Should We Send Collins And Latour To Dayton, Ohio?

by Gerard de Vries

It was a good place to hang around. Very European. Multicultural. Witty people. A community of friends. It was always Sunday.

All of this seems to have ended by now. Hostility rages. Heard the latest news? ‘They are no longer on speaking terms.’ ‘There is a war going on.’

The first shots were fired during a small meeting in Bath, one Saturday, in February 1990. The meeting ended with dinner in a Lebanese restaurant. Soon after, email messages started to circulate, making it clear that deep differences had come to the surface. No Sundays any more, after this Saturday. Read the ravaging/outrageous review of Latour’s book Collins did for Isis. Listen to Latour. Watch Woolgar. Lebanese dinners are not good omens.

Let’s not dramatise. We’re talking about science and technology studies, not about the Balkans. This is a conflict of the size of one of former Yougoslavia’s stamps.

No one with a taste for intellectual matters should be scared by a few rounds of polemics. Pfeffer for the mind. There is nothing exceptional in a discipline splitting up after some time. Young Turks stand up against the old guard and start shouting. But nothing like that has happened here. The main combatants are scholars with long-standing careers. Old hands. A former President of 4S. A recipient of the Bernal Award.

Is the dispute between Harry Collins and Bruno Latour perhaps just a matter of egos in overdrive? The terms in which the debate is conducted and the issues that are at stake suggest that, at least, also more serious matters are involved. It is, among other things, a debate about the scope and ambitions of our business and about the way we should evaluate the achievements of the past decades. Is science studies one of many branches of sociology, a sub-discipline that studies the social process of knowledge production? Or does science and technology studies open a window to the modern world at large? Are we talking about the core of a future anthropology that will completely replace traditional sociology?

True, but the heat of the debate is on a different level. Observe the highly abstract and philosophical issues that are discussed: Humans and Non-Humans, Man and Nature, the Social and the Technical. Deep down, there are Weltanschauungen operating in this debate, which translate into differences in methods, ambitions and styles of writing.

Put shortly, the Sociology of Scientific Knowledge (SSK) is heir to the English and German enlightenment, to a tradition that takes epistemology to be the core of philosophy. Collins is a Kantian dressed up as a sociologist, a rationalist who uses empiricist rhetoric. Latour’s Actor Network Theory (ANT) does not start from this tradition. Its interest lies in the nature of the modern world and it comes with the claim that to analyse this world, one has to bypass epistemology. Latour is doing pan-semiotic ontology. Pardon me?
Let me try to describe the philosophical landscape and let's see how it turned into a battlefield.

SSK

Harry Collins’s Changing Order brilliantly sums up the core of SSK. The point of departure is a simple observation: although the world comes to us in what William James once described as ‘blooming, buzzing confusion,’ there is concerted perception and understanding in science. Collins conceives the task of SSK as to analyse how such concerted perception and action come about, i.e., how scientists actually come to be certain about regularities in practice, how they organise the chaotic world of experience into structured knowledge. As such, Collins’s problem is a well-known, traditional philosophical one, viz. the problem of induction, the problem of how knowing subjects acquire knowledge about the world.

The particular version Collins works upon is drawn from the work of Nelson Goodman. It brings the problem of induction on the level of language rather than knowledge. Epistemological scepticism is translated into the problem of how we know the meaning of words and phrases. Enter Wittgenstein. In Philosophische Untersuchungen, the concept of rule-governed behaviour is introduced to explicate the meaning of words: meaning is rule-governed use. But rules do not contain the rules for their application. So, ‘something more’ is needed to guarantee our continuous correct use of language. According to Collins, ‘social conventions’ fill in this gap. Even in the case that we ourselves have forgotten what the correct application of a rule is, others will be able to identify a mistake. Ergo, the criterion for correct use rests with a community of rule-followers.

Meaning is thus constituted by a community providing agreement. This agreement is not an agreement of opinion but one of being socialised in a ‘form of life’, an agreement in doing things, i.e., to follow certain rules. For example, the physicists Collins is talking about agree on what counts as a good experiment, what counts as a valid argument, what counts as a good scientific paper, etcetera. This agreement is shown in the actual practice of physics as a discipline, in institutionalised beliefs.

At this point, all the essential connections for SSK have been made. The traditional epistemological problem of induction has been transformed into scepticism with respect to meaning. This scepticism cannot be answered as long as we hold a view on language that explicated meaning in terms of truth conditions, because that would bring us back to epistemological problems. Therefore we need another semantics, another philosophy of language: one that concentrates on assertibility conditions. These assertibility conditions are provided by a community that shares a form of life. Enter sociology. Sociologists are the experts on community life. They know everything about institutionalisation. So they can answer the problem of induction. There follows Collins’s solution to this problem: ‘It is not the regularity of the world that imposes itself on our senses, but the regularity of our institutionalised beliefs that imposes itself on our world.’

How much progress has been made? In philosophical respect, not much. Kant pointed to ‘transcendental categories’ where Collins thinks that the ‘regularity of institutionalised
beliefs’ operates. What Collins has provided is in fact a sociologised and dynamic version of rationalism: what marks out humans in nature is not - as Kant thought - the mind (rationality, consciousness), but socialisation. Kant’s formulation, however, has the advantage of not being circular, while Collins’s solution is: the phrase ‘the regularity of institutionalised beliefs’ introduces the induction-problem on a new level. This circularity can be neutralised by embracing epistemological relativism. (Philosophers generally don’t like that: relativism is a poor man’s philosophy. If we accept relativism, why bother about epistemology at all).

But in other respects, Collins’s approach has decisive advantages. It opens scientific knowledge to sociological investigation: to do what epistemologists used to do - i.e., to speak about the nature of knowledge, to account for concerted perception - we may study empirically, by describing the interactions in scientific communities, how beliefs become institutionalised and controversies closed. This is Changing Order’s main asset: detailed analyses of the ways beliefs become institutionalised in science. Philosophical epistemology is replaced by detailed sociological study of the development of scientific knowledge. The content of scientific knowledge is explained by its social context, SSK claims.

So, Collins is a present-day rationalist of sorts. However, the rhetoric in his work, the style of his writing and arguing, is definitively empiricist: the sociologist reveals ‘what everyone should know about science’. In this respect the spirit of David Hume’s famous peroration in the first Enquiry reigns over British SSK: Pick up any book about scientific knowledge. Does it contain detailed (sociological or historical) observation? If not, commit it to the flames.

This is SSK’s Weltanschauung and like any Weltanschauung, it splits the world up into good and bad guys. Who are SSK’s enemies? We can predict the answer. First, of course, all who fail to contribute to the solution of the basic epistemological problem: they do not seem to have any interest in science at all. In the second place, everyone who defends a non-rationalist epistemology: realists, mainly, whatever their further convictions may be. Thirdly, all rationalist philosophers whose insights are not based on detailed - sociological, or historical - observation. Popperians, for example, who dare to argue about science in logical terms, rather than base their ideas on such solid grounds as interviews conducted over lunch. Fourthly, all ‘reflexive’ sociologists and philosophers. They have to be kept at arm’s length. People who think that there might be something puzzling and even paradoxical in using empiricist rhetoric to answer rationalist questions, spoil the game. Last, but certainly not least, everybody who blurs the distinction between the human and the non-human world should arouse deep suspicion. This includes adepts of Artificial Intelligence, the chattering classes who have discovered that they are cyborgs, and also ANT. Rationalists are committed to the view that man has a special place in the world. Their epistemology is based on an inherent asymmetry: what can be said about the ‘non-human world’ is what is perceived by humans. We only have epistemic access to the phenomenal world, not to the noumenal world. The stuff we focus on and interact with are interpretations of the world, never ‘things-in-themselves’. To turn blooming, buzzing confusion into organised knowledge requires human accomplishment.
As we will see, Latour is guilty on all charges, except the fourth one. The problem is that he refuses to stand in this court.

**ANT**

Latour’s interests are definitively not primarily epistemological, but ontological ones. He does not focus on the nature of knowledge of the world, but tries to figure out the nature of a world in which knowledge plays a role our world, i.e., the world of science and technology.

To get a feel for ANT, think of the world as a staged play. How does an actor become a character in a play? Only by interacting with other actors and with artefacts, and by speaking about himself, artefacts, events, and so on. What character is he? Look for the artefacts and the actors that surround him and the plots he is involved in. Watch how artefacts mediate to define a character: a crown on his head translates an actor into a king, and vice versa. How does a prop become a particular artefact which plays a definite role in the world of the play? Look how it has become involved in interactions. On stage, each thing is only constituted solely through its interrelations with, and differences from, everything else. Nothing has any intrinsic features of its own. ‘The properties of a thing are effects on other “things”. If I remove all the relationships, all the “properties”, all the “activities” of a thing, the thing does not remain.’ (Is that a Latour quotation? No, but it could have been. In fact, this is Nietzsche). So, to answer any question about what anything is, and to answer any question about meaning, we have to study how the world in which it plays a role is built up as an effect of interactions, i.e., interactions in which both humans and non-humans are involved. We have to deconstruct the ‘scripts’ that brought actors and artefacts into existence, study their genealogy, and see how in that process they became bestowed with essences.

What is the philosophy behind this? First, call to mind the Saussurian idea (commonplace in semiotics) that there are only differences in language: nothing inherently suits a phoneme for its role in words, the only thing that matters is that it differs from other phonemes. (For example, the phoneme b enters in bat and bed, not in rat and red - that makes b into a distinguished phoneme, but nothing inherently affords b this particular role.) ANT follows up on this. It radicalises this idea, by applying the Saussurean principle to the whole world. Interestingly, ANT is not the first to have done this. In fact, Nietzsche already took - twenty years before Saussure - this step (from which Saussure explicitly refrained) to apply the intuition that language is a system of differences to the whole world. So, what we are talking about is a pan-semiotic ontology, a Nietzschean conception of the world as a text, or - as I would prefer - as a staged play.

No intrinsic features, but differences and interactions constituting a world - that’s the main idea. Even the ontological categories are subject to change. There is no a priori distinction between Man and Nature, Subject and Object. You want to know what the world consists of? Want to know the essence of what has come to exist through the actions of humans and non-humans? Join the audience, watch the play and see how the world evolves as a sequence of events, as an effect of interrelations. See how the world
develops as a network of interlocking characters and artefacts. Just follow the play. Now, sit back and reflect on this for a while. Notice first that it is sheerly impossible to imagine a play without props. Even in En Attendant Godot, there is a rope. Artefacts are crucial elements of almost any situation in which humans interact. If we want to analyse the world, we should take human actors and non-human artefacts on a par. Perhaps we better use one term for both: actant. It will help us see how humans and non-humans may change places, how delegation of human action to a machine may occur. Secondly, observe that on stage, there is only local action. If a faraway, out of sight, event is supposed to affect the course of action we are looking at, the playwright has to introduce a messenger who or which mediates that faraway event for the actors on stage, and for us, the audience. Therefore, if you want to study the modern world, a world in which science and technology play a dominant role, study how texts and artefacts and scientific instruments circulate, how laboratories are built and statistics are collected. For these are the actants that mediate, that make up the extended, often global, networks that characterise our modern world.

This is what Latour is extremely good at: staging an episode in the history of science or technology, picking out the relevant actors and props, showing the work they do, reflecting on what's going on, and thus turning thick description into philosophy. As an anthropologist of science and technology, Latour is playwright and literary critic in one. But aren't we, as audience, interpreting the events on stage? Yes, of course, in a certain sense we are, but that is not the point. On stage, in normal cases, there is no 'interpretative flexibility'. Props speak in a clear voice: 'I'm a crown.' The actors on stage take this for granted, as does the audience captured by the play. Of course, someone may begin to question whether this thing is the real crown or a forgery, but then the action of the play has already turned into a different phase.

Likewise in science. Instruments - and more generally: natural phenomena and things - speak in a clear voice. Outcomes of measurements are taken for granted as unproblematic units; they are 'black boxed'. However, scientists can question outcomes, 'open the black box', by using interpretative flexibility as a rhetorical tool. When a scientist doesn't believe an opponent's claim, but has not yet found a conclusive countermove, he may weaken the opponent's stand by pointing out that his claim is '(just) an interpretation', suggesting that other views are possible as well.

For Collins and the rationalist philosophical tradition, knowledge consists of interpretations of natural phenomena. For Latour, 'interpretations' are the exception, not the rule. ANT focuses on the ways in which arguments (produced by humans) and data (produced by machines) become lined up into black-boxed 'facts' that can speak as one: measuring devices, field experiments, graphs summarising data, even the title of a paper - they all can be instrumental to this effect. Whereas the rationalist tradition perceives human scientists interpreting non-human phenomena, i.e., organising chaotic experiences through the filter of institutionalised beliefs into certified knowledge, ANT focuses on the mediation that is involved in enrolling and controlling both human actors and non-human props into a tight network. In this outlook, interpretation and hence the problem of induction are borderline phenomena.
ANT stresses that networks always involve two-way interaction: everything and everybody that acts, will also be acted upon. For ANT, there is no a priori distinction between something organising (scientists, transcendental categories, institutionalised beliefs, or social context, all being directly linked up with humans) and something being organised (nature, data, experience, etcetera). The difference between organising and being organised is only a matter of time. We have to watch how the play evolves, to see the work that goes into organising (human and non-human) actants into (temporarily) stable networks.

This Weltanschauung is more catholic (in both senses of the term) than the one we discussed before. But this one too, picks out its good and bad guys. Who are ANT’s enemies? First and foremost: the epistemologists. They commit complicated sins. They ignore ontological questions and as a result, they become victim of the rigid modernist worldview with its timeless ontological categories: subject and object, Man and Nature, Humans and Non-Humans. The outcome of the long process of the genealogy of the world is mistaken for an unproblematic starting point of analysis. As a result, epistemologists are seduced to think that they should answer the question as to how scientists organise blooming, buzzing and confusing experience into concerted perception. However, someone who experiences the world as blooming buzzing confusion is certainly not a scientist; he probably needs psychiatric help. SSK fails to see that the content and context of scientific knowledge are both outcomes of the work that goes into building networks of humans and artefacts, and that in this network scientists and the world they investigate mutually assume form.

The second class of enemies of ANT is made up by philosophers who take ontology seriously, but who lack the ability to feed this interest with detailed, empirical analyses: Heidegger, for instance. There are certainly similarities between Latour’s interests and those of this philosopher. But there is a crucial difference in style of writing that one should not skip over light-heartedly. For Heidegger, the modern world has lost something; its genealogy is a story of decline. No need, therefore, to bother with detailed examples. Heidegger has no interest in the modern world itself. Enough. Get rid of him.

The third group are the reflexivists. In criticising SSK, they accept too much of the epistemologist’s framework and problematic. What’s more, their approach often turns into unreadable writing. For somebody with a dramaturg’s eye, this is a deadly sin.

**The dispute**

From the point of view of SSK, Latour’s philosophy is metaphysical nonsense. For SSK, ANT just fails to take advantage of the critical attitude that came with the epistemological scepticism of Hume and Kant. As a result, as soon as Latour starts to discuss science and technology, he is either naive or wrong. He seems to think that scientists have unproblematic access to the world of facts, and that bacteria, Coquilles Saint Jacques or whatever object may draw his attention, speak in a clear voice. Naively, he falls back into the out-of-date realism of the philosophically and sociologically illiterate. As a result, Latour’s practice is reactionary. Uncritically, he embraces the winners in the social power
games of science and technology. Admittedly, it took some time before all of this became clear. Latour's style of writing, which emulates the style of serious empirical work, misled SSK. But in Latour's recent work, there is little left of the 'empirical fulcrum that gave his earlier work its leverage'. The verdict is therefore clear: '[Latour's] We Have Never Been Modern has nothing to offer on the question of the primacy of human society in the making of knowledge, nor on a host of other topics with which SSK still struggles.' In fact, with hindsight, one may wonder whether Latour has ever been part of the great enterprise that SSK is.

Now that SSK has finished its plea, let us turn to the opposite party.

Of course things look different from ANT's perspective. Latour is happy to admit that SSK has been very useful in the past, but only 'for a split second'. SSK helped to transform sterile philosophical studies of science and technology into a discipline where an eye for empirical detail really matters. But Collins is wrong in thinking that the real work has already been done and that we can be proud of the achievements of 'social studies of science' in the past. It is true: ANT 'has nothing to offer on the question of the primacy of human society in the making of knowledge'. But this is not due to a sudden weakness of the mind of ANT's practitioners. The reason ANT has nothing to offer on this issue is that, on second analysis, the question is completely ill-framed. It takes for granted what has to be analysed: what is 'society'?; what role humans and non-humans play in the making of knowledge?; etc. The topics with which SSK still struggles are hardly worthy of attention. Not ANT is the problem, but the other side. Because he fails to move beyond the epistemological problematique, Collins's 'social constructivist' epistemology is by now brain-dead.

It is hard to imagine how this deadlock can ever be unravelled. In this dispute, SSK and ANT not only embody different philosophies, but, as a result of this, they also fundamentally differ on what the dispute is about. However, as in any war, the fronts in this conflict have in fact been less static than the rhetoric of the generals suggests.

Consider first ANT's development. (Hey, I'm trying to be fair, so it's time to reverse the order of presentation used so far.) There has been an interesting shift in Latour's style of writing. Laboratory Life was written in the style of an anthropological site visit, with a few theoretical models and a couple of jokes to sum up the results. This was a style familiar to empirically oriented sociologists and for that reason they can be excused for failing to see that Latour's aims differed radically from both traditional sociology of science and SSK. In Latour's later work, the double role of the (ANT) anthropologist as playwright and literary critic has become much more explicit. Latour's Aramis is a good example. In this book, the history of Aramis, a French high-tech public transportation system, is cleverly and elegantly staged in a kind of Bildungsroman. A young student becomes a detective of sorts, and in the course of his attempts to answer the question 'who killed Aramis?', he learns what technology and society are made of. What mediates the past? Documents with technical details, evaluation reports, interviews with engineers and policy-makers, his professor's commentary. Out of these fragments, the student reconstructs the world of Aramis. From scattered splinters of the past, like an archaeologist, he constructs how content ('technology') and context ('society') co-
developed. He comes to understand that Aramis is not a thing ‘out there’ that is killed by a character (Capitalism, the Communist Party, Engineering Problems) waiting in the background to be discovered. He comes to know a network, and discovers why it disintegrated in the end. How do we, as readers, learn about all of this? In the same way: by constructing a plot out of the fragments in this book. The literary form of the book supports the (ANT) content. By emphasising mediation and by selecting a clever format of writing, the problems the epistemological tradition used to frame as ‘problems of method’ are tackled.

Now consider SSK. By the end of the 1980s, Collins became engaged in a shoot-out with Artificial Intelligence. The reason was obvious. AI’s claim that intelligent machines exist (or are at least at the point of becoming reality) is - if true - a clear refutation of SSK’s basic idea that there is a fundamental and unbridgeable difference between socialised human beings and the non-human world of machines and nature. In this debate, Collins used an argument that did wonderfully well. He claimed that whereas humans can (intentionally) mimic machine behaviour, the reverse is not true: machines cannot mimic normal human action. However, because of the former, we are tempted to think that there is overlap between human action and machine behaviour and that there are in fact certain types of human action that can be better performed by a machine. But this is false. Machines are generally better in performing machine behaviour than men are in mimicking this (machine) behaviour. But from this, it doesn’t follow at all that machines will ever have the capacity to mimic typically human, socialised, and rule-governed action. Machines are good in the area where machines are good: machine behaviour (humans are not so good in this domain); humans are good in the area where humans are good: socialised action (in this domain machines fail). The argument is a little tricky (because it begs the question that is at stake in the AI debate), but it worked. Collins then moved on to apply the same argument to tackle problems that are closer to ANT’s interests: the question as to which part - if any - of human skills can be delegated to machines and, more generally, the problem ‘how men and machines mix’. Observe that this is no longer an epistemological problem, but an ontological one, and that it comes very close to ANT’s interests. But as we will see, Collins’s views remained informed by the same (epistemology-based) philosophy that informed SSK.

The problem ‘how men and machines mix’ turned out to be much more difficult to answer than AI’s outrageous claims. A long sequence of papers (and a forthcoming book with Martin Kush) shows Collins’s adding new distinctions again and again to account for the supposed basic difference between socialised human beings and non-human artefacts. For some time, like the Ptolemaic astronomers, Collins made the impression of needing to add ever new epicycles to save a system that was about to collapse. Moreover, his style of reasoning changed: no more interviews with scientists and engineers over lunch, but elementary examples discussed in the style of good old analytical philosophy - a style that had been discarded in the early days of SSK as pedantic and useless. However, in the end, Collins’s answer came down to an interesting claim that - I think - can be summarised in a simple formula: Yes, men and machines mix, but men mix differently with machines than machines mix with men. With this claim, Collins sticks to SSK’s point of view laid down in the 1970s (the asymmetry between socialised humans and non-humans), but he
also allows some room for a role for un-socialised machines in our concepts of human society and human action. It took Collins a long detour to arrive at a point that is obvious to Latour: that it takes more than just ‘interpretation’ to account for the ways in which humans and non-humans (machines, nature) mix. But along the way, Collins has qualified Latour’s point. His claim points to the possibility that Latour has been too rash in using one category (actant) for both human actors and non-human artefacts. Even if we accept the idea of hybrid (human plus non-human) networks as the basic stuff the world is made of, it may be the case that human actors and non-human artefacts lock into these networks in ways that differ systematically in an interesting way. It is an hypothesis (it is an hypothesis) worthy to be discussed and tested.

Let’s set out two simple constraints for this debate. First, any future contribution to this matter will have to turn philosophy into thick description and back. Let us in that respect grant the ‘split second’ of SSK to last forever. Second, one has to cook up a clever format of writing. A straightforward empiricist phrase regimen (‘this is how I found the world to be’) will not do for the obvious reason that it presupposes the distinction between humans and the world that is at stake. It also entails too simplistic ideas about time and our relation to history. If the texture of the world is made up by a mix of humans and non-humans, we should expect the traces of that to come out in our texts.

No doubt, it will take the parties involved some effort to move, to imagine the opponent’s point of view, to shift style and leave behind philosophical (and national and egotistical) bases. Perhaps EASST can organise a conference. The airbase in Dayton, Ohio, seems to have excellent facilities that are vacant by now.

Notes

3. There are more people involved in the debate than Harry Collins and Bruno Latour, including Steven Yearley and Michel Callon and Steve Woolgar. To reduce complexity, I will stick to Collins and Latour.
4. I use ANT because it is an established name by now, although “Actor Network Approach” seems to me to be more appropriate.
9. A better view on the Nietzsche connection may help to save ANT from the often aired accusation that it embodies a voluntaristic ideology. This accusation (which in Collins’s review in ISIS takes the form of a wild association of Latour’s work with Margaret
Thatcher’s idea that there are only ‘individuals’, and no such thing as ‘society’) is based on a simplistic interpretation of the concept of the ‘will to power’. Cf. Nehamas op.cit. for a more interesting reading of this concept.

11. Collins, Isis, cf. fn. 2
15. This paper grew out of a ridiculously long email message to, among others, Collins and Latour, sent in 1990 shortly after the Bath conference where the papers for the Pickering volume (cf. note 1) had been discussed. I refrained from publishing the argument because I was very pleased to see references to my email message in the printed press. The recent new outbreak of the dispute made me rethink my position. Several people have contributed to the argument, including the two main protagonists of SSK and ANT, and my colleagues Rob Hagendijk, Werner Callebaut, Ruud Hendriks and Annemarie Mol.