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Thomas Dahl

LATOUR AND HIS AMODERN TOUR.
(or La tour moderne)

How scientists became scientists and then scientists again

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senter for teknologi og samfunn
universitetet i trondheim
7055 dragvoll

tlf: +47 73 59 17 88
fax: +47 73 59 15 27

university of trondheim
centre for technology and society
n-7055 dragvoll, norway

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How scientists became scientists and then scientists again[1]

Science and technology studies are today represented in many institutions and different arenas. The field is still not a discipline like philosophy, history, sociology or natural science but compared to the situation 20 years ago these studies have made a huge leap forward towards becoming one.

One of the most important starting points for this development was the many critical studies of modern society that started to focus on science and technology and not only on political, cultural or social structures. These studies became apparent during the fifties and sixties and they saw that science and technology, once only means for societal development, had now become a cause in itself and they were by themselves influential for societal change. Earlier this influence, if it was considered, was seen mainly positive: science and technology were important means for societal development. With the new focus, this changed: science and technology had a political impact and in many ways this impact had a negative character. Especially technology was seen as a cause for the growing discomfort in modern societies. A critical attitude toward science and technology rose but also an interest: why did science and in particular technology create such a discomfort? How come that the means that once was so important in bringing society forward and making life better now could be seen as suppressing to a good human life?

Although the view of science and technology in earlier days was mainly positive, there has always existed critical positions towards them as long as they have existed. In the Middle ages, even in the Antique, there has been negative assessments of science and technology. The difference between this traditional critique and the post second world war kind, was that the second was not solely of a luddist type; it also made analyses and tried to understand its own critical position. Many of these studies could be mentioned, but let us name a few in order to provide it with names: In Europe the works of the Germans Helmut Schelsky and Arnold Gehlen and the French Jacques Ellul are well known. In the

[1] I have especially been helped with this text and its content by Bjørn Olav Listog. Many thanks to him.

US, the critique was often connected to an understanding of environmental problems, problems that pressed forward a changed attitude toward science and technology. Among the best known works are those by Rachel Carson, Barry Commoner and Murray Bookchin (from an European viewpoint). But also in the US, technology and science were placed under the eyes of Argues because of the general state of the society: Lewis Mumford has on many occasions been launched as a father of technology studies. The emigrated German Herbert Marcuse could also be mentioned, not only for a specific impact on a discipline but for an impact on a large part of a specific generation.

All these studies, being profoundly different, seem to agree that: science and technology had in some way become autonomous; science and technology were themselves political actors that politics had to consider. This view can be seen not only in the critical analysis but also in the making of special politics for science and technology that also grew rapidly during the sixties in most western countries. Science and technology had become like monsters that moved around in the world by themselves. Still many loved these monsters and tried to help them forward but a fast growing group saw them as monsters destroying the conditions for a good life.

To do something with these powerful monsters would not be easy: both science and technology were among the most important tools for bringing society forward to its present stage; a critique of them, would it not be a critique of the modern society as such? A critique of a historical development? A romantic passion for the good old days when life was easy and technology simple?

The problems these studies touched upon were many and the different solution drawn up numerous. However, two different solutions can be specified; not being completely separated and often interrelating, but still separated. The first one of these was in many ways a continuation of the critical aspects of the previous studies but with a more profound look on science and technology and sometimes involving radical proposals for changes. Again, only to mention a few names: Ivan Illich, E.P. Schumacher, André Gorz and Jürgen Habermas. Here we find not only a profound will to do something with the modern discomfort; they also drew aspects of and perspectives on science and technology into light that were previously unknown. No wonder that these authors wrote books that attained the status of bibles among activists of different kind during the seventies. However, these studies have to a little degree been integrated and developed in science and technology studies. They have been seen as belonging to a general societal critique, not specifically connected to science and technology studies.

The other solution, or focus on, science and technology, is not so visible as the first one. Not so strange since those taking the direction left, at least in their investigations, the arena of the public discussion and critique and went into the laboratories to study science and technology at work. Here they generated

their own arena for an internal polemic, a polemic well known to everyone being inside the arena themselves. Though internal, it is nevertheless this direction that to a large degree has generated science and technology studies as a discipline with research centres and training programs spread around the western world. But being inside the laboratories doing their studies and searching for funding to support their own research program, this direction has not been able (or willing) to come up with many solutions, proposals or argument around the growing discomfort in the modern society that originally was an important source for the focus on science and technology.

The situation for the last group has changed recently. In 1991, Bruno Latour published a book in French that now has been translated into English (1991, 1993). Latour is well known inside the field of science and technology studies, having been both inside the laboratories of scientists and made several studies on science as well as technology at work.

Although running around in laboratories and following engineers in their construction work, Latour has always kept an eye open to the outside world and has clearly shown that science and technology are not so autonomous activities as originally thought; they are indeed integrated in to the world through networks of different kind. But still: through the open eye, Latour and with him others of the second direction have mostly been looking on how the "outside world" is integrated, used and shaped through the activities of scientists and engineers. Politics has only been present through the work of scientists and engineers and culture is only what is outside the laboratory walls.

This is very different in Latour's latest book: here he is placing not only laboratories and factories under his microscope but the whole of society. And not only society: culture and nature and sometimes even God as well; Latour offers a picture of everything. For those being inside the laboratories, this book must be of great interest since it is one of the insiders that has jumped out and landed on the arena where technology and science studies originated. And for those outside as well: what can those that have been away for so long now tell us about everything? Can the knowledge of how science and technology really work bring us a fresh perspective on our modern world that can help us with the discomfort many of us have with modern science and technology?

With respect to these questions, the title of Latour's book is a little shocking. For what is Latour stating? "*We have never been modern*"! A shock because we were so sure that our present uneasy feeling was a consequence of modernity and its science and technology. Latour, an expert on science and technology, tells us that we have never been modern and that in spite of the obvious presence of exactly science and technology. The title is even not only shocking for those interested or discomforted with science and technology: in the eighties there was a rather heated intellectual debate about whether our society

still was modern or had passed on into post-modernity; Latour states that we have never been modern. After all these shocks have left us to some degree and we are able to look into the book, we get at first sight puzzled: all the names except for one of those that I have mentioned so far are not to be found in the bibliography; the critical fathers must have been washed out in the favour of something completely different. This difference must be not only of a qualitative kind but also of a quantitative: while the sole name mentioned among my names, Jürgen Habermas, writes books like *Theorie des kommunikativen Handelns* which in German (Suhrkamp edition) runs a total of 1175 pages, Latour's book in the French version contains only 211 pages and the English even less: 157. This can be read both by those that have read the Mumford opus the whole way trough, and those who have read laboratory manuals and gone trough factory archives.

Can Latour smile after the shock he has given us? Can he fulfil our expectations as we in our eagerness jump into his presentation? Has the detour into the laboratories been a tour that can clarify our present confusing situation and reduce our discomfort, we that are only citizens and in no way happy scientists? And the most important question: are we really not modern? Many questions that I will touch upon even briefer than Latour's brief manner. But then to use his excuse: once into the big problems, we have to get out fast.

Going into laboratories

The main reason for the interest in science and technology among people like Ellul, Mumford and Marcuse was an unpleasant feeling about modern societies. However, there were others that also started to look on it without the same type of discomfort. Back in the thirties Gaston Bachelard and Ludwik Fleck respectively made studies of scientific practices. Their work, with respect to the insight they showed into scientific practice, was hardly noticed. It was first in the sixties and then with the now rather famous book by Thomas Kuhn, *The Structure of Scientific Revolutions*, 1962, that a debate about what science was and its legitimacy started. First on the arena of philosophy of science. Debating people like Karl Popper, Imre Lakatos and Paul Feyerabend, Kuhn's position on the question of the cause of science progress was that "it should be clear that the explanation must ... be psychological or sociological." (1970, p. 21) Kuhn stated the opposite of the view of science as autonomous: science was a result of the political and social context in which it developed. Kuhn opposed that science develops through its scientific findings, through its research into nature. He claimed contrary that it was made through the value systems, ideologies and institutions with which science was connected.

Although debated, such a position was further manifested by the so called

"strong programme", presented by David Bloor in a 1973-article. Bloor, lending from Mannheim's sociology of knowledge and philosophy of the later Wittgenstein, stated that sociology had to be impartial to validity claims of scientists. All claims of scientists should be treated equally. The reason was that none of these claims could be said to a priori represent or present nature in a better or more truly way than others; the establishment of the claim that finally won through as the most true had therefore to be sought in the social practices of the scientists. Nature was not delivering validity.

Bloor's symmetry requirement was one of the starting point of Latour's 1979 collaboration with Steve Woolgar: *Laboratory Life*. But Latour and Woolgar found the requirement of symmetry to be insufficient, mainly because it was dealing with observation and analysis of claims and practices. The sociological studies of science was still the outside world looking into the laboratories; Latour and Woolgar wanted to be inside them, and then not only as observers but as practitioners. Instead of a sociology of science, they proposed an "anthropology" of science which would be "in situ observations of scientific practice" (p. 29). The scientific statements were no longer the primary focal point; it was how the craft of scientists was able to transform their practice into statements and Latour and Woolgar practised this craft themselves through their participant observation method: they lived the laboratory life together with their laboratorians.

In the laboratory, a place where we should expect to find only hard science, Latour and Woolgar found politics. Not the large scale politics of the problems of science and technology in modern society, but politics in the making of the scientific facts. The term they used to describe this political activity was agony or agonistic. The term was taken from Jean-François Lyotard (the post-modernist). The meaning they gave to it was not that of standard English where it would mean suffering, but understanding it more in the sense the word had in Ancient Greek where it originates: fight, competition, struggle.[2] Scientists work in an agonistic field where they dispute, gain forces and make alliances of which the outcome is the constructed scientific fact, established by the winners of the agony. They stated: "An agonistic field is in many ways similar to any other political field of contention." (p. 237)

But what about the real politics? The politics that decides on how society shall work, behave and do? This politics - the politics of politics - is found in what Latour and Woolgar call the circumstances of the scientific activity. The circumstances represent the outside world of the laboratory, a world that science is not

[2] The term agony is not so much used by Latour in his later writings. It is however a term, with the meaning he gives it, that shows a central feature of Latour's world view: the laboratory, and we shall later see: the society, is a place for fights and competitions. Now the old Greek understanding of fights and competitions were different to ours. The English use of agony meaning suffering gives a picture of the modern view and this may be in strong contrast with the angient view. What Latour means is not obvious. I wounder what he would have said if I proposed to give it the meaning - in a modern sense of course - discomfort?

independent from. Scientists must consider it and they transform it so that it can be connected to their laboratory activities. However, when science presents its scientific facts, the circumstances have disappeared: "they simply vanish from accounts, being better left to political analysis than to an appreciation of the hard and solid world of facts!" (p. 240)

If the outside world is disappearing through the work of the scientists, this is also the case of the scientific work of Latour and Woolgar: there is no explanation of why they went to do their fieldwork except for their interest in understanding laboratories better than other had done so far, and the fact that anthropology had only been used on non-modern cultures, not on a tribe of scientists. Furthermore, these circumstances appear to the scientists through the windows of the laboratory, and scientists leave it to others to do the political analysis. So do Latour and Woolgar as well: their book contain no political analysis of the outside world, of the circumstances. The circumstances appear as given; they can be translated and transformed through laboratory work but no fundamental critique of them is made, neither by the real scientist nor by the scientists Latour and Woolgar.

Being so closely connected to the scientific practice, Latour and Woolgar could be criticised by those doing criticism of modern science and technology for being like the scientists themselves: only concerned with their own internal practice and leaving the solving of the problems of the modern world to others. Latour and Woolgar were so far into the laboratories that they could not see anything except for the scientists around them and others looking on scientists. The modern world could go on as before except for a small group of sociologists, anthropologists and sometimes historians and philosophers, all of science. But for these Latour and Woolgar had reached a milestone: they had gone so far into the laboratory as possible; the next step would be to give up all discipline-activity-of-science and become scientists themselves - or leave the laboratory and enter the world again. It was the latter that Latour did and he took the laboratory with himself.

And going out again

Getting into the laboratories to such a degree that you almost became a scientist yourselves took some time. And it took some time to get out again. Latour has walked this path through many studies and many publications. What can an almost scientist say to the world? What does the world look like when you come out off the laboratory?

The most striking observation for Latour, at least as it seems from his 1987 book, *Science in action*, is that what he has seen inside the walls of the laboratory is not the same as the outside world sees. Science appear as double-faced for Latour, as he now is able both to see it from within and from the outside, science is as the

two-faced Janus. The one side of the face represent the ready made-science, where science appear with straight facts, being efficient, able to convince and provide the truth. This is the face the outside world, the circumstances, see. Latour, knowing what happens when science is made, has also seen the other face. Here science is not ready made but always in the making, it is not dealing with any pure facts, it decides what the outcome of its activities shall be, it searches for means to convince before what shall convince is made and truth appears first after the agony of the laboratory is ended. When only the one face of Janus is seen, science appears as a black box; the processes behind it are not known. Latour wants to open this box; not because he wants to show the problematic aspect of science but simply showing the process of science in the making.

Showing science in the making was also the outcome of *Laboratory life*. *Science in action* differs from *Laboratory Life* primarily because the question is no longer only about science; Latour discuss as much technology as science in *Science in action* and the subtitle stress: "How to follow scientists and engineers through society". Secondly, what also the subtitle stress, Latour is not longer inside the laboratory; his anthropological method has been expanded to the whole of society; the work of scientists and engineers are not only limited to the work in the laboratory and factory; they are working with the whole society as a laboratory and factory.

This large laboratory can be compared to networks in which scientists and engineers move in order to convince, to search for allies, translate previous findings or technologies, and where the outcome is new networks or stabilisation of a fact or an artefact. As an example of this process we could take one of Latour's many examples: the diesel-engine. The Diesel-engine is today a technology that works well in millions of cars. It is named after the inventor: Rudolf Diesel. To make the technology took, however, not only a flash of genius. It was a long process where Diesel had to transform Carnot's thermodynamics into a suitable form, he needed support from powerful persons, financial resources and people willing to test out some of the ideas. By so doing, Diesel invented black boxes that could be used in his further work to make the machine working. The black boxes where made when parts of the making-process could be stabilised, when it was no longer an agony but something which could be established as being so and with no need for further discussion. In this process Diesel did not have any before hand knowledge that he had to work to press through; the final result was shaped through the process of making.

The sociology of Bloor worked according to a symmetry where all types of claims where treated symmetrically, e.g. with no preference to any of them. The explanation to be found of the establishment of a scientific fact was to be found in the social process among scientists. Bloor found that nature itself could not give the answer to a scientific finding, hence the social should be used.

When Latour has been following scientists and engineers, this symmetry is not general enough. Just as little as nature can be used as an explanation of the establishment of a scientific fact, society could be. Society is as little "real" as nature. Latour establish a general symmetry where no a priori elements are used as explanations. A priori elements like society and nature is the outcome of the processes he studies. Inside the black box everything is floating; here scientists and engineers try out new associations, displace interests, negotiates facts, reshuffles groups and recruits new allies; and in doing so they do not make any distinction between some of the elements as being natural, others belonging to society. Rather: nature and society is the outcome of the process in work, they are the stabilised forms of network processes.

The outcome of Latour's process is not free of problems since he has drawn his understanding into the extreme. When nature and society only represent the outcome, why operate with a distinction in the analysis? Should there be a difference between what natural science present to us and what social science does? And even more problematic: should there be made any difference between non-humans and humans? Latour's answer to all these questions is the provoking no. Perhaps most clearly this answer can be found in Latour's article about the door-opener at La Villette in Paris (1992). Here Latour refuses to make any distinction between the human door-opener and a mechanically made; the latter has as much of the shape of humans as the first; they are both anthropomorphic. The mechanical door-opener occupies the position of a human and it does also shapes human action. It is an actor in the network where the work of the actors are delegated as the network moves on. This delegation can be made to a non-human as well as a human so why make a distinction between them? Latour's attack on sociology, an attack that started already in Laboratory Life, continues. Sociologists had problems in laboratory studies because they stressed the social explanation for the establishment of a scientific fact. Sociologists have problems in societal studies because they also here only focus on social explanations; they do not see that the world is a network in the making where translations of previous elements are made and delegations for the further process, independent of whether the elements under translation or delegation is so-called human and non-human.

Latour has expanded the activity of engineers and scientists to the whole world. But this world then only appears as a large network with translations and delegations and as such it does not seem to give Latour any problems. The problems are still to be found in the social analysis, not in the world. But with a change in the analysis, would that not mean a different view on the world? Latour has in the end of the door-article a hint to that: "society itself is to be rethought from top to bottom once we add to it the facts and the artefacts that make up large sections of our social ties." (p. 254) But Latour has still not presented us with this rethinking in the door-article. We can however see aspects of it in an other article:

"The prince for machines as well as for machinations." (1988) In this article we find from the very start something that indicates that the question is no longer only about the work of scientists and engineers. Latour states: "Expanding The Prince to redefine democracy". (p. 20) And not only that: the Prince which is mentioned is related to a Machiavellian Prince. Machiavelli, being indeed a political thinker, was in many ways also the founder of modern political theory by breaking with the antique understandings. And a thinker so modern that he has become more and more read the last twenty years. Has Latour shifted interest? Or has science and technology studies, the branch disappearing into laboratories and factories, found a new political theory in the old Machiavelli?

The Premodern Middle Ages

Machiavelli lived in the end of 15th century and beginning of 16th century in Italy. This was a time when Italy was divided between many small powers that did not at all agree on how this division should be made; Italy was more or less in civil war, a state of order that was not particular to Italy at that time. How to gain power and how to stay in power were the questions, and Machiavelli gave answers to them. His *The Prince* contains advises on how a prince in a situation with both inner and outer enemies should behave in order to go on being a prince. The book has given Machiavelli a reputation for being cynical; Machiavelli does not present a moral for behaviour to the princes, nor any strict guideline. The prince has to consider all aspects that can influence his power and he must sometimes be evil, sometimes good in order to beat down enemies and to secure allies. Latour summarises Machiavelli's advice to the princes like this: "If you want to be virtuous, ..., you need much more than your selfrighteous sense of morality, you need many more allies, many of whom will betray you. Instead of contenting yourself with ethics, enlist allies, fight enemies and beware of all." (p. 21)

In this political advice, Latour sees a similarity with the behaviour of engineers and scientists when constructing a scientific fact or an artefact, which also requires fighting enemies, searching for allies and a general awareness of all the problems that other actors may cause in the working out of the fact or artefact. The agonies of laboratories and factories is found in the late middle age Italy as well and there there is also no distinction between non-human and human actors. The Italian princes must form alliances with all types of actors. The difference is that they did not have so many non-human allies as the modern scientist and engineers. The only non-human allies in *The Prince* are fortresses and weapons. The Machiavellian world is very much a social one.

This differs with the modern world, so filled up with non-human actors. Latour claims that also these non-human actors must be considered and not only by

engineers and scientists who have been doing so all the time through their science and technology at work. But without ideas of alternative societies or public participation in technical discussions. In so doing, the modern princes, the scientists and the engineers, are free to perform the medieval strategies of making allies and fighting enemies, and those not taking part in this process will only see the final outcome, the ready-made science or technology and even the ready-made society. Latour states: "If science and technology are politics pursued by other means, then the only way to pursue democracy is to get inside science and technology, that is to penetrate where society and science are simultaneously defined through the same stratagems. This is where the new Princes stand. This is where we should stand if the Prince is to be more than a few individuals, if it is to be called 'the People'." (p. 39)

What Latour presents here represent a rather dramatic shift away from the manner in which previous analysts and critics approached technology. Ellul, Mumford and Marcuse claimed technology, science or rationality to threaten the human condition; the social and human arena were threatened by the monsters of science and technology, squeezing themselves in everywhere. Should this arena be saved, the monsters had to be fought. Latour says the opposite: in stead of fighting them, join them; instead of standing out there, outside the laboratories and the factories, being only circumstances and observing the result, take part in the process; become yourself a little prince that forms allies and fight enemies in order to stabilise or destabilise. If you do so, then you can take part in the process of making, being inside the black boxes where society and nature, humans and non-humans are mixed together and where they can be translated and transformed to become something different then what they were. Become a prince, or a monster, yourself!

Latour present a clear political program. He could however still be opposed by the old critics: Latour only solves the problems with science and technology by dragging everyone into the laboratory. What about all the things that can not be brought in? The circumstances where the whole process of making science and technology takes place, circumstances that will be there even if the numbers of scientists and engineers grew to millions. These circumstances, the modern society, what to do about them? Latour's answer to such critics is simple: we have never been modern!

The Amodern Modernity

The Machiavellian princes lived in Northern Italy in pre-modern times. They lived in a society that did not have any final constitution that obliged everyone, princes as well as non-princes, to behave properly. The one who lived properly was the one

that was able to stabilise his situation by binding up enemies and allies in a network. The medieval situation Latour rediscovers in the modern laboratories and factories where there also is a situation without a constitution: engineers and scientist translate and form alliances without any specific obligation except what other engineers and scientists may make for or against them. That makes scientists and engineers rather un-modern, or a-modern.

Can this form the base of the thesis that "we", all the others that have never had the chance or the will to become scientists and engineers, that we are not modern? Do we not live in a world that has its constitution, a constitution that prevent the scrupulous play of the princes and at the same time prevents the chaotic situation of civil war? Is not our modern society an ordered society where the translation of everything is not possible? Where the cynical princes are some way under Control, although conquering larger and larger sectors of the world?

Latour is highly aware of the modern constitution. His *We have never been modern* devotes one of its main chapter to this constitution. The main input for looking on it is what happened through and with Robert Boyle and Thomas Hobbes in 17th century England. As Machiavelli, Boyle and Hobbes also lived in the midst of a civil war. And not only one: both had to face two major civil wars. Faced with the disasters of these wars, they both sought ways to end the situation that lead to the wars. While Machiavelli only gave advises on how to go on, Hobbes and Boyle tried to find something that could prevent the whole thing. And so they did, but in profoundly different ways.

Boyle went to nature for help. With his air-pump he could make experiments and show how nature was. To do that was not easy and Boyle had like a Machiavellian prince to set up a network that could convince others that the laws of nature Boyle was demonstrating really was laws of nature. Boyle did this so cleverly that he was able to convince: his experiments showed a nature that was beyond any doubt; everyone had to accept that this was something real, something that was the way it was whatever they did, even if they fought civil wars. Nature was an Archimedean point from which humans could be moved in a proper order, nature was transcendental to all human action. Boyle delivered a ready-made fact.

Boyle was however not able to convince Hobbes; Hobbes saw Boyle's set-up of the air-pump only as a theatre, his nature was only a convincing argument, no nature in itself and transcendental. But if nature could not be the point that everyone had to obey, what could then give it? Hobbes answer was his Leviathan. The Leviathan was the sovereign that everyone had to obey; no one could transcend him. But he is not a God. He becomes a sovereign because everyone gives up his personal interests and rights in favour of the sovereign. In this way the state of nature where every man was at war with each other could be ended. Hobbes delivered a ready-made society.

When Hobbes made his civil philosophy, he had also, like Boyle, to

consider all types of elements and arguments in order to construct a convincing story. Latour says: "In his *Leviathan*, Hobbes simultaneously redraws physics, theology, psychology, law, biblical exegesis and political science. In his writing and his correspondence, Boyle simultaneously redesigns scientific rhetoric, theology, scientific politics, and the hermeneutics of facts." (1993, p. 29) The premodern way of mixing and tricking with all elements goes on also in the work of Boyle and Hobbes; the outcome however is for Boyle a purified nature, for Hobbes a purified Leviathan, the society.

When creating the purified versions of respectively nature and society, Boyle and Hobbes find the transcendental elements that can be used for making order in the immanent chaos: society has to order itself according to the laws of nature (Boyle) or nature has to order itself according to the sovereign, be it a representative in one person or in many or society in general (Hobbes). In the ordering, what is seen as transcendental by one of the parts is immanent for the other: Boyle uses the transcendental nature on the immanent society, and Hobbes the transcendental society on the immanent nature. So both nature and society shift from immanence to transcendence and the other way around, depending on who that is considering it.

By making these purified forms (with the addition that God is crossed out), "modernity" is made. It is a modernity where nature and society is separated but at the same time this separation is cancelled by the critique made by the modern constitution of respectively nature and society. Latour states that the modern constitution is "a rather neat construction that makes it possible to do everything without being limited by anything." (p. 32)

This constitution with the separation of nature and society and with the critique made on the ground of them and against them, has been moving modernity since Hobbes and Boyle. It is a sort of twin enlightenment where one enlightenment is to order society with the enlightened nature and the other to order nature with the enlightened society. This twin enlightenment is what we have thought to be our situation in the world since we have only seen the purified result of the process: the ready made nature and the ready made society. However, we have never been modern, Latour claims. Because the purifying process is only one side of the Janus face, now not a Janus-face of science and technology but the Janus-face of modernity that is not modern. The other side of the face is the hybridisation of all elements where no pure nature nor pure society exist; it is a mixture of everything like the situation is for a scientist in the laboratory or a prince in northern Italy four hundred years ago. And this situation is general: when Hobbes and Boyle were making their objects, they took in use the same method and so has every modern that has not been modern done since.

To see this requires the insight that science and technology studies have been giving the latest years. A political scientist leaves out the non-human actors of

the game. A natural scientist would on the other hand leave out all human actors. The student of science and technology being himself or herself often a hybrid, half engineer and half philosopher, having seen the mix of humans and non-humans in the making of further humans and non-humans, nature and society, can see that modernity is not modern because the mixture appears even in the critical project made by a political scientist or natural scientists.

Latour who stressed anthropology in *Laboratory Life* also stress it here. In *Laboratory Life* it was that we have a fairly detailed knowledge of how exotic tribes live and behave but are ignorant of the activity of the tribes of scientists. Now he demands an anthropology of the modern world which shall describe both the process of purification and the one of translation as anthropologists have been studying it in primitive tribes.

The Collapse of "Modernity"

If "modernity" was so successful with its constitution, why bother at all? Latour claims that the division between the two elements, nature and society, has collapsed and hence making it obvious that modernity is no longer modern. The year 1989 was in this respect very important. This was the year when the Berlin wall fell. This fall marks the final collapse of the Hobbesian paradigm to ground the perfect society; to find the pure social situation that could order everything in a perfect manner proved impossible, In 1989 the first world conferences on the global state of the planet took place. This shows the failure of the purified Boylean nature; nature has simply started to act on its own, no Boylean air-pump can now demonstrate its permanent laws.

This collapse of modernity has become obvious to others than Latour, and Latour sees the debate on modernity vs. post-modernity where also anti-moderns take part as a result of that the transcendentality of a nature or a society can no longer be presented in the Hobbesian or Boylean way. The response of the different positions are different: the antimoderns claim that we should not longer go on with the modern project; we must no longer try to put an end to man's domination of others or mans exploitation of nature. The moderns try to go on as if nothing has happened and the post-modern take a position in between where they do no longer believe in naturalisation or socialisation, but at the same time they are no longer able to give them up completely.

To this Latour has his programmatic claim; not only have we been amodern all the time, we should also go on being that. Hence the collapse of modernity is viewed positively by Latour, 1989 becomes a miraculous year, the year when the modern constitution collapsed. With the collapse, the translation processes in between comes clearly into daylight. It is the third kingdom, as Latour calls it, that

now comes to its own right. In this kingdom everyone should take place, become a part in the making-process: science in the making, society in the making. Then the problems that were so obvious in the sixties, when the studies of technology and science began, will no longer be problems. Science shall be purified from its purifying ambition whence it claimed to provide objectivity and truth. Only the interesting aspects of science shall remain: "their daring, their experimentation, their uncertainty, their warmth, their incongruous blend of hybrids, their crazy ability of social bond. We take away from them only the mystery of their birth and the danger their clandestineness posed to democracy." (p. 142)

So then, everything must be well? Latour states: "The production of hybrids, by becoming explicit and collective, becomes the object of an enlarged democracy that regulates or slows down its cadence." (Fig. 5.2, p. 141) The problematic modernity that turns out to become a happy amodernity, an amodernity we have been living in all the time? Shall we now release our breath and thank Latour for his detour into the laboratories? With the outcome of making us all Machiavellian princes or laboratory scientists?

The Machiavellian princes lived in a state of civil war. So did the scientists although by other means. But the scientists had, what the Machiavellian princes did not have, circumstances that were the foundation for their activity. Although being only purified versions, the circumstances had some understanding of how they should be circumstances: what they should let into the laboratories and what they should let out. As the laboratories grew bigger, both in real terms and through the way Latour has described them: as enlarged networks, the circumstances became smaller and smaller and by this proposal of Latour: they shall vanish! But what shall then guide the tricking and mixing of a whole world made up of engineers-philosophers? When the networks grew so large, there is nothing left outside them that can have the role of being an Archimedean point? The detour through the laboratory has some obvious problems. Not being aware of these problems, could it be that the amodernity of Latour is indeed a very modern one, not providing any change to the situation except for the changes that has always been in the modern project? And maybe worse: could it be that modernity had some aspects that Latour has not seen? The post-modern aspects of modernity?

The Modern Amodernity

"Modernity" consisted of a constitution that ended the premodern civil war but in such a way that the premodernity became the condition for the modernity and that to such a degree that we have never been modern. But when Latour makes this claim, is not he himself a modern according to his own definition of modernity? Modernity was brought forward by the critical stance that primarily was made as a

critique of the great divide between nature and society but that also took forms like the semiotic turn and its discourse analysis, or critique and the Heideggerian claim of the forgetting of Being. What is Latour doing if not criticising a forgetting of networks, of hybrids, of Machiavellian princes? He does as everyone in the enlightenment: enlightens elements that have not been enlightened before. If not, why to make the critique he makes of all other analyses?

Latour is aware of this problem, he clearly sees that also he can be accused of being modern: "by proposing to debunk their illusions, to uncover their real practice, to probe their unconscious belief, to reveal their double talk, I would play a very modern role indeed, taking my turn in a long queue of debunkers and critics." (p. 40) But this is not the case, he claims. The moderns are aware of both practices, both the purification and the hybridisation. The only thing Latour adds, is the relation between these two. But if only so, is not that what all modern critics say? Even Marx at times claimed that he was only showing things as they were and adding some small elements. In the preface to *Das Kapital*, he states that what he was doing was only "Spitzfindigkeiten" (over-precision), hence nothing modern at all. (1947, p. 12)

More problematic for Latour: what he is enlightening (or only adding), is that something that has not been enlightened in the modern project? Could it not be that the modern project exactly is his amodernity, what he even claims: we have never been modern. That this amodernity is modernity?

To test out these questions, I will be scientific and critical and look on some of the main figures of modernity and the critique that has characterised modernity: Kant, Baudelaire and Heidegger. The first and the latter are treated by Latour. They obviously had something to do with it: Kant through his Copernican revolution and Heidegger because of his Destruction of the old ontology and metaphysics. Baudelaire I have not found in any work by Latour. Still, it is Baudelaire that is seen as the inventor of the word modernity (*la modernité*) and he deserves treatment in a scientific and critical analysis.

The modern modernity

Modernity starts for Latour with the division of nature and society through the work of Hobbes and Boyle. This division is made deeper through the history of philosophy which Latour follows over a few pages through Kant, Hegel, the phenomenologists and even Habermas and the post-moderns. Kant plays a special role in this history: "It is with Kantianism that our Constitution receives its truly canonical formulation. What was a mere distinction is sharpened into a total separation, a Copernican Revolution. Things-in-themselves become inaccessible while, symmetrically, the transcendental subject becomes infinitely remote from

the world." (p. 56) This description is correct but it misses the point of Kant's Copernican revolution. Kant saw the need to make this revolution exactly because nature in itself or society in itself could not function as Archimedean points, they could not be placed, ordered or analysed in a total and finite way. Hence Kant turns his eyes on what is between: perception (*Anschauung*), reason (*Verstand*) and intellect (*Vernunft*). Since the thing-in-itself, be it of a social or natural type can not directly order order, Kant searches for forms that can give order to this intermediate position between the subject and the object, an intermediate position which in Latour's terminology would be called the third kingdom. But Kant will not let this third kingdom behave like Machiavellian princes and he comes with his transcendental forms of perception, his categories of reason and the discipline of the intellect. Hence the Copernican revolution consist in finding the elements of order in the relation between the subject the object: Kant creates a quasi-object in the transcendental forms of this relation.

Michel Foucault has in *Les mots et les choses* (1966) clearly seen how Kant's critique replace the old metaphysics, the metaphysics of the pure subject or the pure object, with a metaphysics that goes beyond these purified forms of the old. By so doing, Kant takes the first steps towards our modernity ("la seuil de notre modernité", p. 255) according to Foucault. So for Foucault, Kant's modernity consist in what Latour defines as a-modernity. Modernity is really a-modern but for Foucault this amodernity is exactly what modernity is about.

It can be claimed that Kant himself was not convinced by the order he found in the subject-object relation in his first critique and it was this understanding that made the two following critiques necessary. So has been claimed by Odo Marquard (1989), and significantly in the French readings of Kant by people like Derrida and Lyotard (see for example the collective work: Lyotard et al. 1985). If this is the case, then the intermediate position between the subject and the object become even more like Latour's third kingdom with its mixing and tricking and no transcendental guideline. However, Kant draws some moral consequences of his view, and that already in the first critique. Since the thing-in-itself which in general is everything that is not of us - nature or society - can not be grasped in a way that grasps whatever the thing might be, we should show carefulness in our grasping. Kant state that his critique is a limitation of how we can behave (*Verengung unseres Vernunftgebrauchs*, 1968, B XXIV), we can not freely play around like Machiavellian princes. If we do play around like them, it could in the end mean that it is our own picture of how things should be that is impressed on the world and what is not of us have no chance of being what it is. A strong limitation on our free play is then to see that our play might be destructive to our surroundings, whatever they are, purified forms or hybrids. If it is something modernity has done wrong, then is in its understanding of Kant: we have let the third kingdom have it's free play of translation and transformation of everything. Modernity has been a

modernity that has not been modern enough.

Baudelaire's modernity shows similarities with the picture Kant draws. For Baudelaire, modernity contains two elements: one that is the always movable and changeable, one that stands beyond all the things that can be transformed and this to such a degree that it is to be regarded as inaccessible and sacred - but as a pure ideal, not as any real metaphysical substance. In *La peintre de la vie moderne*, Baudelaire gives a nice and short definition of this modernity: "modernity is on the one hand side the transitory, the fugitive, the quota (*le transitoire, le fugitif, le contingent*), on the other it is the eternal and the unalterable (*l'éternel et l'immuable.*)" (Chap. 4: "La modernite"; 1968, p. 553)

But also this modernity represents an ideal; the world according to Baudelaire is not modern since it is neglecting the second element of modernity: "In our deplorable days, a new industry is rising which contributes not little to ruin what could still rest as divine in the French spirit." (1986, p. 288) And not only the French spirit: as Walter Benjamin has declared: Paris was the capital of the 19th century and it was here the modernity that in Baudelaire's eyes was not a modernity arose.

Baudelaire's divine, the element of modernity that is destroyed by the tricking and mixing of the modernity - the modern monsters -, is not any transcendental God nor any transcendental nature or society. It is what is not of human kind and still of human kind in the way that it can only be sensed as an ideal. This ideal has however also monstrous features; it is not the ideal of premodern times. In his "Hymne à la beauté" in *Les fleurs du mal* (1968, p. 54), Baudelaire states about the divinity:

"Que tu viennes du ciel ou de l'enfer, qu'importe,
O Beauté! monstre énorme, effrayant, ingénu!
Si ton œil, ton souris, ton pied, m'ouvrent la porte
D'un Infini que j'aime et n'ai jamais connu?"

Baudelaire's idealism differs from the standard idealism in the way that his ideal divinity is not what has made this world the best of all possible worlds. It is nothing that can be trusted, that we can rely on in the making of this world to an even better world. But still it is necessary to have this monstrous divinity to look beyond the pure transformations and translations for finding something new, for finding beauty, to feel the infinity. Only networks of translation may be not be morally problematic (the Kantian understanding) but it will indeed be boring and rib the possibility of making something that has value - for Baudelaire that is beauty - beyond the agony and play. So Baudelaire's modernity had the Latourian a-modernity but also expands it: the a-modernity-element is not sufficient for modernity. A network of scientists and engineers in agonies will not create works

of art.

And finally Heidegger. Here I must make a critique of the amodern reading of Heidegger that Latour presents. The Heideggerian *Sein* is written with a capital by Latour, both in the English translation and the French original: Being and *Être*. By so doing, Latour stress that *Sein* is to be regarded as a substantive, a substantive non plus ultra that requires capital letters in languages where substantives are not normally written in such a way. Nothing could be more fundamentally wrong: the Heideggerian *Sein* is not to be regarded as a substantive but as a verb: *In-der-Welt-Sein*, to be in the world. If that is not obvious from the Heideggerian text itself, it should be obvious from French contemporary readings of Heidegger, especially by Emmanual Levinas (1993, p. 138). Because Heidegger sees *Sein* as a verb, it is not purified in any ways: it is always in the making, to use Latour's terminology.

The forgetting of being is hence to forget how to be. When Heidegger focuses on modern technique, it is because he does not see it as very modern and that it prevents with its antique forms *being* (as partisippe, not substantive). The "modern" technique only orders on how *to be* through its set-up (*Ge-stell*), it orders doing (*bestellt*). The "modern" technique is then only a continuation of the old metaphysic; instead of delivering himself to a God, man has delivered himself to the modern technique, and this to such a degree that he has forgotten how to be: he only lives in the world of translation and transformation (Latour-terminology) and does not see beyond.

But to see beyond is not to see for finding anything because there is nothing there to find, there are no purified forms beyond the hybrids. That should not prevent man from looking above the hybrids. Only in so doing, the gods would be present; not as a God in the Machine, but in being. Staying inside the hybrids, inside the Latourian networks, man is only to be found as *Das Man*. The Heideggerian *Das Man*, the one only acting in the world with its given facts and artefacts and by making new only through the translation of the old. Those following *Das Man*, they are only what they are doing ("*Sie sind das, was sie betrieben*", 1986, p. 126). To be for Heidegger is however to do, *not* to be, what you are doing. To do, to act, it is *poiesis*, and the acting that makes and creates, is *techne*. This *techne* contains something that lacks in the work of a-modern engineers and scientists; they only act through agonies of translation and transformation, not with *poiesis*. The artist is squeezed out in a game of enemies and alliance-making.

Heidegger's analysis of modernity is not so different from the picture Latour gives us with his a-modernity. But Heidegger stress that accepting this a-modernity is problematic, not only in the moral (Kant) or aesthetic (Baudelaire) sense but in the ontological: to be only like scientists and engineers inside the networks of translation is a forgetting of how to be.

So are we then modern? No, says Latour. No, says Kant, Baudelaire and

Heidegger. But instead of going on being non-modern, the latter three ask if it is not time to become really modern; to sense our limitations, to sense the ideal, to act not only in networks but beyond?

The Collapse of Premodernity

We have never been modern. Like Machiavellian princes we have fought around, not only with other princes in northern Italy but with everything that we could get on a cross. With modern science and technology, everything could be transformed into a huge hybrid where we could make the purified outcome that we wanted. As the princes in northern Italy was not much concerned with others than themselves, we have not been concerned with much but playing around in our networks of translation, making new and blending purifications. These purifications were blending; they never represented any real ideal.

But in spite of all our fancy strategies to deconstruct and construct networks, the present crisis shows that we have in some way come short. This crisis manifests itself in many ways, the ecological aspects of it is perhaps the most problematic. Latour's solution to this crisis is to generate networks, networks that shall have "the whole place to themselves"(1993, p. 145) Let not only the networks work in northern Italy some hundred years ago, let them not only work in laboratories and in factories, let them cover the world. But what about that which is not in the network, the thing that hits back under the present crisis, what even the most advanced network: science, can not get a hold of. Or what about the similar and just as advanced network: politics? It has just as huge problems of handling the crisis.

Thanks to the branch of science and technology studies that went into the laboratories, we are now aware of this premodern situation. Latour has shown that we never have been modern: in the laboratories and the factories hybrids have been made, hybrids that have not had any limitations of what could be hybridised. When Kant stated the limitations in this activity, it was ignored. When Baudelaire stressed the importance of the ideal, be it monstrous or divine, none took notice. When Heidegger pointed to the new metaphysics in science and technology, they both became even more metaphysical. And Latour disregard Kant, takes no notice of Baudelaire, and emphasise the metaphysical hybrids that shall cover the whole world. He does not want to become modern, taking into concern the aspects of modernity that has not been considered by this amodern world. Instead of making his detour a tour into modernity, Latour still stays in premodernity. Maybe because he has become too much of a scientist? Starting of as a scientist studying science, then almost becoming like those scientists he was studying, and then finally coming out in the world as a scientist with a scientist's amodern view of the world

and demanding that everyone shall become like those scientists caught in world-covering networks.

The old critics of science and technology in the sixties saw the need for a break with the way science and technology were moving forward in the modern world. These critiques came to short because, as Latour has stated: the world was not modern. However doing like Latour - becoming a scientist - does not make it more modern. Maybe Heidegger's notice of Hölderlin shows a different way. Hölderlin said: "*...dichterisch wohnet der Mensch auf dieser Erde.*" But as long as human beings remains scientists, hung up in the networks of science, technology and society, they are not able to be poets, they are not able to see what is above the networks and then compose poetry, which in its premodern meaning also means technology (*techne*). If not able, then Latour's miraculous year of 1989 might become a most tragic year for mankind: finally there was something that stated that the world was not only network, and the only thing we then did was to expand our networks.

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Except for Latour (1991), all translations in the text are done by me. So if some of them are not up to what you would expect, you know whom to blame.

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