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As Technological System, Discourse
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This paper was held at the conference "Cultural Politics of Technology", Trondheim, June 15.-16., 1998. The session was called "Planning and presenting reality". The title refers to the question posed to the audience: How are we going to view/analyse processes of environmental impact assessment, as used in planning nowadays. The question could also be posed somewhat differently: Where do we end and what do we get, if we analyse EIA using these three perspectives?

Environmental Impact Assessment (EIA) is a procedure to establish the impacts of large projects on the environment, the natural resources and the community. This is a way of doing planning, or a procedure within planning. When EIA is done properly, this is said to affect the way projects are planned, thus also provide the necessary information when public decisions about projects are made. My question is how to analyse EIA, and where do the different approaches of analysis lead me? In this paper, I will be influenced by concepts/methods of technological systems theory, with sidelong glances to EIA as discourse and EIA as a process of translation.

Since USA legally established EIA in their National Environmental Policy Act (NEPA) in 1969, this procedure of predicting and preventing damage on the physical environment has spread throughout the world. Today, most industrialised countries, practises some form of EIA, usually integrated with, or connected to their national planning system. Norway implemented systematic EIA rather late, with an amendment to The Planning and Building Act in 1990.

Promoters of EIA often stresses the general progress of environmental policy, nationally and internationally, since the 1960's. While the first focus was set to repair "old sins" and monitor the environment, we now have entered a second stage, where we should concentrate more on preventing harm, rather than just repairing. For example, in a review presented at the *Earth 5+ Summit Conference* in New York last summer (1997), the Norwegian Government emphasised the importance of The Planning and Building act, and especially the EIA-regulations, as one of the most effective and successful implementations of Agenda 21 in Norway since the *UN Conference on Environment and Development* in Rio (1992). A watershed has been passed, as:

"... the next generation of environmental policy instruments are increasingly expected to focus on measures aimed at prevention rather than reparation".

The Norwegian MoE, has likewise on several occasions emphasised EIA as “an important tool to prevent environmental problems and to ensure a sustainable development”.¹

An opposite, more critical opinion to these matters, could be represented by the authors Szerszynski, Scott and Lash. In their book *Risk, Environment and Modernity* (1996), they argue that post-Rio has been met “...not by cultural recognition but by grandiose ideas of ‘Managing Planet Earth’ by technocratic expertise” (p.4). Without explicit naming EIA-systems, their claim is that “environmental policy concerns have repeatedly been technologised”, especially within bodies like The European Union. Whether this criticism hits EIA or not, this particular view emphasises the continuity in national and international environmental policy, rather than an absolute break with the past.

In matters concerning the environment, one could easily adopt a normative attitude and be (mis-)led to find an answer to the question of “is EIA good, or bad”. The vast and ever growing literature on current and past environmental policies, shows examples of both inclinations. Rather than being implicit, I will say that it is not my main objective here to be normative. First of all, I would like to regard EIA-systems as a part of a wider picture of environmental discourse (and practise) on society and nature. Secondly, I would like to depart from a more traditional description of environmental means and ends, and then, in the end, try to develop a description of the EIA more as a “process of social shaping”, rather than extreme rational processes, considering and evaluating “facts” about nature and in decisions about land-use.

The early EIA-regulations of NEPA

As mentioned earlier, within the EIA-community, it is customary to refer back to the National Environmental Policy Act (NEPA) of 1969, as the first legislation of this kind to be carried out. The purpose of this Act was rather pompous, spelled out as: “To declare a national policy, which will encourage productive and enjoyable harmony between man and his environment...”.²

The means to ensure this harmony, was to: “utilise a systematic, interdisciplinary approach which will insure the integrated use of natural and social sciences and the environmental design arts in planning and decisionmaking which may have an impact on man’s environment”.³ Voila EIA!

At the same time, the Government (during the presidency of Richard Nixon) established a Federal Council of Environmental Quality (CEQ). CEQ was given the task of developing relevant methods and procedures which could be used to implement the Act’s objective, that is, a proper way to do these assessments. It is important to note that the EIA-regulations of NEPA is restricted to all Federal actions, not just decisions about physical planning, but at the same time not concerning projects by private entrepreneurs.

¹ The Minister of Environment, Torbjørn Berntsen in a speech to the Norwegian Parliament, the 18th of April 1996 (The Annual Statement of Environmental Policy).

² NEPA of 1969, Sec. 2.

³ Ibid., Sec.102.

NEPA says that “any major Federal action significantly affecting the quality of human environment” should be accompanied by a detailed statement (an Environmental Impact Statement, the EIS) made by the responsible official authority on:

- ✓ the environmental impact of the proposed action,
- ✓ any adverse environmental effects which can not be avoided should the proposal be implemented,
- ✓ alternatives to the proposed action,
- ✓ the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and
- ✓ any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

In this Sec. 102 of NEPA, the main objective is to secure that knowledge of impacts is taken into consideration, when decisions are made. This seems to be a common feature of most EIA-regulations; they do not say anything about the priority of the environment over economic and technical considerations, but environmental aspects must at least be considered.

What is then the assumed impact of such a statement? First of all, it is said to procure knowledge about impacts which otherwise had not existed. This knowledge is also (evenly?) distributed to actors involved in, or affected by this project. This knowledge is meant to establish a common ground for discussion about a particular project, in other words what the relevant topics is and how one should/could talk about these. The discussion, in turn, is meant to serve as a correction to the topics of inquiry in the statement and the alternatives considered.⁴

In the end of this process, when knowledge about impacts, peoples interests and different priorities is known, the proper consideration takes place and decisions about the project is made. As remarked earlier, the regulations gives no special priority to environmental concerns, but on each level of consideration, the entrepreneur is required to do some reasoning to legitimate the decisions made.

It is not difficult to recognise the rationalistic origin of EIA. Knowledge associated to a particular project is "out there", discovered in nature, by experts, and brought into the society to be considered by the relevant actors. This knowledge then constitutes the basis for a rational and enlightened discussion about alternatives. We see that the process is defined, the roles of the different actors is distributed, and also how to think about preventing environmental harm. This is all about trying to create "an **obligatory passage point**" (namely the EIA), to get all the relevant actors to agree to recognise this tool as the best and hopefully the only method of fighting for their environment. Did they succeed in this?

Practising EIA in USA during the 1970’s, resulted in what is described as a “flood of early lawsuits” (Glasson et al. 1994:28) from environmental activists, and consequently many projects was subjected to considerable delays. The activists challenged Federal decisions on three different grounds: 1) The decision not to prepare an EIA, 2) the adequacy of an EIA, and lastly 3) the decision to allow a project to proceed in light of the content of an EIA. In the first stage, for example, the activists

⁴ In EIA-language, this is called "scoping".

raised the question of whether a project was "major" or if environmental impacts was "significant". The lesson of these lawsuits of early EIA-practise was quickly learnt, and similar EIA-regulations adopted later in other countries, ensured that the possibility for legally contesting EIA-decisions was reduced (as in Norway).

In 1978, after nearly eight years of EIA-practise, CEQ revised the regulations. In textbooks (Wathern 1988, Glasson et al. 1994), this is said to mark a significant change from developing "methods of EIA", to more concentration on the "process of EIA". This is meant to signify that a period of developing more or less standardised and scientific methods of doing EIA, was over, and that more weight and energy was put on developing ways to handle the different actors in EIA, especially the public or the NGO's.⁵ With that, the delay and the energy spent on lawsuits was reduced, and the EIA-system could be "more effective" in the future.

Even if there was some trouble practising EIA during the first years, it is clearly, I think, that the federal authorities in USA had succeeded in making EIA as "an obligatory passage point", to solve questions or debate related to federal projects which could harm the environment. The arguments presented in the early lawsuits demonstrates that the activists had accepted the rationale behind this process and the roles they had to play, at any rate for the time being.⁶ This apparent success "spread the gospel" around the world, also to Norway.

The background of the Norwegian EIA-regulations

In 1990, 20 years after NEPA, similar regulations was implemented in Norway. These regulations had a rather long history, being approved for the first time in 1980. Only months later, this first Act was suspended.

Being a part of the national planning system and regulations, made the discussion about EIA a part of, and tied to a much wider discussion about planning in Norway. This discussion took place both within "the planning community" and among politicians.⁷ But when the new Planning Act of 1980 was suspended, this was a consequence of a change of Government, from the Norwegian Labour Party, who wanted to expand and control the national planning system, and to a conservative Government, who said they wanted less regulations and a more effective planning system. None in the parliament presented at this stage any serious objections to the EIA-regulations.

Within "the planning community", there was (mainly in the second half of the 1970's) parallel discussions about the effectiveness of planning, but also about

⁵ The acronym NGO, meaning Non-Governmental Organisation, referring first of all to various environmental organisations, but also the NIMBY's. See explanation under. There is more such acronyms used in planning, and as these two shows, they are made from the perspective of the planners. I can only suggest that this is one way of trying to deal with these groups.

⁶ The political trend in USA at that time, was turning to the right, anyhow. The 80's was a quiet period, in some ways, a kind of environmental recess regarding both public and private engagement (especially during the Reagan administration). In USA this resulted in a significant reduction in the number of employees in the environmental administration (Vig & Kraft 1994). On the other side, it is also possibly that federal authorities took a more strategic stance in matters of large projects, after experiencing some rather large conflicts.

⁷ The expression "the planning community" does not refer to any substantial group or body. Of course, if you look deeper into what planners said and discussed, you will find a lot more differentiated picture.

principles of planning, about how planning should be done and how to think about planning. It is not unlikely that this was a part of a more general (radically and critically inspired) discussion about the role of professional knowledge and expertise, about the meaning of democracy and public participation. In textbooks on planning (Faludi 1994, Langdalen 1994), the outcome of these discussions can be recognised as a change of concepts, from "rationalistic and linear planning" to more "incremental planning". That is, doing planning has become a non-linear process, perhaps more like muddling through, rather than doing things one at a time (as a planner you have to take into account how to deal with more or less non-relevant or unscientific arguments from NIMBY's).⁸

The relationship between planners and the Labour party is interesting, because both parties wished to extend and strengthen the national planning system, but on different grounds. The Labour Party in Norway has a long tradition of viewing planning as a way of implementing political goals, either by setting national standards and goals of planning, or by bringing plans into the public arena (establishing local and regional planning councils etc.). The planners themselves are on the one side not opposed to a detailed and professional planning system, but on the other side, they were also critical to what they thought were cumbersome activities. For them, that was the "problems" (worded as a loss of effectiveness) that occur when plans are deliberated in various public committees. In spite of being the traditionally allies of the Labour Party, the planners this time very clearly sided with the conservatives (Grande 1997).

Five years later, in 1985, a revised Planning and Building Act (the PBA) was approved, this time under a conservative government. The proposal for this Act also had regulations about EIA, but when discussed in the chambers of the Parliament, these regulations was suspended once more because of objections raised by different public authorities (the most important probably the Ministry of Trade and Industry, Swensen 1997). There was also a common agreement that more work should be put into clarifying these regulations before they were presented for approval in the parliament. That work took another four years.

We should not take for granted that this process of shaping the regulations only was concerned with putting pieces of science together and streamlining the different stages in EIA. This is more about weaving a web so fine and elaborate that the different actors could see that, firstly, that this was a problem which could not be handled by the existing procedures, and secondly, that this was the right way to do it. One could say, that this was similar to set up a play, based on a rough sketch and where the actors did not agree to the roles they where given or the lines they should say. Not easy!

⁸ A well known concept in planning, NIMBY means "Not In My Backyard". For example this can characterise people who don't want a new motorway through their neighbourhood. In other words, this is people, who can't see "the common good", or "the big perspective" of planning and in society.

A summary of the Norwegian EIA-regulations

These regulations were approved without any serious objections in 1989 (implemented in 1990). In 1994, after signing an agreement with the European Economic Area (EEA), Norway obliged itself to incorporate the prevailing EU-directives into Norwegian legislation.⁹ That was done with alterations in the Act in 1995, and in the provisions in 1996 (implemented 1997). I shall here give a short summary of these regulations.

The Norwegian EIA-system is based on a two-stage process: the notification stage and the impact assessment stage. First, an entrepreneur is required to send in a notification to the proper authorities (usually the Ministry or its subsidiary directorate). Since only certain projects qualify for an EIA, there must be a method to separate these from all the rest. The Act (and its provisions) has first of all a check-list which specifies the nature of and the size of the projects of interest. This makes it possible for the entrepreneur to know if he has to notify the authorities (and also, of course, to do the alterations necessary not to qualify for an EIA, or to renounce the whole project). If the entrepreneur chooses not to notify (or if he doesn't know of the regulations), the project is normally detected by the authorities, since the Planning and Building Act requires every project of importance in Norway to be approved according to existing plans.

The notification from the entrepreneur, shall contain a short description of the project and its estimated impacts. Also, it shall contain a study programme for further impact assessments, if the project is decided to be subjected to a complete EIA. In the years 1990-96, the Ministry had to decide, on the basis of the notification, if the project was to be subjected to a complete EIA. With alterations in the Act done in 1996, all projects submitted for notification, is also to be submitted to a complete EIA. The proposed study programme is therefore said to be of great importance, since this specifies a very detailed guide to which assessments is to be made later on.¹⁰

The notification is made accessible to the public, to the relevant authorities, public and private bodies and also to environmental organisations. Before 1997, the comments received on this stage, would be relevant for the decision to, or not to approve a project. If no further assessments were required, the authorities issued a letter of approval. From 1997 and on, this stage is mostly relevant for the content of the study programme.

Then the project enters the impact assessment stage. Here, the entrepreneur must carry out the specified study programme, either himself, if he has the necessary expertise, or hire someone to do this. The assessments done, results in a statement (an EIS), which must go through the same public procedure as the notification, but in addition, the entrepreneur is instructed to arrange a public hearing on the matter, in the area where the project is planned.

⁹ The important directive on EIA: ECD 85/337, approved in 1985.

¹⁰ The possibility of not being forced to do an EIA, is said to have produced notifications more or less similar to an EIS. By doing so, the entrepreneur could gain time, and perhaps money, since the cost of making a notification, and an EIS, is done at the entrepreneurs expense. Once the study programme is approved, you have to raise very serious objections, if additional assessments is required.

If this hearing or other objections is said to produce any relevant information about unknown or un-quantified impacts, it could result in a demand for further investigations or preventive actions taken by the entrepreneur. If no such demands are known, the proper authority writes a letter of approval for the assessment.

In Norway, it is made explicit that this process of EIA, is made parallel to the ordinary process of planning. Since all such projects are subjected to approval in public bodies (i.e. local councils of planning, according to the Planning and Building Act), the letter of approval for an EIS must be issued, before any plans can be officially approved.

The subsequent scale and character of the EIA-system in Norway

Since implementing these regulations in 1990, about 270 different projects has been involved in the Norwegian EIA-system, as regulated by the PBA (263 projects by October 1997).¹¹ Of these, the statistics shows that only 32 projects has produced a complete and decisive EIS. Most projects have been approved without a complete EIS, while some projects was still under consideration. A rather small number of projects have been abandoned during consideration. The number of projects shelved before the notification, is unknown.

Of all projects considered, almost a quarter (74) have been larger sand-pits or stone quarries, and one-fifth (53) have been road construction. The then larger categories are 30 projects within trade and industry, 29 railroad construction and 24 projects concerning freshwater- and river-regulations.

Although the number of projects considered according to the EIA-regulations is relatively small in Norway, especially compared to the circa 2000 EIA's in the United Kingdom during the years 1988-1996, it would certainly be right to say that there is established a more or less official EIA-network and an "EIA-industry", during almost 8 years of practise.

As this system concerns both public and private entrepreneurs, smaller and bigger ones alike, some would have the capacity and the knowledge to do a complete EIA themselves, others not. Big companies like Statoil (the multimillion dollar oil company owned by the Norwegian state), are able to have whole departments within their own organisation working with EIA. The other extreme could be the local truckdriver, wanting to sell gravel from a pit in some remote area. He would most likely have to seek and hire help to do an EIA, if he could afford it.

Since very few companies are able to, or have the capacity to do a complete EIA all by themselves, this has made a fertile soil for a plethora of private consultants and firms. Some are experts, or one could perhaps also call them entrepreneurs, on co-ordinating whole EIA-processes, others are more specialised, doing assessments on issues like water-pollution, mapping animal habitats and so forth. This has lead to

¹¹ Numbers from on the database published by NIBR, The Norwegian Research Institute of Town and Regional Planning, Oslo: <http://www.nibr.no/>

some expansion in the number of jobs, both for planners and natural scientists, and in some cases even for social scientists.¹²

There is also very clearly established a personal and professional network between public authorities, concerned with advising and evaluating EIA, and the larger entrepreneurs, public or private, who are required to do EIA's on a regularly basis. This network is even formalised, through the formation of an organisation called the EIA Forum in Norway in 1994.¹³ This organisation is also connected to a much larger international network, through the International Association for Impact Assessment (IAIA).¹⁴

Building the EIA-system - Looking at the guides

The regulations was approved in June 1990, and carried out the 1st of August, the same year. The MoE had at the same time prepared an EIA-guide, which was aimed at "entrepreneurs, Ministries, local and regional authorities and other relevant parties".¹⁵ This guide was revised in 1994, and a new and third guide is "under construction" and will most likely be published before the end of this year (1998).¹⁶

I regard these guides as very interesting sources of information, because they can tell me about what (the Norwegian) EIA is meant to be, how it is described and understood and who is connected or involved in this system. Comparing different guides, at different stages, could also tell me something important about the ongoing reflexive process of practising, understanding and prescribing EIA. But let us first see if just a quick (superficial?) comparison of these two guides can tell us something interesting of how this work had evolved.

The first guide from 1990 is rather thin (just under 70 pages), while the guide from 1994 has definitely put on weight (over 170 pages in a larger format). Looking at the table of contents, we recognise the similar first two chapters in both guides, while the one from 1994 has got two additional chapters.

Both guides starts with a description of the regulations and provisions concerning EIA, in the Planning and Building Act. The second chapter outlines the duties and the roles of the different actors in this process: the entrepreneur, the proper Ministry, subsidiary directorates, the Ministry of Environment, regional authorities, local authorities, non-governmental organisations and the public.

The third, and new chapter in 1994, outlines more clearly the required specifications of both the notification and the subsequent impact assessment, and also lists actions recommended or required by the entrepreneur. The fourth chapter gives instructions on how to assess and describe different impacts. The impacts are divided

¹² Some planners even insinuate that this expansion is connected to creating jobs for a vast number of natural scientists and environmental experts, educated at the universities.

¹³ Information on the Norwegian EIA Forum on <http://www.gruk.no/kuforum/index.html>

¹⁴ Information on IAIA on <http://www.ext.nodak.edu/IAIA/>

¹⁵ The first guide: *Konsekvensutredninger. En veileder i plan- og bygningslovens bestemmelser*, Miljøverndepartementet. August 1990, T-746.

¹⁶ The present guide (by June 1998): *Konsekvensutredninger. Veileder i plan- og bygningslovens bestemmelser*, Miljøverndepartementet Juli 1994, T-1015.

into the three thematic divisions required by the Act: environmental impacts, impacts on natural resources and on the society. This part is clearly largest of them all.

Both guides contain enclosures with additional information; a meagre four enclosures in 1990 has grown to 11 in 1994. The Act and its provisions for EIA is also printed. In 1994, the ECD 85/337 is attached. Both guides contain additional specifications, a few examples, check-lists of impacts and out-lines for notifications, study programmes and impact statements. In 1994 there is also a list of the proper authority according to the type of project (responsible for all the important decisions for each project), and which authorities to consult during the two stages in EIA. Interesting is also a list in the 1994-guide of who is considered the most relevant NGO's.

As this outline of the two guides shows, there is a marked difference between the 1990 and the 1994 guides, considering the aspects mentioned. This is of course a consequence of four years of practising EIA, but also a consequence of system-building. What this is, is clearly illustrated in the forewords of the guides. While the 1990-guide barely refers to the Ministry of Environment, the foreword of the 1994-guide says that this new guide is made by MoE, in co-operation with all of its subsidiary directorates and other relevant Ministries. This work has also been supported by a reference group consisting of representatives from private consultant firms, from some of the largest public and private entrepreneurs, and from local and regional authorities. Doing EIA, has clearly to do with trying to get all these actors to understand, and to co-operate, in such a fashion that they are compatible with each other, and in "the spirit of EIA".

EIA in practise - a case of building a railroad tunnel in Oslo

To show how the contents of a statement could look like, I will describe the statement for a railroad tunnel, just at the edge of the inner city of Oslo, called the Old City. I will also give some of the story behind this case. The statement was even, most unusually, made as a proposal for the parliament, because the tunnel originally was put forward of one the representatives.¹⁷

The tunnel is a small part of a larger and very controversial project, the making of a railroad line between Oslo and the new central airport, Gardermoen, about 40 miles north-east of Oslo. The discussion about the localisation of this airport, including the question if it was really needed, did take at least two decades. In 1992, the parliament eventually made the decision, and at the same time, the planning of a new railroad for a high-speed train between the city and the airport began.

¹⁷ Stortingsproposisjon nr. 33 (1996-97), *Konsekvensutredning for jernbanetunell under Gamlebyen i Oslo*. The proposal was put forward by the representative Carl I. Hagen in 1995. Hagen belongs to a right-wing party, who also is known to be very critical to the increased influx of foreign people to Norway. The east side of Oslo has the highest concentration of people from abroad, but was also the part of Oslo which gave comparatively many of the votes to Hagen's party in the election the same year.

As many large projects, the building of the railroad and the airport have been both conflict-ridden and suffered from huge technical and environmental problems, but these are not my main concern here.¹⁸

The reason for the proposal of this particular tunnel, was expressed as a concern for the people in this part of Oslo. Even if the reason for making this railroad mainly was environmental, as it could reduce the use of private cars to the airport, the railroad itself was said to produce so much noise and vibration, that the people in the area on both sides of the railroad had to be protected. Since this part of Oslo also is known to be one of the poorest parts (the east-side), there existed a social argument, making good for the disadvantage of living there.

There was put forward many arguments, both pro and contra, in this case. The adherents of the tunnel seemed to have a strong case, referring to the noise from the railroad. The trains would pass regularly in high speed, just some few meters from the living quarters of thousands of people, it was said. This view attracted a lot of support from the people living there, and some politicians and local resident groups. On the other hand, there existed a strong union consisting of the residing government, the Labour Party, the Ministry of Communications, and the National Railroad Company, the NSB. They claimed that other technical solutions could provide the necessary noise reduction, with just a fraction of the cost. This could either be done with changing the position of the railroad-line, or by building concrete walls, shielding people from the noise, or both.

The notification was delivered to the Ministry 5. July 1995, and the study programme was fixed 20. December the very same year. Between these two dates, all the relevant actors had put forward their opinion on this project and the proposed study programme. Making the assessments, took place in the first half of 1996. In the second half, the statement, made by NSB, was sent to the bodies entitled to comment on it. The statement was approved by the Ministry of Communication 6. February 1997. The process was completed in some haste, since the airport is planned to open by the end of 1998. As one easily could claim, what made this speed possibly, was that the NSB, alias the Ministry of Communications, sat at both sides of the table, both as entrepreneur of the railroad/tunnel and as supervisor of the EIA-process.

As expected, the conclusions in the statement were very clear. The EIA-process had assessed several tunnel-proposals, but none had shown to be acceptable because of a very low cost-benefit ratio. The statement started with a short appraisal of the different alternatives. This was visualised by using a table where every factor was measured in its estimated value in Norwegian kroner: the cost of building the tunnel, the cost of driving, the cost of time, the cost of accidents and so forth. On the other hand was the benefit for the environment and saved physical area by building a tunnel, also measured in kroner.

The desired effect of such calculations depends on how you are able to neutralise all attempts to discredit these numbers. Of course, a very few persons have

¹⁸ One of the best known to the people of Norway, through media, is the making of another tunnel just a few miles north of this tunnel, Romeriksporten. The assessments in front didn't reveal that the stone was filled with cracks, some leading to a small lake just opposite of the tunnel. This resulted in a severe leakage problem, threatening to devastate the lake and the tunnel. Trying to stop the leakage, the entrepreneur used a chemical, Rocha-Gil, which later was discovered to be very toxic.

the capacity, the knowledge and the necessary information to make reasonable alternatives. Also, the entrepreneur in this case had done preventive actions, by hiring what they said were external highly qualified economic expertise, giving their own calculations "a letter of approval".

Other institutions had also contributed to this statement, which also gives us a very good illustration of a situation of interchangeable roles within, or on the fringe of the EIA-system. Two public research institutes, the NIBR and the NIKU, had also been hired by the Ministry of Communications to guarantee the quality of the assessments done.¹⁹ These institutes thrive mainly because of allowances from other Ministries, and does most of the public funded research on EIA in Norway. Getting an acceptance from these must therefore be highly valued.

But this is also very much a local project, within a certain area of Oslo. This means that it is probably very important to mobilise, or to establish a network of communication within important actors in this community. Otherwise, the situation could get out of control very quickly. The National Railroad Company, the NSB, established regularly meetings with a reference group, consisting of representatives from the people living in this particular area, representatives from local authorities, and among those, people with responsibility for the conservation of the city's cultural heritage, as this project involved some old buildings.

The hearing of the EIS, brought forward 34 letters of opinion. Among those, the largest national environmental organisation, Naturverforbundet, along with the regional authority, Fylkesmannen, stated that they didn't want a tunnel in any case. Others, the local authority, Oslo Kommune, and the National Institution for Conservation of the National Heritage, Riksantikvaren, wanted additional assessments. At last, the organisation for the inhabitants in this area, Gamlebyen beboerforening, wanted to plan and assess a new alternative to the south of the present alternatives in the EIS, sparing the most densely populated areas.

With so many different opinions and crossing interests, this seemed most likely to clear the ground for the entrepreneur, to have it his/hers way. As the statements finely concludes:

*"The department for the national railroad system thinks that the EIA has shown that building a tunnel through the Old City of Oslo would be very expensive. The cost clearly exceeds any environmental gains."*²⁰

The crucial point in this particular assessment, aside from the economical considerations, was of course the question of noise and vibration. Mapping present levels of noise and predicting future levels, was done by a private consultant firm, Brekke & Strand. The results was thereafter controlled by another consultant, Multiconsult.

The entrepreneur had reasons to expect some controversy on this matter because two of the political parties in the parliamentary committee of the communications had stated earlier that:

¹⁹ NIBR, The Norwegian Institute of Research on Town and Regional Planning, and NIKU, The Norwegian Institute of Research on Our Cultural Heritage.

²⁰ Section 8, *The Recommendation of The National Railroad Company and The Departement for Railroad Systems*.

"We have reason to be concerned about the noise that will be a nuisance for ca. 12.000 people in this area of The Old City of Oslo, when the railroad to Gardermoen opens, if the tunnel isn't built."²¹

This was "proved" wrong in an estimate done by the consultants Brekke & Strand, referred to in the EIS. They concluded that the number of people affected by an increase in the level of noise, hardly would exceed 400 persons, compared to present conditions. If the proposed remedies for noise reduction (building concrete walls) was realised by the time the railroad opened, the indoor level of noise would even be under the limit of 35 dBA (underscores a recommended value of 42 dBA) for all inhabitants in this area.

The assessment of this particular subject also said that this was an area of some uncertainty:

"It is important to estimate levels of noise, because noise is harmful for the health of people. It is very difficult to quantify the level of unpleasantness people feel and the health effects of noise. This is very highly a matter of subjective judgements and unsolved methodical questions. [...] These assessments are done according to the regulations made by the Ministry of Environment".²²

Even if there is an element of uncertainty in assessing the effects of noise to people, the entrepreneur tackles this question with considerable force. First of all, he is referring to the standards set by the MoE. In other words, according to the highest (approved) standards. Secondly, it is not that the conditions will be worse, the conditions will even be better after the railroad has been built, even without a tunnel.

In February 1997, this proposal (the EIS), was debated in the parliament.²³ The Labour Party, presently in charge of the government, agreed to the conclusions in the statement. As a compensation, or to remedy the conditions in The Old City, the government also proposed to allocate funds for a renewal or a restructuring of the traffic system in this area. This didn't help the Labour Party from suffering a defeat in the parliament, as the whole opposition agreed in this matter. The final decision was postponed for a while, but in April 1977 the parliament decided that a new tunnel should be assessed and approved before the end of 1998.

R & D: What is done and who does it?

After eight years of practising EIA, there is some research done here locally in Norway, although it shows clearly after reading about these matters for a while, that most of the literature on this subject, is in English, from UK and USA.

²¹ Section 5.3, *The consequences for the housing conditions*.

²² Ibid.

²³ If this hadn't been a parliamentary proposal, the case would have been closed by this stage, and exit the tunnel.

Just after the start of EIA here in Norway, the MoE allocated funds to establish a centre for research on EIA, at the earlier mentioned NIBR, in Oslo.²⁴ Some of the themes dealt with in this research, has been:

- The question of co-ordinating EIA and local planning
- The quality of some selected EIS's
- The consequence of Norway entering the European Economic Area (EEA), on EIA
- The time spent, doing EIA
- The importance of scoping as a tool to minimise and focus the EIA

In a Ph.D.-thesis, produced at the same centre in 1997, some selected EIA-processes in recent years have been studied.²⁵ This study has mostly been directed at evaluating the documents in EIS's, but some interviews have also been done with different actors, some time after the decisions about the EIS is made.

The conclusions in this thesis is divided into three. First of all, the researcher found that EIA is practised differently according to the character and type of project. Secondly, the importance of a base line description of the area affected by the project. And thirdly, the dominance of the expertise and the bureaucracy in the EIA-process, while local public bodies takes the actual consent in the end.

The general impression of this research, in my opinion, is that the perspective is concentrated mainly on viewing EIA as a tool or a technique. As a tool, you can on the one side learn to use it better, or, on the other side, you can modify its structure, in order reach your goals and to reduce the use of resources while doing this. Effectiveness is the important word here, both considering the goals and the time and resources spent in the process. There is no doubt that this is a consequence of a general discussion on the effectiveness and benefit of doing planning, which has been going on since the 1970's, and perhaps even longer.

One very good example of this, is the evaluating of EIS's done in the work mentioned.²⁶ To do this properly, there is developed methods, as they say, "to reduce the subjectivity" in this process. The chosen solution, is a check-list, where different themes and aspects of assessments is graded. Also on this level, the thought is that it is possible to "calculate" a result, to produce differences of quality in the statements. In some way, this is possible, but how interesting is this information?

As the example of assessments of the railroad tunnel in the Old City of Oslo showed us, there is a tendency to chose quantitative presentation, using one or another common denominator, to get your message through. The risk is of course, that you end up with simplifying very complex and heterogeneous processes.

But, for the sake of the common comfort, let us go along for a while. It should not be very difficult to characterise the EIA as a kind of technology, as a mean directed against certain goals. What these goals is, is hard to say, but as a tool it is

²⁴ Although four to six persons have been involved in this centre, the funds from the MoE suffices to approx. two full positions.

²⁵ The title of this thesis, is *Professional knowledge or negotiations? A study of the Norwegian environmental impact assessment (EIA) provisions*, NTNU 1997:2, by Ingvild S.H. Swensen.

²⁶ Joranger & Røe, *Konsekvensutredninger. Evaluering av fire rapporter*, NIBR notat 1993:113, and Swensen (1997).

meant to work, to change a system (what system?), one way or another, the question is how?

The dilemmas of planning for the environment

The change to viewing EIA as a kind of tool or "hard" technology, and not just as a method of doing things or as a procedure, makes it possibly to deliberate other perspectives on this subject than this research seems to do. Therefore, my starting point will be that, as a technology, the EIA-process produces something - and the following questions are: What does it produce and how does it do it?

EIA is not only about doing something differently, and about altering elements within the process of planning. A core rationale in EIA is the (desired) effect of bringing more knowledge of environmental aspects into the process of planning, as a platform for doing the assessments. This input could mean, at least from a technical or an economical perspective, more contingency in planning. This is certainly the case, when accompanied with public involvement at different stages of the process. At the same time, there is a legally and commercially concern about justice and equality. That is, all projects should be treated according to predicable rules and procedures, and at the same time not creating "unfavourable competitive conditions", between sectors, regions or countries.²⁷ This shows clearly that there exists a tension between trying to create local and particular knowledge on environmental aspects, and at the same time trying to make both the process and the knowledge produced, predictable and standardised.

When making and implementing procedures like EIA, one could ask what is the main concern. One of the prominent concepts since Rio has been "sustainable future", and EIA is said to be one of the tools to produce this. When reading about "sustainable future", one could have the impression that nature is given a lesser priority, when, as they say: "our actions today should be guided of a concern about future generations". As a consequence, nature is characterised as a resource, that is, nature exists or is defined from a human point of view (which it always is, but then discursively). I think this view is mostly utilitarian. Even if concepts like bio-diversity (which has succeeded "ecology" as the leading catch-word today) seems to give nature some kind of independence, it seems to me that this bio-diversity is preserved mainly because its degradation would affect the standard of living or the welfare of future generations of human beings.

An other "effect" of the concept of sustainable future, is, as many critics already have said, the impossibility of reconciling an ever expanding economy, and at the same time considering the environment. It is not difficult to realise that this can produce never-ending spirals, both economic and technological, where more money and better and cleaner technology becomes the only way to improve our relationship with the environment.

²⁷ ECD 85/337: "Whereas the disparities between the laws in force in the various Member States with regard to the assessment of the environmental effects of public and private projects may create unfavourable competitive conditions and thereby directly affect the functioning of the common market; whereas, therefore, it is necessary to approximate national laws in this field..."

As this short exposition shows, there exists (or are produced) rather un-solvable dilemmas trying to implement a "sustainable society" in the post-Rio period.²⁸ We have a need to control our actions, creating predictability, both legally and commercial. But restrictions are also said to reduce technical innovation and commercial freedom. At the same time, by making decisions on these matters local, we are introducing an element of contingency. As we do not want to create unequal or unfavourable commercial conditions between sectors and countries, regulations and procedures is standardised, even if these standards are not necessarily meaningful in a local context. It is also said that some standards is necessary to introduce the global perspective on the environment. We are also still, within systems of sustainability, pursuing even more economic growth, alas we all know that this has been one of the biggest threats on the environment. As a preliminary conclusion one could therefore say that EIA is a mean directed against solving some of these contradictions, or as I questioned, it produces dilemma-solving.

This is some of the "meta-problems" of implementing environmental means. It could be so that these dilemmas is a consequence of our thinking and acting on nature is dominated (pervaded) by concepts and understandings from the domains of natural science, economy and technology. One could say that this is also dilemma-producing. To develop along these lines, I will now try to use some of the concepts from the social studies of science and technology-field.

Creating networks - Relevant actors and relevant knowledge

As my exposition of the different guides, processes and the history of making the EIA-regulations demonstrates, the single most powerful aspect is the establishing of different networks. These networks is not just about synchronising or negotiating interests, but also about establishing how to think and to act about EIA, and last, but not at least, who are the relevant actors (remember the check-lists in the guides?).

As an example of this, the regulations should have been implemented already in 1980, but a bad timing and a misjudgement of who were the relevant actors to enrol (in this case also the unpredictability of the voters), shows clearly the contingent matter of these things.

As the years went by, towards the approval of the regulations in 1990, the regulations were worked over, as to apply to the demands of Ministry of Trade and Industry. Allied with the Ministry of Economy, these two Ministries represent very strong actors, when new regulations affecting their activity is shaped.²⁹

One of the consequences of this network-building, was on firstly that the regulations were made as clear and as simple as possibly, not to obstruct to much in the developing of new projects. Secondly, the power of administering these processes of EIA, was attributed to "the proper Ministry", that is in projects involving the industry, the Ministry of Trade and Industry. In this case, it is clear that to have these

²⁸ There is 22 years between the NEPA and Rio. Since I have earlier referred to the "origin" of EIA, there is of course a possibility that trying to write a genealogy of EIA is rather forced. On the other hand, some could argue for that EIA is a part of the "modern project", with much older origins.

²⁹ Swensen (1997).

regulations approved, the MoE also had to renounce on its ambitions of controlling all planning involving the environment.

This process of enrolment is not finished when the regulations are approved. As the procedure involves different actors, the guides shows clearly that these actors, or some of them (not many NGO's here), are continuously involved in the process of shaping this instrument. This has to do with developing understandings, methods and procedures. The formation of the EIA Forum, beside of, or as an addition to the established network of planners in Norway, says also something of the particular character of EIA. It can suggest that there still exists an opposition within the "old planning system", to the relatively new EIA-regulations.³⁰

At last, executing particular EIA's, is also all about creating networks between what is accepted as relevant actors. As the case of the tunnel in the Old City of Oslo demonstrates that there is a mixture of politics, science, groups and actors. The NSB, and the Ministry of Communications, argues in the EIS, both on the basis of science and economy, without success. They even try to strengthen the proposition with drawing on external scientific and economic expertise, and at the same time discrediting statements from the opposition. But the certainty of science, or the validity of its predictions is not the point here (it does not solve the riddle). More to the point is the history of the Old City of Oslo, its physical structure, its inhabitants and the creation of alliances between both material structure, people and politicians.

Is it possible to delegate environmental concern?

As some legal regulations on the environment are directed against what people are allowed to do, or not to do, as setting criteria or prescribing human actions, the case of EIA is of another kind. If the intention of EIA is carried out, it is possibly to say that one of the effects of this process is to increase environmental concern, without setting strict criteria for the outcome of such processes. One could say that the extent and nature of this environmental concern, is delegated to the EIA process. One could also say that this is a matter of controlling, or trying to combine different discursive formations about nature, which until now have been separated into one technical/economical domain and another scientific domain.³¹ As a common impression is that present knowledge of the environment, and especially of environmental damage, is not utilised fully within planning, this intention is delegated to the EIA-procedure.

But this is not the sole purpose of EIA. Also delegated to the EIA-procedure, is the so-called deliberation between technical, economical and environmental aspects of a planned project. Although the final decision about if a project is allowed to proceed, and which alternative to choose, is outside of the Norwegian EIA-process, the EIA is

³⁰ As a report from the NIBR suggests: *By the next revision [of the EIA-regulations] is made, one should comply with the close relationship between EIA and planning, so that the creative element of the EIA-procedure - the requirement for a study programme - is incorporated as a requirement in the ordinary planning work*, (Huseby 1997:16).

³¹ As the guide from 1994 says: *The object of the EIA-regulations is to produce and to utilise the knowledge about impacts* (p.11).

meant to generate the relevant alternatives. This means that EIA can, and should affect the physical characteristics of a project, on a very early stage.

The guides of EIA, both from the MoE and from other Ministries or the directorates, is certainly examples of scripts, some as producer scripts, on this process. I would think that EIA relies rather heavily on producing such scripts, as lacking more manifest or "hard" technology. The guides made by other Ministries and sectors are most likely modifications of "the mother of all guides" from the MoE, reflecting the modalities or networks of humans and non-humans in that particular sector.

The users, in this case the entrepreneurs and/or their respective directorates, must modulate their own intentions and structure, both material and immaterial, into the EIA-process. For some, this could mean that generation of alternatives is highly unlikely. As I have been told by people working with mining, a geological occurrence is not negotiable in the same way as a factory or a road. And I think that this is a very important subject in EIA, often neglected or suppressed in the guides, you have to negotiate with the nature as well, not only humans.

An integrated approach to analysing EIA?

Even if the project involved in EIA is not subjected to an open conflict, the goal of this procedure is to produce successful translations among the actors involved. It is an expressed objective that EIA should be an instrument to clarify conflicting interests and also to reduce the possibility of direct conflict, or even battles, when projects are carried out. This objective is not insignificant, remembering the strong conflicts of some cases in the late 1970's and in the beginning of the next decade. There is no guarantee that this is not happening again at some time.

In a more sceptical (or perhaps cynical) view, one could say that this is a method to neutralise opposition and conflicts, by binding the different actors to the process and by defining what can be said, and therefore what is relevant knowledge about certain projects. This can be a very efficient way of defining relevant knowledge within the scientific, the technical or the economic domains, and at the same time excluding other knowledges.

The point is that when the translation is made, it happens between different actors, but to these actors it sticks certain interests and knowledges, which has to be translated in order to fit together or to define new common goals.

In order to do these translations, we see that we have to define who is relevant actors and what is relevant knowledge. As the expression NIMBY is created to describe short-sightedness and selfish objectives, this is also a way to neutralise certain knowledges and experiences. But as the example with the tunnel in the Old City of Oslo tells us, this is not always the case. If the NIMBY's finds alliances with other powerful actors, this knowledge could in some cases be regarded as important.

Environmental Impact Assessment (EIA)

How rewarding is it to analyse EIA:

- as a technical planning system,
- as discourse or
- as processes of translation?

What is EIA?

- *Established for **identifying** the likely **consequences** for the environment and the society when planning.*
- *Systematic EIA introduced in Norway with new regulations in the **Planning and Building Act** in 1990.*
- *Regarded as one of the most important implementations of **Agenda 21**.*
- *The catch phrase is "It is better to **prevent**, than to **repair**".*

EIA as a technical system

- Here we look at how EIA is used by large international bodies like the World Bank, the UN Development Program, EU and in most industrialised countries.
- We see how experts on EIA is organised, and how EIA is established as a particular field of knowledge, with textbooks, courses etc.
- In Norway, we can see how EIA is advocated and supervised by the Ministry of Environment, and other public/private actors.
- We can look at the development of more or less standardised procedures for identifying and predicting impacts.
- How the EIA regulations delegates roles to the different actors: authorities, entrepreneur, NGO's, citizens, planners, experts and others.
- How EIA is used to manage/control controversial projects.
- How EIA establishes a "new" technical (integrated) subsystem, drawing on resources from planning, science, economy and other technologies.

EIA as discourse

- This makes it possible to view EIA as a consequence of certain problem definitions/constructions, and methods of solving such problems.
- How guides on EIA says something about the production of relevant knowledge, and at the same time about the exclusion of non-relevant knowledge.
- How EIA can be interpreted as a production of relations between different knowledges, interests and considerations.
- How EIA is delivering a platform/background, which political or public decisions on planning can be made from.
- And if that means that conflicts about plans and projects can be moved into a scientific context, and be solved by scientific arguments.

EIA as processes of translation

- How has advocates of EIA (first of all the MoE) succeeded in establishing EIA as an obligatory passage point?
- Is there established a network of indispensable persons, experts on EIA, both in the public and the private sector?
- How do guiding on EIA give actors different roles and status? To what extent can we say that EIA is trained/rehearsed?
- Even if EIA (for the entrepreneurs, activists) seems to be a detour, how can it can be argued that EIA is effective? Is it because it creates predictability? And is the best way of implementing sustainable planning?
- How the success of EIA (both in the short and the long run) also depends on how the different actors/groups is represented in this process.
- How the success of EIA depends on the mobilisation of various resources, both human and non-human, inside and outside of the EIA system.