Facts, Ethics and Event

Mariam Fraser

Of all the modern philosophers who tried to overcome matters of fact, Whitehead is the only one who, instead of taking the path of critique and directing his attention *away* from facts to what makes them possible as Kant did; or adding something to their bare bones as Husserl did; or avoiding the fate of their domination, their *Gestell*, as much as possible as Heidigger did; tried to get *closer* to them or, more exactly, to see through them the reality that requested a new respectful realist attitude (Latour 2004a: 244).

This is the problem for Bruno Latour: that, in order to explore their conditions of possibility, science studies scholars in the end seem to have taken facts too much for granted and have assumed to know too well in advance what they are. In so doing, the facts that 'everyone else' could kick at, or bang on, or sit down on seemed to disintegrate in their hands. This is the ironic conclusion, for '[t]he question was never to get *away* from facts but *closer* to them' (Latour 2004a: 231).

In this article I want to explore some of the sometimes different, sometimes overlapping ways in which the reality of facts is understood by Bruno Latour, Isabelle Stengers, Alfred North Whitehead, and Gilles Deleuze. My intentions here are not at all to produce an exhaustive survey, or to come up with an ideal synthesis of these theorists' work in this area, nor is it to 'compare and contrast' them. Instead, the argument in this chapter folds, unfolds and refolds around these authors with the aim of exploring what their different concepts, or what the same concepts differently inflected, can do. I want to ask where a few key terms - among them, relationality, exteriority, potentiality and virtuality - might lead, and how they might be made to matter. The discussion will be dominated by two attractors.[1] The first is event, the second is ethics.

Event has been used by many theorists - far more than I will refer to below - as a way of contesting the concept of bare fact which often dominates mechanistic (and common sense) accounts of the world. An event in this context is not just something that happens. As a philosophical concept, it exists in relation to a specific set of problems, including the problem of how to conceive of modes of individuation that pertain not to being, or to essences and representation, but to becoming and effectivity. In this respect event-thinking can be understood to be part of an anti-reductionist project that seeks to describe the relations between actual things, bodies, and happenings and the independent reality of these events in themselves. It is thus

an especially relevant concept with regards to the problematisation of knowledge, and in particular to the philosophy of science.

Any discussion of the concept of event necessarily involves addressing far more than bare fact. In the first parts of this chapter, I explore how this concept aids Whitehead in his critique of the bifurcation of nature and, in particular, its role in Whitehead's, Latour's and Stengers' critique of the bifurcated relations between subjects and objects, primary and secondary qualities, and facts and values, as these relations are often dramatised in the ideal of modern science. Having established, at some length, the use that these theorists make of event, I then push the analysis further by examining some of the implications of event-thinking in relation not only to scientific facts, but also to value/s and ethics. Of course this approach to ethics, via science, is not the only way to address the issue. Indeed, the limitations of the bifurcation of nature into facts and values that subtends much scientific thinking - in science as well as in other fields, such as economics (see for example Putnam 2004) - and the implications of that bifurcation for ethics are, and perhaps always have been, particularly noticeable. Ethical value is just as often (if not more often) identified, for instance, with the creativity of 'life *itself*' and not solely with values that are perceived to be imposed *upon* life. It is precisely because modern science claims a privileged relation to the facts of life however (and on this basis, its own privilege with regards to conceptions of the world) that I find it an especially fertile point of entry to value, and from there, to ethics. And indeed, the relation between ethics and science - or more specifically, the relation of ethics to science - is a live and contested contemporary issue, as the burgeoning debates and critiques in and around bioethics suggest. At a gathering of scholars working in the field of science studies (4S and EASST, Public Proofs: Science, Technology and Democracy, Paris 2004), pleas were made for an engagement with the role and place of ethics in social scientific studies of science to begin in earnest (for example Mol 2004).

Although my point of entry to ethics proceeds via science and turns, in large part, on Latour's and Stengers' different takes on Whitehead's notion of the bifurcation of nature, I should also add that there are themes in Whitehead's work that are rarely addressed by these two theorists, but which are more fully developed by Deleuze. I am thinking in particular of the points of resonance between Whitehead's concept of potentiality and Deleuze's concept of virtuality which, I will argue, differ considerably from Latour's notion of exteriority. It is by way of Deleuze's conception of the relation between the virtual and the actual, a relation which also informs his understanding of

the relation between problems and solutions, that I am able to further explore the implications of event-thinking for ethics in ways that are relevant, but not exclusively so, to science. Indeed, in the final two sections of this chapter, I want to consider why it might be important for social scientists to attend not only to the actual domain but also to the virtual. Firstly, because the concept of the virtual, in challenging the assumption that the social is the only valid level of explanation, extends critiques of social constructionist accounts of science; and secondly, because this concept also provides a reason, a reason which is immanent to 'concrete fact', for asking about value. In this respect, as I will argue, it further develops an ethics of social science research. My intentions in this paper, then, are somewhat different to sociological critiques *of* ethics (and especially critiques of the style of ethical reasoning that is typical of a certain Anglo-American philosophy), of the 'ethicalisation process' (Barry 2004), and of bioethics (Evans 2002). Such studies are especially welcome in view of the increasingly important role that ethics is called upon to play in the contemporary scientific, technological, and especially biomedical, landscape. Nevertheless, in this chapter I want to make a positive argument *for* ethics, and to suggest that the concept of the event, augmented by the concept of the virtual, is useful in this task.

Prehension, relationality, reality

As Philip Rose explains: 'an absolute key to understanding Whitehead's work is the fallibility and revisability of his metaphysical scheme. Whitehead's attempt to develop a system of metaphysics should thus be seen not as a final statement concerning the nature of things, but rather as part of a larger ongoing historical project' (Rose 2002: 2). Necessarily so, for Whitehead was concerned not only with what he calls 'speculative metaphysics' – which addresses itself to the necessary conditions for the possibility of existence - but also with cosmology, with 'the *contingent* conditions of "things" as they happen to be' (Rose 2002: 3). One of the key contingencies installed by modern science, as far as Whitehead is concerned, is the 'bifurcation of nature' into subjects and objects and, relatedly, primary and secondary qualities. 'The sensationalist doctrine', as he calls it, rests on two problematic assumptions. In the first instance, it assumes that sense-data does no more than signal (if it even manages that) to its existence. Passive and mute, it contributes nothing to meaning. The second dimension (the 'subjectivist principle') assumes that these inert facts are qualified and given meaning by a subject (a human mind, say) who organises them according to a universal principle, such as rationality or morality.

Nevertheless, despite the 'genius' of the seventeenth century, and the 'continued work of clearance' conducted in the eighteenth century, not everyone, Whitehead argues, accepts the opposition that underpins scientific realism (Whitehead 1985: 95). It is in English literature in particular that Whitehead finds representatives of 'the intuitive refusal seriously to accept the abstract materialism of science' (Whitehead 1985: 106) and, especially, the divorce of nature from value. His own aim therefore is to build a system of thought in which aesthetic value (for example) is as much a part of nature as is the mechanism of matter. For Whitehead, natural philosophy - and this well-known quote is cited in Latour's article in *Critical Inquiry* (2004a) - 'may not pick up and choose. For us the red glow of the sunset should be as much a part of nature as are the molecules and electric waves by which men of science would explain the phenomenon' (Latour 2004a: 244).

The complex historical genesis of the bifurcation of nature into primary and secondary qualities has been described, by Whitehead as well as by others, from a number of different angles (see for example Proctor 1991). In *The Concept of Nature* however, Whitehead lays considerable emphasis on the part played by the systematic establishment of theories of light and sound in the seventeenth century, and in particular the connection that Newton made between light and colour. These transmission theories, as Whitehead calls them, put an end to 'the sweet simplicity' of 'the concept of matter as the substance whose attributes we perceive' (Whitehead 1920: 26) and dislodged the epistemological confidence that observation once guaranteed. For while a colour may be perceived to be an attribute of matter, 'in fact' it is not. A gap thus opens up in western philosophy and science between what *seems to be* (what is experienced by the subject) and what *is* (what is known as a fact), between the redness and the warmth of the fire on the one hand, and the conjectured system of agitated molecules of carbon and oxygen on the other. One of the principal aims of Whitehead's concept of nature is to address both the object of perception (which is the task that the philosophy of science set itself), as well as the perceiver and the process, and the histories of their relations. For if these entities are *not* understood to be related to each other, then as Whitehead (taking the scientific neglect of aesthetic value to its logical conclusion) wryly notes:

> nature gets credit for what should in truth be reserved for ourselves: the rose for its scent: the nightingale for his song: and the sun for his radiance. The

poets are entirely mistaken. They should address their lyrics to themselves, and should turn them into odes of self-congratulation on the excellency of the human mind. Nature is a dull affair, soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly (Whitehead 1985: 68-69).

The concept of nature, therefore, must refer to *everything* that 'we observe in perception through the senses' (Whitehead 1920: 3). It must refer, as Isabelle Stengers says, not just to 'what we perceive and can identify, but [to] the whole indefinite complexity of what we are aware of, even if we have no words to name it' (Stengers 1999: 197). I will be returning to this point in due course.

In an attempt to avoid the bifurcation of nature into subjects and objects and to illustrate instead their connectedness, Whitehead defines all things, or what he calls 'actual entities' or 'actual occasions', in terms of their relatedness. This is what an actual entity *is* in Whitehead's metaphysical system: a coalition into something concrete, a novel concrescence (or becoming), of relatedness or prehensions. Whitehead often calls prehensions 'feelings,' although they are not emotions in any conventional sense, are not psychological, nor are they necessarily even associated with human subjects. Instead, prehension might be better understood as *a process of unifying*. It is by way of prehension, by way of processes of unification, that all actual entities and societies of actual entities come into existence. 'Feelings are variously specialized operations,' Whitehead writes, 'effecting a transition into subjectivity. ... An actual entity is a process, and is not describable in terms of the morphology of a "stuff"' (Whitehead 1978: 40-41). Nature is a complex not of 'things' *per se*, but of prehensive unifications. Importantly, the unity to which Whitehead refers is not given in a subject, a human mind, in consciousness, or in cognition, but is rather 'placed in the unity of an event' (Whitehead 1985: 114). Whitehead's prehensive unities 'precede' the bifurcation of nature not only into subject and object, but also into primary and secondary qualities. For this reason, the concept of subjective value also undergoes a radical transformation: '"Value"', Whitehead writes, 'is the word I use for the intrinsic reality of an event ... Realisation is in itself the attainment of value' (Whitehead 1985: 116).

Rather than pursue the implications of Whitehead's concepts of the event and of value now, I want to pause momentarily to consider some of the points of resonance between his and Isabelle Stengers' and Bruno Latour's understandings of reality, particularly insofar as they too privilege relationality (to a more or less radical

degree). For instance: in her discussion of the notion of discovery in *The Invention of Modern Science* Stengers describes the reality of America in terms that bear a striking similarity to the interwoven prehensions that are grasped and grasp themselves together in a unity: '[w]hat other definition can we give to the reality of America, than that of having the power to hold together a *disparate* multiplicity of practices, each and every one of which bears witness, in a different mode, to the existence of what they group together' (Stengers 2000: 97). Although Stengers' use of the notion of practices might be likened to Whitehead's emphasis on different modes of becoming (modes of becoming that will shape an entity's mode of achievement in its specificity), in fact, using a rather more Latourian vocabulary, she suggests that it is not the sheer number of witnesses that contributes to the reality of an entity such as America, but rather their heterogeneity: 'If the allies belong to a homogenous class, the stability of the reference only holds for a single type of test. America affirms its existence prior to the discovery of Columbus by the multiplicity of tests to which those who define their practice in reference to it have subjected it' (Stengers 2000: 97).

This is an 'answer' then - an answer which I will be explicating in more detail below in relation to Stengers' understanding of the concept of an event - to the question as to whether America existed prior to its 'discovery', or whether 'the ferments (of the microbes)', in one of Latour's examples, 'exist[ed] before Pasteur' (Latour 1999: 147). It is the kind of question that haunts critiques, and especially constructionist critiques, of science and of the status of scientific objects (are they real? are they representations?) precisely because science aims 'at things that the passing of time cannot "make equal"' (Stengers 2000: 39). How can historians, Stengers ask, 'not think, *like the rest of us*, that the Earth revolves around the Sun'? (Stengers 2000: 41). And yet, she continues, the conception of reality in terms of bearing witness demands that the earth and the sun and the revolutions be understood to be absolutely specific to - and therefore contingent upon - the relations that constitute them. '[W]hoever doubts the existence of the Sun would have stacked against him or her not only the witness of astronomers and our everyday experience, but also the witness of our retinas, invented to detect light, and the chlorophyll of plants, invented to capture its energy' (Stengers 2000: 97.8). Insofar as an entity is dependent upon relationality, upon its interconnectedness with other entities, its permanence - or endurance, as Whitehead puts it - cannot be guaranteed.

Latour ties, helpfully I think, the problem of historicity to the bifurcation of nature into subjects and objects. The problem with the subject/object dichotomy, he writes, is that subjects and objects 'cannot share history equally' (Latour 1999: 149, emphasis omitted): 'Pasteur's statement may have a history - it appears in 1858 and not before - but the ferment cannot have such a history since it either has always been there or has never been there' (Latour 1999: 149). Herein, for him, lies the usefulness of the concept of an event:

> EVENT: A term borrowed from Whitehead to replace the notion of discovery and its very implausible philosophy of history (in which the object remains immobile while the human historicity of the discoverers receives all the attention). Defining the experiment as an event has consequences for the historicity of all the ingredients, including nonhumans, that are the circumstances of that experiment (see concrescence) (Latour 1999: 306).

Rather than concede to the idea of bare and mute facts that lie waiting to be discovered by the active human agent and in order, instead, to grant activity to both actors *and* actants, Latour explores the associations and substitutions - that is, the connections and replacements - that occur between them as they come into existence. Reality is extracted, in Latour's terms, 'not from a one-to-one correspondence between an isolated statement and a state of affairs, but from the unique signature drawn by associations and substitutions through the conceptual space' (Latour 1999: 161-162). An entity does not secure a fixed ontological position by passing into an extrahistorical dimension. Rather, Latour is 'able to talk calmly about *relative existence'* (Latour 1999: 156), 'to define existence not as an all-or-nothing concept but as a gradient' (Latour 1999: 310). Both subjects and objects, or more accurately propositions, are characterised by a dynamic historicity, where historicity refers not simply to the moment of representation ('our contemporary "representation" of microorganisms dates from the mid-nineteenth century') or to evolution ('the ferments "evolve over time"'), but to '*the whole series* of transformations that make up the reference' (Latour 1999: 145, 146 and 150). Each transformation defines an entity in its singularity: just as Whitehead claims that 'an electron within a living body is different from the electron outside it' (Stengers 1999: 202), so Latour suggests that '"air" will be different when associated with "Rouen" and "spontaneous generation" than when associated with "rue d'Ulm," "swan-neck experiment," and "germs"' (Latour 1999: 161).

Another, perhaps more technical, way of putting this would be to argue, as Whitehead does, that '[t]here is a becoming of continuity, but no continuity of becoming' (Whitehead 1978: 35). One of the implications of this claim is that it disputes the finality of those explanations of the world that 'privilege the continuity of the functions or patterns on which they depend' (Stengers 2002: 252) - a point that extends not only to tangible entities in the world, but also to space and to time. For Whitehead, once again, the recourse to time and space as a means of unifying nature – for example the claim that the redness of the fire and the agitation of the molecules occur at the same time and in the same space – cannot suffice as an explanation for it demands that time and space be apprehended *independently* of the happenings that occur in time, or of the objects that occupy space. Whitehead argues instead that, along with subjects and objects, space and time are also reified entities that are to be explained by the contingent and changing events from which they are abstracted.[2] An enduring entity - such as a molecule - does not move through time and space and nor do changes occur in space and time. Instead, motion and change are attributable to the differences between successive events, each with their own durations.

Insofar as it is extensiveness which becomes (and not becoming which is extensive) there is, as Stengers points out, a strong contrast between the values of experimental science and of speculative philosophy: one is 'for' being and the other is 'for' becoming (Stengers 2002: 252-253). Indeed Stengers argues that the atomicity of time was precisely the price, 'the speculative price', that had to be paid 'in order for philosophy to define itself "for" becoming' (Stengers 2002: 252). This does not mean however that the purpose of speculative philosophy is to act as a corrective, nor is it to *devalue* what scientists value (continuity, for instance). When Whitehead criticizes scientific method on the basis of the experiences that it fails to include, when he asks what it is that Wordsworth finds in nature that 'failed to receive expression in science', he does so, he underscores, 'in the interest of science itself; for one main position in these lectures is a protest against the idea that the abstractions of science are irreformable and unalterable' (Whitehead 1985: 103).

Although Whitehead might certainly have wanted to reform and alter scientific abstractions, it is arguable that his own level of abstraction and technicality makes his work difficult to translate in to anything other than a most general political programme. On the other hand, it may be precisely this 'difficulty' that enables Whitehead's work to be such a rich and influential resource for other critics.[3] There is no question for example, as I will be discussing below, of the impact of Whitehead's

approach (or perhaps more specifically, of the impact of a Stengers-Whitehead approach) on the expressly political - and indeed ethical - project that Latour outlines in *Politics of Nature*. Before beginning to address this project, I want to consider the way that Stengers deploys the concept of an event in order to re-conceive of the very relation between science and politics.

Politics, science

The concept of the event is crucial in the context of Stengers' critique of scientists and of critics of science for it offers a route out of 'the black hole' in which both parties, Stengers argues, often find themselves. The reason that they do so, she writes, is because scientists

> if asked to explain, would describe the 'different from all other practices' in terms of privilege, and would distinguish science from other collective practices said to be stamped with subjectivity, instruments for the pursuit of different interests, guided by values that pose an obstacle to truth. Objectivity, neutrality, truth - all these terms, when used to characterize the singularity of the sciences, transform this singularity into a privilege. And this privilege, which confers on the sciences a position of judgement in relation to other collective practices, is also what the critics gathered together in the black hole transform, in their own way, into an instrument of judgement against the sciences (Stengers 1997: 133-134).

It is not enough, for Stengers, for critics of science to draw attention to the ways in which this 'ideally' value-free discipline is 'in fact' riddled with various political, economic and other investments. Similarly, the claim that science is a social undertaking like any other (and here Stengers is undoubtedly referring to some of Latour's and other science studies scholars' early work) is problematic not only because it flattens science out and renders it equivalent to all other knowledges and practices - not 'different from all other practices' after all - but also because it establishes sociology as 'a superscience, the science that explains all others' (Stengers 2000: 3). For Stengers, the challenge is to respect the singularity of the sciences, without at the same time conceding to the perceived opposition between rationality on the one hand and 'illusion, ideology, and opinion' on the other (Stengers 1997: 134): 'Political engagement', she writes, 'is a choice, and not the result of a disappointment linked to the discovery of the political dimension of the practices that reason was supposed to regulate' (Stengers 2000: 59).

Rather than define science in opposition to politics, Stengers redefines politics. Or more accurately, she offers a definition of politics in terms of *cosmopolitics*. Her debt to Whitehead, in the following explanation of this term, is clear:

> [t]he prefix 'cosmo' takes into account that the word *common* should not be restricted to our fellow humans, as politics since Plato has implied, but should entertain the problematic togetherness of the many concrete, heterogeneous, enduring shapes of value that compose actuality, thus including beings as disparate as 'neutrinos' (a part of the physicist's reality) and ancestors (a part of the reality for those whose traditions have taught them to communicate with the dead) (Stengers 2002: 248).

According to this definition, modern science is political through and through not on account of its 'extra-rational' investments but because it has invented a new mode of 'togetherness', one which, specifically, problematises the relation between fact and fiction. Rather than understand this new 'use of reason' in terms of scientific discovery or progress, Stengers puts it under the sign of the event. The Gallilean event, she writes, was

> capable of doing what it was no longer believed possible to do, celebrating the statements that lightheartedly cross the distance between 'nature' and polished balls rushing down a smooth, inclined plane. What is presented as having been reconquered in principle, if not (still) in fact, is precisely *something one believed to have been lost: the power to make nature speak*, that is, the power of assessing the difference between 'its' reasons and those of the fictions so easily created about it (Stengers 2000: 80).[4]

At its most minimal an event, for Stengers, is the creator of a difference between a before and an after. Crucially however, it is not the event itself which is the bearer of signification. Instead, all those who are touched by an event define and are defined by it, whether they are aligned with or opposed to it. In her words (and note how in keeping this description is with her conception of reality):

> [An event] has neither a privileged representative nor legitimate scope. The scope of the event is part of its effects, of the problem posed in the future it creates. Its measure is the object of multiple interpretations, but it can also be

measured by the very multiplicity of these interpretations: all those who, in one way or another, refer to it or invent a way of using it to construct their own position, become part of the event's effects. ... Only indifference 'proves' the limits of the scope of the event (Stengers 2000: 66-67).

Indifference: feeling's own contrast. And yet the notion of an event is a provocation to feeling precisely insofar as it signals that something matters - that something has produced a variation, or made a difference - *without* specifying what that something is, or to whom or to what it will matter. It is impossible to draw up a list of the entities that enter an event in advance because identities and relations acquire definition through it.[5] Not only does the event not have a privileged representative therefore (science is not the domain of scientists alone), it is also impossible for any participant in an event, by definition, to stand outside of it and to pass judgement on it, or to explain it *away* with reference to a history, culture, or geographical area. As Stengers puts it: 'No account can have the status *of* explanation, conferring a logically deducible character to the event, without falling into the classic trap of giving to the reasons that one discovers a posteriori the power of making it occur, when, in other circumstances, they would have had no such power' (Stengers 1997: 216). Latour explicates this point about causality further: '[n]ot only should science studies abstain from using society to account for nature or vice versa, it should also abstain from using causality to explain anything. Causality *follows* from events and does not precede them' (Latour 1999: 152).

The above discussion has begun to address the ways in which the concept of event, as it is used by Whitehead, and to a greater or lesser degree by Stengers and Latour, can be mobilised as part of an anti-reductionist project that seeks to challenge the notion of bare and ahistorical facts, the distinction between primary and secondary qualities, and the opposition between subjects and objects. If subjects and objects cannot be assumed to exist *prior* to the event, and thus cannot claim any general validity, then the question of their existence and the nature of their identity and of their relations (their relation of opposition for example), is no longer a philosophical one but, rather, a matter for practical investigation (Stengers 2000: 132-133). To argue thus is not to undermine or disrespect the achievements of science - be they methodological, epistemological, or ontological - but rather to recognise the specificity of those achievements and the practices, risks, and responsibility which enable them. This in itself serves to displace their privilege. As Stengers puts it: '"Science is different from all other practices!"' For many scientists, this is a heartfelt cry, a cry that needs to be

heard, *even if we remain free not to understand it exactly in the way that those who utter it would like*' (Stengers 1997: 133, my emphasis).

For Whitehead, as I have already noted, the singularity of an entity is derived from a multiplicity of diverse elements that are inextricably conjoined not by relations of cause and effect in space and time but by way of prehensive relations grasped in the unity of an event. One of the important implications of this point is that it displaces the need for any additional - or perhaps Whitehead would say any arbitrary - term to be introduced in order to explain the relations between things. Consider, for example, his critique of the Newton's laws of motion:

> the notion of stresses, as essential connections between bodies, was a fundamental factor in the Newtonian concept of nature. ... But [Newton] left no hint why, in the nature of things, there should be any stresses at all. The arbitrary motions of the bodies were thus explained by the arbitrary stresses between material bodies ... By introducing stresses ... [Newton] greatly increased the systematic aspect of Nature. But he left all the factors of the system ... in the position of detached facts devoid of any reason for their compresence. He thus illustrated a great philosophic truth, that a dead Nature can give no reasons (Whitehead 1938: 184).

This critique has much contemporary relevance. One might consider its implications, for example, with respect to debates that address the usefulness, or not, of analytical terms such as 'the social', 'the natural', or 'discourse'. Some of the frustration that often surrounds the use of these terms can be put down to the recognition that they are abstractions which, as such, cannot do the work of explanation: it is they themselves that instead *require* explanation. Hence Latour's suggestion, cited above, that 'science studies abstain from using society to account for nature or vice versa'. It is not surprising that Latour should advise his reader thus, for he is part of a sociological sub-discipline that has situated itself against grand narratives and reifying concepts and which has, as Adrian Mackenzie (specifically in relation to SCOT) notes, 'stayed within localized sites, seeking to trace the social with an ever more fine-grained focus' (Mackenzie 2005: 4). This is a valuable project, especially insofar as it draws attention to the singularity of each and every situation, a singularity which is not reducible to the individual components that can be identified within it, but is rather to be found in the unique combination of those components in a specific context.

Having said that, there are arguably two key problems with this focus on the local, especially when it is pursued in isolation from any other conceptual construction. In the first instance, to concentrate on the specificity of the context does not in itself address the issue of how such components are connected beyond their circumstantial togetherness. Nature bifurcates: there is the togetherness, and there are the circumstances that led to it. Secondly, while it may be the case that 'concrete fact', as Whitehead would put it, 'is the only reason' and cannot therefore be explained with reference to another term (stresses, in Whitehead's example, society, in Latour's), it is also important to account for what Mackenzie calls 'the overflow', that is, the 'feeling or affect [that] overflows particular localities' (Mackenzie 2005: 4). I want to pursue these issues - in essence, *becoming* and *virtuality* - in the following section of this chapter, specifically in relation to the problem of ethics, and then go on in conclusion to suggest that the concept of virtuality is also useful in further extending Latour's critique of 'additional' - or 'arbitrary', as Whitehead might put it - analytical terms in the social sciences. For if a dead Nature can give no reasons, as Whitehead claims, then it seems important, with regards to ethics, to explore what vital reasons there might be for focusing on value, as well as concrete fact, in social science research.

Exteriority, potentiality

Conventionally, ethics concerns the application of moral principle to concrete social facts. To simplify in the crudest fashion, this understanding of ethics often rests, more or less explicitly, on the bifurcation of nature into subjects (who are active, moral, and able to conceive of and establish value) and objects (which are passive, mute and indifferent, and which usually have no call on value at all). Clearly, this conception is a problem in the context of Whitehead's speculative metaphysics. In the first instance, as I have already noted, this is because Whitehead understands all entities to be constituted by way of their bonds or relations with the world. Thus the distinction between subjects and objects which subtends ethics, as it is usually understood, is impossible to uphold; indeed, it is impossible to conceive of any entity *in* the world being independent or autonomous *from* the world. As I mentioned briefly earlier, Whitehead further argues that all relations are *value-relations*. This is how all real or actual relations (entities) are to be defined: by the value of their relations. Values, in other words, do not exist outside of, or beyond, relations/things; they are neither brought to them, nor can they be separated from them. Instead, an entity is the source of values for other entities, and is the centre of values felt. Valuative relations, *being affected*, is a necessary condition of existence. Values are

'part of the very "matter" of fact - part of the very fabric of "things" in and of themselves' (Rose 2002: 2). This redefinition of the relation between facts and value is a particularly challenging one with regards to the question of ethics for it suggests that all entities (regardless of their definition as subjects or objects) 'have' - or, strictly speaking, *are* - value. How then is it possible to adopt a normative position with regards to such entities, and their relations?

These are issues which trouble Latour, often very explicitly, in his book *Politics of Nature* (2004b). Latour's agenda here is to rehabilitate political ecology through a detailed analysis (and rejection) of the concept of nature, where nature is understood not in terms of a domain of reality, but as a particular function of politics (Latour 2004b: 133). For Latour, nature in the 'old regime' serves to make political assembly and the convening of the collective (associations of humans and nonhumans) impossible. One of the ways in which it does this, he suggests, is by distributing the capacities of speech and representation along the lines of facts and values. Interestingly, Latour does not seek to critique this situation by dislodging the fact/value distinction, or even by conflating facts and values. Instead, he attempts to replace the vocabulary that describes facts and values, and to reco-ordinate the axes on which they turn.

I do not wish to rehearse the details of Latour's position, which is comprehensively laid out in his chapter on this subject (2004b, see especially chapter three). It is important to note at the outset however that Latour is, for the most part, concerned with propositions - literally, pro-positions, the movement and process prior to the point at which an entity becomes 'natural' (i.e. a 'position'), that is, a full-fledged member of the collective. With regards to this process of 'naturalisation', Latour begins by drawing up a list of requirements that any replacement of the terms facts and values must meet, and reorganizes these requirements under two headings (or houses, as he calls them): the 'power to take in account: how many are we?' (which is the task of the upper house) and the 'power to arrange in rank order: can we live together?' (which is the task of the lower house). The key point about this reorganization of public life is that by laying out the stages by which a candidate for existence becomes natural, Latour seeks to extend 'due process', to extend and enroll in other words, as much of the collective as possible in the fabrication of the common world.

Unlike in the old constitution then, where the definition of nature required that facts be established before values are introduced, we all (and this 'we' includes nonhumans as well as humans) participate in the tasks of the two houses, where some of these tasks refer to questions of fact, and some to questions of value. So far, so unsurprising. If Latour's life work can be characterized as an exploration of the lengthy and complex ways in which facts are made, created, fabricated, and invented, of the ways in which they are *not* given in the common world, then the idea that ethical questions are to be raised only *after* the facts have been established is bound to be a matter for critique. For Latour, it cannot be possible to build the best of possible worlds when the question of values (the common good) is separated from the question of facts (the common world). He argues instead that these questions must be conjoined - as the term 'the good common world', which Latour claims is synonymous with Stengers's 'cosmos', indicates (Latour 2004b: 93). The shift that Latour proposes, from the 'the normative requirement from foundations to the details of the deployment of matters of concern' (Latour 2004b: 118), is arguably not a pushing-aside of ethics but rather an extension of it to all who/that are involved in world-making. In his words: 'All our requirements have the form of an imperative. In other words, they *all* involve the question of what *ought* to be done. ... The question of what ought to be, as we can see now, is not a moment in the process; rather, it is coextensive with the entire process (Latour 2004b: 125).

While Latour's position is not identical with Whitehead's (as will I be discussing below), his claim that 'what ought to be' is coextensive with all world-making has something of the same effect as Whitehead's rather more blunt assertion - which I cited earlier in this chapter - that 'realization is in itself the attainment of value'. Both serve to extend the question of value to every aspect of the world/'worlding' (directly, in Whitehead's case, and more indirectly, via an extension of ethics, in Latour's). Whitehead's position is undoubtedly somewhat problematic however, insofar as endurance itself - the sheer existence of a thing - is not an especially desirable basis for ethics. In Whitehead's schema, an actual entity will never fail to fulfil its obligation to produce itself and its own values, even though these values are not necessarily to be valued. It is for this reason, Stengers argues, that:

> specialists of human sciences who take advantage of the endurance of what they describe in order to claim resemblance with the lawful objects of natural sciences are doing a bad job. Each time they use their knowledge in order to claim that they know what humans and human societies may or may not

achieve, they contribute to give to what exists the power over what could be (Stengers 1999: 204).

Stengers is drawing attention here to a distinction between what can be known in and of the world, and what the world could potentially be, a 'could' that can only, or at best, be imagined. I want to suggest that Latour's and Whitehead's 'answers' to the problems they raise by way of their extension of value to process lies here, in domains that pertain to the issue of 'could ...' - but also that their different conceptions of such a domain are suggestive of rather different ethical projects. I begin with Latour, and with the specific role that he ascribes to moralists[6] in the task of world-making.

The role of the moralist in Latour's new constitution is a particularly interesting one: it is 'to recognize that the collective is always a dangerous artifice' (Latour 2004b: 157), to recognize, that is, that the realisation of things that hold an *essential* place, the work of what Latour calls 'internalization', is also always a work of 'externalization'. The notion of exteriority - of what is excluded, or externalized - is an important one with regards to Latour's challenge to the concept of nature as 'stupid matters of fact' which surround society (Latour 2004b: 124). In place of the nature/society bifurcation, Latour suggests there is 'a collective producing a distinction between what it has internalized and what it has externalized' (Latour 2004b: 124). The entities that have been externalised, Latour reminds his reader, 'can be humans, but also animal species, research programs, concepts' - indeed they can be any rejected proposition at all (Latour 2004b: 124). These rejected propositions represent something of a 'danger' since they might at any moment knock at the door of the good common world and, in demanding to be taken into account, not only modify the 'inside' but also, necessarily, invoke a new definition of the outside. The point here is that '[t]he outside is no longer fixed, no longer inert; it is no longer either a reserve or a court of appeal or a dumping ground, but it is what has constituted the object of an explicit procedure of externalization' (Latour 2004b: 125). It is the task of the moralist to '*go looking for [these entities]* outside the collective, in order to facilitate their reentry and accelerate their insertion' (Latour 2004b: 157).

It is tempting at this point to fold Latour into Whitehead and to suggest that the task of the moralist is to oblige others to be obliged to remember that 'every realization of value is the outcome of limitation' (Whitehead 1985: 116-117). For limitation, in Whitehead's metaphysics, is the price of becoming; specifically, becoming is enabled

by the exclusion - and here a new conceptual construction must be introduced - 'of the boundless wealth of alternative potentiality' (Whitehead 1938: 207-208). Potentiality, for Whitehead, is an important concept, the correlative of what is 'given': '[t]he meaning of "givenness",' he writes, 'is that what *is* "given" might not have been "given"; and that what *is not* "given" *might have been* "given"' (Whitehead 1978: 44). Thus while concrete facts are for Whitehead the only reasons - which means that there can be nothing which is external to them that could possibly account for them (such as 'society') - they are not *wholly* given. Some parallels might be drawn here then, between Latour's concept of exteriority and Whitehead's potentiality. Both refer to an excluded exterior. Indeed Adrian Mackenzie notes that in some of Latour's earlier work the concept of the collective is understood to be 'the outcome of an event in which some element of the pre-individual reserve associated with individuated beings in a domain is singularly structured. In this event, both the individuated beings (subjects, objects, assemblages) and the collective itself become something different' (Mackenzie 2005: 14).

Despite these similarities (which Mackenzie also goes on to question), for me the crucial distinction between Latour's and Whitehead's work on this point concerns their relation to what it is or is not possible to know of that excluded dimension. I cited Stengers earlier, who suggests that for Whitehead nature refers not just to 'what we perceive and can identify, but [to] the whole indefinite complexity of what we are aware of, *even if we have no words to name it'* (Stengers 1999: 197, my emphasis). This is a crucial point, and I would want to underscore its relation to potentiality, the defining characteristic of which is that it cannot, by definition, be grasped in thought: 'by the nature of the case', Whitehead writes, 'you have abstracted from the remainder of things. In so far as the excluded things are important in your experience, your modes of thought are not fitted to deal with them' (Whitehead 1985: 73). It is precisely Latour's suggestion that moralists should *go looking* for excluded entities (which implies that something 'exists' that could be 'found'), indeed his willingness to offer examples of the entities that are located in the exterior (such as the eight thousand lives lost per year in France to speeding cars), which indicates, I think, its difference from the concept of potentiality. Latour's concrete examples make it hard not to conclude that the outside to which he refers is not so much an exterior as a neglected interior.[7] Mackenzie's critical point, that science studies scholars have historically laid too much emphasis on 'social relations that could be rationally understood, and explicated' (Mackenzie 2005: 3), is relevant here also. 'Social structure', Mackenzie writes, 'does not exhaust the potentials of collective life'

(Mackenzie 2005: 13). Not entirely dissimilarly, I would argue that Latour's examples point to a curious emphasis on what is already present in the world, on what can be known and what can be found, and on what is already able to be imagined.

Perhaps this should come as no surprise, since it is, ultimately, a politics of *reality* to which Latour is referring:

> Thanks to the moralists, every set has its complementary counterpart that comes to haunt it, every collective has its worry, every interior has a reminder of the artifice by which means of which it was designed. There exists a *Realpolitik*, perhaps, but there is also a *politics of reality*: while the former is said to exclude moral preoccupations, the latter is nourished by them (Latour, 2004b: 160).

Although I welcome the way that Latour seeks to revisit the question of value (and in doing so, to rehabilitate moralists), I want to propose that it is worth extending his politics of reality to a politics of *virtual* reality in order to attend to more than the processes - of exclusion and inclusion, externalization and internalization - by which things come into existence. Latour's point is that matters of concern, or Things, exist and maintain the sturdiness of their existence by way of the gathering together of participants, ingredients, humans and nonhumans that are not necessarily physically or conceptually present in a specific spatio-temporal situation. By recognising this point, and by launching 'a multifarious inquiry ... with the tools of anthropology, philosophy, metaphysics, history, sociology to detect *how many participants* are gathered in a *thing*', critique, Latour argues, will no longer be confined to 'a flight into the conditions of possibility of a given matter of fact' (Latour 2004a: 246 and 245). Latour considers such matters to be 'simply a gathering that has failed - a fact that has not been assembled according to due process' (Latour 2004a: 246). One might ask, however, where critique might be led if due process referred not only to actual but also to virtual processes; if the critic was obliged to attend not only to those entities that are physically or conceptually present *somewhere* (just not here), but to virtual multiciplicities or singularities that have no corporeal presence at all. In other words, rather than focus solely, as Manuel DeLanda puts it, 'on the final product, or at best on the process of actualization but always in the direction of the final product', one might also (or, DeLanda argues, one might *instead*) 'move in the opposite direction: from qualities and extensities to the intensive processes which produce them, and from there to the virtual' (DeLanda 2002: 67-68).

My intentions in what follows are not to 'correct' Latour, and it is certainly not to do so by using the technical details of Whitehead's work as a primer in this task. Nevertheless there is a richness in Whitehead's concepts and writing, as I suggested earlier, which acts as invitation - or as Stengers might put it, which functions as a lure (Stengers 2004) - to take up some his concepts and to explore where they might lead. It is notable that the concept of potentiality is one that Latour neglects, and yet it is here in particular that I find a provocation to ethics - specifically, to an ethics that is wedded to the virtual. This dimension of Whitehead's work was of special interest to Deleuze, and so it is with his reading - or more accurately, his inhabitation - of Whitehead that I begin.

Value, ethics

In his chapter 'What is an event?' in *The Fold,* Deleuze describes Whitehead's eternal objects - arguably his most developed concept of potentiality - as the 'last component of Whitehead's definition of the event' (Deleuze 2003: 79). A prehension, Deleuze writes, 'does not grasp other prehensions without apprehending eternal objects' (Deleuze 2003: 79). Eternal objects are 'pure Virtualities that are actualized in prehensions' (Deleuze 2003: 79), or as Whitehead puts it, 'the pure potentials of the universe' (Whitehead 1978: 149). The concept of eternal objects has a significant role to play in Whitehead's project, which is in part to return to nature the value (aesthetic value, for example) that he considers modern science to have misplaced. Eternal objects do some of this work inasmuch as they enable Whitehead to account for qualities and intensities without casting these as 'secondary'. This is because, with their physical ingression into an actual occasion, eternal objects become an actual and un-detachable property of a thing, defining it in its particularity. An eternal object, Deleuze writes, 'can thus cease becoming incarnate, just as new things - a new shade of colour, or a new figure - can finally find their conditions' (Deleuze 2003: 80). As the name suggests, eternal objects come close to being universals - 'though not quite', Whitehead adds (Whitehead 1978: 48). Not quite, because it is precisely through the 'realization' of eternal objects that actual entities differ from each another. Deleuze develops this point in *The Logic of Sense*[8] in relation to the infinitive verb, which he identifies as having two dimensions: on the one hand it is virtual and incorporeal, it is a potentiality or becoming, while on the other hand it indicates a substantive relation to a 'state of affairs' which takes place in a physical time characterised by succession. Thus Deleuze writes of 'the verb "to green," distinct from the tree and its greenness, the verb "to eat" ... distinct from food and its

consumable qualities, or the verb "to mate" distinct from bodies and their sexes' (Deleuze 2004: 221).

Whitehead is of particular interest to Deleuze because he rejected substance as the basic metaphysical category, choosing instead to privilege continuity. As the discussion of the becoming of continuity earlier indicated however, this is not the continuity of rectilinear tracks or of lines that could dissolve into independent points but of an infinite series of actual entities or coalitions of prehensions. Contra the oppositions between the figure of the sovereign subject and the inert object, between organic and inorganic matter, Deleuze too emphasises continuous movement and activity, the constant enfolding, unfolding, and refolding of matter, time and space. 'The unit of matter, the smallest element of the labyrinth, is the fold, not the point' (Deleuze 2003: 6). In arguing thus, Deleuze poses a challenge to any philosophy that rests on a distinction between the knowing subject and the object for knowledge. In Deleuze's 'objectless knowledge' (Badiou 1994: 67) the object refers not to a spatialised relation of form-matter, but to a *temporal* modulation, a variation, in a continuum. Correlatively, the subject, which also represents variation, is a 'point of view'. This does not mean that the subject 'has' a point of view (which would imply a pre-given subject), or that the truth varies from subject to subject (which would imply that the truth is relative), but rather that the point of view is 'the condition in which the truth of a variation appears to the subject' (Deleuze 2003: 20).

The concept of the event is especially important in the context of Deleuze's emphasis on continuity. As Alain Badiou explains, the event is what enables Deleuze to account for singularity, it is '*what singularizes continuity in each of its local folds*' (Badiou 1994: 56).[9] In this respect an event is always 'present' in a situation, at least in its virtual dimension. This is not to suggest that it is the cause of that situation however, or that it precedes it *as such*, or that it should be thought of in terms of an original or model. On the contrary, the infinite number of contingencies that are introduced in processes of becoming ensure that a concrete fact does not amount to a realisation of 'something that already existed in a nascent state' (Ansell Pearson 1999: 38). Insofar as the world maintains the power of virtuality, it also therefore maintains the capacity to become differently. Able to be actualised in multiple ways (which is another way of saying that an event is not bound to a particular space and time, but may be experienced whenever and wherever it is actualised anew), an event retains an openness to re-inventions (or re-eventalisations). It is the inexhaustible reserve or

excess that produces novelty. As Deleuze notes, the eternality of eternal objects 'is not opposed to creativity' (Deleuze 2003: 79).

Deleuze's concept of the event is especially useful insofar as it displaces the habituated notion that everything that is 'realized' (in Whitehead's terms) in a particular situation must be explained solely with reference to the participants *in* that situation. Against the mechanistic notions of cause and effect that underpin many scientific conceptions of the world, this is a notion of 'causation' in which what happens in a particular context cannot be explained or accounted for solely by it, or by the physical entities that compose it, nor can it be reduced to it. If one were to liken, for example, the qualities of subjectivity and objectivity to (a complex of) eternal objects, then these qualities would be understood to be both inside *and* outside the experiment, both 'universal' and particular, abstract and concrete.[10] Indeed, bearing in mind the relation between universality and particularity that the concept of eternal objects raises, or that is raised by the relation between the virtual and the actual, one might argue, as Whitehead does, that '[w]e are in the world, and the world is in us' (Whitehead 1938: 227). What is important here, however, is that the world to which Whitehead refers includes a 'virtual' dimension. As such, the notion that 'we are in the world' (and vice versa) must be distinguished from Latour's ostensibly similar claim that, were we to give him 'one matter of concern', he would be able to show us 'the whole earth and heavens that have to be gathered to hold it firmly in place' (Latour 2004a: 246).

Although Whitehead's claim that 'realisation is in itself the attainment of value' and Latour's claim that world-marking is co-extensive with 'what ought to be done' seem, at first glance, to have something of the same *effect* - both extend questions of value, directly or indirectly, to process - in fact they give rise to rather important differences with regards to ethics. While Latour's argument in *Politics of Nature* undoubtedly addresses itself to key ethical issues (such as the relations between facts and values, and the task of moralists), in the end, ethics can hardly be distinguished from due process. If *all* praxis, *all* fabrication, is ethical, then it becomes difficult to understand what it might mean to think and act ethically, as opposed to what it might be to think and act at all. This is why the ascription of a specific role to moralists is one of the most confusing aspects of Latour's work in this area. Why is this necessary, if *every* question posed to the world, by whoever or whatever poses it, is always already ethical in character? Latour's answer - that moralists, in contrast to scientists, politicians and economists, do not have an investment in bringing closure to the

discussion as to what should be taken into account - is hardly inherent to the profession. Indeed, in view of the many controversies that surround those who work in this field, and the complex networks of power that are invested in the institutionalisation of ethics (and bioethics in particular), one might argue that there are others - artists, for example - who are far better qualified for the role, as its requirements are defined by Latour.

It is difficult, in other words, to understand what the alignment of ethics and actualisation offers to the critic in practice. Without wishing to collapse Deleuze into Whitehead or vice versa, it is notable that for both, value - and this is the crucial point - does not pertain solely to processes of actualisation or to actual(ised) entities. This is the lesson of potentiality in Whitehead: that it is not abstractions in themselves, whether they are internalized or externalized, which are relevant to ethics, but rather *the relation of those abstractions to unrealised potentialities*, to 'the remainder of things', that abstractions necessarily exclude but whose significance cannot be refused. While it may be the case therefore that for Whitehead endurance is itself the attainment of value, value is not identical to that which endures. It is notable, for example, that Whitehead defines life not in terms of an enduring entity, or as the property of an enduring entity (an entity which could, say, judge and be judged) but rather as 'a bid for freedom' from the 'shackle' of inherited ancestry to which an entity binds its occasions (Whitehead 1978: 104). For Whitehead, life 'lurks in the interstices' (Whitehead 1978: 105), it is 'a novelty of definiteness' (Whitehead 1978: 104), an *alteration* in value. This point is important because it provides a reason (a reason that is immanent to concrete fact) to develop a relation to the virtual, even if that relation is necessarily irreducible to it.

Not entirely dissimilarly, Deleuze argues that the properly ethical task is to try to 'ascend' to the virtual; 'to carry life to the state of non-personal power'; to 'carr[y] out the conjunction, the transmutation of fluxes, through which life escapes from the resentment of persons, societies and reigns' (Deleuze and Parnet 1987: 50). Evaluation, here, is not a question of judgement (defined in terms of pre-existing criteria) but is rather immanent to the mode of existence in question (Deleuze 1998: 134-135). Or to put that differently: evaluation is evaluated by the extent to which it is 'creative of life' (Deleuze and Parnet 1987: 50). This is the difference between understanding the singularity of an event in terms of the *coming* together of relations in unique configurations, and understanding it in terms of a *becoming* together, that is, in terms of the eliciting into being 'factors in the universe which antecedently to

that process exist only in the mode of unrealized potentialities' (Whitehead 1938: 206-207). It is perhaps in this respect above all then, that Deleuze is distinguished from Whitehead, Stengers and Latour. For Deleuze, event is not solely a conceptual tool by which to critique mechanistic and reductionist understandings of the world (for instance). More than this, being equal to an event - willing an event in a way that involves neither resignation nor ressentiment, that is affirmative, and that transforms the quality of the will itself - is in itself an ethical task.[11]

It would be reasonable to point out, here, that Deleuze's project is also - and perhaps more importantly - distinguished from Latour's insofar as the former is philosophical while the latter is largely, and in keeping with the social sciences more generally, empirical. While there is certainly some truth in this, I nevertheless want to suggest in the final and concluding section of this chapter that the use of the virtual, as a concept, does not necessarily represent a radical departure from core social science concerns and that, as a 'methodological orientation device', it might even contribute to the continued 'life' of empirical social research. Deleuze's analysis of the relations between problems and solutions will be important in this context, especially insofar as problems and solutions are understood, as Manual DeLanda argues they might be, as the epistemological counterpart of the ontological relation between the actual and the virtual.

Problems, solutions

As I noted earlier, one of the most important aspects of Isabelle Stengers' contribution to the philosophy of science has been her analysis of the grounds on which science is critiqued. In this context, Stengers has been especially sceptical of the sociological approach to science. To quote her again on this, in full: 'In saying that science is a social undertaking, doesn't one subordinate it to the categories of sociology? Now, sociology is a science, and in this case it is a science that is trying to become a superscience, the science that explains all others. But how could it escape the very disqualification it brings on the other sciences?' (Stengers 2000: 2-3). Latour, as I have illustrated, has taken this claim seriously and shown how analytic terms such as 'the social' and 'the natural' may be used not to *explain* so much as to *explain away* the very facts that researchers have sought to get closer to. Although science studies scholars have generally been slow to apply the implications of their analyses to social theory, it is arguable that the 'mistaking [of] the analytical tool for the reality' (Haraway 1991: 143) often characterises social science more broadly.

Consider, for example, a classic sociological text, *The Sociological Imagination* ([1959] 2000). Although C. Wright Mills claims in this book that 'no one is "outside society"', he nevertheless suggests that the sociologist is distinguished from 'the ordinary man' (Mills 2000: 184) insofar as he or she is uniquely positioned to make visible - that is, to make relevant - the relations between the individual's experience that is here and now, and structures and forces (capitalism, power, patriarchy) which are not necessarily visible in themselves. For Mills, the sociological problem is the bridge between these two domains, between history and biography, and it is in formulating the problem that the sociological imagination realises its full potential. This bridging, or making the connection, is, for Mills, transformative: it transforms the ordinary man's experience of his own experience. One of the problems with 'the sociological problem' however, as it is cast by Mills, is that it takes historical social structures on the one hand and some variation of the subject on the other as *given*. These givens are abstractions, as Whitehead would put it; they are the fruit of sociology not only as a discipline, but also as a profession. One might speculate, therefore, that 'making the connection' between them is important not solely because it illustrates the relevance of history to biography, but because the activity of connecting makes sociology relevant to itself (to its own abstractions). Understood in this way, the sociological problem is its own solution: it transforms ordinary experience into sociological experience.

This is perhaps not surprising: as I discussed earlier, an enduring entity will never fail to produce its own values, whether they are *of* value or not. And it is also not necessarily problematic: if sociology is indeed a science, as Stengers pointedly implies, then one might confer on the discipline the respect that the singularity of any scientific endeavour deserves, that is, for inventing scientific objects under the strictest conditions. The 'post-constructivist' claim, that the concepts and methods deployed by social scientists are productive of the very object they seek to investigate, comes close - albeit with very different intentions - to confirming this view (see for example Law and Urry 2003). I say 'with very different intentions' because although the aim of many of these arguments is to draw attention to the limits of social science and to demand, as is often demanded of the natural sciences, that researchers recognise the specificity of their objects (results, products, outcomes), it is also, simultaneously, and perhaps in contradiction, to extend its ambitions. For unlike the 'ideal' of the natural sciences, the social sciences often come with an *explicit* aspiration to be relevant, even to make a difference, to something other than itself. The tensions that I am describing here are witnessed in John Law and John Urry's

article, 'Enacting the Social' (a title which neatly captures their post-constructivist point):

> In a world where everything is performative, everything has consequences, there is, as Donna Haraway indicates, no innocence. And if this is right then two questions arise: what realities do the current methods of social science help to enact or erode? And what realities might they help to bring into being or strengthen? (Law and Urry 2003: 5, footnotes omitted).

It is in this context - in the context of the delicate balancing act between, on the one hand, recognising the role that social scientists play in creating the worlds they seek to investigate and, on the other, wishing to change worlds that include more than social scientists and their objects alone - that the concept of the virtual is of value. Specifically, it is of value as a tool or a technique which might orient the social researcher towards, as Whitehead puts it and as I cited earlier, that which is *not* given and that which *might have been* given; towards that which is *not* already known or even imagined; towards 'the whole indefinite complexity', to quote Stengers once again on this point, 'of what we are aware of, even if we have no words to name it'. In order to explicate this point, I want to consider what a social research project might look like if its basic commitments were not to historical social structures and the subject but to the virtual and the actual. And what Mills' sociological problem might look like, if it were refracted through the virtual problem.

Minimally defined as a dimension of the actual that is neither observable nor accessible in itself, the virtual offers a 'beyond' actual states of affairs for the social scientist to look to. This is important, I think, because the explication of what is not immediately, or indeed ever, accessible is how much of the 'magic' of sociology is generated, as Mills passionately (if somewhat polemically) illustrates. Unlike Mills' social structures however, virtual structures or patterns cannot do 'explanatory work' because they are not determining in the way that social forces, or the material sedimentation of such forces over time, are often understood to be in sociology.[12] Virtual structures are not determining not because the virtual has *no* relation to the actual (it is not an unintelligible outside), but because processes of actualisation introduce many contingent divergences. In practice, this means that the question as to whether something is (going to be) important or relevant in a piece of social research cannot be decided in advance. Indeed, the incommensurability of the relation between the virtual and the actual actively mitigates against this and

arguably *institutes* an openness with regards to the question of what is and is not of value.

Deleuze's analysis of the relations between problems and solutions is informed by many of the conceptual themes that I have already introduced. As Philip Goodchild explains, for Deleuze, '[i]n the same way that events are different from the states of affairs in which they are actualized, problems are different from the solutions which they produce within thought' (Goodchild 1996: 54). '[T]he problem of "light"', Claire Colebrook writes, 'is posed, creatively, by different forms of life in different ways: photosynthesis for plants, the eye for animal organisms, colour for the artist' (Colebrook 2002: 21). As this example illustrates, there is no 'true' solution to a problem (although there are true problems). Photosynthesis, the eye, and colour might have the problem of light in common, but their ancestry, or rather, the distribution of the singularities that determine them as solutions, are clearly different. The best - and this is indeed the best, in value-terms - that a solution can do is to *develop* a problem. 'It seems', Deleuze writes, 'that a problem always finds the solution it merits, according to the conditions which define it as a problem' (Deleuze 2004: 65). The obligation here, then, is not to solve a problem (or to explain it away), but rather to try to enable it to 'speak', as it were, or to pose it in terms which enable it to play itself out in productively inventive and creative ways. When *the problem* (rather than the social scientist, and rather than the 'ordinary man') is enabled to make things that cannot be identified in advance relevant to each other, *both* the social scientist and the 'ordinary man' are likely to be transformed.

There is a tendency with event-thinkers to focus on remarkable points, and on the creative aspects of an event, to argue, for instance, that regardless of the rhetoric of reductionism that may take hold of an experimental event, an event will always imply 'something excessive in relation to its actualization, something that overthrows worlds, individuals and persons' (Deleuze in Halewood 2003: 241). As I have suggested throughout, an event is irreducible to the concrete facts that are actualised in process and in this respect there will inevitably be in any actualisation a dimension of creativity and novelty. Nevertheless, while it is possible to discern ancestries that differenciate[13] the virtual in inventive and creative ways - and in these instances a problem 'is a way of creating a future' (Colebrook 2002: 1) - Whitehead also reminds his reader, as I noted briefly earlier, of the shackle or burden of inherited ancestries, ancestries for which 'the uniformity along the historic route increases the degree of conformity which that route exacts from the future. In particular each historic route

of like occasions tends to prolong itself, by reason of the weight of uniform inheritance derivable from its members' (Whitehead 1978: 56).[14] One might apply this point to disciplinary abstractions and to the inheritances that serve to limit what a discipline can or cannot become. As I noted earlier in this chapter, this issue was of considerable concern to Whitehead. His intentions in developing a speculative metaphysics were, precisely, to produce both 'a restraint upon specialists, and also ... an enlargement of their imaginations' (Whitehead 1978: 17). There are many ways to do this. One of them might be to pursue the 'minor history' of sociology, which, as Wolf Lepenies (1992) illustrates, is literary rather than scientific. In this light of this history it is perhaps no accident that Mills, who was evidently preoccupied in *The Sociological Imagination* by the high price of the professionalisation of the social sciences, should argue that the sociological imagination is as likely to be possessed by 'literary men and historians' as it is by 'professional' sociologists, or that his appendix, 'On Intellectual Craftmanship', should read like an essay on the practice of creative writing.

I have chosen to foreground the concept of the virtual which is also commonly linked to the vitality of creativity. I do not think, however, that 'pursuing' the virtual - making a real difference, producing a variation in value - is an easy task. There is a difference, as Stengers puts it, between sophisticated observation and an event. Or as Deleuze writes, 'what is ... frequently found - and worse - are nonsensical sentences, remarks without interest or importance, banalities mistaken for profundities, ordinary "points" confused with singular points, badly posed or distorted problems - all heavy with dangers, yet the fate of us all' (Deleuze 2004: 191). At the very least, then, the virtual serves as a reminder that not all experiments, not all assemblages, not all gatherings, develop a problem that is worth trying to extract from actuality. Not all actualisations are, in themselves, ethical. And articulating a sociological problem is not in itself necessarily the agent of transformation or the mark of novelty. To redistribute the singularities that determine a solution is to truly transform an event. While such transformations are undoubtedly rare, the aspiration towards them provides a reason for continuing to ask questions about value, including the value of social research.

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Endnotes

[1] 'What this means is that a large number of different trajectories … may end up in exactly the same final state (the attractor), as long as all of them begin somewhere within the "sphere of influence"' (DeLanda 2002: 15).

[2] In this respect event thinking is a protest against the notion that time is an ordered succession of instants without duration and that space is a system of points without extension.

[3] This point is indebted to the numerous conversations I have had with Andrew Barry on this subject.

[4] This is relevant to my earlier discussion of primary and secondary qualities because it accounts for what are perceived to be some of the most significant 'fictions' to have been created about nature: the fictions that stem from the subjectivity of the human senses. Like other modern natural philosophers, Galileo distinguishes between 'qualities absolute and fixed, which form the object of mathematical analysis, and qualities subjective and in flux, which derive from the constitution of the observer' (Proctor 1991: 54). While the former alone are real, necessary, and essential to knowledge of an object, the latter are spurious distortions. And herein, in the recognition of the subjectivity of the observer, lies the significance of experimentation, for the experimental method is cast as an important - if not the most important - technique for eliminating bias and appearance, and for gaining access to the essence of things.

[5] Consider in this context Latour's claim that 'the stock drawn upon *before* the experimental event is not the same as the stock drawn upon *after* it' (Latour 1999: 126).

[6] This is a somewhat controversial term, as is the notion of 'ethicist' in contemporary science and especially biomedicine. It would be interesting to address the question as to what name might be given to the group of people who undertake the 'moralists' task' (see below) as Latour understands it, but this is beyond the scope of this chapter.

[7] My thanks to Michael Parker for encapsulating this point so elegantly and, in so doing, helping me to better understand the implications of it.

[8] Which Paul Patton suggests 'might equally have been entitled "The Logic of the Event"' (Patton 1996: 13).

[9] Which is precisely Badiou's problem. The event, understood by Deleuze as that which emerges out of an ontological univocity, is too much *of* the world, is so much a part of the

world, in fact, that Badiou feels obliged to call its singularity into question: how is it possible to distinguish an event from a fact if 'everything is event'? (Badiou 1994: 56). Deleuze's concept of the fold is so profoundly antiextensional, Badiou argues, so labyrinthine and directly qualitative, that he unable to account for the singularity of an event or rupture at all.

[10] For a detailed illustration of this point, in the context of an analysis of early experiments on serotonin, see Fraser (2003).

[11] In arguing thus, Deleuze owes as much to Neitzsche as he does to the Stoics. Indeed Philip Goodchild suggests that the eternal return should be understood 'not [as] a theory of time, but [as] a technique for living the event' (Goodchild 1996: 53).

[12] 'The reality of the virtual is structure. We must avoid giving the elements and relations that form a structure an actuality which they do not have, and withdrawing them from a reality which they have' (Deleuze in DeLanda 2006: 246).

[13] In Deleuze's work, differenciate, with a c, refers to processes that relate to the virtual, while differentiate refers to processes that relate to the actual.

[14] Technically speaking, Whitehead is makes this claim on the basis of his distinction between pure potentiality and real potentiality. Philip Rose explains the difference thus: 'Pure potentiality is an aspect of the "mere" continuum while real potentiality is an aspect of the "real" continuum. … Where the mere continuum includes the entire spectrum of potentiality, the real or extensive continuum represents the general field of *real* potentiality, that is, the field of objectified or Past Actual Occasions (and their relations)' (Rose 2002: 50-51). This is essentially how all actual entities must be understood following the cessation of immediacy or concrescence. Having 'passed away' or 'perished' as Whitehead puts it, the actual entity functions as a resource or, more accurately, as the real potential for the becomings of subsequent actualities: 'The pragmatic use of the actual entity, constituting its static life, lies in the future. The creature perishes *and* is immortal' (Whitehead 1978: 82).

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