

For special issue of Body & Society

'Medicine: Experimentation, Politics, Emergent Bodies'

Other Possible Titles:

Experimentation and Emergence: Medicine, Bodies, Politics

Medicine, Bodies, Politics: Experimentation and Emergence

Medicine's Bodies: Politics and Process

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Introduction

"A thing has as many senses as there are forces capable of seizing it."
(Deleuze, 1986:11)

Within the social sciences, the claim that medicine is a set of knowledges and practices enacted on or through the *human* body manifests in numerous studies of that which is assumed to constitute the work of medicine. Many such studies have been effective in revealing how the body or its 'stuff'—genes, cells, diseases, fluids and so on—is not the given as it is presumed to be by the sciences but, rather, is enacted through the work of science (Barad, 1998, Mol & Law, 2004). Without doubt one of the most significant contributors to these studies has been and continues to be Michel Foucault. Not only have texts such as the *Birth of the Clinic* (2003), *Discipline and Punish* (1979) and *History of Sexuality Vol 1* (1984) provided us with the tools to identify the modes by which the body has acquired the appearance of the stable, autonomous neo-liberal individual but, by turning the gaze *on* medicine, it has been possible to gain new insights into the performative and, invariably, normative work of the biological and biomedical sciences (see for example: Cambrosio et al, 2009; Lock, 2001; Patton, 1995; Race, 2009).

Yet despite what has been learnt from privileging the cultural nature of biological matter, this has come at a cost. As Annemarie Mol (2008) keenly observes, some of the critiques now at hand have supplanted medicine as a 'science of the body' and, in effect, recast it as 'really a matter of social control, or a mode of governing through discipline rather than punishment, or otherwise a place where doctors hold power over patients.' For Mol such approaches do not directly aid the project of medicine. While they endow us with tools for re-evaluating the moral presumptions of medicine as a routine good, and thereby allow us to rethink the sort of relations that go into the formation of medical knowledges and practices, they fall short of the task of working *with* the body. A critique similar in theme can be found within feminist theory, notably on the question of matter as raised by Judith Butler. Since Butler's seminal work *Bodies that Matter* (1993), others have drawn attention to the way in which much social theory tends to produce the body as a non-contributor, as if an entirely passive entity (Barad, 1998; Rosengarten, 2009; Kirby, 1999; Wilson, 1999). That is to say, the palpability and contributory role of the body, ironically, came to be excised from view in the process of its study.

In response to this problematic, we are drawn to what has been invoked as a turn - 'the turn to ontology' or 'the turn to affect.' Precisely what is meant by this terminology may be deduced from the particularity of studies which assert the necessity for a style of analytic approach that is self-consciously performative. In Science and Technology Studies, the turn to ontology can be witnessed in the work of those engaged directly with questions of medicine such as Mol and Law (2004) but also where the relationality of life in general is addressed (Latour, 2004). For Mol (2002) medical conditions are an achievement of a heterogeneous process enacted within the highly specific arrangements of a particular (clinical) setting that include disparate relations that are corporeal (the veins in a leg in contrast to lung capacity), social and phenomenological (the reporting of one symptom in contrast to another), and professional (the diagnostic tools and knowledges that comprise one area of specialization as opposed to another). Here, what the body 'is' and how it emerges depends on the relations of which it is a part and through which it is enacted. The point is that these enactments are both social and material. As Berg and Akrich (2004), in their introduction to their special issue of *Body and Society* in which Mol and Law's, and Latour's articles appeared, put it: 'Emergent bodies come in a range of forms: the body as experienced by the patient, the body as a locus of medical practices, the body as inscribed in medical records, etc.' (2004:3).

In Latour's (2004) essay 'What can a body do?..' we find an ontological account also concerned with process but here, as Blackman and Venn point out, the emphasis is on the capacity to affect and be affected (2010:9). Indeed, Latour celebrates the proliferation of relations in which the body affects and is affected: for him, this is the marker of a good bodily 'life' (in contradistinction to the 'death' of the supposed posthuman transcendence of the corporeal).

Juxtaposing Mol and Latour, we might say that Mol attends to the ways in which medicine construes a body that in its 'illness' has become relationally contracted (that is, its capacities to affect and be affected are constrained in various ways). Medicine redesignates this contraction – it focuses on and re-articulates and re-organizes *particular* relations (for example, corporeal, social, phenomenological and professional as mentioned above). To be sure these relational contractions are always already contestable, but, debatably, one upshot of such contractions is the recovery of those capacities to affect

and be affected, and the enhancement of the variety and density of relations through which the body is enacted.

Clearly, the preceding analysis has been carefully formulated to hedge its ethical and political bets. That is to say, we must treat the ethical and political status of both the contraction and the proliferation of affective relations, and the sorts of bodies that emerge out of these patterns, with circumspection. After all, the very relationality of bodies also means that bodies' affective proliferation or contraction has implications for related bodies, both human and nonhuman. Sometimes contraction (even to the point of objectification) can have positive implications just as proliferation can have negative ones (eg Cussins, 1996).

In the works cited above we may also observe an attention to the contributory role of technology that is central to the turn to ontology and, hence, to the insistence on an ontological *politics*, about which we shall have more to say below. This attention to technology treats technology as itself heterogeneous (enacted through humans and nonhuman relations). On the one hand, technology can be stabilized insofar as it is routinely enacted in particular ways (in Rheinberger's, 1997, terms, it is a 'technical object'). On the other, technology is potentially fluid in that through its complex relations it can become opaque, problematic, immanent (in Rheinberger's terms, an 'epistemic thing', and beyond that an ethical, political and institutional 'thing' – see Michael et al, 2007; Davies, this issue). While this recognition of the complex role of technology as always already present in what emerges as the human body has not necessarily been shared across the field of feminist engagement with the body, it is certainly apparent in the re-engagement of Foucault's and Butler's work by Karen Barad and especially in her notion of 'intra-action.' Bodies emerge here through material and discursive *intra-* rather than *inter-* action, that places the emphasis on the process of entanglement. Following on from this, Barad coins the concept of 'agential realism' in order to render ethics a necessary part of the design of the technology and to highlight the complexity of what it is that becomes emergent. To put this another way, ethics is immanent to the manner in which intra-action or entanglement comes to take place. This is by no means unusual in the turn to ontology, and can be seen, for example, in Couze Venn's (2012:152) discussion of Gilbert Simondon's theory of individuation or in Mariam Fraser's (2010) examination of Bruno Latour's recent work in reference to the question of fact and value. Yet, in Barad's continued Foucaultian/Butlerian emphasis

on the role of the discursive in emergence, the human remains privileged, in distinct contrast to the flattening of human and non-human actors as contributory effects (typical of certain approaches in Science and Technology Studies, notably the variants of Actor-Network Theory).

The question of whether it is necessary to favour Barad over a more affect-oriented ontology—as for instance the work of Latour (2004)—introduces with it an important consideration of agency or, as Barad would put this, the ontology of the agentive. Timmermans and Berg (2003:108) propose a more distributed account of agency and thus, politics, though we might also add ethics too. Medicine entails, in their view, ‘technology in-practice’ and, as such, can be understood as a co-producer of ‘novel subjects or bodies’. By pursuing this analytic, we can hold medicine to account for its subjects and objects (not least its technologies) that would otherwise be simply presupposed. Further, it is possible to consider whether it is necessarily the human actors who should be privileged in the arena of bioethics (especially given that bioethics is routinely reduced to considerations of the relations between researcher and researched, or doctor and patient): to be sure, opening up agency in this way means that new accounts are needed of what might constitute ‘ethical’ practice. In sum, to focus on practice as entailing a plurality of actors (Berg and Akrich 2004; Timmermans/Berg collections 2003), is to begin to move well beyond the frame within which medicine (and, with it, bioethics) is more usually understood and the delimited way it is thus made to account. Indeed in response to claims that ‘a technology-in-practice’ analytic is devoid of political potential, Timmerman and Berg make explicit how technical qualities give shape to what medicine ‘is’ from different micro (for example clinical encounters) to macro (national or international) contexts. Appropriating a claim by Latour, they state: ‘medical technology is inevitably politics by other means’ (2003:107). By mediating what takes place in the clinical encounter, the medical record affects the relations at work in this setting, relations that far exceed those between doctor and patient relations. By mediating the aural or visible, diagnostic technologies are active in the constitution of a patient with a ‘real’ or merely ‘imagined’ medical condition (Greco, 2001).

Here, bearing in mind Walby’s observation that medicine is evidenced throughout this collection as inevitably open-ended in practice, we wish to underscore how the force of medicine in shaping what is of ethical and/or political consideration may be located in its practices, expertise and objects.

It is by examining what might be termed the performative nature of medicine or medical science as it enables novel experimental bodies that aid the pharmaceutical industry (Cooper) or novel subjects whose experience of aging becomes reduced to a matter of regulation (Neilson), that we are able to glimpse a certain account of politics in the elaboration of what Waldby (this issue) articulates as medical traction. Although politics is especially explicit in the ways in which medicine is an actor in the achievement of the Palestinian occupation and its various bodies (Pfungst and Rosengarten)— an actor at once vitally needed and chronically obstructed—we do not want to settle for a broad account in which an ‘abstracted’ medicine stands ontologically distinct from its ‘embroilment’ in the particular practices of the occupation. As Pfingst and Rosengarten show, this work of medicine is thoroughly woven into the technical arrangements of occupation such that medicine has become – ‘is’ now - something different. If medicine itself has ontologically shifted, there can be no easy recourse to a transcendent ethics as this would miss the particularities of the bodies that emerge with this medicine; such an ethics would leave untested precisely what Judith Butler (2008:3) would say is the maximizing of precarious lives.

But before we proceed further, we want to pause on a tension that is emerging here in distinguishing different manifestations of medicine. To explain and supplement what so far we have laid out as the co-affective or hybrid relation of human and non-human technology, we turn to the work of A.N. Whitehead. For Whitehead what medicine and the body are – their ontology - in their specificity depends on the type of events (or actual occasions) of which they are parts and from which they emerge. These events are heterogeneously composed of various social and material elements (prehensions) that come together and combine (concesce) within that event (Whitehead, 1929; also Halewood, 2011). Crucial to this approach is the view that entities – including both medicine and the body - are always eventuated in their specificity. Accordingly, the body and medicine do not exist in the abstract – as primary qualities to which secondary qualities are attached. There is no abstracted body that is ill or beautiful or in remission: there is this ill body, that beautiful body, thus body in remission. And even the abstracted body is abstracted in a particular time and place – by this anatomist, by that philosopher, by this toxicologist.

By adopting Whitehead’s event-oriented perspective, we suggest it becomes possible to diffuse the ‘external’ role of abstraction that articulates a ‘real’

apart from its perception. It becomes possible to emphasize concrete eventuation such that an object—as an actual entity—may be traced and rendered available to practical inquiry. In this sense, eventuation may be conceived in two broad ways: as Mariam Fraser (2010) shows, the component entities within the event can simply be in a state of ‘being with’ each other, or they can be in a process of ‘becoming together’ – what Karen Barad (2007), cited above, would call intra-action. Here, by way of example, we might consider the ‘unborn fetus’ that Barad argues is an achievement of the coming together of the design of ultrasound technology with the flesh and blood of fetus and maternal body. Yet in the design of this coming together, what emerges is a seeming visual representation (an abstraction) of a free-floating fetus—that is, a shadowy form against black background—giving actuality to an independent life with ‘rights’ despite its now made-absent becoming with the technology and maternal body. We might also consider the practice of sipping through which, according to Kane Race (this issue), a self emerges in ways that not only embody biomedical techniques for (an abstracted) good health but also bear the interests of a bottled water market. While sipping water to maintain hydration may seem an especially innocuous practice, it can also be viewed as an event in which different entities concreate to achieve new relations of an embodied self. In both cases, the unborn fetus (along with the maternal body, and ultrasound technology) and the hydrated body (along with water and the bottle) emerge as something ‘novel’. So, central to this argument of becoming together, the event, and the process of eventuation is an integral uncertainty, an element of openness: the event is immanent, open to the virtual, subject to deterritorialization – at least in principle (see, for instance, Massumi, 2002; DeLanda, 2002; Bennett, 2010).

And yet, as we hint at above, these events often are partly composed of enunciated abstractions (eg Deleuze and Guattari, 1988) of one sort or another. These enunciations—theories, narratives, slogans, discourses, and, crucially for us, abstractions –routinely serve in the ‘closing down’ of the event by ‘definitively’ demarcating it. Needless to say, there is nevertheless considerable complexity in the relation of such enunciations to ‘their’ events. The work of discursive abstraction and its closing down of complexity and openness is especially apparent in the evidence-producing mode of the randomized controlled trial that informs ‘best practice’ in medicine. Michael and Rosengarten (forthcoming), for instance, have analysed the eventuations of the ‘gold-standard-ness’ of RCTs in the testing on specific populations of

pharmaceutical prophylactics for HIV infection. They argue that 'gold-standard-ness' acts, and is enacted, in a variety of contrasting ways in the specific eventuations of RCTs: it is at once an 'attractor' - an idealized state toward which the trial is moving; it is a core component in the 'making' of the trial (that is, serves in the definition of the specific trial as an exemplar of RCTs); it is a component that is itself eventuated within and through the specific trial (it comes to emerge from – becomes within - the trial event itself, often as something that is compromised, or botched); and, finally, it also serves as a sort of 'anti-attractor' in a generic problematization of the trial (the abstraction of gold-standard-ness thus also generates a negative reaction, prompting a de-territorialization of the trial as something other, such as an instance of the 'exploitation' of disadvantaged populations). Applying this schema to medicine, we can note how the abstraction of medicine is active – an attractor toward which a series of practices open towards (for example, the production of healthy bodies, robust biomedical knowledge, sound processes of care). At the same time medicine is an anti-attractor: it precipitates a reaction in which something 'other' is taking place – broadly speaking various forms of marketization of bodies, of knowledge and of care. This nuances our previous remarks on the contraction and proliferation of affective relations. Part of the effect of these enunciated abstractions of medicine is, as noted above, the 'closing down' of events. However, these enunciations by simplifying, or detracting from, the complex elements – the concrete practices - that comprise a medical event, serve to proliferate affective relations. In a word, the interplay of abstraction and practice enacts multiple bodies.

By returning to the contributions in this collection, we are able to see shifts in the enunciations that evoke an abstracted medicine. Focusing on particular practices, we see how our contributors unravel re-newed eventuations of medicine (and 'its' bodies). The informal exchanges of drug users about their self-experimental pharmacology in Melinda Cooper's novel analysis of a different kind of industry exploitation, reveals how pharmaceutical companies are able to make use of the openness of the digital economy in ways that, in turn, enable them to reduce or close down the possibilities of social exchange. In place of a more inventive response to users' becoming-with drugs, we see how pharmaceutical companies are able to listen in on the data made available through user self-reporting on experimental engagement with drugs in order to pin down new areas of commercial drug production. Indeed, we gain a fascinating glimpse of how the pharmaceutical industry has, in some instances, out-manuevered the reach of bioethics to harness—without

liability—the labour of unknowing subjects engaged in self-reporting. Here, self-experimental bodies come to stand in for a new target population. And, as the title of her essay ‘Pharmacology in the Age of Distributed Self-Experiment – Theses on Human Capital’ tells us, economics has a significant role in experimentation (though, crucially, experimentation does not need to be driven by the pharmaceutical industry to allow capital gain).

From a different angle, yet retaining a clear interest in the role of the market (particularly the way in which production and consumption are enacted through medical scientific accounts of what it is to acquire a healthy body), Kane Race’s essay ‘Frequent sipping: assembling the subject of hydration’ exposes a strange underbelly to the medical given of ‘sustaining hydration’. The delicate practice of frequent sipping—enacted as a type of care of the body—is, in quite extensive ways, bound up with the profit-making service provision of bottled water. To put it simply, the pursuit of the healthy body is not so simply a material practice of sipping. As Race states, the disciplinary mode of keeping oneself hydrated is achieved through a marketing strategy that appropriates scientific ideas of health to constitute the water bottle as an essential consumer item. In Race’s part historical and part contemporary analysis of the relational nature of the body, water and the market, a new self is shown to emerge. This form of embodied self adds to existing engagements with the notion of biological citizenship (for example, Novas and Rose, 2005) by exposing the emergent and affected nature of the embodied self achieved in the coming together of bodies, exercise science, the beverage industry and more. Here we see health and medical discourses converge with practices (notably that of sipping) and material devices such as the water bottle, to forge a technology of self that simultaneously functions as a market device.

Through Race’s and Cooper’s work we are returned to the affective relations that make up the body, though in quite distinct ways. In Race’s analysis, there is a contraction in the affective relations with the medicalized technology of the water bottle with the effect of a proliferation of other affective relations through a healthier hydrated body. However, as we know, water bottles also generate other sorts of affective relations at the same time – eg economic ones (the cost of bottled water). Moreover, they entail environmental problems (see Hawkins, 2010) that are very likely to place constraints on future bodies. By contrast, Cooper’s case study suggests the individual body emerges through the self-constraint of affective relations with particular drugs. But here the body is also affectively extended through the internet-mediated relations

with others. This extension through internet-mediated relations yields data that potentially enables future affective constraints as pharmaceutical companies come to identify effective drugs, which are then marketed to the exclusion of alternatives.

These differing analyses by Cooper and Race of practices on, or about, the body demonstrate how medicine and the body *become* in their specific eventuations with the particular enactments of, in these cases, 'the market' (which is 'itself' of course variously eventuated in its specificity through particular concrescences with medicine). Brett Neilson's article traces a similar trajectory by focusing on how aging is increasingly becoming a 'troublesome' feature of life that facilitates new systems of management in which medicine is not only attached to the market but co-affective of forms of governance. Yet perhaps most unnerving in this treatment of the later life course is how the experiential dimension of aging is abstracted. If the affective nature of viewing undercover media exposés of abusive nursing homes obliges us to confront the processes of bodily change and incapacitation, Neilson also alerts us to how the experience of this is reduced to an 'ingredient' that can be added to, or subtracted from, the analysis of aging. Indeed, his claim that experience has come to be emptied from accounts of life underscores the ready acceptance, yet highly problematic nature, of abstraction in the enactment of health and medicine. By contrast, to see experience as fundamental to the aging process and its medical articulation, is to render particular and concrete what medicine 'is'. While recognizing that experience is a highly contested notion, Neilson situates it in such a way as to demonstrate that 'geriatric medicine' is by no means a singular disciplinary operation but comprises the coming together of various interested elements, not least those of the market. If the experience of aging entails – or at least requests - the judicious (and expensive) patterning of proliferating and contracting affects, it is no wonder that a medicine so highly entangled with the economic prefers to marginalize experience.

But, we hasten to add, medicine does not always bear so obviously the hallmarks of market interests as Davies, Birke and also the article by Pfingst and Rosengarten show. In other words, it is not 'capitalism' per se that we should necessarily consider as pivotal to how medicine comes to be enacted. Rather 'capitalism' may be viewed here as itself a form of eventuation. In place of a longstanding tendency to assume capitalism as a transcendent more or less monolithic force, we are shown through the work of Neilson,

Cooper and Race that what 'it is' may be understood through specific sets of operations. Without denying the force of market interests, it is especially apparent in Pfingst and Rosengarten's account that the technical arrangements of the occupation of the Palestinian territories are evidence of other sorts of forces. Indeed, in this eventuation there emerges an especially poignant provocation to rethink more transcendental and abstracted claims of both ethics and politics. In situating medicine as a tactic of war, Pfingst and Rosengarten (this issue) invite readers into an intensely politicised terrain. The terrain is an exemplar of the generative nature not of medicine per se but of how it is rendered necessary and thus may be withheld or obstructed in particular ways. In this sense there is a doubling of the precarious nature of life. Although the term 'occupation' may suggest a situation of stability, it is also the case that the practice of occupation remakes the territory such that mobility, in itself, is precarious for some while enabled for others. Here we observe how the patterns of proliferation and contraction of affects that characterize this particular eventuation of medicine are part and parcel of what it means to be occupier and occupied (Weizman, 2007).

In the essay by Gail Davies 'What is a humanized mouse? Remaking the species and spaces of translational medicine' it is apparent that medicine is now achieved through novel experimentation which confounds the presumption of humanness and hence the very presuppositions on the basis of which experimentation proceeds. The humanized mouse—an achievement of genetic manipulation—is an entity that functions as a 'translational object' for moving the findings of bench science into the space of the clinic. But in the achievement of its potential for doing so, our attention is drawn to how medicine is about the making of, rather than merely the *doing with*, bodies. Bodies are not distinct objects available to cure, open to correction, or even the consequences of iatrogenic effects. Rather the bodies of medicine or medical research, as we see here, may be examined for how they are made and as a result what they are made to stand for. Key here is the abstraction of stability that is central to the idea of a distinct species entity on which is grounded the idea of comparability and what we might call 'proxy-fication'. And yet, in Davies' case study, these humanized mice can no longer serve as unproblematic generic surrogates because they embody immune components from a *specific* human individual. Ironically, their role as proxies is compromised, though as a result, and to pile irony upon irony, they facilitate the extension of the process of biomedical collaboration.

In the essay by Lynda Birke 'Modelling Medicine: Animal Bodies in the production of Scientific Knowledge,' it is made evident that the 'non-human' is not only easy prey to experimentation but that the claims attached to experimentation may be interrogated not least because of the ways in which they are warranted are themselves contestable. Along similar lines to Davies, Birke reveals how 'animal models' are created to supposedly mimic human pathologies. However we also come to learn of less evident laboratory practices entailed in the informal and affective relations between human lab workers and the animals that come to affect—render do-able—what are otherwise enacted as the 'objective' techniques of the experiment. By placing the affective work of human actors at the heart of biomedical science, the terrain of such experimentation can be shifted to new grounds where ethical debates no longer need to be restricted to the delimited terms of an abstracted moral philosophy but instead can be opened up—like medicine—to the study of practice. In other words, to begin to examine how medicine (and medicine's body) is achieved through the complex, heterogeneous and concrete practices of experimentation is to orient toward new conceptual and, with this, ethical territories of inquiry.

In both the above cases, we see how animal bodies are entered into patterns of affect in order to stand as proxies for human bodies. Abstracted as experimental models, both laboratory animal and humanized mouse are eventuated through concrete practices that belie such abstraction. For the lab animal we see how it is through skilled handling that it can affectively serve as an experimental model; for the humanized mice it is the specificity of the human that affects humanization so that the mouse's status as an experimental model is compromised. At the same time, these abstractions serve to affect human bodies – not least through the promises of future affects that attach to such models.

Most of the contributors to this special issue participated in an occasional seminar series in the Centre for the Study of Invention and Social Process (CSISP) at Goldsmiths, University of London. By posing the question: 'what is medicine?' the series provided an opportunity to expand on recent debates on the medicine and its bodies. This, obviously enough draws us back from working with phenomena in the abstracted terms of medicine, and seeks to render medicine emergent, complex and dynamic. Within this general framing the papers, as Waldby elegantly explicates, approach medicine and the body from different empirical and conceptual directions. Our narrative tactic of

pulling these together through such concepts as eventuation, practice, abstraction, and affective contraction and proliferation, is only partly concerned with abstracting commonalities across the papers. More important is the affective aim: to explore a number of concepts with a view to occasioning analytic practices that, to borrow from Isabelle Stengers (2005), aspire to 'force thought' on medicine and 'its' bodies and, to echo Mariam Fraser (2010), enable 'inventive problem making'. Within this framing, we might suggest that future explorations of an emergent medicine and 'its' bodies might seek out both unexpected distributions of agency, or unforeseen topologies of affect, along with the way that abstractions are made to matter practically and affectively. For example, in relation to research on embryonic stem cells, to ask a question such as 'who is actually able to extract the right cells from blastocysts' is not to betray gross naivety. Rather, it is to begin to draw out the byways of agency that ground stem cell research programmes and their abstractions. Concomitantly, to pursue the abstracted promises and expectation that mediate stem cell research, is not only to unravel 'posthuman' assumptions but to trace how these animate researchers' and users' practices. In other words, and against the juxtaposition of practice and abstraction that has animated much of this article, we are suggesting that a future move would be to put into dialogue the 'abstraction of practice' and the 'practice of abstraction'.

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