publics, she states, "are not all alike but are guided by culturally conditioned 'civic epistemologies'". We should think of 'The Public' less as a pre-existing entity and more as a space within which publics selectively form around technoscientific objects and matters of concern. It is

these issue-oriented publics, Jasanoff contends, who enter the political arena to participate in constructing scientific and technological futures. Crucially, as Wynne also argues here, it is the public meanings attached to science and innovation that should be allowed more space and influence in the political economy of science rather than their being discounted in the face of scientifically-defined problems and risks.

...

New platforms and spaces for engagement

Much of the new money available for dialogue, at least in Europe, has come from government sources attached to science and technology issues seen as strategically important. Yet over the last twenty years there has been a huge growth in informal engagement activities such as science festivals and online spaces for science communication and engagement. Social media have revealed an enthusiasm for uncontrolled engagement among those interested in science. Less academic attention has been focused on sites of engagement between publics and science outside of the policy setting (Davies et al., 2009; Jensen and Buckley, 2012) and as such, we know little about the rationales, agendas and activities that are in operation in these newer spaces.

It is tempting to criticise informal learning events as peddling deficit model approaches, but evaluations of informal science engagement events have noted the variety of rationales for participation (Davies, 2008; Burchell et al., 2009; Wilkinson et al., 2011; Jensen and Buckley, 2012). Social media have connected previously disparate groups of 'science enthusiasts' or so-called 'geeks' (Henderson, 2012). However, as yet there has been little research on the motivations of such individuals to engage with each other and why and how in some cases they have moved from informal settings such as pubs, festivals and cafes to effective lobbying on issues such as libel law and science funding... Such activities break down any clear distinction between informal, policyfree engagements and politically motivated activities. Much has also been made of the growing activity that falls under the wide umbrella of 'citizen science' (Ince, 2011; Gura, 2013). Yet much of this activity, even if it takes place outside a formal laboratory, seems to do little more than replicate existing power relationships between scientists and publics (Haklay, 2013). There is much to understand here about these new spaces for engagement with science and technology and their impacts on scientific culture, politics and society. As Nowotny argues in this issue we have "to follow the engagement of citizens with new technologies and how their use of the new media shapes, constrains and possibly widens the choices open for science and democracy." Likewise, as Horst suggests in the case of Denmark, in trying to institutionalise or 'tame' public engagement activity we risk ignoring or discounting places outside of the formally mandated engagement processes where publics do, or wish to, engage with science, technology and innovation.

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