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New Discoveries and Theories Revisited

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MODERNIZATION AND AND ENVIRONMENTAL PROBLEMS: HOW TO AVOID THE PITFALLS

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Abstract

Broadly, there is agreement that from an historical point of view modernization consisted of two aspects: a critical questioning of traditions, customs, morals and institutionalized religion; and a constructive search for new, rational knowledge and science pursuing such ideals as control of reality, social justice, equality and democracy.

These developments have contributed to impressive positive developments in society, among others more freedom for individual people, institutions that enabled the participation of citizens in public affairs and –in the longer run- an enormous improvement in the living condition for many people. But these developments came at a price. The environmental problems we face at a global scale like water and air pollution, scarcity of natural resources, emission of greenhouse gases and climate change, are largely a result of the industrialization that came as a result of the modernization. How can these negative effects be understood and can that help avoiding them? A philosophy-of-culture perspective on modernization can provide additional ways of describing and understanding modernization and the openings is offers for going astray.

Characteristic for modernization also is that the relation with physical reality was influenced by objectification and rational reasoning. This new relationship became the centre of modern science that in its turn influenced the way people in general related to physical reality. Reality was no longer seen as ordered, meaningful Cosmos that harbours an intrinsic normativity. In the modern approach the world is seen as value-free matter that can be used as the raw material for the technological (re)construction of a world according mankind's own views. Right from the beginning this approach has been motivated by a pursuit of power and control over reality. Due to this pursuit of power the methodological limitations of science were neglected. The basic attitude in 'modern' cultures towards reality shifted from 'appreciation' to 'manipulation'. As a result the abstractions that characterize modern science and technology and have a legitimate place in them, also guided the scientific-technological applications in society at large. This entailed foregoing the intrinsic normativity in reality. Exploitation of the natural environment, fragmentation of social structures and the experience of the loss of meaning are typical manifestations connected to that overestimation of the scientific-technological approach to reality.

In order to avoid the negative consequences of a 'modernization-gone-wild', it is essential to take into account the abstract character of scientific knowledge that needs to be reintegrated into a broader normative view of reality before it is applied in social life. The attitude of manipulation, that is very effective in the restricted domain of science and technology, should be complemented with the attitude of appreciation when applying that knowledge to human life. A promising theory of guiding this process is the model of normative (social) practices.

1. Environment

In recent decades it has become increasingly clear that the natural environment deteriorated substantially. Maybe not everywhere in the sense of immediate poisoning of the air, the soil or the surface water. In some rivers in Europe the water quality is better now than a few decades ago. But the exhaustion of natural resources and the threat of disturbing crucial natural balances and the climate has continued to increase. I quote a few recent studies.

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The recent Report of the High-Level Panel of Eminent Persons on the Post-2015 development agenda, gives the following summary of a few serious environmental problems. During the first half of 2013 "*the world passed an alarming threshold: atmospheric carbon dioxide concentration was measured at over 400 parts per million, probably the highest level in at least 800,000 years. There is no evidence yet that the upward trend has been slowed or reversed, as it must be if potentially catastrophic changes in climate are to be avoided. Despite all the rhetoric about alternative energy sources, fossil fuels still make up 81 per cent of global energy production--unchanged since 1990. To continue on this business-as-usual path would be very dangerous. Changes in consumption and production patterns are essential, and they must be led by the developed countries.*
Recent food and energy crises, and high prices for many commodities, point to a world where increasing resource scarcity is the norm. In environmental "hot spots," the harm that is coming if we don't halt current trends will be irreversible. Of the 24 most important ways the poor depend on natural resources, 15 are in serious decline, including: more than 40 per cent of global fisheries that have crashed or are overfished; loss of 130 million hectares of forests in the last decade; loss of 20 percent of mangrove forests since 1980; threats to 75 per cent of the world's coral reefs, mostly in small island developing states where dependence on reefs is high."[2]
Many more data could be cited but let this suffice to prove that mankind faces a serious threat to the very existence of large numbers of people. Of course I know that may new initiatives are being developed to make economic development and the rise of the standard of life more sustainable (e.g., bio-economy, cradle to cradle movement, energy from wind and sun). Such solutions, though, often come with their own problems. So, before jumping to technical solutions I think it is helpful, if not indispensable, to better understand the cultural background of the environmental problems. It is my thesis that these are not just unfortunate side-effects of an in itself good development, but that they are invariably related to the core of what is understood by modernization. In other words, the problems are the flipside of the successes of modernization.
I will try to explain and argue this and will subsequently indicate another way of what should be considered 'development'.

2. Modernization

First a terminological clarification. *Modernity* is understood here as the new self-understanding of mankind that became manifest in European culture in the 16th and 17th century. *Modernization* or modernisation is the historic process in which modernity shaped social and cultural life in Europe and later in other countries; it refers to a model of an evolutionary transition from a 'pre-modern' or 'traditional' to a 'modern' society.[3] The two are very closely related but not exactly the same.
In its core modernity can be understood as a change in the relationship between mankind and reality. In premodern cultures, both in Europe and in other parts of the world, the physical and the spiritual reality are seen as closely related and interconnected. In the process of (European) modernization physical reality was conceptualized as separated from spiritual reality. Secondly the relation with physical reality became characterized more and more by objectification and rational reasoning. This new relationship became the centre of modern science that in its turn influenced the way people in general related to physical reality. Reality

[2] A new global partnership: Eradicate poverty and transform economies through sustainable development. The report of the high-level panel of eminent persons on the Post-2015 Development Agenda. UN, 2013, 4
[3] https://en.wikipedia.org/wiki/Modernization

was no longer seen as divine creation or a divine cosmos that harbours an intrinsic normativity. In the modernist approach the world is seen as value-free matter that can be used as the raw material for the technological (re)construction of a world according mankind's own views. Right from the beginning this approach has been motivated by a pursuit for power and control over reality to secure human existence and welfare as much as possible.[4]
Some of the main elements of the cultural turn that was involved in the transition from premodern culture to modernity are summarized in table 1. By explaining this table will further clarify the character of modernity. At the same time it will help to get an understanding of the implications of modernity for the environment and the relation to environmental problems.

Table 1: Two opposite positions of mankind towards reality

Premodern	(Post)modern
• Meaning precedes existence	• Existence precedes meaning
• Appreciation	• Manipulation
• Quest for meaning	• Quest for having
• Human being intrinsic dignity	• Human being granted dignity
• Responding to given values and norms for life and world	• Instrumentalization of life and world; value attributing
• Technology respects an intrinsic value and regularities of things	• Technology dissects and reconstructs reality according to human
• Pursues improvements of quality of life acknowledging historic situatedness and vulnerability of humanity	• Tries to overcome historic situatedness and vulnerability of humanity (to reconstruct the parameters of human condition)

3. Two basic attitudes to reality

In the relation between human beings and reality we can distinguish theoretically two fundamentally different attitudes.[5] These two approaches can be rendered as 'meaning precedes existence' versus 'existence precedes meaning'. The first approach, meaning precedes existence, holds that reality has meaning and value that underlie human existence. Because of the frailty and mortality of human existence and the existence of evil this meaning often is elusive and needs to be discovered and elaborated by human beings and given shape in everyday life. But reality has a value independent of its usefulness for mankind. So, fundamentally, 'meaning' is not a construct of the human being and the experience that life makes sense is not an emotional illusion but refers to the ultimate reality about this world and about mankind. In contrast, much contemporary ethical analysis assumes that existence is the raw material of ethics. This second approach holds that the task of humanity is to construct meaning and values which will guide our choices against the backdrop of circumstance – in other words, it holds that existence precedes meaning.

[4] B. Goudzwaard, M. vanderVennen, D. van Heemst. *Hope in troubled times. A new vision for confronting global crises*. Grand Rapids (MI): Baker Academic 2007. :139-146; H. Staudinger & W. Behler, W. *Chance und Risiko der Gegenwart,* (Paderborn: F Schöningh, 1976); David F. Noble. *The religion of technology. The divinity of man and the spirit of invention* (New York: A Knopf, 1998).
[5] H. Jochemsen. Normative practices as an intermediate between theoretical ethics and morality. *Philosophia Reformata* 71 (2006): 96-112.

These two positions correspond quite well with the two opposite ethical positions described by Avraham Heschel.[6] Heschel, an influential American Jewish thinker, also distinguishes two fundamentally different ways in which the humans can relate to reality. He calls these ways `manipulation' and `appreciation.' With the former, the individual views his surroundings as things to handle, to control, and to utilize. With the latter, the individual views his surroundings as things to accept, to comprehend, to appreciate or to admire. Manipulation, Heschel contends, is the cause of alienation, for there is no bond between the individual and his surroundings except utility. Ultimately, the individual is alone and things have no meaning apart from his use for them. Nothing has meaning in and of itself. The individual becomes the only source of meaning for all things, including other people. This mentality tends to deny the transcendence in human existence.

4. Modernization and environment

As will be clear by now, modernization is characterized predominantly by the attitude of 'manipulation'. This attitude is closely related to the rise of modern science and technology that in their turn facilitated the process of industrialization and increasing material wealth. These developments have contributed to impressive positive developments in society, among others an enormous improvement in the physical condition of human existence for those for whom the achievements of this process have become accessible. But those developments were not without new problems. By neglecting their methodical restrictions, science and technology have become the lenses through which reality was studied and interpreted. As a result the abstractions that characterize modern science and technology and have a legitimate place in them, also guided the scientific technological applications in society at large. This entailed foregoing the intrinsic normativity in reality. Exploitation of the natural environment, fragmentation of social structures and the experience of the loss of meaning are typical manifestations connected to that overestimation of the scientific-technological approach to reality. For it is one thing to use a certain methodology to study reality, to set up models of certain phenomena and to have specific questions answered in a way that allows effective intervention. It is quite another thing to consider these abstract models as true representations of reality itself, thereby omitting the notion that the models are a reduction of reality. Yet this has happened.

As a consequence, in modern and post-modern culture people have a diminished sense the notion of given normative orders. Ethical values and virtues like faithfulness, concern and self-sacrifice, as well as assertiveness, justice and wisdom, are subjectivized into subjective interests where, if it comes to conflict, each person serves his own well-understood interests. New technological possibilities are often exploited with a view to an immediately served interest benefiting certain or even many people. In the longer term the disadvantages become obvious, which are often more diffuse and which oppose the interests of influential groups and therefore are not given sufficient attention in public policy. In this context we can think of environmental damage done by developments in industry, mobility and agriculture. We have to acknowledge that the various crises we presently experience, of finance, food and fuel (all broadly understood) have their background in modernization gone wild, with its unjust and unsustainable systems of mass production and consumption.[7] [8] I refer to three publications to support this statement.

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[6] A.J. Heschel, *Who Is Man?* Stanford (CA): Stanford University Press. 1965

[7] Goudzwaard et al., 2007 ibidem; Asuncion Lera St Clair, "Global poverty: development ethics meets global justice", *Globalizations* 3, no.2 (2006):139-157.

On the basis of an overview of recent developments regarding the state of the global environment a recent study supported by the Swedish Academy of Sciences notes that "Human action alters ecosystem support not only locally and regionally but also globally".[9] And in their conclusions the authors state: "The current mental disconnect of human progress and economic growth from the fundamental interactions with the biosphere has altered the long-term capacity of 'natural capital' to sustain societal developments".[10] A similar statement is made by Ponting in his famous 'A green history of the world'. "From an ecological perspective the process *[of 'progress' that was a consequence of modernization, HJ]* appears as a succession of more complex and environmentally damaging ways of meeting the same basic human needs".[11] Studies of the footprint of European countries in comparison with their GNP makes clear that 'development' in the sense of increased welfare is linked with increased unsustainability in ecological terms.[12] The conclusion that the environmental problems are closely relate to the cultural movement that is called modernization is unavoidable. As a consequence it would be unwise for humanity to continue on the road of modernization. What does this mean for modern cultures ?

5. Stewardship in practices

The Swedish study mentioned above argues that Planetary Stewardship should be a central value in public policy, in social-ecological scholarship and in developing strategies that link sustainability science to action.[13] How can this important principle and value be elaborated in the social realities of modernizing cultures?
First of all it is important that the dominance of the modern attitude of 'manipulation' to reality will be ended and the attitude of appreciation will penetrate cultures and societies that are undergoing modernization. This requires that this attitude will be the starting point for a normative analysis of reality. The attitude of appreciation starts from the presumption that life and reality harbour meaning and that meaning ultimately is not something we construct or produce. Meaning is, rather, given to us. Our task is to identify, recognize and acknowledge it. In fact this wisdom has been known in China for a long time in the Taoist tradition.[14] In this context it is important to realize that we do not have perfect detailed knowledge of what is proper and improper. On the contrary, normative judgements must be based on careful analysis undertaken in the light of the most complete (scientific) knowledge available. Achievements of modernization are certainly needed. But this process of learning how to pursue given meaning and values in any particular situation is a journey of discovery, not of planned construction. What does this mean for the way in which we understand human activity in society in relation to the natural environment?

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[8] *The process of moving from a pre-industrial society to an industrialised one has been dubbed 'development'.* A quote of Clive Ponting, in Martin Desvaux, A synopsis of Clive Ponting's 'A green history of he world'. Optimum population trust journal Volumes 5-10 (2005-2010); see http://www.populationmatters.org/wp-content/uploads/green_history.pdf, accessed June 14, 2013.
[9] Carl Folke et al. Reconnecting to the Biosphere, Ambio, A Journal of the Human Environment 2011, 40(7):720
[10] Folke et al. 2011, 732
[11] Martin Desvaux, A synopsis of Clive Ponting's 'A green history of he world', ibid., 54
[12] Global Foorprint Network. EUROPE 2007 - Gross Domestic Product and Ecological Footprint. Brussels, WWF 2007.
[13] Folke et al., 2011, 731
[14] *"Healthy human life could flourish only in accord with Dao -- nature, simplicity, a free-and-easy approach to life. The early Taoists taught the art of living and surviving by conforming with the natural way of things;"*, quote from Judith A. Berling. Taoism, or the Way. Asian Religions, in: *Focus on Asian Studies*, Vol. II (1982), No. 1, pp. 9-11.

In my view a model for social practices that was developed in the school of Reformational Philosophy in the Netherlands, can help.[15] [16] This approach starts from the observation that the good life of human beings realizes itself mainly in social practices. This understanding of practices as social entities is informed by the concept of practices as defined by MacIntyre[17] who builds on Aristotelian virtue ethics, and by the Reformational Philosophical view on modal aspects that can be distinguished in reality.[18] This model departs from the distinction between 'structure' and 'direction'. Structure refers to the constellation of principles and norms that characterise the social entity under study. Direction on the other hand refers to the normative beliefs that steers the interpretation and implementation of those principles and norms in the way a social structure functions in an actual historical situation. I will briefly present this model by first elaborating 'structure' and subsequently 'direction'.

6. Normative structure of (agrarian) practices

Structural side

In the *structure* of practice as meant here we distinguish the following elements.

- it is an *entity* with its own reason of existence *(telos)*
- to realize this telos the *practitioner* has to follow a constellation of principles and norms (*standards of excellence*)

These elements will be explained briefly.

Entity

A practice is a form of *socially established human activity*. A practice comes up in history and develops as the result of many decisions and processes that embody normative choices. In this sense, e.g. agriculture is in itself already a normative practice and the practitioner realizes he should follow that normativity. The individual practitioner is initiated into the practice by learning a certain way of doing things. The practice shapes the behaviour of individual practitioners before they can begin to reshape the practice.

Telos

Practices have a certain *finality,* a reason, a core value for which the practice exists (I use the Aristotelian term telos). The activities making up a practice are directed at the realisation of this finality, this telos of that actual practice. For example, justice is the telos of the courts, care for the health interests of patients is the telos of health care practices, the production of food, feed and fibre, ultimately for human use is the telos of agriculture. It is important to distinguish this finality of a practice from goals that an individual practitioner may have.

Standards of excellence

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[15] Reformational Philosophy is the name for the school of philosophy that, between World War I and II, was developed by Herman Dooyeweerd in collaboration with Dirk H.TH. Vollenhoven at the Free University (now VU University) in Amsterdam.

[16] See H. Jochemsen, 2006, ibid. for an extensive explanation of this model.

[17] "*By a `practice' I am going to mean any and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and human conceptions of the ends and goods involved, are systematically extended*". A. MacIntyre, After virtue. A study in moral theory, Duckworth, London, 1983: 187.

[18] For a short introduction into Dooyweerd's thinking and further literature see also www.freewebs.com/reformationalphilosophy/

The third essential element of a practice is that human activities in a practice are seen as *rule-guided behaviour* in which the "rules of the play" are understood as the standards of excellence for that practice. These standards or rules, constitute the practice and at the same time define excellent practice and provide criteria to evaluate the activities of individual practitioners. In this context, the concept of "rule" does not so much refer to rules in the sense of "knowing that," which implies the ability to explicitly formulate the applied rules. Rather, it includes knowing rules in the sense of "knowing how," in which the rules are embodied in professional competences.[19] One can easily see that performing a practice, e.g. playing the violin, cannot be learned just by theoretical instruction about the practice; it requires engagement in the practice.

Table 1:
The modal aspects of Reformational Philosophy and their normative principles

Modal aspect	**Meaning kernel/ normative principle**
Quantitative	▪ discrete amount
Spatial	▪ continuous space
Kinematic	▪ movement
Physical	▪ energy + mass, forces
Biotic / Organic	▪ life functions + organisms
Sensitive / Psychic	▪ sense, feeling, emotion
Analytical	▪ distinction, conceptualization
Formative	▪ deliberate shaping: history, culture, technology, goals, achievement
Lingual	▪ meaning carried by symbols
Social	▪ 'we': sociality, relationships, roles, respect frugal management of resources
Economic	
Aesthetic	▪ harmony, surprise, fun, play, enjoyment
Juridical	▪ due: responsibilities+rights
Ethical	▪ care, generosity, self-giving love
Pistic	▪ vision, aspiration, commitment, belief

An important question that arises from this description of practices is: How do we find the constitutive rules of a practice? To answer this question we again draw on Reformational philosophy. This philosophy distinguishes in realty a number of irreducible modal aspects (cf. table 1). These aspects are ways in which reality is experienced, they represent domains of reality with their own laws (e.g. the laws that apply in physics are different from those typical for biology and again different form the regularities in technology or language, etc.
These modal aspects are also *normative perspectives on reality.* All things, including social entities, function in all of these aspects, and they will flourish if all of the normative aspects are *simultaneously* observed. In other words, an adequate, competent performance of a practice requires the *simultaneous realization of all the normative principles and the rules derived from them,* thereby complying an integral normativity.
As a consequence, according to this view of reality all social practices, be it (economic) enterprising, trade, science, technology development, public policy education, health care, journalism, or whatever, should observe the whole constellation of the normative principles. Even though the priority differs between one practice and another.

[19] From this description it will be clear that we use the word rule here in a broader sense than a strict directive for action that has the structure of 'If a, then do b.' Our use of the word comprises directives for action but also norms at a higher abstraction level. Roughly stated we mean context-dependent norms and directives that can be derived from context-independent normative principles.

Important for our subject is the conclusion that all social practices should, among others, observe the normative principle of the *biotic* aspect. This is typical for all living organisms. The normative principle of the biotic aspect is 'life'. Observing this principle implies that, in its incredible diversity, life as a typical, irreducible phenomenon in reality should be handled respectfully.
Another conclusion is that all practices also function in the ethical aspect and hence should respect the ethical principle of care. Care is understood as *the normative attitude that considers the (well-being of the)other as not just instrumentally, but also intrinsically, valuable.*[20] Here 'the other' not just refers to other human beings, but also to other entities in the physical and social reality. In each practice the practitioner should know what the meaning is of the different normative principles and how they should guide the practitioner's performance. Such an understanding and interpretation will always be informed by the practitioner's broader view of the practice and of its meaning for human beings and society. Here we touch on the *directional side* of practices.

Direction of practices
The *structural* side of a practice, as briefly described above, embodies the normative principles and rules that should guide the performance of the practice. However, any performance and assessment involves a specific *interpretation* of the rules (cf. the interpretation of a piece of music in a particular performance). Such an interpretation occurs within a broader interpretative framework of normative beliefs that steers the interpretation and implementation of those principles and norms in the way a social structure functions in an actual historical situation. We call this the *directional side* of practices. There is no 'neutral' performance of practices. Ultimately world views are behind any interpretation of human life and human social practices. World views are sources for the human quest for meaning; the experience of meaning being as essential for human beings as their daily bread.[21]
Therefore, taking seriously human beings and stimulating them to excellence in their practices in the full diversity of normative perspectives requires that the beliefs and ideas that regulate the performance of practices are open for debate. In such debates the narrow-mindedness of the usual modernization process can also be pointed out; a narrow-mindedness we need to overcome in order to remediate the environmental problems identified in the first section of this paper.

7. Conclusion

Modernity and the Enlightenment, the cultural movements behind modernization in Europe, correctly emphasized that the thinking and behaviour of human beings should not be determined by cultural, social and economic factors. The value and responsibility of the individual human being was given more prominence, and rightly so. But human rationality, interpreted in the narrow sense of instrumental rationality, was made an absolute, leading to a truncated view of mankind and of society. We need an enlightenment of Enlightenment: a new light on the proper view of rationality and its role in human life as well as new light on the plurality of normative aspects in reality. In my view a core value of this renewed understanding of and relation to reality should be 'appreciation'. Such a new understanding of humanity and reality are indispensable to steer the process of modernization towards a society

[20] J. Hoogland, H. Jochemsen, Professional autonomy and the normative structure of medical practice, *Theoretical medicine and bioethics* 21 (2000) 457-475
[21] Victor Frankl Frankl. *De zin van het bestaan. [The meaning of life],* Rotterdam 1978, 123-126

in which the environment is cared for in a responsible way and human beings and their social structures can flourish.

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