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Responsibility for Nature:
A challenge to reflect critically on cultural values

Jens Christensen

Introduction

Discussions of responsibility for nature are important for all practitioners with considerable influence on the technical and social practise with nature, particularly engineers, in a broad sense meaning technical and social engineers. In this sense, the term of engineers covers all professionals who contribute to forming the technical practise, including the formation of the social conditions of this practise.

Responsibility may be defined as acting in a way that responds to problems in consideration of values. If the mentioned professionals should develop into ethical responsible agents, it is important that they acquire the qualifications, which make them able to identify and manage problems and values, not merely on the level of appearance, but also on a more basic level, including the cultural context. During their education, they should achieve the ability to understand this context, both as cultural specific, and as a result of a historical process, in which they take part. They should obtain the ability to reflect their own way of thinking and acting critically, *as* culturally and historically influenced beings.

With the aim of contributing to this reflection, the paper shows, what it may involve facing problems and values on a cultural level. The paper is centred around two images. The first image gives a view of the *problems* in man's relation to nature, and the second image serves as a reference for promoting the discussion of *values* to be considered in responsible action. The discussion of the second image ends up with a focus on dilemmas, and thereby it is indicated that responsibility implies a challenge to understand and manage dilemmas.

Problems in man's relation to nature

Current problems

How can we conceptualise the problems in man's relation to nature? In the search for a way to answer this question, it is important to realise that the problems have different levels (figure 1).
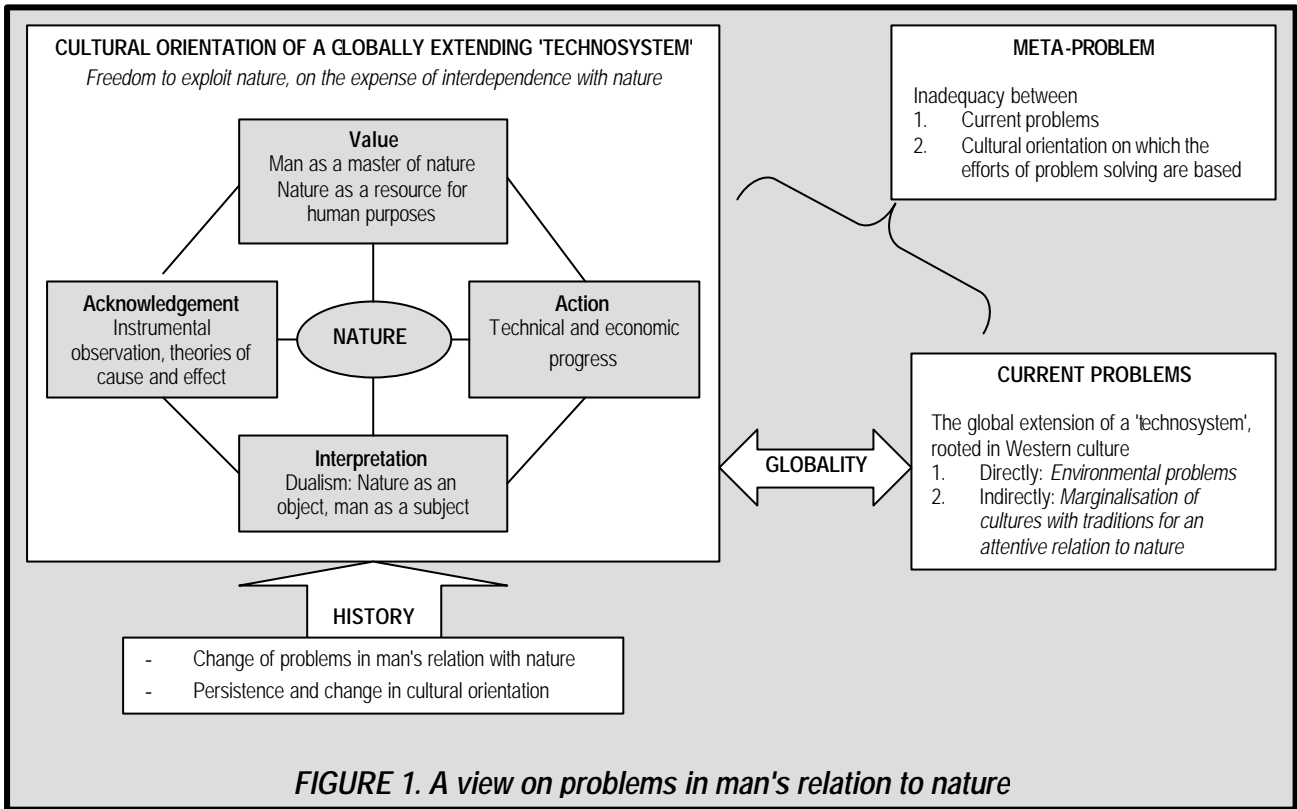
CULTURAL ORIENTATION OF A GLOBALLY EXTENDING 'TECHNOSYSTEM'
Freedom to exploit nature, on the expense of interdependence with nature

Value
Man as a master of nature
Nature as a resource for
human purposes

Acknowledgement
Instrumental
observation, theories of
cause and effect

NATURE

Action
Technical and economic
progress

Interpretation
Dualism: Nature as an
object, man as a subject

HISTORY
- Change of problems in man's relation with nature
- Persistence and change in cultural orientation

META-PROBLEM

Inadequacy between
1. Current problems
2. Cultural orientation on which the
   efforts of problem solving are based

CURRENT PROBLEMS

The global extension of a 'technosystem',
rooted in Western culture
1. Directly: *Environmental problems*
2. Indirectly: *Marginalisation of
   cultures with traditions for an
   attentive relation to nature*

GLOBALITY

FIGURE 1. A view on problems in man's relation to nature

CULTURAL ORIENTATION OF A RESPONSIBLE PRACTISE WITH NATURE
*Unification of freedom in the human self-realisation and interdependence in man's
relation to nature*

Value
A multiplicity of ways of
giving meaning to the
relationship between man
and nature

Acknowledgement
A multiplicity of ways to
human insight

NATURE

Action
A multiplicity of ways of
human expressions

Interpretation
A multiplicity of ways of
interpreting interconnections
between man and nature

HISTORY
- Change of problems in man's relation with nature
- Persistence and change in cultural orientation

RESPONSE TO THE META -PROBLEM

A search for adequacy between
1. Current problems
2. Cultural orientation on which the
   efforts of problem solving are based

**RESPONSE TO THE CURRENT
PROBLEMS**

1. *The search for an attentive
   relation to nature in Western
   culture*
2. *Respect for and appreciation of
   cultures with traditions for an
   attentive relation to nature*
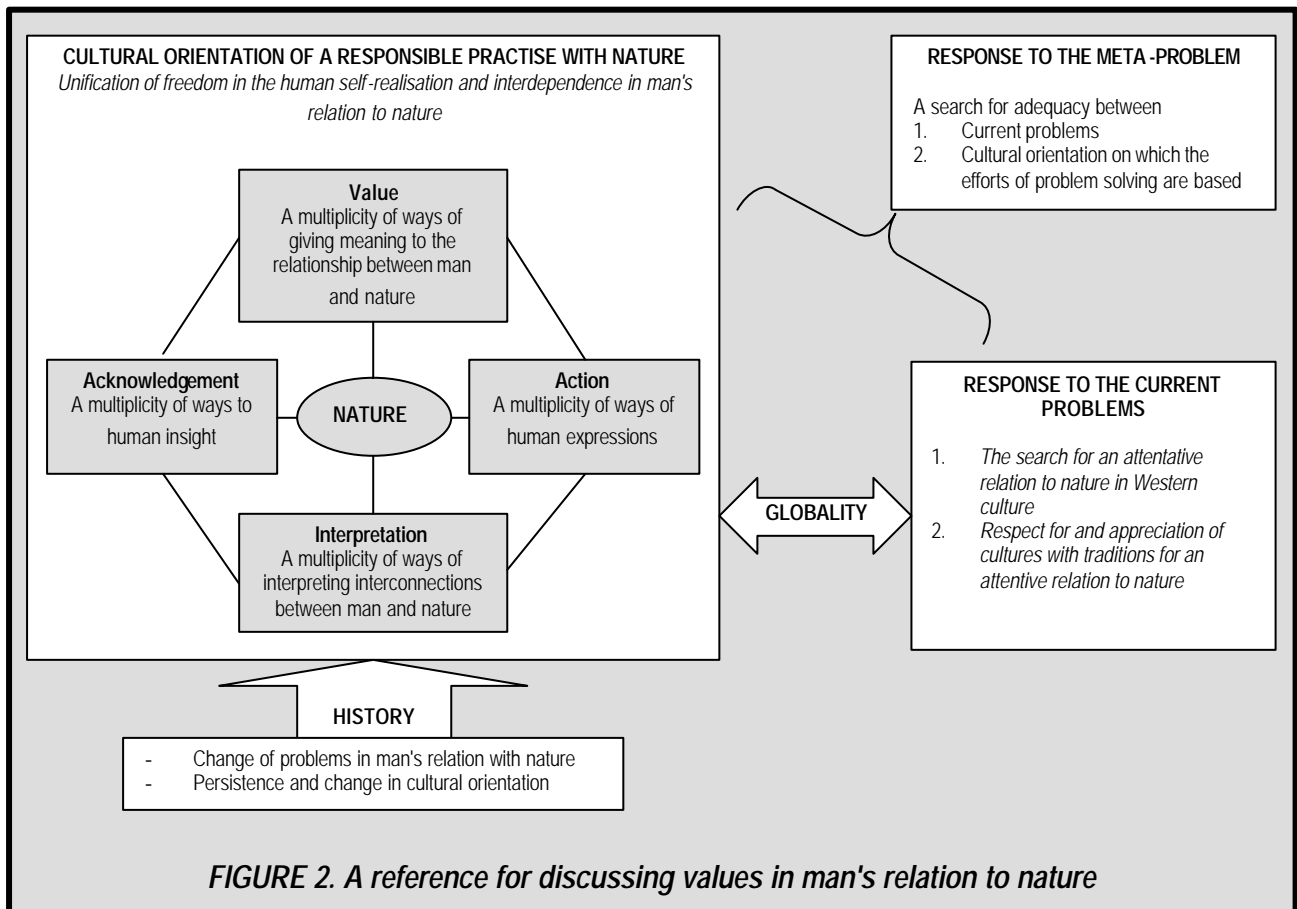
GLOBALITY

FIGURE 2. A reference for discussing values in man's relation to nature

On the level of appearance, the current problems most obviously occur as a *direct* pressure on nature, known as environmental problems, caused by the human exploitation of nature. However, the explanation of causes involves a complexity of factors. As a conceptualisation of this complexity, we may imagine a global extension of a 'technosystem', rooted in Western culture, centred around science and technology, and aiming at economic production and consumption of material goods.[1] The concept of a 'technosystem' includes not only the material technology, but also the dominating motive powers of technological development, socially, economically, and ideologically. The dominating base of knowledge, the Western conception of scientific knowledge, is part of the technosystem, too. In a broader sense, the technosystem expresses a cultural and historical specific type of consciousness and practise. Already by introducing the concept of a technosystem, it becomes clear that the actual pressure on nature is deeply rooted in culture and critical reflections on culture are important.

Less appearing, but still on a relatively apparent level, the extension of this technosystem also causes an *indirect* pressure on nature. The dominating global development tends to marginalize cultures differently than the Western; including cultures with traditions for an attentive relation to nature. On a basic level, and in spite of many various expressions of the technosystem, the earth tends to become subject of a one-sided culture. The more the cultural plurality is eroded, the more the technosystem looses cultural competition, and the more open is the space for a continued expansion of the technosystem and its underlying ideas. The indirect pressure does not only have a cultural aspect, but also a material aspect. The dominating technology and economy provide benefits to some of the global social groups, while the material poor groups are often forced to over-exploit their natural conditions, in order to provide basic needs.[2]

A meta-problem

Behind the appearance of the problems, attention should be paid to the existence of a more fundamental problem, a *meta-problem*, meaning that efforts to solve the apparent problems are based on premises similar to the premises of the practise causing the problems. The meta-problem is the tendency to remain within a context, even when basic premises of this context are parts of the problem. Changes at the apparent level may show a persistence on a more fundamental level. Facing the apparent level only, without attention to the meta-level, is equal to reacting on symptoms rather than on problems.

The meta-problem can be found in all human life.[3] As human beings we behave according to a life-orientation, embedded in our way of thinking and acting, and directing the course of our thoughts and actions. It seems to be a common disposition in human life that what we have once learned is to some degree subject of persistence, in spite of crucial changes in the circumstances that form the conditions of our life. If we are faced with new types of problems, different from the former, and if we meet the problems with an unchanged life-orientation, then an inadequacy between the current problems and the efforts to solve them will occur.

Similar to the personal level, an inadequacy may appear on a cultural level. During the course of history, also cultures face new problems, while the cultural orientation in some respects remains unchanged. Qua culturally influenced beings, professionals as well as laymen continue to think and act on the premises of a cultural orientation, handed down by historical tradition. At the time of its origin, the orientation may have been adequate to the problems, even if it does not respond adequately to the historical new problems.

Globally extended, the environmental problems that we face today form a historically new situation. On a global level, a lot of work is put into problem solving, both politically and practically. However and in spite of many alternative tendencies, the main tendency is that both the methods to interpret environmental problems and the efforts to solve these problems remain within

the context of the technosystem, causing the problems. Practitioners within the fields of technical and social engineering often tend to interpret and solve environmental problems within the same frame of instrumentality, which forms the technological and social development. When this is the case, the practitioners do not handle the technosystem as external agents, but as a part of the technosystem, as internal agents. It means that their operations are conditioned by the premises of the operated system.

Also, it should be emphasised that ethics may be perceived merely as an additional skill if ethics are taught *only* as a subject among other subjects, meaning additional skill on the content-level, rather than ethics challenging the context-level critically. Especially within the field of engineering, centred around instrumental sciences, ethics may very easily become interpreted instrumentally, as 'ethic rules'. Hence, ethics are interpreted as a corrective to the instrumental sciences, but within the context of instrumentality. When interpreted in this way, the critical potential of ethics will be weakened.

The challenge of a critical reflection is a challenge to reflect the cultural orientation which is embedded in the operated system. A precondition of reflecting a cultural orientation is to make this orientation visible.

The cultural orientation in the technosystem

A framework for analysing practise-oriented systems of knowledge (hereafter abbreviated as knowledge systems) may contribute to the visibility of the cultural orientation in the technosystem. The framework, as shown in the previous figure, consists of four closely interconnected components: A process of *acknowledging* and *acting*, in its connection with a basic *interpretation* of nature (what *is* nature?), and a basic *value* (what is the role of human beings in relation to nature?).

The basic ideas of the instrumentality, forming the technosystem, can briefly be emphasised by the following points:
- *Acknowledgement:* The technical sciences are fundamentally based on the idea of acknowledgement by means of instrumental observation of nature in combination with rationally developed theories about cause and effect.
- *Action:* This kind of science is not only for the purpose of explaining nature, but it is mainly for the purpose of acting with nature, and in a way that is directed towards technical and economic progress.
- *Interpretation:* The relationship between acknowledgement and action refers to a specific interpretation of nature. Nature is not only perceived from a human perspective, but man and nature are separated in a dualistic way. Nature is the object, while man is the subject.
- *Value:* The dominating value is that man has the role to play as a master of nature, and nature functions as a resource for human purposes.

Historically, the relationship between acknowledgement and action is rooted in the view of science formulated four hundred years ago by Francis Bacon. Also, the basic interpretation and the basic values lead back to the enlightenment, but with deeper historical roots; among others, the earlier theological interpretations of the Judeo-Christian religion. [4]

The knowledge system can be perceived as a specific expression of an even deeper orientation towards meaning, described by a relationship between *freedom* and *interdependence*.

During western history, particularly during the latest centuries and with reference to the enlightenment, *freedom* has been a dominating concept. However, the concept of freedom has also been interpreted in a way that is closely connected to power. As a master of nature man has the freedom to exploit nature. Nothing *in* nature, or *in* the relationship between man and nature, commits man to an attentive practise with nature. Protection of nature is predominantly argued from

a human perspective. This is true, also when the issue of a sustainable development is in focus. Sustainability is mainly perceived as a commitment to future generations, not as a commitment towards nature.

Fundamentally, it is characteristic by Western culture that human freedom is gained on the expense of interdependence with nature. Nature is reified. As we do not feel responsible to other people, if we define them just as 'things' or 'objects', neither do we feel responsible to a reified nature, a nature which does not really mean anything to us. This is a fundamental problem, which challenges us to search for knowledge systems, based on values committing man in his relation to nature.

Values in man's relation to nature

Freedom and interdependence
As an alternative to figure 1, figure 2 is meant as a reference for promoting the further discussion of values that is to be considered in relation to responsible action.

Whenever alternatives are formulated, it seems important to avoid the risk of going into one of two opposites. One risk is to formulate the alternative so widely that it is likely to become interpreted at one's own convenience. Another risk is to formulate the alternative so rigidly that it very easily may become refuted as an arbitrary and subjective view only. The content of figure 2 expresses an attempt to manage the movement in between a too open and a too decisive approach.

As the current problems are described above, the search for a response to the problems has two aspects. Firstly, there is a challenge to search for ways to develop an attentive relation to nature within Western culture. Secondly, there is a challenge to respect and appreciate cultures different from the Western, especially such cultures, which have a tradition for an attentive relation to nature.

The concept of an 'attentive' relationship is too blurred. With reference to the above, two keywords are crucial for plotting a course. The keywords are *freedom* and *interdependence*.

It has been argued that the persistence of *some* cultural constituents in Western culture is problematic, compared with the problems in man's relation to nature. This is, however, not the same as to argue that *all* cultural constituents of the West are problematic. The statement of a specific interpretation of the concept of freedom being problematic, namely freedom perceived as man's right to exploit nature without obligation for nature, is not equal to denying the aspiration and strive for human freedom as such. The orientation towards meaning in Western culture is based on the concept of freedom, so fundamentally that denial of freedom would be the same as to disclaim Western culture in its roots. Freedom is not only an important concept. Freedom is a symbol. As a symbol, the concept of freedom is a carrier of meaning, and this implies that the concept is emotionally charged. Moreover, the concept of freedom is one of the most crucial carriers of meaning in the Western culture. Questioning freedom goes straight into the heart of Western culture. Rather than questioning the very concept of freedom, it is a challenge to redefine the content of the concept, in a way that includes an interdependent relationship to nature.

Furthermore, two points ought to be emphasised. The one point is that the technosystem is not Western culture in its totality, even if it has its origin in this culture. The other point is that the criticism of the technosystem is directed only towards the *problematic* aspects of the cultural orientation of this system.

The criticism should be connected to a search for potentials within the Western culture, including potentials of the concept of freedom. The search is for an interdependent relationship with nature, emotionally charged, as a counterpart to the one-sided focus on freedom from nature, but in respect of the very aspiration towards human freedom. A crucial issue for further discussion is, how

to unify freedom and interdependence as a base for a responsible approach to the way of forming the technical and social practise with nature.

A multiplicity of expressions of freedom and interdependence

How can we understand freedom and interdependence, neither as contradictions, nor as two separate concepts that are interrelated, but as parts of the same orientation towards meaning? This seems to be the vital question.

As a response to the one-sided expression of the technosystem, a first step is to adopt an open attitude towards a multiplicity of expressions of freedom as well as interdependence.

Freedom may be said to be equal to realising the many-sided potentials of human beings for entering into a process of getting insight and expressing oneself. With reference to the framework used above, the realisation of potentials involves the interconnection between acknowledgement and action (keeping in mind that the distinction between four components is only for analytical purposes, and that a knowledge system should be perceived as an entity).

-   *Acknowledgement:* As humans, we can get insight in a multiplicity of ways, different from instrumental observation and rational reasoning, for instance by means of intuition and empathy.
-   *Action:* As humans, we can express ourselves in a multiplicity of ways, different from technical and economic progress, for instance artistically or based on alertness.

Interdependence may be said to be equal to entering into a meaningful relation to an otherness, meaning something else than oneself, including the non-human nature. A meaningful relationship involves the interconnection between interpretation and value.

-   *Interpretation:* As humans, we can interpret nature in a multiplicity of ways, not only as an object, separated from the human subject. Interpretations of nature as spiritual, as divine, or as akin to the soul of man, are known from cultures that are different than Western cultures. On the basis of Western culture, we may think in terms of man's origin in nature or in terms of an inextricable interconnection between man and nature.
-   *Value:* As humans, we can enter into a meaningful relationship with nature in a multiplicity of ways, different from the role of man as a master of nature. Different kinds of interpretations involve different meanings, for instance spiritual or divine. In Western culture, a respectful attitude towards nature may be perceived in terms of a dialogical relation between man and nature.

A unifying concept may be 'the meaning of man as a whole human being in its whole and meaningful connections'. 'Man as a whole human being' refers to the realisation of human potentials to get insight and to express oneself. The realisation of potentials of human life takes place in the world, and the term of 'connection' includes everything that influences and is influenced by the life of man on earth, as an incarnated being. Thus, 'connections' include all relations within mankind, as well as relations between mankind and non-mankind, including nature.

The existence of a multiplicity of cultures on earth, as well as subcultures, indicates that by nature, as human beings we have potentials for a huge variation of cultural orientations, expressed as knowledge systems. Every culture, qua culture, is expressive of a specific system. Every culture is expressive of an interpretation of: what 'man as a whole human being' is, and what 'meaningful connections' are, as well as a specified interpretation of the concepts of freedom and interdependence (even if the culture does not have such concepts in its vocabulary).

As the first step, the *leitmotif* of unifying freedom and interdependence is a challenge to be open-minded and respectful towards the plurality of cultural life- and worldviews, but an open-minded approach is not sufficient to ensure responsibility for nature. As a second step, a search for a decisive approach is needed.

Responsibility: a challenge to understand and manage dilemmas

The decisive approach should respond to the meta-problem, which is discussed above. The meta-problem was emphasised as an inadequacy between the current problems and the cultural orientation, on which the efforts to solve the problems are based. Responding to this meta-problem should involve a search for cultural orientations, *adequate* to the historical circumstances, including the historically new problems, to which the culture has not developed any adequate 'compass' for orientation.

Here, we need to take a step backwards and reflect the result of the argumentation so far. Unification of freedom and interdependence is a *leitmotif*, and a leitmotif is open for discussion of its specific implications. Also, adequacy between current problems and cultural orientations is a *leitmotif*, open for discussion. Leitmotifs are not similar to rules, and the indication of a leitmotif is not equal to set up operative guidelines for action, meaning that a leitmotif is not within the context of instrumentality. When we stand before leitmotifs, we need to realise that we have not obtained an applicable answer to the question that was asked, ready made for implementation. We have only reached the stage of formulating entries into continued discussions, hopefully on a more qualified level than earlier.

On this stage, we also need to realise that we enter into crucial dilemmas and that responsibility involves the ability to identify and manage dilemmas. On a more general level there is a dilemma between open-mindedness and decisiveness and a challenge to manage the movement in between. More specifically and only for the purpose of exemplifying, three dilemmas will be indicated.

One dilemma is between theoretical concepts and symbols. Unification of freedom and interdependence may be introduced as a leitmotif on a theoretical level. Also, it may be exemplified, how freedom and interdependence are interpreted differently in the various cultures and subcultures.[5] However, in order to function as a leitmotif in the practical life, among people, the symbolic character of the concepts is important, including emotive connotations. Concepts do not achieve the character of symbols, carrying meaning and guiding action, by means of rational thinking only. The development of symbolism is subject to human life as such.

Another dilemma is between the ability to orient oneself as a cultural being and the ability to solve problems; especially with regard to new historical problems. The perception of a phenomenon as problematic is influenced by the optic of the cultural orientation, and at the same time new phenomena challenge to change the old optic. From this view there is no fixed standpoint for deciding 'adequate' problem solving.

The second dilemma becomes clearer by focusing also on a third dilemma, between being part of a culture and reflecting this culture critically. Essentially, reflection is an activity from an external position compared with the reflected issue. However, the critical reflection of one's own culture will always take its starting point within this culture. The search for possible changes will interfere with the culture to be changed. Outlooks to different cultures may inspire, but the inspiration will be influenced by the optics of the culture, from which an outlook is taken.

Final remark: The need of existential enlightenment

It has been argued that responsibility for nature should consider problems and values in a cultural pespective. As individuals, of course, critically reflecting agents cannot change the cultural constituents of the globalised practise with nature. However, professionals with considerable influence on the development of the technical and social practise, especially engineers of all kinds, may have an important role to play by contributing in a professional manner to reflections on the basic aspects of a responsible practise with nature. The precondition is that their education gives them a foundation for fulfilling this role. During their professional education, engineers should not

only achieve scientific enlightenment, but also existential enlightenment.[6] At least two aspects are important.

Firstly, existential enlightenment goes far beyond ethics as a specific discipline. Knowledge about the history and the fundaments of one's own culture is important, combined with an attitude towards this culture as only one among a variety of cultures on earth. Based on historical and cultural knowledge professionals in the fields of technical and social engineering should aquire the ability to identify and reflect two interrelated aspects of their professional work critically. a) The cultural constituents of the issue, with which they deal, the technical and social practise. b) The cultural constituents embedded in their own way of thinking and acting, and on the basis of which they deal with technology and society.

Secondly, existential enlightenment also goes far beyond instrumentalism. A crucial point is the acquirement of an ability to identify, reflect, and manage basic dilemmas, including the ability to manage in situations with no fixed answers.

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[1] The term of a technosystem is inspired by the Finnish philosopher Georg Henrik von Wright, but I use the concept more comprehensive than von Wright. G.H. von Wright, 1994. *Myten om fremskridtet (The Myth of Progress).* Copenhagen, Denmark. - To a certain extent, the 'technosystem' is akin to Heideggers concept 'Das Gestell'. Martin Heidegger. *The Question concerning Technology.* In: David Farrell Krell (ed.), 1978. *Martin Heidegger, Basic Writings.* Routledge & Kegan Paul, London and Henley, Great Britain. Pages 283-317.

[2] An indirect pressure as described, both culturally and materially, can be observed for instance in the Indian Himalayas.

[3] Comprehensively discussed in Paul Watzlawick et al., 1974. *Change. Principles of Problem Formation and Problem Resolution.* USA.

[4] For a brief introduction: See for instance the classical, and also disputed, article by Lynn White, Jr., 1967. *The Historical Roots of Our Ecologic Crisis.* Science, Vol. 155, No. 3767, 10 March.

[5] The space is not for exemplifying in this paper. Writings concerning freedom and interdependence in man's relation to nature, contenting examples, are under preparation, but for the present only in Danish.

[6] I owe thanks to Jesper Garsdal, Ph.D. of philosophy from Aalborg University, Denmark, for the distinction between existential enlightenment and scientific enlightenment.