Diderot's egg

Divorcing materialism from eliminativism

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I have taken the invitation to speak about materials and materialisms* as an opportunity to re-examine the position I adopted nearly thirty years ago now, when writing *La Nouvelle Alliance* (translated as *Order Out of Chaos*) with Ilya Prigogine.[1] In that book, I proposed a definition of materialism from the scientific point of view, and more precisely of materialism as a challenge to the sciences. Materialism, I wrote, demands 'that we understand nature in such a way that there would be no absurdity in affirming that it produced us'. At that time, this sentence was meant only to emphasize that the far-from-equilibrium physics which was presented in that book was a step in this direction, because the possibility of matter spontaneously adopting, far from equilibrium, a collective self-organized form of activity was somehow diminishing the gap between life and non-life.

Today the situation has changed. On the one hand, what I took for granted thirty years ago – that understanding nature is at stake in natural sciences – would now be hotly contested by those who are busy deconstructing and eliminating any connection between the sciences and the claims associated with understanding. But, on the other hand, new and academically more and more powerful protagonists have appeared, who would endorse the demand I formulated, but would give it a rather different meaning. Indeed, they happily equate understanding with actively eliminating everything about 'us' that cannot be aligned with their conception of what matter is all about. This is why – and it will be the theme of this talk – I now propose that the demands of materialism cannot be identified in terms of knowledge alone, scientific or other. Rather, just like the Marxist concept of class, materialism loses its meaning when it is separated from its relations with struggle.

Struggle must obviously be distinguished from the academic war games conducted around so many versions of what can be called 'eliminativism'. In 'Democratic Materialism and the Materialist Dialectic', in *Radical Philosophy* 130 (March/April 2005), Alain Badiou critically associated the postmodern claim that there are only bodies and languages with what he called 'democratic materialism'. I would emphasize that the eliminative claim expressed by 'only' may well sound democratic, in the sad sense of erasing all differences that oppose general equivalence, but it is first and foremost part of such an academic war game. Indeed the ones who make this claim take the classic academic high ground: they know while others just believe.

Against such a 'democratic' materialism, it is tempting to invoke Spinoza: 'We do not even know what a body can do.' But we also have to invoke other, more compromising voices. It is academically fashionable to quote Spinoza today, but less so to recall that both religion and the craft of magic implied some knowledge of what language can do – of the power of words crafted to bless or kill, or save, or curse – of ritual words or ancestral words. Only languages indeed!

However, my point here is not about what we know, and what we do not know, or refuse to know. My point is that as soon as materialism is identified with eliminativism – with elimination as an achievement in itself, accompanied by the proud opposition between those who believe and those who know – the connection with struggle is lost. It becomes a matter of mere rivalry for a very disputed title: who is the thinking brain of humanity? Such a rivalry was sadly exhibited some years ago, in the famous 'science wars', with scientists aggressively reacting against the thesis that science was a practice like any other. Whatever

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the dogmatic rigidity of this reaction, it would be a mistake to identify it with a mere defence of their privileges. It may well be that some of the angry protesters would have accepted, as would any heir to Marx, that sciences are practices, and that whatever claims to truth, objectivity or validity they produce, these have to be actively related to those practices. But what scientists heard, and what made them angry, was an attack by academic rivals and judges, claiming that science was 'only' a practice, as 'any' other, implying that those rivals and judges possessed the general definition of a practice.

It is important in this connection to refer to the struggle of radical scientists such as Hilary and Stephen Rose against what they defined as bad science. As Hilary Rose forcefully testified, this struggle was made difficult because their radical allies were not ready to recognize that there are 'bad sciences', as this would imply that there is something like a 'good' science. As if the only opposite of bad is good. As if the point was not to characterize the practices of science in order to resist those who betray the specific constraints of those practices, and also the allies who encourage or take advantage of this betrayal. Today, the relevance of such resistance has become a matter of public and political concern. Together with the wide protest and struggle against GMOs, it is the conception of living beings that dominates contemporary biology that has been turned into a stake in the dispute. The issue is not only the risks of biotechnology, or the problems of bioethics, or even patents, but the very mode of production of scientific knowledge, with the certainties of lab biologists silencing those colleagues who work outside of the lab and ask different and perplexing questions. The great voice of Vandana Shiva is raised not only against biopiracy and the privatization of life forms but also against the abstract definition of those life forms that is exhibited in the project of modifying them at will. It would be a catastrophic mistake, I believe, to recognize the importance of Vandana Shiva's struggle against capitalism, but to associate her protest against the paradigm of contemporary biology with words like holistic, traditional or romantic. Hers is a call not for 'an other science', but for a relevant science, a science that would actively take into account the knowledge associated with those agricultural practices that are in the process of being destroyed in the name of progress.

The thesis I am defending – that materialism should divorce from eliminativism in order to connect with struggle – does not deny that elimination may have been utterly relevant when it entailed struggling against the allied powers of state and church, for instance. Today, however, the situation has changed. Elimination has become the very tool of power. It is not only a tool for capitalism, but also for what I would call, together with Hilary Rose, 'bad science'.

Physicalism

I will not speak here about physics, even if the point may also be made in that case. I will rather speak about physicalism, as referred to by other sciences, meaning the decided elimination of whatever cannot be connected with a rather vague version of what physicists claim to be reality. Physicalism is a weapon for the new protagonists I alluded to above, who are busy conquering new territories by disqualifying everything that cannot be aligned with what they call 'materialism' or 'naturalism'. Humanities are the target. This is exemplified by Daniel Dennett denouncing what he derisively calls 'skyhooks' – miraculous lifters that he defines as transcending the working of evolutionary processes. In order for those processes to be compatible with physics, Dennett claims, they must be understood in terms of replicators and the competition among replicators, producing what he call 'cranes'.

In order not to confuse academic polemic and operations of conquest with a materialist struggle, it is important to be concrete. Such operations, undertaken in the name of progress and reason, are about power. Take two recent books, Daniel Dennett's *Breaking the Spell: Religion as a Natural Phenomenon* and Richard Dawkins's *The God Delusion*. What is characteristic about such books, and the flourishing industry of evolutionary psychology more generally, is the complete ignorance and contempt their authors entertain about the work of their colleagues: historians of religion or anthropologists, for instance. As if this work, the controversies and learning it has produced, the slow and difficult resistance it entails against the easy temptation of projecting the ideas of the West onto other people (that is, of judging them in terms of this standard) was of no interest at all. Dennett would say that all this work is saturated with skyhooks, as are all cultural studies, because they try and take seriously what should be eliminated, reduced to the working of evolutionary cranes. Further he would argue that it is now irrelevant since the cranes' science is a truly objective science, the universality of which has nothing to do with the ideas of the West. This science will not be stopped by scholarly niceties. Its object is the 'real' human behind cultural appearances, the human defined as the result of the working of evolutionary cranes. 'Alas, poor Darwin'…

Anthropologists or historians of religion and others will protest that this leads us back to the imperialist nineteenth century, but if their protest remains in the academic world, if the situation does not become a matter of political concern and struggle, it will be of no great avail. They will be left to dry up in their libraries, with all the research money and new students going to the new evolutionary anthropologists who travel everywhere in order to submit people to questions the aim of which is to identify universal human affective and cognitive features.

This may be only an academic war, but, like the conception of life forms dominating contemporary biology, as denounced by Vandana Shiva, such wars may also be breaking the ground for other kinds of operation. I am thinking of the future great scientific revolution that is now heralded, the great NBIC convergence – the convergence between Nanotechnology, Biotechnology, Information Technology and Cognitive Science. Such a convergence requires a definition of what is to be conquered in the perspective of the legitimacy of this conquest. That is, it requires an elimination of all obstacles as not really mattering, just like the Indian peasants' knowledge must not matter if GMOs are to prevail. And this is precisely what skyhook-hunting and -slaying is doing. The universal acid of the so-called dangerous idea of Darwin is eliminating, dissolving away, all reasons to resist the redefinition of humans as a piece of engineering that can be understood in terms of algorithms, and modified at will. And those who struggle against this operative redefinition of our worlds will have against them the authority of reason and science.

Now a radical theorist may claim that cultural anthropology or history of religion were of interest in the colonial epoch, but that in the present epoch of global, delocalized capitalism, dematerialization, substrate-independent algorithms and universal flexibility are what matters. The changes in contemporary science would then just be the expression of this transformation. This is a very smart proposition indeed, but it may be a bit too smart, as it first warrants that the one who produces such an analysis is not a dupe, does not entertain any illusion. Nobody will be able to say to him or her 'What! You still believe that…' This is a good position in the academic game, but a position that is not connected with any possibility of struggle. It rather emphasizes the power of capitalism to do and undo, and all the theorist can tell to besieged, angry or protesting scientists is: despair, lose your illusions that what you were doing was worth doing, was mattering. Eliminative materialism indeed.

Like Donna Haraway – who has chosen now to dare to write no longer about fashionable cyborgs but about her dogs, about the creation of a relation that matters between her and the dog Cayenne, with whom she practises agility sports – I am convinced that we need other kinds of narratives, narratives that populate our worlds and imaginations in a different way. When writing about Cayenne and about what she has learned with her, Haraway is exposing herself to her colleagues' derision, and knowingly so, but she is making present, vivid and mattering, the imbroglio, perplexity and messiness of a worldly world, a world where we, our ideas and power relations, are not alone, were never alone, will never be alone. As she recalls with joy and wonder, human genomes can be found in only about 10 per cent of the cells that live in what we call our body, the rest of the cells being filled with the genomes of bacteria, fungi, protists and such. This is materialism of another kind, a kind that may be connected with the many struggles that are necessary against what simplifies away our world in terms of idealist judgements about what would ultimately matter and what does not.

It is in the same spirit that I wish to associate the question of materialism today with the active memory of Denis Diderot, and more particularly with the well-known exclamation that marks his *Conversation* with D'Alembert: 'Do you see this egg? With this you can overthrow all the schools of theology, all the churches of the earth.'

Wit, flesh, blood, eloquence – and polemic

As we know, Diderot is traditionally classified among French materialists who are heirs to Baconian empiricism. It is important, however, not to confuse Diderot's 'Do you see this egg?' with the expression of a Baconian trust in the power of empirical knowledge against theology or metaphysics. D'Alembert, the one he addresses in his *Conversation*, the one who is asked to 'see the egg', was not a metaphysician. He was what we would call now a physicist, but at that time a physicist was interested in natural phenomena, in chemistry, medicine, magnetism or electricity. D'Alembert was a mathematician and a mechanist, one who contributed to ending the speculative quarrels between Newtonian, Cartesian and Leibnizian interpretations of motion, of conservation and of force, and to turning the science that started with Galileo into a definitive set of functional, self-contained equations, what was to be called 'rational mechanics'.

In other words, Diderot's *Conversation* with D'Alembert may be read as witnessing a struggle that

is foreign to the historical Bacon because it concerns the very scope and meaning of modern science, a kind of science that Bacon ignored for obvious historical reasons. What Diderot challenges is the benign indifference and scepticism of D'Alembert, the mathematician but also the academician: D'Alembert who promotes a closed definition of rational science, and ignores – considering it a matter of arbitrary opinion that must be kept outside science – everything that exceeds such a definition.

This is why, when Diderot tells about the egg as what enables the overthrow of all schools of theology and all temples on the earth, it is not only the theology of a Creator God he alludes to, featuring the One who, through some Intelligent Design, organized common matter into a being able to get out of the egg, to move and be moved, to feel, suffer and rejoice. It is also that other temple, the academic science of his time, the egg should overthrow. Diderot is fighting a double fight: against a theology with God as the author of the world, and against the authority of a science which refuses the challenge of the egg, in the name of its own restricted definitions. For him the question 'What is matter?' does not have its answer in a particular science. If there must be a materialist understanding of how, with matter, we get sensitivity, life, memory, consciousness, passions and thought, such an understanding demands an interpretative adventure that must be defended against the authority of whoever claims to stop it in the name of reason.

Diderot did not only add 'wit, flesh, blood, and eloquence' to English materialism, as Karl Marx wrote in *The Holy Family*; he also added polemics, polemics against what was considered the epitome of human reason, the mathematical science of matter and motion. At the end of the *Conversation* D'Alembert just wants to sleep, but Diderot warns him 'you will dream on your pillow about this conversation'; and indeed what follows is the famous *Dream of D'Alembert*, with a delirious D'Alembert haunted by Diderot's proposition that the egg requires matter to be gifted with sensation, imagining the famous cluster of bees, with a bee pinching a neighbour, and the neighbour another one, and suddenly the whole swarm gets animated as one unique being…

Let me be clear. I am not proposing a revival of Diderot's materialism as a good definition of a sensitive matter against the bad physicalist one. If I am an heir to Diderot, if I wish to situate myself as such, it is because of the demanding, not the eliminativist, nature of his materialism. Diderot's materialism is not demanding that we *respect* challenging facts. Few facts are challenging by themselves. The egg offers no challenge – it is an egg. Diderot's empiricism is not about the facts and only the facts. He does not ask D'Alembert to observe the egg, but to accept *seeing* the egg, seeing the developing embryo, the small chicken who breaks the shell and comes out. What Diderot asks D'Alembert is that he *give* to the egg *the power to challenge* his well-defined categories.

Recalling that what a temple, any temple, signifies is separateness, the stake for Diderot is that science does not become a new temple, marked by a cut or, to follow Louis Althusser, by an epistemological rupture – between scientific, rational definition and everything else that may be ignored, eliminated, silenced as only a matter of opinion. Accept 'seeing' the egg, Diderot asked. Accept grappling with the messiness of the world, Haraway now asks. This does not mean produce a theory, but pay attention to the idealist temptation, which is inside science as it is inside any claimed separation giving to ideas the power to separate, silence and disqualify. I must admit I feel this temptation at work when Alain Badiou proposes a general definition of science on the model of set theory. Whatever his will to affirm the event and the procedures of truth against rational calculation and reason, the separation is too clean, and makes too many victims. A temple is needed in order for the truth-event to punch a hole in its roof, and the kind of knowledge Haraway gained in agility sport will probably not be admitted in this frame.

My proposition should not be confused with a free-for-all position claiming that all opinions are to be equally admitted. This would be only the reverse of the same coin, a very Dostoyevskian coin by the way. If God does not exist, everything is permitted. If we have no criteria to oppose reason against opinion, we will have to admit everything and illusion will rule. I am not a judge, thinking in terms of what to admit and what not to admit. Opinion as such does not interest me. It functions indeed as an abstract Dostoyevskian term fabricated in order to trap us and have us recognize that we need science, or theory, or whatever. It transforms us into a thinking brain having to direct an opinionated body. What I am interested in is *practice*, the *plurality* and *diverging* character of practices. If Haraway is able to become a witness for her dog Cayenne, it is because of the practice they entered together, of agility sport. And if D'Alembert was able to participate in the definition of what are called the laws of motion, it is because he was an heir to the very strange practice Galileo initiated: the experimental practice that succeeded in turning heavy

falling bodies into reliable witnesses of the way their gain of speed should be described.

I propose as a materialist motto: we never get a relevant answer if our practices have not enabled us to produce a relevant question. How could D'Alembert's physico-mathematical categories be relevant for the egg when they were not the result of practices that address, as mattering, the development of the chicken in the egg? The point is not that the egg has the secret of what matter is. The challenge of the egg points to what is required from matter in order for the development of the chicken not to be a miracle, or the expression of some intelligent design. And the tentative answers to that challenge depend on the practices for which such a development matters.

The power of wonder

One of the many beauties of the English language is the double 't' in the spelling of 'matter'. It moves us away from substance, or any kind of stuff with which a general reason or cause for what we observe can be associated, and it connects us with the verb 'to matter'. But here many philosophers will immediately react. They will object that I am confusing epistemology and ontology, the problem of knowledge and the problem of the way things exist for themselves and by themselves. And some will even add that this confusion is the sign that what I am proposing is just another version of an instrumentalist conception of knowledge, reducing it to the answers we get to the questions that matter for us. This is a replay, again and again, of the same powerful tune that also poisoned the history of orthodox Marxism since Lenin.

I must admit it took me some time to overcome the surprise I experienced when I first encountered this kind of objection. It was some time before I realized how swiftly one proposition had been transformed into another one. My proposition had emphasized that a problem must matter in order to get a possibly relevant answer. The proposition that came back against me was that we impose on what we claim to understand the kind of questions that matter for us, so that all our answers can be explained away, reduced to our own human, too-human interests. The same ambiguity characterizes the use of the term 'interest'. Either we use it as what explains our questions, or we affirm that to be interested by something has the character of an event, since it gives to that something a power it does not generally possess: the power to cause us to think, feel and wonder, the power to have us wondering how practically to relate to it, how to pose relevant questions about it.

In order to make this point more forcefully, let us call what Diderot tried to mobilize against D'Alembert scepticism: 'the power of wonder'. This is a dangerous term, obviously, because of its association with mysticism, bowing down in front of what cannot be understood. But Diderot was not asking that D'Alembert bow down in front of the wonderful miracle of the egg. He was just asking D'Alembert not to explain it away with his conception of matter. To wonder is a verb that, as a French speaker, I envy English speakers. It means both to be surprised and to entertain questions. It thus may refer to the double operation Diderot wanted to achieve on D'Alembert: to have him accept being affected, troubled, surprised, but also being forced to think and question his own knowledge, not in terms its sad limitations, but in terms of the restricted set of practical situations in which it is positively relevant. The point was not to have the wondering D'Alembert enter into the demanding practice upon which depends the eventual production of relevant questions about the egg, but to have him renounce any claim that would imply a privileged link between his knowledge and general overbearing adjectives like 'rational', 'objective' and 'scientific'.

Wonder, as I understand it, is not a general attitude in front of a wonderful world. What is general – the idealist attitude – is the explaining away of what would complicate our judgements, or, worse, what we see as dangerous, encouraging irrationality. This is why silencing the power of wonder is not to be identified with a scientific attitude. Rather, it designates science as it has been mobilized in defence of public order.

Together with the historian Robert Darnton,[2] I would situate the end of Enlightenment in France as when scientists officially accepted this role. It was at a time when French authorities decided to react against the popularity of Mesmerism, which spread across France like an epidemic, and was not devoid of political dimensions. Indeed, Franz Mesmer's magnetic fluid was taken as a concrete affirmation of human equality, because it put into relation any humans, whatever their social class. The scientific commission named by the king included renowned scientists such as Lavoisier and Benjamin Franklin. Confronted with the surprising effects and affects attributed to Mesmer's fluid, they put into action a procedure that turns experimentation into a true judicial trial, imposing on the fluid the question *they* decided was crucial. And, rather unsurprisingly, the magnetic fluid was found guilty of not existing, its effects proving to have imagination as a necessary condition. Imagination, a natural animal feature, was thus defined as a sufficient explanation,

Mesmer was only a quack and there was no need at all to wonder about magnetic healing. Circulate! There is nothing to see.

The commissioners' argument may appear strong, and it is still in use today, but it manifests its authors' complete ignorance or contempt for the practice they were condemning. Already Paracelsus, the father of magnetism, had proclaimed that this force was impotent without will and imagination. This, however, was not the commissioners' problem – their problem was to bring reason to a population that was no longer defined, in the Enlightenment mode, as a potential ally in the process of emancipation, but as gullible, ready to follow any quack or swindler. Modern science as a blind destroyer of traditional practices did not begin with colonization but in Europe, when scientists accepted the role of guardians of an infantile public.

We cannot affirm the constraining relation between intelligibility – as it must be produced and as the commissioners did not produce it – and practice, as its mode of production, without also defending the power of wonder against the alliance of science with public order. But this means learning how to address scientists, how to activate their disentanglement from the role of guardians of rationality that has captivated them and put them at the service of power, both state and capitalist power. In the so-called 'Science Wars', if scientists had been asked 'What is your practice? What matters for you as practitioners?', it may well be that the resulting situation would have been much more interesting from the point of view of political struggle. It may even be that some scientists would have been confident enough to tell about the so-called knowledge economy as it threatens to destroy their practice.

How should we listen to such anxious scientists? The temptation is to explain away their disarray in terms of resistance to renouncing their pretence to disinterested knowledge and autonomy. The knowledge economy is nothing new: scientific knowledge's first value is, and has always been, its potential consequences for interested economic and industrial partners. This looks like a materialist interpretation, explaining away the eventual disarray of scientists to a matter of ideology. The problem is that this is also the interpretation proposed by promoters of the knowledge economy, except for the fact that they do not speak about ideology but about psychological resistance, a refusal by scientists to change their habits, to become more flexible. The two interpretations thus converge on the fact that the scientists' disarray is not worth taking into account. They will still have the resources, the equipment and the facilities they need. The only point being that they will have to propose research programmes that are in explicit agreement with the interests of their partners.

I think that the anxious scientists know better, and that the convergence in not seeing the point of their protest and disarray marks the shortcoming of what merely *looks like* a materialist interpretation. What is at stake in a practice, in any practice, cannot be reduced to the generality of a socially organized human activity. When you address a practitioner, you do not address only a human with a specialized activity. Practices are always collective, and you address somebody who belongs to a collective, the gathering of which cannot be reduced to a question of mere ideology; the gathering of which, furthermore, *can well be destroyed*, for instance if it is effectively dealt with as mere ideology.[3] Scientists know better because they know their practice may be destroyed even if they go on working.

Celebrating the exception

This is why I claimed that the statement 'science is only a practice like any other' was bound to provoke war, independently of the scientists' exceptionalist claims about rationality and objectivity. What was denied or eliminated is the importance of the question of what matters for each practice and of how what matters effectively connects practitioners. For instance, if we take the science of motion initiated by Galileo, Heidegger was quite right to emphasize that the scientists involved did not really think about questions like matter, space or time. But he was quite wrong to conclude that those scientists do not think. What matters for them, what causes them to think, imagine and object positively diverges from what may matter for philosophers. What matters for them – and because of which they may quite happily subvert any settled conception of space, time and matter, including the settled ones in their discipline – is the very specific achievement of an experimental science. In *The Invention of Modern Science*, I characterized this achievement as 'the invention of the power to confer on things the power of conferring on the experimenter the power to speak in their name'.[4] Galileo's inclined plane proving able to turn falling bodies into reliable witnesses of the way their accelerated motion should be interpreted marks an event, something new in human history, and what matters for experimental practitioners, what they celebrate when announcing that 'nature has spoken', is the eventual repetition of such events. Again, an experimental device has achieved the practical high feat of having the phenomenon make a

difference such that it forces any competent, interested person to bow down and agree.

I know that many critics of science have found it necessary to deconstruct this high feat, and affirm that phenomena are unable to make such a difference, that scientists always talk in the name of a reality that remains decidedly mute. This, for experimenters, indeed means war, because it is a direct attack against what first matters for them, the verification of which gathers them as practitioners and causes them to imagine and object. And I would add that this war is completely beside the usual point, namely that it is needed in order to demystify the exceptionalism claimed by scientists. What is needed instead, and drastically so, is that experimental eventual achievement not be abstracted from the practice that produced it; that experimental objectivity be not transformed into the normal reward for a general rational or scientific method, a method that would silence the power of wonder and explain away the egg in terms of belief statements about the possibility of reducing it to the terms of physicalist working cranes. What is needed against scientists' exceptionalism is that the experimental achievement be indeed celebrated as an event, as the exception, not the rule. Diderot's egg has not become an experimental reliable witness.

Celebrating the exceptional character of the experimental achievement very effectively limits the claims made in the name of science. For instance, the way Lavoisier and his colleagues invented a scientific judiciary process against Mesmerism is best described not as an objective demonstration, but as a case of instrumentalization, unilaterally imposing a binary alternative on what they dealt with. Theirs was no achievement at all since the situation they created is unable to produce a reliable witness for the way magnetic cures should be interpreted. It only authorizes a verdict against one possible and unnecessary interpretation, a verdict the only interest of which was to serve public order, to silence the irrationality of the public.

Taking seriously the singularity of experimental practices also leads to understanding the strong possibility of their destruction by the coming knowledge economy. The point is not that the scientific enterprise would lose a neutrality it never had. From the beginning, experimental scientists have taken an active, and even entrepreneurial, part in industrial and commercial development. What is at risk is rather the very social fabric of scientific reliability; that is, the constitutive relation between an experimental achievement and the gathering of what can be called 'competent colleagues', colleagues assembled by the question of verifying, objecting, of putting to the test the eventual power of an experimental fact to force agreement by silencing other possible interpretations. Such a social fabric emphatically does not ensure anything about propositions that have failed, for whatever reason, to become a matter of collective practical concern. But it relates the reliability of the consensus about an experimental scientific proposition to such a collective concern, to the critical attention of colleagues who will use their imagination to test and criticize a claim, whatever its interest and promises.

This quite specific social fabric will be destroyed when scientists as practitioners do not depend upon each other any longer, but are tied instead to competing industrial interests. It becomes then a matter of survival to confirm the kind of promises that attracted the appetites of investors, and to produce patentable results. As the future of those results is independent of concerned colleagues, what will prevail is the general wisdom that you do not saw off the branch on which you are sitting together with everybody else. Nobody will then object too much, if objecting against a scientific argument may lead to a general weakening of the promises of a field. This amounts to saying that, with the knowledge economy, we may have scientists at work everywhere, producing facts with the speed that new sophisticated instruments make possible, but that the way those facts are interpreted will now mostly follow the landscape of settled interests. In other words, the deconstructivist–eliminativist view will then be fully verified. We will more and more deal with instrumental knowledge. But the verification will not result from the deconstructivist's daring perceptiveness, but from the fact that capitalism will have destroyed yet another practice, just as it is an ongoing process of destruction of the commons.

Here is probably my greatest divergence from the orthodox Marxist tradition, and this divergence is directly connected with my materialist standpoint, linking knowledge-production with practices. We live in a cemetery of already destroyed practices, as capitalism, together with state regulations and ongoing pressure to conform to the demands of public order, is a Great Destroyer of practices. But it may also be claimed that radical materialist thinkers have turned a blind, or even a blessing, eye on the ongoing destruction of practices and the attachments those practices cultivate. And it is still the case: when confronting the disarray of scientists who understand that the knowledge economy means the destruction of their practice, many are tempted to answer: 'Well, for a long

time you have believed that you could be a partner of capitalism, that you would be respected because you were useful. You have just learned that capitalism respects nothing. Do not come and complain about the destruction of your practice. Rather, come and join those who struggle, as one among the multitude.'

My proposition is that we do not accept at face value the scientists' complaint that rationality is under attack, that economy should stop and respect the temple of disinterested science, but that we take seriously the fact that rejecting scientists' complaints on those grounds itself leaves the field free for the destruction. Indeed, it justifies it, even if regretfully. My point is that there is no practice the destruction of which cannot be justified, either by the privileges they benefited from, or by their alienating archaism, or by their closure and resistance to change, but all those reasons, if they amount to justifying why destruction is not a cause for struggle, also amount to giving free elbow-room to capitalism in its ongoing destructive redefinition of the world.

My proposition is not restricted to scientific practices. Those practices are privileged only because they force us to make a crucial transition from materialism as a theory of knowledge to materialism as concerned by production, and also destruction, of what exists. What I am confronting here is the fact that the orthodox Marxist vision, whatever its conceptual beauty, left practices undefended. It even defined practitioners as 'not to be trusted' because they would always cultivate their own way of having situations and questions matter, or, in brief, because they have something else to lose than their chains. And we get the same perspective again when Michael Hardt and Antonio Negri celebrate the general intellect, and propose that we consider the multitude not in terms of identities that are in danger of contradicting each other, but in terms of singularities that have no identity to lose and may thus act together in the production of the common.

The dilemma 'either identities or singularities' is a binary choice that primordially expresses, as do all such choices, the transcendent power attributed to abstract discursive reasoning. The point is not to choose, but to escape. Here, this means emphasizing that practices do not contradict each other. Rather, they have diverging ways of having things and situations matter. They produce their own lines of divergence as they produce themselves.

The difference between a contradiction and a divergence is not a matter of fact, of empirical or logical definition, but a matter of struggle: it is something that must be produced and maintained against the idealist oblivion of practice. Indeed, we get contradiction as soon as practice is forgotten and the answers obtained by practitioners present themselves as free from practical constraints; that is, free to be compared to each other and to contradict each other.

However, divergence does not permit the conceptual derivation and warranting of the production of the common, as Hardt and Negri envisage it. We could say that practices are commons, but that the addition of the commons does not logically lead to the common. I am not at all sure that I can imagine physicists and practitioners of such crafts as tarot-card reading or of the art of healing affirming together anything else than a rather empty common goodwill tolerance. As I remarked about Diderot's egg, the power of wonder with which Diderot tried to infect D'Alembert was not intended to inspire a common conception of matter, but to have D'Alembert accept that his conception of matter was not *the* 'rational' one, but the one his practice produced as relevant.

What may happen among diverging practitioners is the creation of what Deleuze and Guattari describe as 'rhizomatic connections': that is, connections as events, the event of an articulation without a common ground to justify it, or an ideal from which to deduce it. We may recall the famous example given by Deleuze of the '*noce contre nature*', between the wasp and the orchid. Their connection is an event that matters in diverging ways for the wasp and for the orchid. Its achievement is not to lead the wasp and the orchid to accept a common aim or definition, but having the wasp and the orchid presuppose the existence of each other in order to produce themselves.

Challenge and diagnosis

How can such events be correlated to the need and concern for unity in struggle or the production of the common? This problem should be addressed in materialist terms, as a practical one, not as a problem the solution of which must be conceptually grounded and warranted, as is the case with the nice image of the multitude as the fountainhead of human creativity. Such an image suggests that if the price of a concept of the common related to free singularities is the destruction of divergent practices, this destruction is no great loss anyway. The fountainhead will produce whatever we may need. The plausibility of this idea may be related to the past polemical use of the concept of practice, when it was mainly in charge of the elimination of any transcendent source of authority, but was not a matter of interest or concern as such. This allows us not to 'see' the systematic destruction of practices, or of commons, as part and parcel of the

power of capitalist expansion, that both conditions it and feeds it. From a materialist, non-eliminativist standpoint, a standpoint that does not accept the nude abstraction of the 'creative human', it may well be that this destruction is the destruction of what enables humans to think, imagine and resist.

Starting from that standpoint, in *La Sorcellerie Capitaliste*[5] I have, together with Philippe Pignarre, addressed the problem of the kind of unity in struggle that may be produced without smoothing away the diverging plurality of practices. We have not produced a general answer but some practical suggestions that may arouse an appetite to counter the nostalgia of a conceptual solution. I will limit myself here to the presentation of a challenge and a diagnosis.

The challenge, which I deem a materialist challenge, is that whatever the mess and perplexity that may result, we should resist the temptation to pick and choose among practices – keeping those which appear rational and judging away the others, tarot-card reading, for instance. The need for such a resistance is something naturalists have learned, when learning to avoid judging animal species as either useful or pests. This does not mean that some animal species cannot be considered as destructive or dangerous. In the same way, some practices may well be considered intolerable or disgusting. In both cases, the point is to refrain from using general judgemental criteria to legitimate their elimination, and to refrain from dreaming about a clean world with no cause to wonder and alarm.

This challenge is not for the future. I come now to the diagnosis. If we have chosen the term 'sorcery' in order to characterize capitalism, it was not as a metaphor, but as an active proposition. It was meant to produce wonder, the kind of wonder the present-day situation may well provoke, when capitalism is utterly divorced from all the usual pretence relating it to human progress, but has nevertheless lost nothing of its power. Such a situation, which nobody would have anticipated thirty years ago, may certainly be explained, but the many clever interpretations provided may also appear as so many versions of the famous Bergsonian retroactive move, when, after an event, the past is understood in its light, and is given the power to explain it. Retroactively there is no wonder. Associating capitalism with sorcery aims first at thwarting this move – that is, at dramatizing the event, at giving to it the power to have us wonder. But it aims also at asking the questions that all sorcery traditions in the world would ask: that is, the question of the vulnerability that the sorcerer's attack is exploiting and the correlative question of the necessary protection against such attacks.

Becoming able to take these questions seriously is connected to the challenge I have just presented. Issues like vulnerability and protection were part of practices the destruction of which has consensually signified the coming into adulthood of humankind, leaving behind superstitions and what was described as belief in supernatural powers. From this point of view, explaining capitalist power through alienation is much more convenient – a bit too convenient, since it both confirms the West's self-assigned mission of demystifying the world, and ratifies what philosophers have not stopped diagnosing, namely that humans usually resist the truth they are indicating, whatever this truth. This criticism is rather well known in post-colonial studies. But the point here is not to criticize but to accept – against the conceptual convenience of concepts such as alienation – to have practices and their destruction mattering. It may well be that their convenient dismissal as causes for thinking, feeling and struggling is part of our vulnerability to capitalist attacks. Is it not the case, indeed, that capitalism is exploiting to its own advantage any trust we may have in a conveniently settled perspective, turning it into an opportunity for new operations? Is it not the case also that conveniently escaping a confrontation with the messy world of practices through clean conceptual dilemmas or eliminativist judgements has left us with a theatre of concepts the power of which, for retroactive understanding, is matched only by their powerlessness to transform? Naming sorcery as the power of what has been able to profit from any assurance our convenient simplifications entailed means that we may have something to learn from those practices we have eliminated as superstitious, the practices of those for whom sorcery and protection against sorcery are a matter of serious practical concern. I do not claim we should mimic those practices, but maybe we should allow ourselves to 'see' them, and wonder.

Notes

1. Ilya Prigogine and Isabelle Stengers, *La Nouvelle Alliance: Metamorphose de la Science*, Gallimard, Paris, 1980; translated as *Order Out of Chaos: Man's New Dialogue with Nature*, Shambala, Boulder CO, 1984.
2. Robert Darnton, *Mesmerism and the End of the Enlightenment in France*, Harvard University Press, Cambridge MA, 1968.
3. For practices and their eventual destruction, see Isabelle Stengers, *La Vierge et le neutrino*, Les Empêcheurs de penser en rond/Le Seuil, Paris, 2006.
4. Isabelle Stengers, *The Invention of Modern Science*, trans. D.W. Smith, University of Minnesota Press, Minneapolis, 2000, p. 88.
5. Philippe Pignarre and Isabelle Stengers, *La Sorcellerie capitaliste: Pratiques de désenvoûtement*, La Découverte, Paris, 2005.