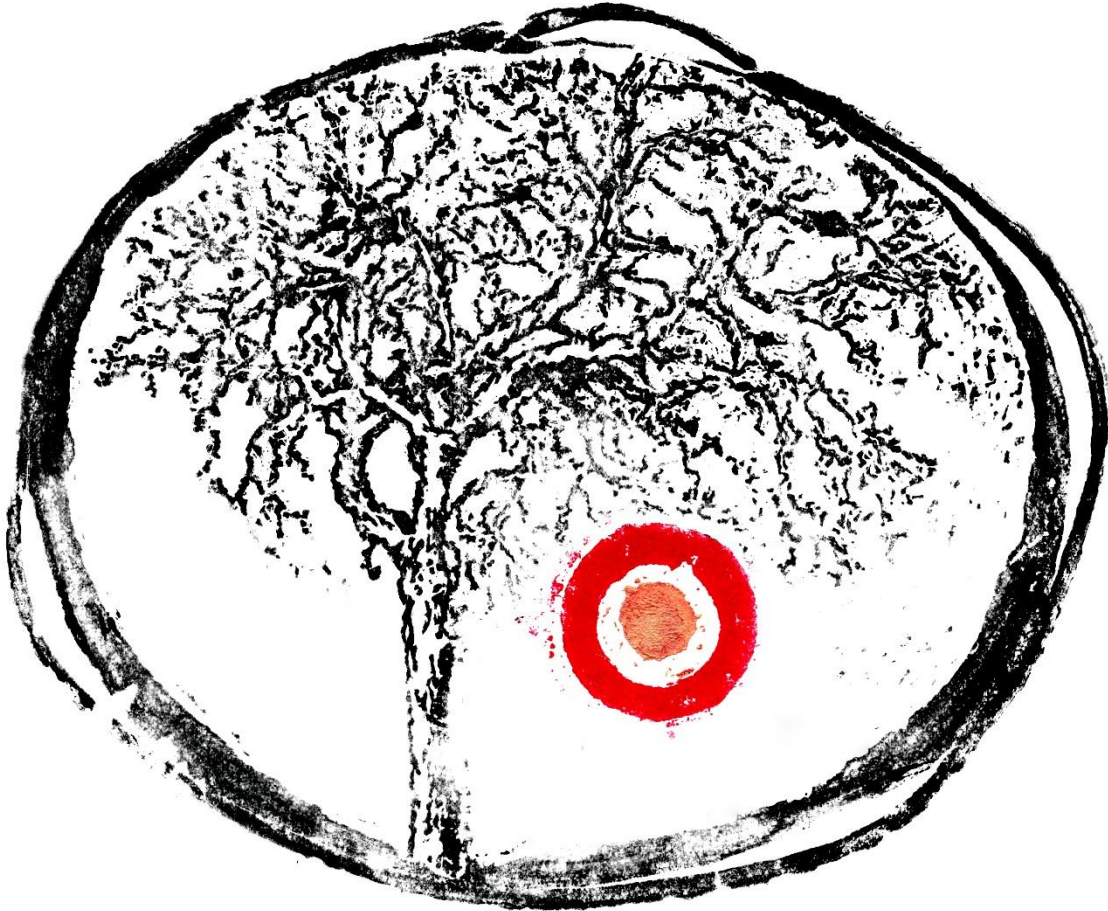


FOOTNOTE 14 , plus, a afterword page 10-14
linked to the *Pandemic Situation and
the Crisis of Climate Change*



Johan Cronehed, a text based on footnote 14 in my book:
Theory of Science; about scientific debate and scientific practice.
(*Vetenskapsteori; Om vetenskaplig debatt och vetenskapligt praktiserande 2008*)

With a written afterword in May 2021 page 10-14, linked to a social psychological perspective and a methodological suggestion to analyze a broad variety of phenomena's in the society in their local and/or global condition, and why not, as examples of phenomena's in our society; the ongoing pandemic situation Covid 19, and likewise the ongoing process of Climate Change.

Studying how objectivity develops in science, how it is used and function in interaction with social activities of various kind is interesting. That is, how the scientific framework of objectivity works and is used in its context in accordance with political, social, economic and/or technological development lines, etc.

In this area, there's a number of studies that are worth mentioning, both historical and more concretely linked to our present-day living conditions. Some of my favorites are Daniel B. Boorstein's books *The Republic of Technology: Reflections on our future community*, Harper & Row Publishers New York 1978, and *The Discoveres*, Random House New York 1983. These books illustrate in a historical perspective, how new discoveries and technological innovations influence the way we understand life, with the logic that is valid for its own specific time.

The social anthropologist Oscar Andersson's dissertation in anthropology; *Chicago School: Institutionalization, the tradition of ideas and science*, Department of Social Anthropology Lund 2003, as well as the further processing in the book *Chicago School's Urban Sociology: Researchers and Ideas 1892-1965 - Egalite* Lund 2007, also deals with the above-mentioned phenomena's of new discoveries. I would like to recommend the chapter in Oscar Andersson's book that deals with the Chicago School's science and empirical methods. And my favorite part about the research-process; student's education in empirical methods, according to themselves, illustrates that there was no other formal education in methodology at the University of Chicago in the 1920's, than an informal traineeship that emanated from the professors when it was time for essay writing and dissertation work. And how the research students were encouraged to do fieldwork and not to be unfamiliar with using both quantitative and qualitative methods in different combinations, even if it the main focus was the life stories and direct observations. In fieldworks, that explored everything from the study of immigrants, bohemians and vagabonds to the study of various youth gangs, etc. in Chicago.

On another level of theoretical theory, Oscar Andersson illustrates in his book - 2007- how an innovative anthropological and sociological schooling develops based on a desire to study and understand the city of Chicago, it's development, on empirical grounds. A city that was in a very expansive period around the 20th century and onwards, i.e. a period of time that involved largescale development in industry and trade as well as an influx of people with roots from many different countries. For the university, it was about conducting active research efforts with the ambition of reading the city of Chicago as an image of different social events valid for that time. Social scientists who joined the University of Chicago were

carrier of various influences based on journalism, pedagogy, philosophy, theology, etc. Furthermore, this knowledge, also the attitude to this knowledge and the scientific practice were transferred to the university students. Students, who in turn when they graduated, spread the Chicago School's "attitude and scientific practice" to other universities.

Journalism is interesting in this context. At the beginning of the 20th century, it was not a usual practice for an academic to conduct fieldwork and to have direct contact with the various social environments that were to be documented and analyzed. A method of documentation that can be found in investigative journalism, even in its conducted form at that time, when it was at its best.

The photographs and the accompanying text in the book *Let Us Now Praise Famous Men* by James Agee and Walker Evans - in the Violette edition from 2001 London - are one such example, where the documentary photography in black and white images, often in the form of portraits, illustrates the reality of farm life in the 1930s USA. And where the text likewise works photographically with the task of maintaining "detail and the sharpness of presence" in its representation of impressions on a variety of levels. It is then about how the direct representation, with its various aspects of a sense of presence, creates a status of objectivity.

However with the reservation, that Bruno Latour provocatively writes in the book *The Return of the Artifact: A Meeting between Organizational Theory and the Sociology of Things* - Nerenius & Santérus Stockholm 1998:

.... No observer of human collectives for at least the last two million years, has ever faced a pure social relationship ... and likewise ... no one has, of course, especially in "high-tech" modern environments, ever encountered a pure technology An argument that then can be linked to the theoretical debate in science, its various actors that are stated in my book. In the debate where the laws of nature, quite correctly, are presented as persistent and valid over time in a completely different manner than the use of technology, social and psychological relations in their momentary context. An approach that also exercises an influence on researchers who are employed in the various branches of science in question - the humanities, social sciences and natural sciences.

What we then find is a search for objectivity based on different premises. Although, with an actor oriented perspective that is about researchers in different

scientific disciplines who often cooperates with political, social, economic authorities and sometimes in the implementation phase, also with stakeholders, for example in the scientific area of technology. In Latour's analysis (1998) the various things produced in the form of objects such as sketches, drawings, prototypes, etc. constitute a stabilizing and unifying factor in the communicative flow that takes place between different memberships, branches of science.

These processes, based on my previous work at Department of Spatial Planning, CTUP Blekinge Institute of Technology, and my current work as a teacher and researcher at The Faculty of Social Sciences, School of Social Work at Lund University can be illustrated as follows, as a "thought proposal" in accordance with Bruno Latour's reasoning - 1998.

For example, in order for a wide-ranging care program to be adopted, it is necessary that a number of different factors interact in our society; politically, economically, socially, psychologically and also technologically, administratively. The individual care program must be up-to-date politically in terms of foresight and it should also have a relevant scientific basis. Perhaps in this context a new type of nursing home is being built, alternatively and commonly, it may be that previously existing buildings must be completely or partially redesigned for a specific need. We then find that the technological aspects of the implementation are important, as well as that different perspectives regarding the labor market. Relevant research can and should be linked to these previous problem areas, adapted to the form of care, if it contains, for example, advanced, social, psychological, medical and/or technological aspects. A research which then can be locally based at a nearby university, etc.

We have now been given an activity, which if it receives sufficient recognition, may become a firmly established institution in a society, perhaps even in its common conceptual world. In other words, the result of the form of care can be seen as fairly stable over time, but the road to get there is not lined with the same rationality. The driving forces for the result and the more largescale implementation are part of a societal process of complexity and collaboration, for example in the communicative meeting between all stakeholders. Similar basic assumptions for communication and collaboration between different actors in the scientific field can be made for a high number of contemporary and largescale projects.

In my understanding of Latour's reasoning (1998), it is in the continuous flow, consisting of the communicative exchange between all parties involved, that it is possible to find "transparency", i.e. a kind of momentary objectivity both in the description and analysis of a project.

Thus, in the study of scientific projects and of the collaboration between different scientists, these communicative transactions, their content and character are of great importance to examine. In our case for the social scientist who deals with understanding and analyzing scientific practice on its own terms, as both dependent and partially independent of the underlying and often local context. However it is not found in the polarity between the materially oriented approaches versus the culture-specific approaches when it comes to studying social phenomena's. Again, in our case it is about the study of scientific practice i.e. our existence does not consist of scientific practice that only will be made understandable based on measurable, concretely visible observations. Likewise, these frameworks of understanding can not only be accommodated in social constructions and in culture-specific action. Our existence and our way of participation is more complex than that.

Nor does a "both/and perspective" in relation to this methodologically contrasting polarity, in the text above, satisfy Latour's way of carrying out his analysis. An analytical approach that instead focuses on the communicative and concrete collaborative flow of activities between different actors (1998).

My idea is about the implementation of a care program with all its involved actors. However, the scientific study can of course also be focused on a construction project, a separate research project, etc. Or as in one of Latour's (1998) case descriptions, around the implementation of an automated metro system in France, with all its various professions and involved scientists. In his reasoning about studies of scientific practice, Latour takes the support of many prominent researchers, such as:

- **H. Collins** *Changing order: Replication and induction in scientific practice* Sage, London 1985
- **K Knorr-Cetina** and **A.V. Cicourel** who has compiled the book *Advances in social theory and methodology: Toward an integration of micro- and macro sociologies* Routledge, Boston 1981.

- B. Latour and **S. Woolgar** *Laboratory life: The social construction of scientific facts* Sage, London 1979.
- **M. Lynch** *Art and artifact in laboratory science: a study of shop work and shop talk in a research laboratory* Routledge, London 1985.
- **A. Pickering** who has compiled the book *Science as practice and culture* The University of Chicago Press, Chicago 1992.
- **T.J Pinch** *Confronting Nature: the sociology of solar neutrino detection* Dordrecht, Reidel, Lancaster 1986.

These researchers who, in harmony with Latour (1998) and with his poetic choice of words (in translation from Swedish) both demonstrate what and who has done:

... The truth to the result of and not the reason why scientific contradictions are stabilized. The solidity, resilience, beauty and originality of scientific facts are still there, but so are their artisans, factories, human and non-human allies, accusations and instruments that make these facts hold...

Where the focus is on what conditions in their context, which causes truths to be both sustainable and coexist with other accepted truths. It will then be possible to analyze communicative flows and different forms of perspectives that are made visible in a scientific project, such as accommodating researchers from several different scientific professions and schools.

This reasoning, leads to chapter number 7 in Latour's book (1998) *The Return of the Artifact*, which takes its starting point in Brazil, the province of Roraima in the Amazon, and in Latour's ethnographic study of a multidisciplinary scientific project, which aims was to find out if the savannah spreads on the expense of the surrounding forest or vice versa.

An important point in Latour's study of the above scientific projects. Are to describe the different measures that needs to be taken by three scientists; a botanist, an expert on trees and plants, a pedologist who is an expert in analyzing the topsoil and a geomorphologist who studies the social and natural history that shapes the landscape; to be able to communicate and start collaborating with each other. The initial step is about understanding each other's foundations for perception and what meanings each scientist places in these different perceptions. Or, in other words and somewhat simplified: Do the trees win over the savannah's soil or is it the savannah's soil that wins over the trees' ability to spread? Based on the scientific knowledge of a pedologist, a soil expert and a botanist, respectively.

Another way of describing the collaboration is that the scientists who study the problems of the presumed spread of the savannah or not, represent different forms of "image-making". It is only when these "knowledge images" are super-imposed on each other like transparent products of particular knowledge, that shared knowledge and experience can begin to assert itself in processes of intellectual work.

To get there, in the example given by Latour, a piece of land is re-created, ie. a part of the geographical territory of Brazil that the scientists in question are tasked with analyzing is formed to a laboratory, well-defined and measured. All members of the scientific group can then begin to work with their respective samples, for further analysis, in orderly and scientifically correct forms. Bruno Latour describes this process very worth reading in his book, chapter 7, 1998. We can in this part of the text follow how the initial uncertainty of the scientists turns into safety and security the more the surrounding territory changes to function as a kind of large-scale laboratory for all members involved.

The theme of seeing the surrounding environment as a laboratory for scientific studies can be found in Oscar Andersson's dissertation, from 2003, about the Chicago school, where the surrounding territory/laboratory consisted of the city of Chicago. How the establishment of scientific objectivity works and is used, also refer to the following studies:

First out is Thomas Brante, who in collaboration with Helena Norman, has written the book *Epidemic mass psychosis or real risk? A sociological study of the controversy surrounding electrical hypersensitivity*, Symposium, Stockholm 1995. The book's starting point is how various actors in the scientific arena capture a relatively new problem concerning hypersensitivity to electricity, and how already in the recognition of the problem disputes arises between what can be called scientific versus non-scientific views.

The connection to the previous text about truth as a result and stabilization of contradictions, in the analysis which is based on Latour, it's strong when reading Thomas Brante and Helena Norman's book on electrical hypersensitivity, 1995. Which means that the scientific truth is within a sphere where it constitutes ... *the result of and not the reason why scientific contradictions are stabilized ...* see previous quotes from Latour in this text, which in turn shows how several

explanatory models can exist in parallel. These may then be a part of persistent structures of "fixed polarity" within the scientific community. Something that is clearly demonstrated in Brante's and Norman's book, 1995, where the suggested cure for this "disease" is of a communicative nature based on an ideal approach where all researchers "put the cards on the table" in an open presentation of their results and sub-results, for the ability to move forward in continuous research.

Once again, we end up in the sphere of "transparency in relation to the research process" and how much it can withstand this formula in its current state, i.e. something that also can be counterproductive in a research process, for example in the phase that precedes the testing of a hypothesis.

Anthropologist Torbjörn Friberg illustrates in his dissertation: *Diagnosing Burnout: An anthropological study of a social concept in Sweden* - chapter 4, 5, Mediatryck Lund 2006, how a diagnosis, grounded in scientific research, can be seen as a temporary theory, that is reformulated, refined or rejected in its contemporary historical perspective.

Friberg then continues his analysis, 2006, by demonstrating how the diagnosis "burnout" is used and how it's changes over time. From the mid-1970's, the diagnosis acquires a scientific legitimacy in the Western world, and then meets different needs for socially and psychologically complex problems in our own time, for example when it comes to various aspects of increased individualization in working life. The diagnosis of burnout thus partly gets its own life in various social, political and economic contexts in our society. Furthermore, how the focus on the "diagnosis of burnout" is declining and now shifting to other descriptions and/or disease models of similar symptoms.

Previous books on the exploration of hypersensitivity to electricity and on the diagnosis of burnout, illustrate excellently the polarity that may exist between the view of a phenomenon as socially and psychologically complex, versus its counterpart on medical grounds. At the same time, several attitudes are formed that are confronted with the disease, with all that it entails of symptoms and various causal explanations.

Torbjörn Friberg, 2006, shows how the diagnosis, also in this case, precedes the "cure" of the disease, which on a natural basis is a common course in science, and how the forms of treatment are initially experimental and open to new influences.

Almost like a trial of various hypotheses regarding the realization of how "burnt out people" can be rehabilitated, to some extent in analogy with "the laboratory and its various actors" according to Latour's reasoning, 1998. In Friberg's research, 2006, his empirical data consists of participatory observations and interview material collected from two institutions for the rehabilitation of "burnt out people". An important conclusion stated in the study is how the patients/clients learn to take care of themselves based on the form of individuality, i.e. an individual reflexive approach with an emphasis on one's own self, which is highly embedded in our own time and in its current state mainly in the western world.

A common denominator that I have stated so far in this footnote number 14, is how researchers with different affiliations/memberships handle similar problems in somewhat different ways, also in the cognitive manner. The natural scientist and the physician often have a more instrumental goal and result-oriented approach to a problem than the social scientist who studies the same research area based on possible social, psychological connections, with quantitative and/or qualitative methods in different combinations.

It is now possible to link these analytical arguments to Sophie Kari and her dissertation in philosophy: *The small technology in the big event: Nanotechnology, boundaries and perceptions of the world*, Linköping University 2006. The researched is based on interviews with people who are engaged in developing a new technology; nanotechnology. These interviews also consist of the scientist's perceptions of the outside world, which include existential issues. The Final Discussion in the book illustrates how these researchers carry perceptions of the outside world that are intimately associated with the technology they are engaged in developing. A technology that in its current state not yet has become part of everyday life and if the technology is going to be a cross-border in scientific terms, i.e. it can become a cross-border towards both the scientific and existential approach to human development in general.

Nanotechnology is interesting in this context, as its model, "in both thought and action" clearly can be integrated in "nature and living matters" and not in too distant future it may be difficult to distinguish the natural from the substance created by humans, in its smallest components.

In the perception of something new and cross-border, the laboratory's conclusions may form a part of the environment's perception of reality and vice versa, i.e. in the communicative flow between the participants of science and everyday life.

I have such an approach in my own dissertation; *The Grammar of the Hype: Information technology in the Narrative as a Myth, Practiced reality and Scientific analysis* - Demos, Lund 2004. Where I compare the texts of nine "IT theorists", the views reflected in their books, against seven "IT users" oral narration and own conclusions about the use of information technology in working life, the years before and around the year 2000. Interesting in the context of IT is how quickly a use of new technology can be included in a perception and analysis of the world on everyday basis, in the spectrum of perception that's characterized by both visions and real conditions.

Afterword spring 2021

in relation to both the Pandemic Covid-19 and the Climate Change that are ongoing phenomena's at the time of this writing, there are several conclusions that are possible to do with the previous text as a framework, here's some:

Starting point: If the phenomenon to be understood is mainly about the individual researchers' different specialized areas of activity, its methods, their conclusions and messages based on their own premises, it is easy to end up in a narrow and stagnant research paradigm. Something that mostly reproduces what is stable and expected and not the less stable and sometimes the surprising and innovative. However, to do different is not the same as working with a scientifically groundless theory building. Rather it's about working across borders, innovatively and multi-disciplinary with forthcoming possibilities at the practical level. Not at least when the concrete practical aims needs the support of political, economic and public active forces. This form of multidisciplinary approach to both research and towards concrete practical actions are something that we can follow to an accelerating extent both in terms of coping the Climate Change processes and the ongoing Covid-19 pandemic situation.

The various things produced in the form of objects such as sketches, drawings, prototypes, etc. constitute a stabilizing and unifying factor in the communicative flow that takes place between different memberships - branches of science.

(Conclusion based on B.Latours book 1998)

In accordance with the previous analysis in this footnote 14, it is also a matter of when a new phenomenon or better defined, the understanding of a so-called new phenomenon, ends up as a general eye-catcher in society. Then it is first met by the already previously known historical references. In other words, included in various forms of perceptions, both experiential and theoretical, which at first are mostly on a local/regional level in the concrete handling of the phenomenon in question. Then it moves further on to the cross-border global and communicative perceptions, which we are definitely within in our present time according to both the pandemic situation of Covid-19 and the processes of Climate Change. In addition, how we understand a societal phenomenon is quite naturally dependent on the logic that exists in our own period of time, which becomes especially clear when the phenomenon in question meets new discoveries and innovations according to the formula:

New discoveries and technological innovations influence the way we understand life, with the logic that is valid for our own time

(Conclusion based on D. B. Boorstein books 1978,1983)

The previous formula can be seen in the processes that have led to different social strategies of protection against Coronavirus, the disease of Covid 19 and the production of vaccines against it. But also when it comes to our current strategies to try to prevent our climate from accelerating in temperature. About the ongoing Climate Change, mostly at the theoretical level, it is about whether it is possible to "slow down or not", how technological innovations and strategies deal with reducing fossil emissions, and to try to prevent some of the sun's radiating and heat-raising effects. Also to try to reduce that form of consumption, societal development that constantly consumes too much of the earth's resources and its ability to maintain an ecologically functioning balance. In addition, again the question of whether these processes in their largescale global conditions are possible to implement both in a shared scientific understanding of the problems and at the concrete level of actions in our society? Something, when it comes to vaccines, the possibility of slowing down and in the long run even being able to prevent the spread of covid-19 can be understood as more hopeful at the moment, which of course also has to do with the fairly common perception of vaccines as a scientifically proven method in modern times.

Again based on footnote 14's reasoning, the city of Chicago in the early 20th century could in that time be seen as a laboratory in social science to find out and understand the city in its state of development. In a similar way, concerning the

climate change and/or the pandemic situation, our entire planet can now be seen as a kind of laboratory, in spheres of micro, meso and macro levels, to both scientifically understand, test and implement various forms of measures; socially, psychologically, scientifically and technologically etc.

It is only when these "knowledge images" are superimposed on each other like transparent products of particular knowledge, that shared knowledge and experience can begin to assert itself in processes of intellectual work.

(Conclusion based on B.Latours book 1998)

When it comes to strategies against the spread of Covid-19 and the distribution of vaccines, different countries and sometimes even entire continent's attitudes and resources are compared. At the local level, the same comparisons often also exist within different regions.

On similar grounds it is possible to analyze these both phenomena's, the Climate Change and Covid-19 within the parameter "individual persons versus social structure in the society" related to "discursive approaches", i.e. how some countries put the solutions when it comes to preventing the spread of virus at a more directly structurally superior level, or vice versa, that it is more up to the individual opinion to relate to the spread of virus. Something that can be more clearly visible by studying a society's regulations to partially limit or completely try to prevent the spread of virus. The same reasoning goes for the crisis of Climate Change.

As a proposal according the pandemic situation; In this context, Israel can, for example, be distinguished as a country where extensive vaccination against Covid-19 took place in a relatively short period of time and the country can also be seen as a kind of large-scale scientific laboratory when it comes to studying the effects of a vaccine. Furthermore, how it works to deal with virus-mutations and social attitudes within the state of Israel to prevent further spread. The small island nation of Iceland is interesting in this context, as the country has actively managed to prevent large-scale spread of the virus both because of its demographic conditions and because of intense protective social measures. China is a country that has worked against the spread of the virus at a level of large-scale structural exercise of power. My own country, Sweden, on the other hand, has worked against the spread of Covid-19 within the more individual-oriented level based on

recommendations of socially responsible actions. In addition, not to be "first out" when it comes to do measures at societal structural level, as well as actions that include vaccination. In other words, that largescale actions in society should if possible, be based on scientifically documented knowledge, plus, the comparative aspect of how protective measures against the spread of the virus have worked in other EU countries, and where our Nordic neighbors have been and still are important comparative elements in this debate. For example, when it comes to comparisons of healthcare resources to meet the need for care due to Covid-19. Something that can be put in relation to the first phase of the pandemic situation in spring 2020, when the idea of herd immunity without the help of vaccine were frequent at both institutional and public levels in our society.

In summary, from a social anthropological and social psychological point of view; all phenomena in a society, plus that part of a phenomena that contains actions against the prevailing pandemic and/or climate change or alternatively not have resources to do so, become understandable only in the exploration of how the phenomena work within different societal contexts. Of course, the different scientific contexts included.

When it comes to take the necessary actions against the ongoing climate change process/crisis, the same procedure goes for the current pandemic situation. i.e. it is possible to find a lot of different laboratory activities at micro, meso and macro-levels with support of economic and political power-holders. For example when it comes to the crisis of climate change, such actions as the phasing out of fossil fuels that are currently in progression. In a short time span from the historic point of view, but slow based on all of the measures that must be taken.

It is in the continuous flow, consisting of the communicative exchange between all parties involved, that it is possible to find "transparency", ie. a kind of momentary objectivity both in the description and analysis of a project.

(Conclusion based on B.Latours book 1998)

If layers are laid on layers of knowledge and research in various forms of global and locally related transparency. Then it is also a matter of adding layers to layers of actions that has be done to promote an environment and climate development towards to high temperature in the atmosphere. It is then about the paradox that we as humans, as society-building beings, need an increased understanding and modesty of both the maintenance and the favor of being able to be part of this thin

sphere/membrane of ecological and biological conditions on the earth surface that allow both our own life's and survival.

In social anthropological terms, in the balance between nature and culture. That is, in balance with the earth's existing resources and in collaboration with its various forms of social and physically constructions. And most likely, where trees in natural balance with their surroundings constitute better benchmarks than ourselves when it comes to the continued existence of which we are all, not least future generations, part of. In short, where all measures that have to be done out of necessity, rests on the earlier stated formula of existence:

An increased understanding and modesty of both the maintenance and the favor of being able to be part of this thin sphere/membrane of ecological and biological conditions on the earth surface

Month of May 2021 /// Johan Cronehed
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For my family Helen, Kalle and Linus, Zetterholm Cronehed



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