
Another turn after ANT: An interview with Bruno Latour

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Abstract

This is a review, or preview, in the form of an interview, of Bruno Latour's forthcoming book, *An Inquiry into Modes of Existence*. We discuss his intellectual trajectory leading up to actor–network theory and the pluralistic philosophy underlying his new, 'positive' anthropology of modernity.

Keywords

actor–network theory, anthropology of science, Bruno Latour, globalization, modernity, philosophy of science, speech act theory

Bruno Latour's work on actor–network theory (ANT) put him at the forefront of a wave of ethnographic research on scientists 'in action' in their laboratories and in the wider world. Starting with 1979's *Laboratory Life*, his many books, written independently and in collaboration, have traced the chains of reference that connect instrumental inscriptions in labs to factual statements in journals and, eventually, to the laws of nature found in textbooks. Along the way, he has shown, facts take on increasing ontological weight, growing increasingly 'universal' through extensions of the scale and reach of networks and alliances between humans and nonhumans. His work has also contributed to rethinking of modernity, leading scholars to study how scientists, engineers, and their heterogeneous allies have redefined and transformed both nature and society. Compelling, controversial, and constantly on the move, Latour's arguments and collective projects have helped orient many research perspectives in Science and Technology Studies (STS) over the past three decades, creating bridges between science studies and anthropology, history, literary studies, art history, and environmental studies; philosophers have also increasingly engaged with his ideas (e.g. Bennett, 2010; Harman, 2009; Rouse, 1987; as well as Latour, 2010).

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Latour's (1992, 2005) most recent statements about ANT have followed through the consequences of taking 'one more turn after the social turn' – that is, considering society not as the preexisting background upon which scientific and technical innovations build, but rather as a set of concrete relations that they reassemble. His forthcoming book, *An Inquiry into Modes of Existence* (henceforth *AIME*, to be published by Harvard University Press), announces a further, even more dramatic reorientation. First presented and discussed by his colleagues and students in a conference in 2007 in C erisy, the book puts forward an ambitious philosophical program. At its core is a pluralist argument. The picture of science that emerged in Latour's previous writings remains, although science is now defined as 'reference', a term that highlights the multiplicity of mediations and attachments that ensure that scientists' connections to the distant things they discuss are as robust and solid as possible. Yet 'reference' is now presented as just one kind of rationality, one 'mode of existence'. Besides scientific values, the book also discusses at length a number of other values that the West has held dear – those associated with religion, art, law, and economics, for instance – and spells out what, in Latour's view, gives each of them its distinctive type of rationality. Each of these 'modes of existence', he argues, involves specific conditions of truth and falsity, making it possible to decide whether an entity is well or badly made. He presents *AIME* as part of a larger project of 'diplomacy', both among the different regimes of truth in the West and between the West and other cultures. A subsequent phase of the project will stage online, real-time dialogues with experts in each of the modes of existence, with the aim of instituting them more precisely, as a further step in the ongoing diplomatic process of defining and sharing the world in common.

As an anticipatory review of the new book – and as a complement to Latour's own 'Biography of an inquiry', appearing in this issue of *Social Studies of Science* – the following is a edited transcription of a conversation held in Paris on 16 March 2012. Originally conducted at the suggestion of Warren Breckman, editor for the German journal for the history of ideas *Zeitschrift f ur Ideengeschichte*, the interview was first published there in German.

- JT: Before we talk more about the argument and aims of your new book, could you say something about what you thought actor network theory accomplished, and why it was necessary to move, in *AIME*, from an empirical focus, back to philosophy?
- BL: Well in fact it's largely an optical illusion that these are different approaches, since I pursued the two things exactly in parallel. ANT was the result of a collection of things that I was doing in Africa and with *Laboratory Life* (Latour and Woolgar, 1979) – a matrix of semiotics, ethnomethodology, science studies – all with the idea of comparing the truth conditions in different regimes. Actually, one of the reasons why I went to do ethnographic studies of laboratories in California after doing my PhD, which was on biblical exegesis, was the idea of comparing regimes of truth – I didn't call them modes of existence yet. So in terms of publication, it might look as if I was first a sociologist interested in actor-networks, and now I'm again a philosopher working on modes of existence, but for me it was not like that. I had been interested in modes of

existence, I was working on the project. And it is still an empirical project – a collective inquiry, which is an unusual form of inquiry, but still empirical. So it's not first sociology, then philosophy: it's the same interest in empirical philosophy and truth conditions all along.

JT: And networks still play an important part in *AIME*.

BL: Yes, but I now argue that networks are really just one, somewhat heterogeneous mode of existence. 'Network' designates the ability to move out of domains and to connect heterogeneous elements, as well as the surprise created by these heterogeneous cosmograms. ANT's job was to get rid of the rationalist discourse, the difference between force and reasons. It offered the great advantage of being a tool for moving from one domain to the next. But it did not respect the differences between these domains; that was not my priority. So there were some things missing in ANT, to the point where it was really a monomaniacal principle. It was very good at giving freedom of movement but very bad at defining differences. Though of course the differences I'm considering now are not the *old* differences – like this is law, this is science, this is religion, etc. So it took me a while, working in parallel. All the way back to 1975 or '76, I was planning my big inquiry which is now coming to fruition. But I agree, it's sort of hidden, divided between back office and front office. What happened was that actor–network theory was a success, so everyone was talking about humans and nonhumans, relativism, and so on, and I was overwhelmed by the 'after-sale service' of this argument. But at the same time, obsessively, and with quite a lot of confidence, I was actually filling in the questionnaires for which I'm now publishing the report. Because the new book is a report.

JT: To clarify: You did a PhD dissertation in theology, and then you began your ethnographic work in California, at the Salk Institute, immediately afterward?

BL: No, no, the twist was to go to Africa, for my military service, I mean, the French civilian service, like the Peace Corps.

JT: So the dissertation looked at the conditions of truth in religious speech and documents. But you already had in mind the question: Is there a comparison with the sciences?

BL: When I was doing my studies in philosophy in Dijon, I discovered Biblical exegesis. But I wrote my dissertation while I was in Africa, while I was doing something entirely different: learning anthropology and ethnography, and realizing how bad, how asymmetrical were all the discourses on religion, rationality, irrationality. But I have notes in my notebook, from 1975 or '76, on what the program will be: religion, science, economics: because this was the great moment of postcolonial ...

JT: Development?

BL: Development – but not postcolonial studies. Neocolonialism, in fact, which at the time was amazingly strong in Africa. I was studying that, studying the modernizing front. And reading Deleuze and Guattari's (1983[1972]) *Anti-Oedipus* all the time. (Laughs.)

JT: But you weren't just studying it, you were part of it – you were on a state mission, right?

- BL: Aayah ... I was teaching philosophy in a college ... Well ... Yes, I was part of the modernizing front, yes, you're right. (Laughs.) I was part of the thing. And I also have a daughter who was born there. So it was quite a cauldron of lots of interesting things.
- JT: Deleuze was important for you, I know: the little book on *Spinoza* (2001[1970]), and *Difference and Repetition* (1995[1968]).
- BL: But the common link with Deleuze is Charles Péguy.¹ Every September I went with my mother and father to a Péguy symposium, memorial lectures. It's from Péguy that I got the idea of what I now call a mode of existence: a sort of stream or continuity of action, interrupted by a hiatus. It's really a mixture between Péguy and Bultmann.
- JT: Bultmann?
- BL: Rudolf Bultmann, the great Biblical exegete.² A German guy. Bultmann is very, very important, as Henning Schmidgen (2011) showed me in the book he wrote about my work. Because Bultmann's method of exegesis is one that I've used for science stuff. Besides that I had no other real training. And – to speak like Bultmann, who was interested in religion as a kind of cognitive mapping – the 'Hoch-Modell' of a mode of existence is, I think, the idea of *nappes*, or the *layers*, or streams of transformation, and reinvention, that are so beautifully studied in biblical exegesis, but in a positive way – not as destructive or critical. But of course I was also reading Derrida at the time.
- JT: Which is deconstruction, and therefore negative?
- BL: Yes, but since I was into Péguy, I was actually reading Derrida positively – as pointing out other layers of mediation. I read it all positively, the whole critical trajectory of French philosophy at the time: 'Great! More mediation? The more mediation, the better!' And I don't know why this is. If I could find the reason for that, I would have understood my own philosophy, which of course I will never do. That's why I was so surprised when people complained when I used these tools of exegesis for science, because I was using them in the same positive mood. I used these ideas – the more mediations, the more inscriptions, the more rewriting, the more interpretations, the better – to study science in the same way as the truth of biblical texts. In Péguy's beautiful argument, the text is 'on your shoulder': you are responsible for it, and if you don't really bring it out, remake it, it's gone.
- JT: So your innovation was to apply such a perspective to the sciences: more mediation as a good thing, along with this 'hiatus', which calls for constant renewal and remaking. And of course this is how you described networks in general, long before *AIME*: in *Irreductions* (in Latour, 1988), in particular, you emphasized that this constant process of maintaining, and adding, is not artificial: this is what being is. In *AIME*, you call this 'l'être-en-tant-qu'autre', but for a long time, this is how you've said all sorts of things – every sort of thing – exists. And you've connected it to Deleuze, and Péguy, and what Philippe Montebello (2003) calls 'l'autre métaphysique'. But you also argue that this is not particular to the mode of existence you call 'Networks', or even to another mode,

‘Reproduction’ – the term you use in *AIME* to describe the work of collective entities, or societies as Whitehead (1976) calls them, in persisting in being.

BL: No, no! All of them are like that, not just networks. But it was only later that I realized that networks are just *one* of the modes, a meta-mode – a mode that is very good at multiplying connections, but not for listening to differences. The differences had to be found instead in the mode that I am calling the ‘prepositions’, or the antecedents. In this sense, what I’m doing is very much akin to Austin: a sort of ontological form of speech act theory. If you could ontologize speech act theory, you would get the concept of modes of existence.³

JT: For example, the people named by phrases like, ‘I now pronounce you husband and wife ...’

BL: Yes. Austin set out the project of classifying the illocutionary force of antecedents – of that which defines *what comes next*. If you don’t restrict this force to language, and give it some ontological weight, you would get to the argument of modes of existence. You would actually get to the argument made by William James about prepositions, which I also rely on quite a bit: his idea that relations are in the world, not just in the mind.⁴ And James’ work on prepositions also turned up in this amazing work by Etienne Souriau (1943), *Les différentes modes d’existence*, which was very important. With Souriau, I found a guy who was actually daring enough, not only to say there are several modes of existence, but to *count* them.

JT: I get the impression that for you the number of modes of existence is potentially larger than the 15 you describe in the book. But not infinite.

BL: It depends. I’ve reinterpreted Souriau’s notion of modes of existence anthropologically. For me, it means a contrast that people actually make – like if someone has a set number of fabrics and colors, how many contrasts can they make between them? And this depends on a lot of anthropological elements, which can be different in different places and times. Contrary to Souriau, who made a general, universal theory of modes of existence, mine is regional: a study of the things that the moderns have been obsessed by.

JT: You mean it’s regional for the West from about 1600?

BL: Right. The West. It’s about trying to make sense of what happened to Westerners, to the Moderns. And to guide them as they’re confronted with the ecological crisis. It’s a diplomatic inquiry, one that is necessary now because of this tension. Suddenly, it’s quite important to know what has happened to us, and what’s the difference between us and the others – especially since the others are now different – and how all these things can now be renegotiated.

JT: You’ve said that situation has changed, that the ‘modern parenthesis’ is closing; and one part of that is that the West can no longer be so confident about taking on the burden of ‘developing’ and ‘modernizing’ the rest of the world. One way you’ve framed your new project is as a continuation of the ‘anthropology of the moderns’ that you have been doing for some time with ANT, but now instead of evaluating modernity merely negatively – as in *We Have Never Been Modern* (1993) where you argued that the moderns can never live up to the rhetoric or the epistemology that they have used to define themselves – now you are

defining it positively. And at one point you say this is in order to reclaim the European heritage.

- BL: Yes. And a big part of that heritage is optimism. Looking for the optimum. This Western obsession: that the universal has to be reached. But it was prematurely reached by the first modernism. I'm still very interested in the question of what is the common world we are making.
- JT: And you say this positive reevaluation is a first step in the project of creating a new diplomacy, in the moment of, on one hand, the ecological crisis, and on the other hand, the end of the hegemony of the West, with the rise of new powers – you mention China, India, Brazil.
- BL: Right. This gives an occasion to become intelligent, instead of modernizing mechanically – 'forward, forward, forward!'
- JT: But it may also be the moment when such a project is no longer even possible. That it's no longer up to the Moderns, or simply the Westerners, to define themselves any longer. Or to define what the cutting edge of modernity will look like – if the cutting edge is no longer what you called, in *We Have Never Been Modern*, the purification of the world into objects and subjects.
- BL: Well, my interpretation would be that we have never actually 'met' modernity; the 'first contact' has still not occurred. Because the Moderns have been so busy expanding, they never met themselves. They never had the chance to figure out what they were up to. So no, on the contrary, my somewhat fanciful idea is to say that now is the first time the Moderns have the time to do their *own* anthropology. Of course, now there are postcolonial studies, subaltern studies, all sorts of other people doing the anthropology of modernity. Fine. Let them do it. But it's also a valuable occasion for us to ask, what has happened? And of course, to ask, what is it that we are inheriting? Because we know, and this is in your work also, that we don't inherit the 19th century in the same way if we see it as the century of science, progress, and disenchantment, or if instead we see it as the century of new cosmograms, of humanized nature. So I think it's an interesting moment: to slow down, to concentrate on us – I know, that sounds completely bizarre, at the time of post-colonial studies, I agree – but to say okay, let's try to think through what has happened.
- JT: So ANT was *too* successful, in a way, in breaking down the divisions between 'science' and 'society'. And now the question you're asking is: What are the *many* divisions between the *many* modes of existence in modernity. You mention the great difficulty any native informant will have in defining their own domain – that a lawyer, for instance, knows there is something distinct about the law, but has a hard time saying explicitly just what it is. So I'm wondering, how will *you* know when you are confronted with something which is scientific or religious or legal – and not technical? For instance, I was just at a conference about 'religion and machines', which was full of amazing objects.⁵ One was Charles Babbage's Difference Engine, seen as one of the first computers. This object was technical, and of course, scientific, but also beautiful. And it was also used as a demonstration for a certain view of natural theology: it could be programmed to produce a regular sequence of numbers that, to the viewer,

looked like a miracle. So, with this one example, Babbage has no problem with mixing or interposing these modes of existence. Don't we find that with most objects?

BL: All of them.

JT: So how is what you're proposing – defining what belongs to science, what belongs to religion, what belongs to fiction or art – how is that different first of all, from the work of 'purifying' objects from subjects that was so important in your *negative* definition of the Moderns? And also, if it is different, how do you go about doing it?

BL: Well, that's exactly what the inquiry is all about. All situations are mixed, that's what you realize every time. In every situation, if you begin to do a network analysis, you will realize that, to the surprise of the people trying to make a purified domain. Babbage, for instance, is simultaneously a theologian, a politician, a scientist, etc. That's why we have never been modern, because we have never lived in these separated domains. But the fact that there are heterogeneous connections doesn't mean that you cannot 'color' these connections. There are little bits and pieces, which give a different tone. So if you had said to Babbage with his machine: 'You have written a beautiful *novel* about what the future of calculation will be', he would be angry, even though he was indeed doing this, in a way; and Babbage's anger would have to be registered. But not by saying 'You're just doing science', which he obviously is not, but by saying, 'OK, in this cosmogram that you are building, there are a few segments that had to be attached by a connectedness that is, for lack of a better term, scientific. Why? And why are you at the same time fighting for your rights by writing a patent, etc. If it's all about science, why do you care?' Ah: He has a few lines here that seem to be interested in transporting a connectedness and a type of association which we would call *legal*. The portrayal of associations is important, and has to be done every time, because it's always heterogeneous and multimodal. But you don't hear the *harmonics* between all these modes if you describe all of them by saying, well, Babbage is simultaneously doing science, politics, religion. No! He's not simultaneously doing science, politics, religion, because the association is much more refined than that, and it's *very* important that this part of a network and this little bit of association be scientific, and *not* legal, and *not* fictional, etc. So, that's why I compare it to going from a black and white to a color vision of an activity. It's good to see in color. I mean, you could have black and white, but it would be a pity because there are colors which count a lot for these guys and they want to be able to distinguish them: this is red and not yellow. And if we are not able to register these contrasts, our accounts of what happened to these networks will be limited.

JT: So that's how the different modes are made visible – through the contrasts.

BL: Yes. And if you don't have a vocabulary to describe and register those colors, those differences, people will fall back on the old language of domains, and say, 'let's not mix science with politics, etc., etc.' Science studies has been very good at unfolding the diversity of the associations, but as long as there is not a successor to the notion of domains, we're stuck, because people will always fall

back on this language. And they're right: because what they want is a way to register, to hear these distinctions, which are *there*... It's like having a nose with a very great ability to distinguish small differences and being speechless when you have to describe them. So my outlandish interpretation is to say that the Moderns have been able to detect all these values, but they have never actually spent any time determining what they were. And they enshrined them into domains: this is science, this is religion, this is law. Luhmann made his systems out of these things, in an argument that does not hold up to a single inquiry – but that was because he didn't have another vocabulary. So they're right, those who say there is something missing when you say there are no domains: there are, but the question is how do you register them. Science in its official version is very badly registered with this subject/object dichotomy. Nothing is justifiable and solidly established with the subject/object divide, because reference chains have nothing to do with that. That's where the diplomacy comes in.

- JT: You present *AIME* as preparing for a new form of diplomacy. This is where you're going to take someone who is a lawyer, or an artist, or a scientist, and take a project of theirs, or an object of theirs, and apply your definition to it, and ask them, for the scientist for example: 'Does this work for you? Do you agree that this element, this strand, is the color of science, but this strand, is also economic, and this strand is technical, and this strand is aesthetic? And what exactly is crucial about this one strand which defines you, the science strand, which to you is the fundamental definition?' I'd like to hear more about how you plan to operationalize the next part of the project.
- BL: Well, first we have the book. Then we have the inquiry. A while back you asked, what's the difference between domains, and how do you go about identifying them. Well, I've tried, quite systematically, for a quarter of a century, to answer this question with questionnaires I've been keeping in my files. I've extracted from them a summary: this is the book. Then, I will add some of the archives, the proofs, showing the point – this will all be online. But then the next step is, through a digital platform which we're creating, to organize a live debate, a face to face interaction, where we can say: 'Have I captured the experience in a way that you feel does justice to what you would say is being a scientist or being an engineer or being ...?' And on that ground, the pedigree of science studies is pretty good! When we present scientists with our account, people have said, 'yes, that's the way science is made, that's how it is done, yes, you're completely right.' So that's really the Jamesian part – which is to say, 'yes, yes, this experience is shared.' And then I can say, 'OK, would you agree with this definition which accounts, now, for this experience?' And they may say yes, or they may tell us how to make a better definition.
- JT: But isn't the aim then, once again, to separate 'science' from other activities, from 'society'? To 'purify the domains', in some sense?
- BL: No, it's to rebuild the institutions. To institute the values which we think it's important to have. Currently, science is badly instituted because it excludes things which are supposed to be merely supports for science, like mediations and representations, and focuses instead on the epistemology of the 'double-click' – the

illusion that we can go back and forth between objective, detached knowledge and the world as easily and unproblematically as we move from an icon on our computer's screen to the page it links to, by clicking on it.⁶

- JT: It's now clearer that you're not only interested in clearing up the category errors involved when someone says, 'This belongs only to science, and we must exclude the economic, or the religious'. It's more than that: as you said with the Babbage example, you want to be able to capture the subtle and precise additions, borrowings, and interweavings from all the other modes in a situation.
- BL: Yes, but in fact, the category mistake is where you begin: it's the occasion where you feel there is something missing. You have the feeling that there is something fishy, that you are not doing the right thing. And of course, the double-click image of knowledge always makes us misjudge. Double-click is the bad guy in my story. And it is constantly mistaken because it tries precisely to ...
- JT: To replace everything: 'We'll have a science to explain religion, a science for art criticism, a science for the unconscious ...'
- BL: The power of the double-click is pretty strong. This idea of transportation without transformation is everywhere. Especially in economics.
- JT: Your earlier work put a heavy emphasis on laboratory sciences, but now you seem to be saying that economics is actually just as much or perhaps even more of a reason for misunderstanding what the sciences do.
- BL: Yes, you're right. This is precisely the part I've revised the most: the treatment of the three different modes which I've identified, which were previously glued together completely under the term 'economics'. And that happened after I read this incredible book by Reviel Netz (1999) on Greek demonstration, which shows that the Greeks had an originality which is anthropologically amazing. Not the fact of transporting necessity from one diagram to the next through mathematical proofs – the Chinese were doing that – but using that method for *politics*. Netz's book is a watershed about this innovation. It's a completely contingent innovation, but it is extraordinarily powerful when there is this sudden click: to use demonstration in politics, in these questions that had nothing do with philosophy. This is still the most powerful argument they have, all the way from Plato to Steven Weinberg and the science warriors. Really, it's like an absolute obsession: that you could do politics, by transporting, by demonstrating in such a way that you shut people's mouths, without cutting their heads off. I mean, this is amazing. At the Pompidou Center, two years ago, I organized a debate between Netz and Geoffrey Lloyd. It was beautiful, they insisted on all the important points, one after the other. It was just stunning. They showed how there is a similarity between the scripts in economics and politics, which becomes an equivalence. At my school in Paris, at Sciences Po, we just created a whole department of economics, so I have a better feel now for just what these guys do.
- JT: That's sort of the subtext for my previous question. At Sciences Po, you're dealing with managers, administrators, economists: the people who are in many cases, the actual perpetrators of the economic reduction, the double-click illusion. And, especially, the reduction of all the multiplicity of values in society to the single bottom line.

BL: Yes, but they are also quite interesting, and when you look at the detail of their work, they are interesting in their practices. But you're right, there has been a category mistake. And that is: Since we calculate, this is the same as reference, we access something that isn't present. But, no. There are many ways to calculate: one is reference, and one is distribution – the allocation of resources. And these have absolutely nothing to do with each other. For instance, when we have our yearly meeting with the other owners of this apartment building, we meet a guy, called the *syndic*, who calculates: I owe this, and I owe this, and you owe this, and you owe this, etc. So, it is similar to reference, but not the same. All of the owners have to watch this distribution very carefully to make sure they wind up with a distribution they can live with. There's no common ground between a proposition that calculates for the distribution of resources and a proposition for a calculation which accesses the far away. They're completely different. This confusion between distribution and reference – the poison of economics is just that. Because then of course you can clear the room out, since to access things that are far away, all you need are specialists. I mean, you don't assemble all sorts of people to discuss whether there are 10 galaxies, or 300,000 galaxies; this is a question for specialists. But it isn't, or it shouldn't be, just a question for specialists when you're dealing with calculations that distribute the quantity of goods.

JT: When you share.

BL: When you share. And that's where the studies of economics as a discipline have been so admirable; Tim Mitchell's (2011) *Carbon Democracy*, for example. Because they show this difference between reference and distribution so marvelously. Last year I taught a class where students read Whitehead (1978), Philippe Descola (2005), my own stuff; I did all of this, with students with a good scientific training, and they accepted the idea that nature was historical and that all these things were 'socially constructed', etc. But then I assigned Polanyi (1944), *The Great Transformation*, and Tim Mitchell: and with this they were up in arms. 'You cannot say this about economics!' They were much more shocked by these, much more than by Whitehead ...

JT: Polanyi scandalized them! 'What do you mean the market isn't natural, what do you mean it's not the primary state?' That's an amazing ethnographic finding: The nature that the students are least willing to let go of is not the nature of physics, or the big bang, or even biology or genes, but the nature of the economists.

BL: It brings to mind that nice sentence: that people are more ready to entertain the idea of the end of the world than the end of capitalism.

JT: I heard David Harvey say that before an Occupy event.

BL: It's a nice quip.

JT: So, two last questions. Any thoughts about the Mayan prediction about the end of the world in 2012, the year we're living in? And last, as a kind of summary: Could you say very simply what the modes of existence project is about – like if you had to explain it in an elevator?

BL: Well, I have nothing to do with the Mayan prediction; I think the real predictions are much more dire. But for the second question: Modes of existence is a way of

looking at how many entities we can entertain, simultaneously, in a world in which there is more than just subjects and objects. That's about one floor.

JT: The elevator goes to the fourth floor!

BL: And if there is more than subjects and objects, and if we are able to define them, what sort of ontology do they have? If we can answer that, then we will have more space not only to breathe, of course, but also to enter into connection with the others, who are prisoners of modernization's limits, in a sort of prison. And we might be able to meet the constraints set by Gaia, the necessity of making a common world, and by the ecological crisis, on a more equal footing, because we could use all these other ways of handling these multiple ontologies. That's what the project is.

JT: Great. Fourth floor, maybe even fifth.

BL: (Laughs.)

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Notes

1. Charles Péguy, 1873–1914, student of Bergson, philosopher, historian, and literary and biblical scholar, who advanced a mystical Catholic philosophy of being and history, seeing the accomplishment of God's will in artisanal labor, the family, and the republic (see Péguy, 1932).
2. Rudolf Bultmann, 1884–1976, Lutheran theologian and philosopher, affiliated with Heidegger, who sought to demythologize Christianity through an historical dating of the New Testament (1976) and an existential interpretation of its message (1958).
3. JL Austin's speech act theory (1962) concentrated on the performative dimension of language; an 'illocutionary act' is part of activity and brings about a change, rather than simply denoting a state of affairs.
4. James described the flux of pure experience as the sensing of the relations expressed by prepositions: 'Prepositions, copulas, and conjunctions, 'is', 'isn't', 'then', 'before', 'in', 'on', 'beside', 'between', 'next', 'like', 'unlike', 'as', 'but', flower out of the stream of pure experience, the stream of concretes or the sensational stream, as naturally as nouns and adjectives do, and they melt into it as fluidly when we apply them to a new portion of the stream' (James, 1987: 783).
5. Marie-José Durand-Richard, "Charles Babbage, mathématiques et loi divine dans la *Ninth Bridgewater Treatise*." Seminar on *Machines et religion*, organized by Koen Vermeir, REHSEIS/CNRS, Université de Paris VII, 16 March 2012.
6. See the discussion in Latour (2003).

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