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Marres, Noortje and Lezaun, Javier

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Noortje Marres and Javier Lezaun

Abstract

This introduction provides an overview of material- or device-centered approaches to the study of public participation, and articulates the theoretical contributions of the four articles that make up this special section. Set against the background of post-Foucaldian perspectives on the material dimensions of citizenship and engagement - perspectives that treat matter as a tacit, *constituting* force in the organization of collectives and are predominantly concerned with the fabrication of political *subjects* - we outline an approach that considers material engagement as a distinct mode of performing the public. The question, then, is how objects, devices, settings and materials acquire explicit political capacities, and how they serve to enact material participation as a specific public form. We discuss the connections between social studies of material participation and political theory, and define the contours of an empiricist approach to material publics, one that takes as its central cue that the values and criteria particular to these publics emerge as part of the process of their organization. Finally, we discuss four themes that connect the articles in this special section, namely their focus on 1) mundane technologies, 2) experimental devices and settings for material participation; 3) the dynamic of effort and comfort, and 4) the modes of containment and proliferation that characterize material publics.

What are publics made of? Of people, the conventional answer would be, people engaged in a particular form of public or political action. Yet this response only displaces the question, slightly: What, then, is that engagement – the sort of engagement that generates a public – made of? By what means does this form of action – a genuinely *public* action – come about?

To address this issue, a variety of disciplines preoccupied with political participation and citizenship have increasingly turned their attention to the socio-material conditions of public engagement – to the devices, objects, substances and material settings in and through which publics are mobilized. In fields as diverse as science and technology studies, sociology, geography, anthropology, political theory and cultural studies, the question of how these elements constrain, inform and constitute political or ethical involvement has acquired a new salience (see, for instance, Barry, 2001; Braun and Whatmore, 2010; Bennett, 2001; Callon & Rabeharisoa 2004; Coole and Frost, 2010; Hawkins, 2006, Latour, 2005a; Kelty, 2008; Frost, 2008; Skinner, 2009). With its emphasis on the role of materials and artifacts in the public organisation of collectives, this mode of inquiry stands in stark contrast to those traditions that define publics and their politics largely in discursive, linguistic or procedural terms – traditions that put forward a vision in which the emergence of true public action requires divesting actors from the object-dependent qualities of their everyday lives.

A proper consideration of the materials and devices of public participation seems overdue. 'Materiality' and 'material culture' have, of course, long been key preoccupations in anthropology (e.g., Appadurai, 1986; Harvey, 2005; Ingold, 2000; Miller, 1997), an emphasis on the role of settings, instruments and devices in the production of scientific facts is the banner of science studies (e.g., Lynch, 1985; Latour & Woolgar, 1986; Hannaway, 1986; Shapin, 1988), and a similar materialist sensibility has over the last decade been extended to a range of fields, such as economics and the economy (e.g., Barry & Slater, 2005; Callon, 1998; Callon et al, 2007; MacKenzie, 2009) society and 'post-society' (Knorr-Cetina, 1997) and the environment (e.g., Castree and Braun, 2001). Why the delay – or, in some cases, qualms – in extending this form of empirical investigation to political practice, and more particularly to the issue of public engagement and participation?[1] Is 'participation' perhaps a special case? Does a 'material turn' in the study of public action force us to recast our political vocabularies, and if so, what are the implications for our normative projects? Finally, has the study of specifically *public* matters and materials anything new or distinctive to contribute

to longstanding debates about the material dimensions of cultural, social and political life?

The articles in this special section explore these questions through an assortment of objects and devices, and in relation to diverse material settings. It is, intellectually, a heterogeneous and somewhat promiscuous collection, with its contributors borrowing from a variety of analytical traditions. Rather than trying to disentangle the conceptual threads running through our four articles, here we would like to highlight some of the theoretical, methodological and empirical preoccupations that animate our concern with the physique of the public.[2] We will address four issues to sharpen the contrast with other approaches to public participation and articulate the normative implications of the research strategies adopted in the articles that follow. First, we will sketch out the key features of 'material-' or 'device-centered' approaches in the social and cultural studies of participation, outlining the fundamental difference with those traditions that see publics as constituted primarily by linguistic, deliberative, or abstract communicative processes.

Secondly, we will typify what we believe is a limitation of many contemporary approximations to the material dimensions of citizenship and engagement, particularly those inspired by Foucauldian perspectives: namely, their understanding of matter as a tacit, *constituting* force in the organization of political collectives, and their often exclusive preoccupation with the fabrication of particular kinds of political *subjects*. We characterize this perspective as 'sub-political', and offer as an alternative a mode of inquiry oriented towards distinctively material *forms* of participation – that is, an investigation that queries how objects, devices, settings and materials, not just subjects, acquire explicit political capacities, capacities that are themselves the object of public struggle and contestation, and serve to enact distinctive ideals of citizenship and participation.

Our approach implies a renewed interest in political theory – in its peculiar way of understanding the body politic and of making normative claims about its composition. Political theorists of different stripes have long recognized that attempts to define citizenship in material terms risk throwing the very notion into disarray. Pocock (1992/1998), for instance, warned that if citizenship is located in 'the world of things', the category risks losing its distinctiveness, for such a move implies erasing the fundamental distinction between the public and the private, abandoning the separation between political existence and the material reproduction of everyday life. Authors inspired by feminist and post-structuralist

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perspectives have long argued that an appreciation of the material constitution of political subjects forces us to reconsider received notions of citizenship as well as the conditions, such as autonomy or self-government, commonly attached to participation in public life (Bennett, 2009; Frost, 2008; see also Dobson, 2003; Rubio and Lezaun, 2011).

In the third section we will elaborate on the potential of a new engagement – or new terms of engagement – with political theory, while in the fourth and final segment we will drawn on the cases and materials of this collection to develop some paths for a normative appreciation of publics that is neither premised on their degree of immateriality, nor limited to claims about their tacit material constitution: an evaluation that considers forms and modes of participation that are irreducibly material, and that recognizes that the political value of objects, devices and settings is itself established during the emergence of an idiosyncratic public.

In relation to these questions, the contributors to this special section have adopted an empiricist stance, resisting *a priori* decisions on which materials and materialities are relevant to political action, and pursuing the question of the normative promise of object-centered publics in relation to concrete devices. The objects, substances, technologies and material settings represented in the arguments that follow suggest, however, a set of implicit choices and commitments: an appreciation for mundane, everyday, 'low-tech' artifacts and their ability to generate or firm up novel forms of citizenship; an interest in experimental devices and material settings– those that can serve as a 'theatre of proof' for a particular form of political life; a desire to highlight the labor, effort and work involved in public participation when it requires the fabrication or handling of objects; and, finally, a concern with the forms of containment and modes of proliferation that accompany political engagement when it comes in an explicitly material form. The mixture of 'new' and 'old' technologies and artifacts, the always publicly contested attribution of agency to different components of particular socio-material assemblages, the knotty question of the ability of object-centered publics to become mobile or durable, these are all issues, raised by the articles in this collection, that point to a particular strategy of empirical investigation in taking on the question of the composition of material publics. They suggest that we are unlikely to account adequately for the materiality of publics by formulating a singular political ontology. Rather, to understand how things acquire participatory capacities, we must attend to the empirical variability of materials and devices of the public.

1. The materialization of participation

Material perspectives on participation challenge a vision of public action centered on discursive or deliberative processes. The idea that language is the central vehicle of politics – that language, in fact, founds and sustains the difference between human politics and the lives and quarrels of those (beasts or gods) who exist outside the polity – is so deeply ingrained in our pre-conceptions of the political that it is almost impossible to imagine a public, particularly a democratic one, not constituted primarily by acts of discursive deliberation. We have only to think of a term such as 'public sphere', and the careful delimitation of the kinds of activities conducive to its emergence that defines its use in contemporary democratic theory, to grasp the difficulty of coming up with a political vocabulary that is not premised on disembodied 'voice' and linguistic exchange. The circumscription of a separate domain of action as distinctly and essentially 'political' has often been thought to require an active disregard for other modes of action (Arendt, 1958). According to the classical, Aristotelian view of citizenship, an actor became 'political' precisely by moving beyond the domains of work, of the domestic, of economic (chrematistic) action, and citizenship was denied to those, such as slaves and women, who were 'too much involved in the world of things – in material, productive, domestic or reproductive relationships' (Pocock, 1992/1998: 34).

To the extent that this 'world of things' is classically associated with the extra-political spheres of domestic life, work, leisure, or economic action, adopting a material perspective on participation involves two changes in how we approach a description of the body politic. First, we need a vocabulary that does not inadvertently sever some ('political') forms of activity from ('non-political') others. Second, a materially sensitive account of public participation entails a particular project of political and moral *expansion*: to consider the role of material objects in the organization of publics implies a move 'beyond the human', a broadening of the range of entities that ought to be considered relevant to the fabric of political communities.

These two commitments have been extensively discussed in recent inquiries into the relationships between science, technology, nature and politics (Latour, 1993b; Mol, 2002; Law, 2004; Haraway, 2003; Bennett, 2007; Thrift, 2008; Jasanoff, 2010), and are reflected in the arguments put forward in this special section. First, the articles expand the repertoire of entities relevant to the

enactment of public action by adding to the list of usual suspects (language, ideas, organizations, will, parliaments, votes, procedures) a new set of candidates: water containers and filters, a merchant ship, the smart electricity meter in an environmentally conscious household, or the objects manufactured in the course of a deliberative procedure. Second, they explore how public participation may be performed in sites classically defined as 'extra-political', those of work, play and domestic life. But the contributions in this collection move beyond a mere dedication to including the 'non-human' in our political constitution. They propose to examine more closely what is distinctive or special (and typically contentious) about *participatory* objects, settings, devices, and stuff – about objects, settings, devices and stuff that in a particular situation come to play a role in the enactment of public participation. This focus implies a particular strategy for further developing a material perspective on publics.

Several courses of action have recently been developed in sociology, science studies, geography, political theory and anthropology. Some authors pursue a project of empirical re-description to account for the role that material settings, things and devices play in the enactment of 'classic', deliberative (i.e., parliamentary) politics, without necessarily challenging traditional, 'non-material' ideals of participation (Heurtin, 1999; Callon & Rabeharisoa, 2004; Lezaun and Soneryd, 2007). Others, in contrast, explore *alternative* settings, practices and forms of participation – those that deviate from the conventional formats (such as voting or public speaking in deliberative contexts) privileged in discursive perspectives, and that involve the deployment of material settings, as in in-situ protests (Barry, 2001; Gomart & Hajer, 2003; Hawkins, 2006; Roseneil, 1995; Stockelova, 2009);[3] Thirdly, political and cultural theorists have re-discovered material objects and physical bodies at the center of classic articulations of political ontology, from Lucretius to Marx, via Hobbes or Spinoza (Coole & Frost, 2010; Frost 2005, 2008; Bennett 2001, 2010; Cheah & Robbins, 1998; Skinner, 2009).[4]

The articles in this special section combine these approaches through empirical studies of concrete materials and devices of the public. Each contribution explores an 'innovative' object or setting of engagement – an object or setting that is construed as 'novel' or 'unconventional' in relation to participation: a merchant ship as a site for the enactment of participatory democracy; the plastic water bottle as a 'channel' for contradictory politics of consumption, waste and recycling; carbon accounting technologies as a way of

fashioning a new form of 'action-based' engagement with the environment; a deliberative platform in which the making and deployment of things changes the valence of knowledge claims. The contributors anchor their arguments in a consideration of the performative aspects of materialization; they investigate the practices, operations and techniques through which things, objects, environments and infrastructures *become invested* with political and moral capacities. In so doing they take up the question of the materiality of engagement in a direction that departs, slightly but significantly, from the path broken by neo-Foucauldian perspectives on the ontology of politics. It is to this difference that we now turn.

2. Device-centered studies of participation: beyond sub-politics

Notwithstanding the diversity of theoretical and disciplinary perspectives on the materiality of participation, it is impossible to exaggerate the impact of Foucault's work on how the very question of the physique of the public – the manner of its structuration by material, environmental, or technical means – is posed today. A central stream of work on the role of architectures, 'political technologies' and publicity devices in the constitution of publics is grounded in a Foucauldian sensibility towards the 'micro-physical' workings of modern governmentalities, the 'tiny, everyday, physical mechanisms of micro-power' that organize political subjectivity (Foucault, 1975/1991; see Rose, Barry and Osborne 1996; Miller and Rose, 2008; and also Anderson 1983; Ezrahi 1990; Latour, 2005b; Law 1986; Mukerji, 2009). The articles that follow attest to this broad neo-Foucauldian influence, yet the collection also adds, we believe, a new perspective, by broadening the range of modalities in which material elements features in the organization of publics.

In the neo-Foucaldian idiom, political subjects and spaces are configured through the deployment of objects, devices, environments and infrastructures, but this is a process that typically occurs informally and unobtrusively. Material elements operate in a 'sub-discursive' manner: their relevance to political processes remains unacknowledged or at least under-articulated in public discourse.[5] A 'sub-political' understanding of the 'politics of things' also permeates the analytical strategy of science studies: here the socio-material conditions of participation and citizenship are typically shown to operate upon actors in ways that are not just tacit, but virtually sub-legal; technology *silently* replaces the legal coercions that bind political subjects; artifacts, settings and socio-material architectures exert a semi- or pseudo-juridical form of constraint on

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action. Paradigmatic examples of the 'politics of artifacts', such as the forms of (im)mobility enforced by the Long Island bridges discussed by Winner (1980), or the modalities of behavior inscribed by car safety belts, as described by Latour (1992), express clearly this 'sub-political' quality: the politics of materially implicated actors is a politics of ordering by other, pseudo-legal means, an ordering that is silent, inscribed, implicit, invisible, or at any rate under-articulated. It is the remit, indeed the monopoly, of the analyst to *reveal* a materiality that is so pervasive that has become unnoticeable to the actors in the world; it is the privilege of the critic to display the hidden yet all-encompassing effects of the material – effects so constitutive as to be invisible, to have become a sort of 'second nature' for the political subjects involved.

The articles in this special section, along with much recent work on the materialization of publics, attempt to move beyond the idiom of 'sub-political' or 'constitutive' materiality. Our primary interest does not lie with how matter silently or secretly enters into the constitution of political subjects and forms – in materiality as a 'latent' force – but in how material things, technologies and settings themselves become invested with more or less *explicit* political and moral capacities. Our approach is not limited to how things partake in the constitution of political *subjects* (i.e., citizens), *spaces* (e.g., parliaments), or *tools* (e.g., the opinion poll), but extends to the political capacities of things in their own right – to how objects acquire 'powers of engagement', and how those powers of engagement are articulated, discussed and contested in the public domain (Marres, 2009).

In her discussion of the plastic bottle, for instance, Hawkins explores how the object acquires the capacity to mediate matters of concern, from health to labor or environmental issues, but also how that mediation becomes an object of scrutiny and struggle – how 'the matter of the package comes to matter politically' and thereby becomes the object of multiple public articulations. In Marres' article, it is the very ability of carbon accounting technologies to facilitate a concern with climate change that is the object of controversy and political action. In Lezaun's contribution, the material superstructure of *Balao* – a large working artifact that operates also as a purposefully designed setting for a new kind of politics – is explicitly and contentiously designed to become a platform for engagement, and that design, far from being latent, silent, or unobtrusive, goes hand in hand with a proliferation of public articulations of the value of material structures and social theories. In their account of a public forum on flood risks, Whatmore and

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Landström describe a process of 'making things together' that is public and accountable to the actors involved in it, a process in which the collective handling of objects – maps, photos, pieces of mouldy carpet – serves to 'recharge' a deliberative procedure, to 'slow down' and 'put at risk' expert knowledge claims (see also Stengers, 2000).

Importantly, the papers attend not just to participatory objects, but also to settings. This is in part a way of upholding a skeptical attitude towards singular, discrete, clearly bounded object and their ability to 'embody' or 'mediate', by themselves, a particular concept of publicity. In our examples, objects are deployed in very specific places, in material settings that are carefully designed and arranged to produce particular effects and facilitate the investment of objects with participatory potential. The design of the setting is a notable means of materially scripting participation, and acquires special significance where the sites of work, play and domesticity enable rather than disable the performance of public participation. Whether it is the retrofitted home, the purposefully designed ship, or the architecture of the competency group, the design of a particular environment for the use and handling of objects is a central aspect of the configuration of a particular public. Even when discrete, well-bounded objects – such as the perfectly packaged water bottle – are the explicit focus of attention, the arguments pursue these entities beyond the limits of their self-containment – by exploring, in the case of Hawkins, the recycling practices through which the plastic container becomes 'a materially potent object capable of capturing humans in networks of obligation and responsibility' (Hawkins, this issue), or questioning the ability of object-specific effects to travel beyond the site of their original invocation.

The articles, we mentioned earlier, treat the material dimensions of publicity, whether those of objects, devices or settings, as themselves an object of public action, and in so doing break with a certain 'asymmetry' peculiar to materially-sensitive approaches to politics and democracy. Those perspectives acknowledge the material constitution of the subjects, spaces and issues of democracy, but often conclude by upholding the idea that genuine publicity requires dis-connection from the socio-material relations of everyday or professional life. Indeed, it is striking how several of the authors mentioned above (Rose and Novas, 2004; Callon et al, 2009; Latour, 2004), who have so productively inquired into the socio-material constitution of both the subjects and the objects of political life, revert to an ideal of public participation premised on processes of dis-embedding

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or dis-entanglement from material practices – the extent to which they limit participation to deliberative *forums* of one kind or another.[6] This collection, by contrast, suggests that the performance of participation does not necessarily involve dissociating actors from their everyday or working lives, or displacing them to a dedicated, 'political' location. Participation is rather performed in the workplace, the home, nature, the market – in settings and through objects that do not belong to a distinct sphere of action, bur rather co-articulate public political activity with other domains of everyday practice.

In short, the papers collected here attempt to shift attention from the latent material constitution of subjects and forms of democracy to more explicit deployments of objects, settings and devices in the organization of participation. They consider participatory democracy as enacted through work in and on material objects. The publics thus organized consist of materially and physically implicated actors, and would cease to exist if these actors were transposed into a sphere where these socio-material constituents could be disregarded. Rather than treating the material as a substratum, background or tool of politics, then, these papers inquire into forms of politics that are distinctively and irreducibly material.

3. An empiricist engagement with political theory

A view that takes materiality to be a central feature of political action leads to a renewed engagement of social and cultural studies with political theory – an engagement that is visible in many strands of contemporary work on science, technology and democracy (Kelty, 2008; Braun & Whatmore, 2010; Wynne, 2008; Brown, 2009; Lezaun, 2007; Turner, 2003; Marres, 2007; Thorpe, 2007). In this line of work, an intensified engagement with core concepts and principles of political theory becomes a necessity, at a time when a certain 'participatory turn' (characterized by the involvement of 'lay' actors and the proliferation of deliberative platforms) has become *de rigeur* in the governance of science, innovation and the environment. When governments and powerful non-governmental organizations adopt an explicitly participatory agenda, a generic commitment to the principle of 'public engagement' no longer suffices. 'Ready-made' concepts of public engagement need probing, and political theory then becomes an important source of critical resources (Wynne, 2008; see also Irwin and Michael, 2003; Waterton and Ellis, 2004).

This renewed engagement with political theory offers an opportunity to address perceived lacunae or shortcomings in the social and cultural studies of

participation. For instance the rather asymmetric treatment of political democracy in science studies – the fact that, while knowledge claims are the object of intense scrutiny, concepts and theories of democracy are often imported with little or no attempt to examine the conditions of their validity. It is striking how often a rigorous probing of notions of 'scientific method' – of its idealized power of prescription and generalization – can go hand in hand with a rather uncritical adoption of 'political methods' – typically the 'off the shelf' concepts and categories of procedural democracy (Marres, 2007). A turn to political theory offers in this regard an opportunity to re-work a repertoire of keywords and ideas that appears somewhat worn. This renewed engagement will be specially productive – also to political theory itself – if the emphasis is on the role that things, devices, settings and substances play in the composition of that distinctive political collective we call public (see also Braun and Whatmore, 2010; Irwin & Michael, 2003; Kelty, 2008; Latour, 2005a).

For one, a focus on the material constitution of publics is conceptually and normatively relevant insofar as it contributes to a widespread attempt to complicate the 'agoristic' view of public politics. Liberal, Marxist and feminist theories have long questioned the notion that public politics can only (or best) occur in a few select spaces uniquely suited to the purpose, of which the Greek 'agora' is the paradigmatic form. According to this model the constitution of a public requires the disengagement of individuals from the socio-material conditions of their everyday lives (see Wolin, 1960/2004; Pocock, 1992/1998). Each of these three traditions has in its own way challenged the notion that material entanglements exceeding those of appropriately 'public' activity are or should be rendered irrelevant to public politics. Classic liberalism conceived of the citizen as legitimately absorbed by everyday concerns; Marxism developed a political vocabulary anchored in the realities of work and production; feminist political theory grounds its claims in a consideration of the physicality of individual and political bodies and of the practices this physicality carries with it. The implications of these arguments are evident in fields as diverse as the history of early-modern republican thought (Pocock, 1975/2003), sociological accounts of the material basis of the public sphere (see, notably, Habermas, 1962/1991), or in feminist arguments about the politics of the personal (Pateman, 1989).

A conspicuous case within the field of political theory itself is the re-examination of the work of Thomas Hobbes, whose texts have been mined for evidence of materialist and physicalist dimensions in his conceptualization of the

body politic, aspects notably missing in those accounts that focus on his theory of absolute sovereign power (Frost, 2005, 2008).[7] In more explicit reference to current affairs, political theorists have reflected on the contemporary environmental crisis in an attempt to develop a thoroughly material conceptions of the polity, one in which the normative obligations of citizenship ensue from the material reproduction of everyday life (Dobson, 2003). These and similar lines of inquiry explicitly reject the notion that authentic political action requires an extrication of individuals from the fabric of their ordinary or working life, or that the influence of material entanglement is to be bracketed or neutralized in order 'to safeguard a self-reflective subject and a voluntarist account of political action' (Frost, 2001: 31).

The articles in this collection take up this line of argumentation, but they pursue it by empirical means, exploring concepts of political theory through case studies of specific participatory objects – plastic bottles, carbon accounting appliances, flood risk models – and physical settings where socio-technical forms of public action are conjured up – the merchant ship, the competency group, the *domus* of the climate-conscious family. The tactic is not dissimilar to the approach that science studies adopted vis-à-vis traditional philosophical issues, namely to turn epistemological issues regarding the nature and conditions of truth, validity or the progress of science into questions of empirical investigation, or 'epistopics' (Bloor, 1976; Latour, 1999; Lynch, 1997; Mol, 2001). Considering the success of science studies in re-specifying the classic themes of epistemological investigation by attending to the role of material devices, it is not surprising that a similar 'material turn' would be deployed in the attempt to recast the concepts and modes of argumentation characteristic of political philosophy, a field that, despite some forceful challenges (e.g., Mouffe, 2000; Connolly, 2002) remains wedded to prescriptive styles of theorization.

Past discussions in social theory over the attribution of agency to instruments, things, animals, or infrastructures – the question of the role of non-humans in the organisation of the collective, to adopt a standard Actor-Network Theory formulation – also offer a cautionary tale here, however. These debates remained rather academic, in the pejorative sense of that fine word (Lippmann, (1922/1997), largely because materiality was conceptualized for the most part in the sub-political idiom of 'mediation': the 'politics of things' remained disconnected from the realm of 'purified' political and democratic forms, ideals, or procedures, a realm that was quarantined, as it were, from the implications of a

materialist examination. The politics typically described in the language of 'mediation' operated, empirically, at a sub-physical level (in which objects and devices provided the architectures, constitution and channels for political life), a metaphysical one (concerning a particular ontology of politics), or a combination of the two (on this point see Mol, 1999; Law, 2004). In contrast, by considering publics as distinctively material productions, the articles in this section allow the 'material turn' to infiltrate the study of specific and specialized political concepts – whether it is 'democracy', 'citizenship', 'responsibility' or 'participation'.

We should also note that several forms of empirical and empiricist investigation are already prevalent in political theory itself (Bennett, 2010; Dean, 2002; Skinner, 1984; Warner, 1990), and they provide a fruitful starting point for our articles. The historical example of American pragmatism is particularly relevant for us, as it not only developed a materially sensitive account of publics, but also put forward an empirical approach to questions of political ontology. Thus, in their famous debate over the fate of democracy in modern societies, John Dewey and Walter Lippmann challenged the way in which classic political theory de-materializes publics and conceives of democratic politics as a distinctive domain, a sort of procedure for lifting actors out of the stream of their on-going affairs. In contrast to what Dewey (1922/1990) described as 'the aversion of democracy to foreign entanglements,' pragmatists argued forcefully that in a technological society publics are organized through specific socio-material entanglements. In making this argument, the pragmatists opened up a distinctively empiricist approach to the multiple and contingent physiques of the public, an approach that is sensitive to the material entities and relations that are created as part of the emergence and organization of a particular public. They did *not* specify a singular political ontology– by, say, detailing the features, material or otherwise, that make up publics. Rather, they argued that in technological societies, marked by constant innovation and change, what composes, holds together, delineates or animates a public is precisely what is at stake in the process of its formation and ordering.

The implication, then, is not simply that questions of political philosophy should be turned into objects of empirical investigation, but that the best approach to such questions is an *experimental* one, premised on the fact that the socio-material composition of political collectives is inevitably caught up in dynamics of technological change (Marres, 2010).[8] Pragmatist theories of the public thus throw up a number of distinctive questions, suggesting that materially constituted

publics come with *specific* set of issues and problems, such as the problem of their instability or 'evanescence' (Hawkins, this issue); their openness to being influenced by the environments and settings of participation; the particular way in which they can be demarcated once the procedural severance from the stream of the everyday is not an option; or the capacity of materially entangled publics to create new institutions (Marres, 2005).

4. Recasting normative projects

Finally, the strategies adopted by the articles in this collection carry implications for how we address questions of political normativity. Once we refuse to measure the quality of public participation by the extent of dis-entanglement from the 'non-political' – when, in other words, the implication of actors in socio-material assemblages ceases to be a marker of 'contamination', a sort of negative of the ideal-typical polity – normative sources for the valuation and evaluation of publics and forms of publicity must be found elsewhere. One important place to look for those sources, the articles suggest, is in the material settings, devices and objects of participation themselves – and in the peculiar forms of life and practice that emerge in conjunction with them. Three relevant themes emerge from the articles in this section: the dynamic of engagement and separation, the role of effort and comfort in the performance of particular forms of publicity, and the political valences of experiments as a way of organizing publics. Each of these themes opens up paths (rather than offering ready-made criteria) for a normative evaluation and appreciation of material publics.

In the arguments that follow a crucial dynamic of engagement and separation applies, but it cannot be understood as a matter of moving from 'the world of things' to a rarefied domain of materially unencumbered or unmarked actors, of disentangling actors from the attachments of their everyday, material lives in order to produce a purified, stand-alone public. In the cases under consideration here, the separations, demarcations and forms of containment that create discrete, active publics are drawn at a much higher level of specificity, and acquire a particular texture by the specific objects at play, whether it is the misleadingly smooth surface of the plastic container, the frayed materials of a deliberative platform, or the metallic environment of a democratic experiment. Even if all the articles express a generic appreciation of 'entanglement' – and of the diversity of qualities, patterns, grains, and fabric it brings with it – as a positive, productive condition of publics, the forms of political action described all

require precise forms of separation and extrication.

Thus in Lezaun's account *Balao* is constructed as a shield to protect a democratic experiment from the interferences of onshore politics ashore. Whatmore and Landström describe, in their discussion of the 'competency group', an attempt to renegotiate the relation between material entanglement and procedural disentanglement – connecting the particular procedural public that is the 'competency group' requires hard work, and the handling of 'issuefied' material objects serves 'to situate each member's attachments to the event of the flooding' (Whatmore and Landström, this issue). The point of these arguments is, first, that acts of connection or disconnection hinge on much finer distinctions and subtle articulations than those available in accounts of political engagement that pose a distinct domain of political action. Second, that material mediations cut both ways – they can serve to isolate discrete publics, to separate them from external influence or attention, or to snare them in new constellations and alliances. Entanglement and disentanglement – their nature and degree – become then a matter of explicit intervention and contention, part and parcel of the controversy itself, a critical issue to be articulated and fought over as a given collective 'goes public' (Hayden, 2003).

'Effort' emerges as an ambivalent metric of public engagement in all of the articles that follow. *Effortless* public engagement – 'involvement made easy' – is the regulatory ideal driving many of the objects, devices and infrastructures discussed in this collection. This is perhaps most explicit in the everyday devices for carbon accounting discussed in Marres' contribution: minimizing the physical cost of attending to environmental problems, reducing the work required to make a positive contribution to climate change mitigation, lowering the threshold of exertion that must be met for public engagement to occur, is a key trope in attempts to broaden participation in climate politics. But it is an ambiguous one, as it is far from self-evident that the promise of delegating the work of engagement to appliances and measurement mechanisms can be fulfilled.

'Design' is a typical by-word for this sort of easing, and several of the contributions dwell on the normative valence of design options that prioritize uncomplicated, 'trouble-free' engagement. Lezaun's description of the voyages of *Balao* focuses on the relevance of spaces of private accommodation and domestic comfort as the platform of a more egalitarian and democratic community of work. Both Marres and Lezaun analyze cases where participation 'made easy' requires that people feel, indeed are made to *be* at home – examples in which either the

home is transformed into a device of participation, or a new domestic space must be created at the very center of a collective political experiment (on this point see also Oswell, 1998). What results is a sudden – but deliberate – disruption of the distinction between public and private spaces, as the home becomes a privileged site for the performance of political actions.

Hawkins' analysis of the water bottle as a market entity and publicity device probes the limits of models of public participation premised on ease or convenience of engagement. What appears as 'easy' engagement if one attends exclusively to the water bottle as a market object or commodity, is quickly undone as soon as the genealogy of the plastic container and its afterlife begin to be considered. Recycling is here retro or pro-actively transformed into a form of critical action: 'a private gesture made public', it represents an obvious form of effort – itself materially distributed – through which what are initially defined as market entanglements are transformed into explicitly normative, vital ones. The carbon accounting devices discussed by Marres similarly enable an inversion of the trope of 'easy involvement', as they invite and enable the calculation, and in some cases valuation, of the 'hidden costs' of environmentally conscious activities.

It is not surprising that effort and exertion (versus ease and alleviation) offer a fruitful venue for discussing the normative force of objects of public engagement. These categories have long been key, yet often implicit, metrics for judging the value of different models of citizenship. Liberal conceptions of the public have often promised forms of citizenship devoid of effort, and the citizenly life has often been defined as a life free of the physical friction of work and toil. This radical separation of labor and deliberation, effort and voice, and the trend towards ergonomic forms of democracy – what Sloterdijk (2007) describes as a generalized 'exoneration of burdens' (*Entlastung*) in contemporary politics – is challenged by traditions in our political imaginary that pose an inverse ratio of exertion to political value, and emphasize the civic virtues of self-mastery, work (on the self and on the world), and physical strain in the pursuit of ethical and political goals. The articles in this section pursue the dualism of effort and comfort, ease and burden, smoothness and friction, for they are central to a distinctively material mode of organizing participation. Intervening into material environments, settings, appliances and artifacts in order to *facilitate* alternative courses of action or, in contrast, to make prevalent ones more *laborious* is a critical aspect of the emergence of new forms of public action.

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Finally, experimentation offers a third trajectory for a normative valuation of material publics. Experimentation figures both as an object of description and a form of intervention in our four articles: objects acquire a capacity to provoke public issues in a distinctively *experimental* manner; but experiments also provide a format for making objects and actions public. Experimentation suggests the establishment of a set of artificial conditions intended to facilitate the production and observation of a particular effect, in our cases the display of idiosyncratic, innovative forms of publicity and participation. As regards their efficacy, the question is whether and how that effect can acquire normative force beyond the confines of the original trial. Our articles explore this question – the diffusion and containment of forms of political action that emerge in experimental settings or as experimental practices – in a variety of directions.

In Whatmore's and Landström's contribution, the 'bund-model', the material face and 'envoy' of the competency group, travels widely, well beyond its initial home, and in the process gathers new actors around it but also loosens its ties to the original experimenters. *Balao* was explicitly set up as a 'demonstration experiment', a way of displaying and witnessing a radically new form of democratic work organization. Yet its deliberate insularity from onshore politics limited the reach of the political effects it sought to generate. In Marres' analysis of carbon accounting devices, experimentality is a by-word for variability: there is a fluidity, flexibility or instability in the particular configuration of settings, technologies and objects that facilitates the dissemination and adaptation of environmentally conscious lifestyles. In Hawkins' discussion of the water bottle and of the narratives and counter-narratives that surround it, marketing operates as a 'zone of experimentation' – a platform where the generation of new forms of publicity ensures the further dissemination of products and the circulation of commodities.

Sometimes, then, the experimental nature of participatory objects adds to their normative force: the transience, permeability and 'liveliness' of experimental forms facilitate their travel and diffusion, their broadcasting and marketing (on this point see also Adkins & Lury, 2009). In other cases, the necessary containment of experimental publics – their attachment to particular artifacts, their dependence on material architectures, the unrepeatability of experimental performances – works to restrict the reach of their political effects. There is no pre-ordained dynamic at work here. What the articles, collectively, suggest is the contours of a research agenda, in which the long-standing concern of science studies with experiments as

sites where science 'goes public' is extended to consider their efficacy as multi-faceted devices of material participation.

These three dynamic pairings – engagement and separation, effort and comfort, experimentality and diffusion – offer paths for exploring the normative valence of modes of public action dependent on an entanglement with objects, devices and material settings. Rather than criteria of worthiness, they represent trajectories along which political practices embedded in socio-material architectures can be valuated – they offer resources for the public articulation and contestation of material forms of participation.

Biographical notes

Noortje Marres studied sociology and philosophy of science and technology at the University of Amsterdam. She conducted her doctoral research at that same university as well as at the Centre de Sociologie de l'Innovation, Ecole des Mines, Paris, on issue-centred concepts of democracy in technological societies, particularly in American pragmatism. She is now a lecturer in Sociology and co-director of the Centre for the Study of Invention and Social Process (CSISP) at Goldsmiths, University of London. She has just completed a monograph entitled *Engaging Devices: Participation after the Object Turn* (Palgrave, forthcoming.)

Javier Lezaun studied Science and Technology Studies at Cornell University, and is currently James Martin Lecturer in Science and Technology Governance at the Institute for Science, Innovation and Society, University of Oxford. His work focuses on the social studies of the life sciences, but he is also interested in the history of the social sciences, particularly in relation to the fabrication of democratic ideals. He currently directs BioProperty, a research project funded by the European Research Council on the evolution of objects and theories of private property in biomedical research.

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[1] The most obvious exception to this claim is the study of regimes and practices of 'governmentality' inspired by the work of Michel Foucault. We discuss this stream of work in more detail below.

[2] This was the title of the workshop where these papers first came together. It took place on June 6, 2008 at the Centre for the Study of Invention and Social Process, Department of Sociology, Goldsmiths, University of London.

[3] On the need for conceptual expansion of the range of settings and genres for the enactment of publics, see also Berlant, (1997), Robbins (1993) and Warner (2002).

[4] Science studies offers a useful precedent to a 'material turn' on public participation insofar as it reconsiders the links between democracy, on the one hand, and science,

technology and nature on the other (Ezrahi, 1990; Sismondo, 2007). Here the intention has been to move beyond the dualism that marked previous engagements with the politics of science and technology – a dualism that led either to *critical* analyses of how technology constrains and undermines democratic modes of life, or to *constructive* proposals for how artifacts may become the object of deliberative democracy (Winner, 1986; Bijker, 1995; Nowotny, 2003). More recent work in science studies considers rather the genealogy of 'technologies of democracy' – modes of technical action, constellations of devices and artifacts, or forms of expertise that are constitutive and internal to the production of democratic life itself (Laurent et al, 2010; see also Kelty, 2008; Barry, 2006; Latour, 2005a; Jasanoff, 2004).

[5] Of course this is not exclusive to the Foucauldian tradition. Habermas's famous study of *Tischgesellschaften* and coffeehouses (1962/1991) carefully attended to the materiality of these forms of sociality. Yet this materiality did ultimately not enter into his articulation of the conditions for the emergence of a public sphere, which he instead defined largely in procedural and abstract terms.

[6] A notable exception here is the work on ontological politics by Annemarie Mol (1999) and John Law (2004), which suggests that materiality constitutes an important plane of political activity in its own right. In their case, however, this commitment seems to translate into skepticism about democracy, which tends to figure in their work as a theoretical form or ideal that is incapable of accommodating material politics. This strand of skepticism about democracy can perhaps be understood as a consequence of the sub-political conception of the politics of matter, as something that plays itself out below and beyond the plane on which political forms are asserted.

[7] Hobbes, of course, looms large in conceptualizations of the body politic in science and technology studies (Shapin and Schaffer, 1989; Latour and Callon 1981; Latour, 1993a). In many of these classic studies, however, the enrolment of objects in the organization of political collectives follows precisely the 'sub-political' mode we discussed earlier.

[8] Such an experimental understanding of political ontology resonates with recent debates on 'performativity', and anticipates notions such as 'dynamic ontology', 'ontological politics' or 'empirical metaphysics' that emerged in social and political theory in the 1980s. The pragmatist vocabulary for the study of publics also prefigures contemporary sociological perspectives on the co-construction of objects and political collectives (Callon, 1980; Knorr-Cetina, 1997). In the pragmatist view, the socio-material articulation of issues and the organisation of publics go hand in hand.