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Publics performing publics: of PiGs, PiPs and politics

Mike Michael

This theoretical paper considers the ways in which the "publics" of public understanding of science and public engagement with science perform themselves not only in relation to science knowledge and scientific institutions, but also in relation to other publics. Specifically, through a survey of the literature, there is an exploration of the processes of differentiation and identification amongst publics. Two broad rhetorical categories of public are identified: Publics-in-General (PiGs) and Publics-in-Particular (PiPs). The means by which they are variously differentiated, and the performative uses to which these can be put are considered. Implications for both the implementation of public engagement processes, and the critique of such engagement, are discussed.

Keywords: engagement, politics, public-in-general, public-in-particular

1. Introduction

In the field of the Public Understanding of Science, it has long been acknowledged that divergent models of the public are deployed by social scientific analysts. For some years now, such models have been subjected to a thoroughgoing reflection, not least as the field of "public understanding of science" is transformed into "public engagement with science." If the former was fundamentally concerned to examine the relations between public and science (whether in the guise of scientific knowledge, or scientific institutions), the latter attempts to explore the ways in which publics-in-interaction-with-science come, for example, to understand scientific knowledge, enact relations of trust with science, and reach decisions about the riskiness or viability or ethical status of this or that technoscientific innovation. As we shall outline below, there are tacit models of the public present in these engagement exercises too—models which are increasingly being excavated and critically examined.

There is an additional dimension to both PUS and PES, namely, that such studies are not simply "moments of observation" or "experiments in democracy" but are woven into the fabric of "science-and-society." That is to say, they are a part of broader assemblages in which publics (or scientific citizens) are "made" or "performed" (e.g. Irwin and Michael, 2003; Horst, 2007) in order to reconfigure "science-and-society" in particular ways (e.g. give greater voice to the public; re-establish the credibility of scientific institutions, etc.). In other words such studies are events with political import—events which draw together a range of factors including the requirements to produce reports, the necessity to implement particular techniques, the aim to exemplify

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the "democratization of democracy," and so on and so forth (e.g. Elam and Bertilsson, 2003; Hagendijk and Kallerud, 2003). Of course, also drawn into these events are the cultural resources of lay participants themselves—resources which allow them to perform themselves as particular sorts of publics.[1] This paper, while addressing the larger question of the "making of the public," is primarily concerned with this self-performative aspect of "doing being a member of the public"—the process by which laypeople enact themselves as publics through identification with, and differentiation from, various other actors—actors that include science but also, crucially, publics. As such, this paper aims at an initial exploration of these processes of "doing being a member of the public" as a way of stimulating a greater sensibility to the complexities of what the public "is," and how it serves in the shaping of "science-and-society."

In what follows, there is a brief introduction to some of the models underpinning public understanding of science, and public engagement with science. Given the ongoing shift of emphasis toward the latter, some attention will be paid to the ways assumptions are built into the techniques of public participation, or engagement, and how these can be read as media of governmentality which resource participants as particular types of public, and indeed particular types of (scientific) citizen. However, we also note how such techniques complexly interact with participants' own cultural resources and techniques for doing "being a member of a public." The larger part of the paper comprises an initial exploration of these techniques and resources. To emphasize, this theoretical paper is exploratory in nature—no claims are being staked to an exhaustive account, still less to a new approach (the public performance of publics). Rather, the more modest aim, is to stimulate debate around the complexities of such public performances of publics, complexities which touch upon our own social scientific role in their enablement, and the ways such performances might serve in the reconfigurations of the assemblages of "science-and-society."[2]

Before proceeding two clarifications are in order. Firstly, this paper is mainly comprised of a survey of the literature with a view to beginning to identify and specify some of the key ways in which publics enact themselves in relation to representations of the public (as opposed to in relation to science or expertise). As such, the paper does not present new data, but re-reads existing work in order to explore the relatively neglected issue of the way that publics enact themselves in relation to other publics. Secondly, the term "public" is used heuristically insofar as it covers a range of cognate terms such as citizens, collectivities, lay groups, communities, and movements. The aim is thus not to define the "public," but to access some of the dynamics by which such "publics" (or collectivities or lay groups, etc.) enact themselves, or emerge through the processes of defining themselves against other such "publics" (or collectivities or lay groups, etc.). Nevertheless, within this heuristic use of the public, it minimally has the features of being enacting (doing discursive and practical things such as demarcating publics), being enacted (produced or made by others—including other publics—discursively and/or practically) and as such, it is partially emergent from processes of rhetorical differentiation and identification (crucially, for present purposes, with other publics).

2. Modeling the public

An account of the development of the field of "the public understanding of science" can take various forms. For present purposes, I characterize it in terms of the contrast between its Traditional and Critical arms, each with their own peculiar model of their public.[3] The Traditional (or Positivist) tradition of research, with its emphasis on the survey analyses of the contents of the public's understanding of science and of its attitudes towards science, has been characterized as oriented toward measuring the public's scientific literacy. It aspires to educate the public and thereby enfranchise it.

The public is seen to be constituted of cognizing or comprehending individuals. The underlying trope is of a public deficient in the right sort of knowledge, and thus in need of improvement. In contrast, the Critical (or Interpretationist or Ethnographic) perspective which deploys qualitative techniques (interviews, ethnography) embeds public knowledge within its local cultural context and in relation to broader institutional agendas. This approach explores the public's identity in relation to its trust in scientific institutions. Analysis turns on the ways in which the public's local knowledges are marginalized by the scientific institutions. Laypeople are conceived in terms of local communities whose views are sufficiently important to require change in scientific institutions (for reviews of these approaches see Wynne, 1995; Irwin and Wynne, 1996; Irwin and Michael, 2003). If the former perspective assumes publics are deficient cognitively, the latter perspective extols their political repleteness. In both cases publics are defined *against* particular versions of science (see Michael, 2002). And yet, *Critical* PUS (as this particular moniker connotes) also defines its version of the public against the Traditional PUS view of the public, not least because the Traditional view is seen to be the one that has, until relatively recently, informed scientific institutions (and even now still lingers more than residually—e.g. Gregory and Miller, 1998).

However, in this simple comparison lies a nexus of questions. When publics "understand," or relate to, science, they might also be understanding, or relating to, themselves as particular sorts of publics. Moreover, given that there are a variety of versions of publics available, we might suspect that they are also differentiating and identifying with particular versions of publics (and indeed, expertise). This is hardly surprising given the historically pliable character of the public (e.g. Shapin, 1991; Chaney, 1993; Warner, 2002). Let us elaborate on this point in relation to recent shifts from Public Understanding of Science towards Public Engagement with Science.

It is nowadays commonplace to note the gradual shift toward a public engagement with science "paradigm." Reflecting and mediating such broad dynamics as the risk society and reflexive modernization (Beck, 1992; Beck et al., 1994; though see Tulloch and Lupton, 2003), Mode 2 science (Nowotny et al., 2001), post-normal science (Funtowicz and Ravetz, 1993), globalization and neoliberalism (Irwin and Michael, 2003), the public is, albeit unevenly, "de-differentiating" from science in Western societies. Indeed, through a mix of pressure from publics of various sorts, and the need of scientific institutions to regain or reinforce some sort of legitimacy, publics seem to be, in one way or another, entering into the process of scientific decision and policy making. One general way of describing this is the "democratization of democracy" (Giddens, 1998) where state-related scientific institutions are, in various cases, actively pursuing publics in order to consult with them, to have them participate in decision making, to provide fora in which they can deliberate on key scientific questions.[4]

In all this, publics are not merely being encouraged to express their citizenly concerns, they are also being "made" as particular types of citizen by virtue of the models of the public that inform public engagement with science initiatives. Arguably, such models are mediated by the *form* of public engagement: assumptions about what the public should (or can) do (or be) are "built into" the techniques by which their voice is encouraged to find "expression." Such "formalized mechanisms of voicing" (Michael and Brown, 2005: 51) can thus be read as moments of governmentality (see Irwin and Michael, 2003) in which, as "technologies of self" such engagement techniques serve to equip participants with particular ways of comporting themselves as "publics" (though obviously this is not in some straightforward mechanistic sense). Just as social and human scientific techniques like the opinion poll (Osborne and Rose, 1999) or the intelligence test (e.g. Richards, 1996) served to, in Ian Hacking's (1986) phrase "make people," so too do the techniques of public engagement serve to "make publics" (or even "scientific citizens").[5]

While such "people-making" is typically traced in retrospect—notably, in the historical study of institutional discourses and practices (e.g. in the work on governmentality influenced by

Foucault—see, for example, Dean, 1999), we can nevertheless look for clues to such ongoing processes in public engagement with science by analyzing the sorts of techniques by which the public's "voicing" is formally "enabled." For instance, Felt et al. (in press) show how in laypeople's "round table" discussion with scientists, "matters of ethics" concerning genomics were curtailed by scientists' recourse to "matters of fact." Indeed, the techniques of bringing laypeople and scientists into "conversation" can simply serve as a means to reinforce particular comportments—such as assuming that ethics are merely a supplement to "matters of fact" rather than partly constitutive of "matters of concern" (Latour, 2004). Methodologically, such analytic reflections can be said to be broadly "ethnographic" in scope insofar as they begin to treat the "engagement with science" as a thickly described event that can be situated in relation to a range of cultural, social and indeed material processes (see also Kerr, Cunningham-Burley and Tutton, 2007; Davies, 2006).

I want to draw out three points from this general discussion. Firstly, there is a governmental dimension to such events insofar as it is assumed that laypeople "want" to engage in this way with scientists. Despite the "experimental" nature of the engagement (in which the engagement is itself placed under ongoing review), such events delimit the particular sorts of skills and capacities for laypeople (and scientists, of course). Secondly, such delimitation derives not only from the designed engagement events themselves, but also from laypeople's own cultural and social resources. That is to say, laypeople enact themselves as particular sorts of publics, in the process drawing distinctions between different types of public. Needless to say, this is not a matter of victim blaming, but of situating laypeople in relation to wider assemblages that incorporate, most obviously, education systems, consumer society, globalization and the media. In keeping with work on governmentality (e.g. Rose, 1999; also see Irwin, 2001), institutional practices (in this case, the "formalized mechanisms of voicing" of public engagement with science) are not monolithic—they interdigitate with many other processes in sometimes consonant, sometimes contradictory ways. This brings us to the third point. Such enactments—or doing being a member of the public—are neither static nor singular: they are dynamic and relational. That is to say, laypeople in enacting themselves as "members of the public" do so in the ongoing processes of discussion, and through identification with, and differentiation from, other actors that might be experts, but might also be other publics of various sorts.

The rest of this paper is devoted to an exploration of this last dimensions by considering in some detail two specific, though interrelated, aspects of these processes of identification and differentiation by which publics perform publics. These can be summarized through the distinction between what we might call publics-in-general (PiGs) and publics-in-particular (PiPs).

3. The public-in-general (PiG)

In outline, the PiG can be regarded as an undifferentiated whole that is distinguished from science that is itself characterized globally in terms of some key dimension. This version of the public mirrors what Michael (1992) has called science-in-general—science understood in terms of general characteristics such as the use of hypothesis testing, or the production of particular sorts of arcane knowledge, or a commitment to epistemic (or even "civilizational") progress. It is a public that can be defined against, or identified with, such a science-in-general. The PiG also echoes a particular use of discourse of "society" studied by Bowers and Iwi (1993). Altogether, they identified eight models of society used by respondents to "either legitimate the respondent's argument or undercut an opponent's" (p. 368). Most relevant in the present case is the version of society seen to be "uniform and total" for which everyone was held to be a member, and internal

differentiations were downplayed. As Bowers and Iwi note, versions of "society-in-general" could be put to rhetorical effect in various ways. The speaker could attempt to render unproblematic controversial topics like pornography by equating them with society as a whole and thus all people. Alternatively, "society-in-general" could be represented as "opposing the speaker"—rhetorically, "society-in-general" is portrayed as immoral or oppressive, thus casting the speaker in a positive light.

Amongst expert commentators, there have been numerous overarching characterizations of the PiG: for some, the public is increasingly disillusioned with science (e.g. Lyotard, 1984), for others, the public is becoming anti-scientific (and thus anti-democratic, e.g. Holton, 1992), for others still, the PiG is profoundly ignorant of science (e.g. Royal Society, 1985). In each of these cases, the PiG is juxtaposed to science-in-general: science as a worthy democratizing, civilizing and epistemic endeavor.[6] As we might expect, scientific and regulatory actors also articulate PiGs. For instance, Michael and Brown (2005) note how regulatory spokespersons see the public as highly fickle, or cumulatively skeptical. This is a version of PiG as, broadly speaking, more or less irrational. We can draw out an observation in relation to this broad characterization of PiGs. When PiGs are negatively evaluated (as fickle, or ignorant, or irrational, or anti-scientific), they tend to be seen as suffering from some free-standing pathology: science has no hand in the cognitive or emotional ailments of the public. In other words, the characteristics of PiGs are simply juxtaposed to those of science-in-general. This is something that members of the public can use rhetorically in differentiating themselves from the PiG (e.g. Wright and Nerlich, 2006).

In contrast, where skepticism or cynicism is positively valuated in PiGs, then science is instrumental in the emergence and reproduction of such characteristics in PiGs. For instance, in Lyotard (1984), it is science's failure to realize its Enlightenment promise (in relation to enfranchisement, for instance) that has precipitated the skeptical reaction of the PiG. Similarly, though at a less theoretically elevated level, Michael and Brown (2005) document how members of the public, when considering the fickleness of publics could situate this in relation to the workings of science. Accordingly, if the PiG's fickleness is linked to the spectacular representation of science and technology (gee-whizzery prompts unfounded enthusiasm), members of the public argue that spectacle is part and parcel of the way contemporary science and scientific institutions increasingly represent themselves (in order to gain public acceptability, or attract venture capital). In other words, science has an "investment" in the fickleness of publics, So, overlying these accounts of PiGs, is another feature of PiGs. On the one hand, the PiG can be regarded as an entity *sui generis*—a self-creating, free-standing and sustaining singularity. On the other, the PiG is emergent not least through its complex relations to science-in-general.

With the rise of PES, there has, arguably, been a sea change in the ways in which publics have come to be regarded politically. Rather than the handicaps of deficit (whether the deficit is epistemic, emotional or ethical), laypeople now "necessarily" have a voice in the process of argumentation over science policy. In other words, the PiG is composed of persons who are politically capable *in principle* (see Michael and Brown, 2000). In some cases, this in-principle capacity to do politics is translated into potential calculative skills. For instance, in relation to the animal experimentation controversy, it is sometimes argued by both scientists and social scientists that the public is "mature" by virtue of its ability to perform cost–benefit calculations (see Birke et al., 2007). To be sure this is a reductionist version of PiG, but it is one that we can imagine members of the public mobilizing in order to establish their own credentials as objective or disinterested assessors of scientific controversies.

Now PES can be regarded as an, albeit not altogether coherent, movement that aims to record (through formalized mechanisms of voicing) and circulate (through reports, publications, press releases etc.) the voice of publics in relation to particular scientific controversies. We shall have

reason to return to and examine the specificity of publics-in-particular. Here, however, we shall attend to the ways in which versions of the PiG are presumed in the very project of "giving voice" in PES. As noted above, it is assumed that the PiG has an in-principle political capacity to deliberate, to participate, to engage. But, it is also assumed that there is some deep-seated *desire* in the PiG to deliberate, to participate, to engage. Such a desire might be suppressed, or diverted, or dissipated, but nevertheless by virtue of the tacit characterization of PiG as "citizenly," it can come to define the PiG.

There are a number of issues that arise around such a characterization of the "citizenliness"[7] of the PiG. Firstly, citizenship is of course highly contested. What form should it take (e.g. Barry, 2000)? Are parliamentary democracies and the democratization of those democracies the primary, let alone best, ways in which citizenship is to be expressed? In a world of globalization and liberalization, it becomes more and more problematic to associate citizenliness with nation or region-based states (see Irwin and Michael, 2003; Elam and Bertilsson, 2003). As such, members of the public might regard PES events less as a mode of participation, than as a means of gaining expertise (see Davies, 2006).

Secondly, to the extent the PiG is seen as predisposed toward citizenliness, it is not unreasonable to expect citizenliness to be moralized or normalized: that is, there can be an "expectation" that a member of the PiG should perform in a citizenly manner. In the context of PES, this might be manifested as a "duty" to participate, engage, deliberate in particular ways through formalized mechanisms of voicing. As Callon and Rabeharisoa (2004) have movingly shown, such formalized mechanisms of voicing also include the research interview: participants who refuse such citizenly opportunities are "opting for a different form of morality and humanity" (p. 1). In contrast to Callon and Rabeharisoa's sympathetic reading of refusal, members of the public can use this normalized version of the PiG in order to situate themselves as "good" and, conversely, those who refuse as "bad." For instance, Felt (personal communication) noted how in her Austrian discussion groups, participants enacted "incredulity" when they were informed that there were members of the public who had refused to take up the opportunity to participate. Importantly, such a rhetorical gesture might well be a partial artifact of the participation event itself: to have committed oneself to an event to which others are indifferent suggests that, to save face, one must value the event, and devalue refusing others.

Finally, while in the present section we have focused on PiGs, rhetorics which normalize citizenly participation are liable to be rather more "aggravated" for publics-in-particular—those particular publics who are committed, in one way or another, to "engaging with" science. That is to say, members of Publics-in-Particular (PiPs) who do not act as citizens in relation to the scientific issue at stake, especially where the PiP is a self-help or campaigning group, are liable to some form of criticism (as Gino seemed to be in Callon and Rabeharisoa's case study). As such, we might propose that performance of citizenliness is liable to divide along formal-substantive lines: for PiGs, citizenliness entails an abstracted commitment to participation per se, whereas for PiPs, it entails a commitment to particular substantive issues (e.g. engagement in order to establish some relevant "fact" such as the "reality" of a contested medical condition, or the proper conduct of a medical trial, or the level of the toxicity of a particular chemical). Having proposed this contrast, however, it behooves us to be aware that it is not hard and fast. Some issues—arguably global climate change in the present period—are so pervasive that PiGs and PiPs blur, as do performances of citizenliness that cut across the substantive and the formal.

With this last comment, we can now begin to explore some prominent forms of identification and differentiation through which publics-in-particular are performed.

4. Publics-in-particular

Publics-in-particular (PiP) can be broadly defined as those publics that have an identifiable stake in particular scientific or technological issues or controversies. Rather than scientific literacy per se, PiPs can be associated with specific scientific projects, programs of research or technoscientific enterprises, are attached to recognizable "interests," and enact particular alliances with other actors (e.g. the media, experts of one sort or another, political actors of assorted ilk). If the PiG is something which, for all its historical variability, has always "been there" (and might in the past have gone under the guise of, for example, the "masses" or the "people"), PiPs emerge with technoscientific issues (see, for instance, Marres, 2007; Latour, 2007). Needless to say, such emergence is a complex and variegated process.

Having rendered this basic distinction between PiPs and PiGs, the present concern is how such PiPs are put to work in the "understanding of" and "engagement with" science. As with PiGs, we can turn in the first instance to the literature, to illuminate further some of the dimensions of PiPs. Much of the ethnographically oriented work in Critical Public Understanding of Science has tended to study publics that are, in one way or another "local-izable" or "locate-able." By this, I mean that, unlike the PiG which is in effect everywhere, PiPs can be pinned down spatially. One aspect of such spatiality is "exteriority": PiPs are thus related to geographical areas which are deemed to be the site of some type of technoscientific impact (ionizing radiation, toxic waste, technological development). That is to say, PiPs are demarcated in relation to some external event. Thus we have found PiPs located around the fells of Cumbria contaminated with Chernobyl fallout, or along terraces of Jarrow affected by chemical pollution, or in the environs of Manchester airport threatened by a proposed new runway (Wynne, 1996; Irwin and Michael, 2003; Weldon, 1998). However, such localizability is not simple, not least because PiPs—often articulated as "communities"—are themselves constructions that require continuous enactment (Cohen, 1985). But further, such localizability also relates to the constitution of the members of those PiPs: their geographical location is associated in analysis with certain qualities, not least those of "experience" or "local knowledge."[8] This suggests another form of "localizability"—one based on a common "interiority."

As such, PiPs can also be "located" through a commonality of internal condition that might, for example, take the form of a shared medical condition or genetic disposition. Here, then, some interior condition is seen as a partial spur to the making of a particular PiP which might well be geographically dispersed. Such PiPs might be "realized" in many ways not least through various techniques of circulation (newsletters and meetings, and increasingly Internet communication). Of course, another partial spur is science itself. On the one hand, expert bodies can actively identify, seek out and "draw" upon such PiPs for a variety of reasons including publicity, financial support, the provision of volunteers for studies, the making of a market. On the other hand, the announcement of promising or risky innovations can serve in the mobilization of PiPs. Arguably, this interaction between PiPs and scientific actors can increasingly be understood in terms of dialogic engagements that can take place through hybrid fora, or ethno-epistemic assemblages, or new social movements, and through formalized mechanisms of voicing such as round table discussion and deliberative mapping. In sum, the emergence of a PiP can be seen partly to depend on a particular sort of interiority.

Notice that the localizations we have touched upon above are, by and large, unproblematic. That is to say, having an interiority marked as a "medical condition," or to be a part of a "local community" under some sort of technoscientific risk is read as a reality which can "spur" the emergence of a PiP. Yet, such a "reality" has to be enacted—and these enactments vary across laypersons and experts. To state the obvious, what counts as an index of the "reality" of a PiP is likely to be highly variable, and,

crucially, contestable (e.g. Mol, 2002). Thus, PiPs can be characterized in terms of some form of pathology: they are irrational, violent or criminal as in the case of certain accounts of animal rights groups (Birke et al., 2007); or they are charged with indolence and irresponsibility as in the case of those women who routinely fail to take part in cervical cancer screening programs (Singleton and Michael, 1993). Such critical accounts can be understood as challenges to the authenticity of PiPs—whether they really are "real" as a public in the sense of being driven by an "authentic" concern rather than something pathological or trivial (e.g. over-enthusiasm, irrationality, blind panic, or sentimentality).

This very quick trawl of the literature has yielded a number of ways of demarcating PiPs which can help us identify some of the enactments through which laypersons *themselves* situate themselves in relation to PiPs. If PiPs are enacted through some claim to reality (defined by external or internal circumstance), this claim has to be warranted, not least through claims to "authenticity." Such authenticity might be on the basis of demonstrable experience—for example, to display suffering might serve to signify authenticity. Or authenticity can be indexed by the possession of certain sorts of folk knowledge (e.g. about the complexities of local environments). Or authenticity can be grounded in the associations a PiP might have with particular experts (a PiP is recognized by certain experts or expert bodies as prone to this or that condition).[9] However, the obverse can also hold, where challenging others' claims to authenticity is itself, ironically, an enactment of authenticity (see below).

In what follows we will consider further some of these processes in terms of doing being a member of PiPs. Specifically, we will consider how members of publics-in-particular attempt to establish their authenticity (and thus their voice) not only through demarcating themselves, but also through differentiation from other actors, including other PiPs.

Differentiating PiPs and PiGs

Given the preceding discussion, the most obvious line of difference between PiPs and the PiG is the interest or involvement in a substantive area of science. If the PiG is constituted against science-in-general, PiPs define themselves in relation to particular scientific enterprises. But as we have also noted, this particularity arises out of peculiar circumstances in which PiPs find themselves, and the character of PiPs' internal (bodily) and/or external (geographical) spatialities. This nexus of specific science, circumstance and spatiality affords PiPs not only their identifiability but also their authenticity. Their political voice is grounded in the "reality" of such peculiarities. In contrast, the right to voice by the PiG is compromised because it does not live in certain locales, or has not been subject to specific exposures, or does not carry a particular gene, or does not present with distinctive symptoms. As such, political voice expressed by members of the PiG is superficially grounded—in general reportage, or fickleness, or a tendency to panic, or sheer ignorance (see, for example, Michael and Brown, 2005). In this way, members of PiPs can denigrate "general public" actors for their lack of authenticity.

However, there is a risk entailed in such denigratory tactics: to put too much distance between the character of a PiP and the PiG, is to expose the PiP to such charges as lacking common sense. There can be a fine line between "righteous concern" and "obsession," or between "authenticity" and "irrationality." Animal rights advocates often draw on "commonplace" equivalences between laboratory animals and pets. In parallel, pro-xenotransplantation publics (coronary heart disease patient groups) will draw "commonplace" comparisons between the use of pig organs and the "eating of a ham sandwich" (Michael and Brown, 2004). In both cases, there is an attempt to align the PiP with the common sense of the PiG. Put another way, such PiPs must ensure that they are not seen to be "interested" or impassioned to the extent that their knowledge is marked by bias or prejudice.

Establishing reality, enacting authenticity

In performing such subtle and not-so-subtle differentiations from the PiG, PiPs must, however, establish the "reality" of their particularity. As mentioned above, location, community, condition, exposure, experience, knowledge and so on need to be persuasively enacted in order to found "authenticity" and the "reality" of the PiP. That is to say, PiPs are not transparently obvious entities. For instance, even where PiPs are suffering from an ostensibly common condition, this might be attributed to something like incompetence rather than, say, common exposure to some toxic chemical product. As Wynne (1989) beautifully illustrated, authorities put down farmers' symptoms to their failure to follow instructions in the use of pesticides, rather than to the pesticides themselves. Not only did this display on the part of the authorities, what Wynne called, a "naïve sociology" (which neglected the everyday conditions of working on a farm), it also dissolved this PiP's particularity (folk knowledges and tacit skills of the farmers) into the generalities of a PiG marked by something akin to "ignorance." Put another way, folk or tacit knowledge can underpin claims to authenticity (e.g. about the day to day management of treatment regimes, or the workings of farms). However, as is all too well known, such folk knowledge can stand in contradistinction to "expertise," and thus be subject to scientific censure for vagueness, or lack of rigor (which of course might initially serve to reinforce identification with a PiP).

Above, we noted that the reality of a PiP could be enacted through reference to the common experiences of members. These could be derived from a medical condition or predisposition, or exposure to some hazard. The enactment of suffering—say through the display or enunciation of symptoms—can serve in the establishment of the authenticity of a PiP. Thus, for example, sufferers of certain diseases can argue that it is unethical *not* to conduct animal experiments. However, such arguments rest on a number of tacit epistemic claims, not least that animal experiments do indeed (eventually) yield appropriate treatments. As such, authenticity is partly mediated through claims about scientific knowledge and its making. This nexus of experience and knowledge can be used as a way of demarcating a PiP from both science and other PiPs. On the one hand, members of a PiP can argue that the urgency of its condition overspills any single scientific enterprise. As Michael and Brown (2003) show, members of a coronary heart disease patient group offer only contingent support to the advocates of xenotransplantation because, for them, it is more important to back multiple research programs, any one of which might yield something useful. To "put all one's eggs in one basket" would be foolhardy: indeed, careful consideration needs to be exercised where any single research program might take resources away from other promising avenues of research. Needless to say, such critical overviews are likely to be informed by expert accounts. On the other hand, PiPs can perform authenticity through comparing themselves to other PiPs, as well as to the PiG. To illustrate: members of patient and animal advocate groups routinely contrast themselves to one another (see Michael and Brown, 2004). In mirror image, the other PiP can be accused of "inauthenticity"—the animal rights people would change their minds if they had a child diagnosed with a life-threatening disease; the patients would change their minds if they really saw how animals suffered. In both cases, the opposing PiP is being characterized as effectively having so much "passion" that the authenticity that could be theirs is clouded.

So far in this section, we have concentrated on how a PiP's authenticity can be played out *against* science. But, as mentioned, science can reinforce authenticity by providing expert testimony for the "reality" of a condition or experience, or in corroboration of the usefulness of folk knowledge or tacit skill. Thus, a PiP comprised of RSI (repetitive strain injury) sufferers could account for its experience of symptoms in terms of mechanical injury (rather than, say, a psychosomatic condition) partly because of the endorsement received from some rheumatologists and physiotherapists (Arksey, 1998). Relatedly, PiPs can draw on their associations with expert bodies as warranting what they take to be their legitimacy or authority, in the process

derogating PiPs that do not possess such links. Of course, as this example demonstrates, science is not unitary, and some experts are of lower status than others. In Arksey's case study, the authenticity of this PiP (and the reality of its condition) was impugned partly because it allied itself with disciplines deemed to be of "less importance" (that is, less "scientific") than orthopedic surgery. Clearly, then, the alignment of experience, knowledge and expert association is a delicate balancing act.

The overarching point here is that the enactment of a PiP is tied up with claims to authenticity that draw upon experience and knowledge which are themselves contestable. Thus, in relation to knowledge, authenticity may be undermined because knowledge can be represented, on the one hand, as "too folk" and thus wrongheaded (not least politically where it militates against "beneficial" associations with expert institutions as we have seen), and, on the other, as "too scientific" and thus compromised (not least politically where it leads to tensions within PiPs). These divergent perspectives on the role of knowledge and experience in authenticating PiPs, not surprisingly, map onto the dynamics of drawing boundaries "between and within" PiPs, and it is to this aspect of doing being a member of a PiP that we now turn.

Differentiations "between and within" PiPs

It will not have escaped notice that inverted commas have been placed around "between and within." The reason for this should be obvious enough: it is often very difficult to know whether demarcations serve to authenticate separate PiPs or divisions within PiPs. In noting this, we begin to push at the limits of the usefulness of the terminology of PiPs. However, this problematization does at least serve to throw into relief the rhetorical uses to which demarcating a "PiP-with-tensions" as against separate or distinct PiPs might be put.

Crucially, the above contrast maps onto another distinction between PiPs viewed as relatively "reformist" as opposed to relatively "radical." A good example of this is the dividing line drawn between animal rights and animal welfare PiPs (Jasper and Nelkin, 1992; Birke et al., 2007; also see Hobson-West, 2007 in relation to MMR (measles, mumps and rubella vaccination). Another illustration comes from Epstein's (1996, 2000) work on the AIDS movement in the US, where some activists who were increasingly involved in the design of drug trials were seen by others as "losing touch" with the movement (that is, effectively opting out of grassroots involvement), and thus becoming too expert, as it were. To be sure there are many complexities to these processes, but a simple pattern to the dynamics of identification and differentiation "between and within" PiPs can be suggested. Putative radical PiPs can stress their similarities with reformist PiPs where it is necessary to stress their willingness to collaborate with other actors (e.g. regulators); conversely reformist PiPs can claim common heritage with radicals when they want to draw attention to their campaigning credentials, say. In these cases, these radical and reformist PiPs might both claim unity with one another: a single PiP characterized by healthy difference and debate. However, in other situations, differences are highlighted to the extent that separate PiPs are wrought. Radicals might want to distance themselves from the compromises made by reformists; reformists might want to dissociate themselves wholly from any criminal activities that have been attributed to radicals. The point is that doing being a member of a PiP can entail the drawing and redrawing of borderlines where other "cognate" PiPs are variously, one is tempted to say "tactically," incorporated and distanciated.

In this section, we have considered a number of ways in which members of PiPs can enact their PiPs—through differentiation from the PiG, through establishing reality and authenticity of PiPs (often by drawing connections and boundaries between self and other PiPs and science), and

through demarcating the limits of, and within, a PiP. Despite the obvious limits to the present analysis, what is striking is the rich array of rhetorical resources available to the public for derogating the public (as well as warranting oneself, of course). In concluding, we follow up on some of the implications of this analysis, not least for what it means to "do" (being an analyst of) "the public understanding of science" and "the public engagement with science."

5. Concluding remarks

While this paper has explored a limited number of versions of publics performed by publics, this range can be greatly extended. The complex and partial distinction between PiPs and PiGs, as has been hinted at throughout, maps onto various other contrasts, such as:

- Pure/Impure—untainted/tainted by scientific expertise or institutions
- Ignorant/Knowledgeable
- Trusting/Skeptical (Credulous/Cynical)
- Rational/Irrational
- Violent/Peaceful
- Instrumental (means-oriented)/Substantive (ends-oriented)
- Interested/Disinterested/Uninterested
- Authentic/Inauthentic
- Self-interested/Oriented to broader interests
- Decided/Undecided (Certain/Uncertain)
- Pessimistic/Optimistic/Realistic
- Politically engaged/unengaged
- Part of "the system"/Resisting "the system"
- Risk-averse/Risk-seeking/Risk-oblivious
- Conservative/Reformist/Revolutionary
- Logical/Emotional
- Undeserving of voice/Rights to voice
- Fickle/Stable
- Free-standing or *sui generis* /Relational or emergent
- Cumulatively skeptical/Case by case assessment
- Cooperative/Obstreperous
- Democratic/Anti-democratic
- Pro/Anti-Science

To be sure, this inventory is scarcely exhaustive, and the categories hardly mutually exclusive.[10] Nevertheless, the list serves to highlight both the range of performative resources available to publics in enacting publics, and the subtlety needed to access analytically these resources. Moreover, such resources suggest that concern about the "making" of publics through what have been called "formal mechanisms of voicing" of public engagement might be slightly misplaced. Such mechanisms operate in relation to the processes by which publics perform publics: their governmental influence inflects with the rhetorical resources that publics bring to engagement events. The point is that the wider social role of engagement needs still further careful analysis if we are to grasp how engagement "makes," and is "made by," publics.

Over and above these broad analytic lessons, there are related policy implications as well. Engagement with publics is liable to be rather less than straightforward. In engaging with

publics, the processes of identification and differentiation described above are liable to lead to a proliferation, or rather a *patterning*, of publics. Each engagement yields a complex pattern of publics within which any particular performance of a public will make sense. That is to say, such and such an enactment of a public can only be understood by virtue of how it contrasts and aligns with representations of other publics. How then does policy, let alone scholarly analysis, respond to such dynamic patterning? There is no ready answer, but at least the question has now been posed. Optimistically, a much elaborated and nuanced version of the present account of "publics performing publics" could serve as a means of enabling critical reflection by both publics and policy makers upon the limits and opportunities associated with the dynamics of differentiation and identification.

However, there is another more radical response in which one can remain analytically "unbothered" by the outcomes of one's social scientific endeavors. Here, what comes to mind are forms of public engagement where "engagement" is denoted by "mere" encounter between the public and some more or less disconcerting technoscientific product or process such as one might find in the "biojewellery" (Biojewellery, 2006) or the "drift table" (Sengers and Gaver, 2006) projects. In the case of the former, "biojewellery" entails the donation of bone cells by couples that are subsequently cultured around a ring-shaped bioactive scaffold that is then made into rings incorporating precious metals. In the case of the latter, designers developed a coffee table containing a porthole through which the English countryside could be seen drifting by. The aim of the table was deliberately to open up possibilities of exploration and contemplation, rather than to serve a specifiable task. It was fully expected that users would come to the drift table initially ill-equipped to understand it. What both these "engagements" accomplish is a troubling of the standard notions of science and technology, which now must accommodate something like the aesthetic and the ludic (and with no apparent educational rationale). As a corollary, normal or "default" modes of public performance are likewise unsettled.

If social scientists were to adopt (and adapt) this version of engagement, they would be doing something "other than" social science. Certainly, aspirations to "political relevance" would need to be revised somewhat. However, on this score we can learn from our PiGs and PiPs: in redrawing our differentiations and identifications, in enacting "ourselves" as social scientists in relation to other disciplines such as design or art, our citizenliness can take some strange routes, but it is no less citizenly for that.

Notes

1 This view of social scientific events is informed by Whitehead's (1929) ontology. In the present case, I simply want to stress, on the one hand, the heterogeneity of factors (what Whitehead calls prehensions) that go to make up (concresce) the actual event of a social scientific (participatory) study, and, on the other, how this event becomes a prehension in subsequent events (such as the reconfiguration of science-and-society).

2 Of course, such reflection is no less a part of the process of configuring science-and-society.

3 One reason for this particular characterization of the field lies in the fact that there is a precedent in the literature, notably Wynne's (1995) classic contribution. Of course, there are alternative ways of exploring and theorizing the public. For example, the works of, amongst many others, Dewey, Touraine, Habermas, and Laclau can all be mobilized to define the public. However, as noted in the introduction, this paper is less interested in the abstract demarcation, or definition, of the "public" than in the ways that "publics"—conceptualized heuristically—emerge in relation to *one another* through dynamic processes of identification and differentiation.

4 These public engagements are of course not limited to state sponsored initiatives. They are also, arguably, increasingly prevalent in the private sector (see especially Burningham et al., 2007).

5 There are more circuitous routes by which cultural resources circulate between academia and "the public"—say through the media, through graduates of the social sciences, through professions such as social work, police, education, medicine. Various metaphors have been used to get at this broader circulation, for example, the double hermeneutic (Giddens, 1984), or the rhizome (Martin, 1998).

6 For scholarly arguments regarding this demarcation see the recent debate between Collins and Evans (2002) and Wynne (2003).
7 The term "citizenliness" is used here in order to evoke a diffuse and not necessarily cogent set of capacities related to being a citizen. Citizenliness can also take on the burden of signifying the ways publics enacted themselves in relation to a science that is increasingly "globalized" and therefore "detached" from the singular nation state. As should be apparent, such citizenliness is highly contestable—thus what counts as citizenliness might include not only a commitment to democratic politics, but also passivity or indifference.
8 Complicating matters still further is the likelihood that such geographical localization is shot through with connections to many other, more or less proximal locals. That is to say, such localization is folded into the dynamics of what is sometimes called globalization (see Irwin and Michael, 2003).
9 Of course, these three warrants are hardly mutually exclusive.
10 For example, most obviously I have left untouched the ways that religious rhetoric might resource publics' performance of publics.

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Author

Mike Michael is Professor of Sociology of Science and Technology, and Director of the Centre for the Study of Invention and Social Process, at the Sociology Department, Goldsmiths, University of London. His main areas of research include public understanding of/engagement with science, the relation between everyday life and mundane technology, and biotechnological and biomedical innovation and culture. He is currently elaborating an interest in the interactions between design and social science disciplines. Recent publications include *Technoscience and Everyday Life* (Open University Press, 2006), and (with Lynda Birke and Arnie Arluke) *The Sacrifice: How Scientific Experiments Transform Animals and People* (Purdue University Press, 2007). Correspondence: Department of Sociology, Goldsmiths, University of London, New Cross, London SE14 6NW, UK; e-mail: M.Michael@gold.ac.uk