

4. Notes from the class of 04 05 98

Some notions about current physics and philosophical theology (6 pages).

(Editorial : Mr. T'Jampens is speaking.)

The point is to know the objective value of physics. A. Whitehead, with Bertrand Russell, wrote the work "*Principia mathematica*," in 1910, covering the foundations of mathematics and logistics, and that book is still a classic.

Begin with an applicative model. For example, one might ask: What was it that I saw, that you felt, that he and she smelled and tasted? For example, the answer could be: an apple on the table. That is obvious to everyone. Now look what physics can eventually make of it. One can reduce the apple to a mechanism, consisting of molecules that move and have a position. Of the given apple then not much remains except a kind of network. Such a description makes abstraction of me, you, he and she, i.e. of sensory perception as we, human beings, experience it. Our experiences of taste, smell, feeling ... are put in parentheses and do not interest the physicist as a physicist. The actual apple is put in parentheses, with keeps it to molecules and motion, as in mechanics. That way of thinking that reduces everything to positions and motions is called mechanicism. It does not pretend to represent full reality. Physically speaking, a person in a space is a number of points with position and motion. This amounts to an enormous impoverishment. Physics is a reductive science.

Physics is aware of this ontological impoverishment. The survival value of that apple, that it is e.g. beautiful and tasty, lapses. Phenomenology or the description of such a machine, its movement and position, is mathematical. One describes in terms of mathematics, as abstractly as possible. One pays attention to relations, interrelationships, to the laws, independent of man. By the belief that the explanation of all things is to be found in Newton's mechanics ... every science becomes mathematical. This way of thinking originated already in antiquity with the Greek atomists, but Galilei built on it: the experiment and the mathematical treatment. Since then physics has achieved enormous results. Technologically it is extremely profitable, humanly speaking it is an impoverishment. Objective science is mechanical and mathematical, independent of all subjective impressions. That is the core of modern rationalism. The great ideal is physics, but extended to all of culture.

Rationalists describe society as a big machine. The human psyche is decomposed into parts with positions and movement. That is the raw ideal. It is precisely against this that the romantics react. The universe has a mathematical structure, but viewed solely from this perspective, it is an impoverishment. Life is no longer central. Nature and reality, however, are more and other than what can be said of them mechanically and mathematically. Modern science has results and is undeniably valuable, but the romantics see its limits.

Physics today is the science of all phenomena in nature. Chemistry has become a part of physics in recent years, so has nuclear physics, so has astronomy. Nature and matter are almost synonymous here. Physics appropriates the pretension of being a comprehensive natural science, even to philosophy ... but it is not so simple, unless a purely mechanistic philosophy, as e.g. a Denett advocates them. Classical philosophy, however, does not submit to this.

Physics selects from what is alive that which is mechanical and amenable to mathematical descriptions. For example, a theorist once began a lecture on cow milk production with: consider the cow as a spherical shape. A cow in its biological structure is too complicated to be described mathematically. The theorist conceived of an enormous impoverishment but that is also precisely the power of theory. Mathematically one can proceed. Every problem is so stripped of non-essential, non-mechanical aspects until, according to some, only a caricature of it remains. Nature becomes a machine that can be described mathematically: parts and movements within wholes, with a network of relations. This is precisely what is so exceptionally powerful in the technical field and can be worked on with mathematical formulas.

The physicist Niels Bohr, designed his atomic model, with a nucleus and around it the electrons. From that theory, reality consists of quanta, small particles and waves. They cannot be separated: waves and particle are like fused together. Furthermore, there are neutrons and protons, quarks..., The building blocks of nature are in constant change and vibration. (...) The actual description is structural mathematics. Refer to the LHC collider, the 27 km orbit near Geneva to examine particles for their constituent parts and to mimic the Big Bang. Progress is boundless at that point. One discovers black holes, energy accumulations from which no more light escapes.

Decision: Parts of a whole with positions and motions expressed in mathematical structures and materializable in technical achievements. This is the essence of physics.

In the mid-19th century, the concept of energy is upgraded with the industrial revolution, steam engine, power plants ... energetics is introduced. With Norbert Wiener 1948, cybernetics, steering science, the concept of information becomes central. It is as if matter and energy are informed. Nature is full of laws and processes that are of spirit, of order.

In steering science, the basic scheme is: there is first the normal course, possibly a deviation, and then a feedback as purposeful movement. The Bible describes sacred history in precisely the same way: there is first paradise, then the Fall as deviation, and then redemption as a feedback, a God-directed, purposeful movement.

In 1948, Wiener proclaimed information as a basic concept. It expresses itself in that deviation and feedback. It is a movement that betrays mind and reaches the goal through detours. Aristotle and the ancient Greeks know that scheme very well. You can get lost in sacred history, but it contains the basic scheme of today's science. It is a structured, informed movement. Even through obstacles, if you are informed, you reach your goal. If not there is only aimless movement, which is the essence of all steering science or cybernetics

Moving on to philosophical theology. There are three major theologies:

1. the mythical, 2. the political and 3. The physical.

Go first into the mythical and illustrate with the myth of Narcissos. At his birth, a seer says that Narcissos will suffer a hard fate. Echo, a nymph or female nature spirit, falls in love with him, but he rejects her. Echo loses her life force as a result. A myth's theme is life force. Echo dies of grief. The other nymphs turn to Nemesis, the goddess of avenging justice, as feedback. Narcissus, because of his self-importance, deviates from the normal type of man, and Nemesis causes him to get back "in line. She casts a fate on him, thereby avenging Echo, and what remains of her is the reverberation of her grief.

All peoples have lived by myths for centuries. A myth is a sacred story that deals with life force of beings who may or may not be in trouble. Nemesis casts a fate, i.e., she takes away the life force of Narcissos. He gets thirsty, bends over water and sees his reflection. And there he falls in love with it, does not get rid of it, dies and turns into a flower, a daffodil, in that place. Because he struck that nymph in her life force through his willfulness, Nemesis strikes him in his life force and he pays for it. Thus she restores injustice through feedback. That is the structure of a myth, which contains much more than one would assume at first glance. They are

not just stories. Revenge here is not in the flat ordinary sense ... in the Bible, it is restoration of a violated order. God is not really avenging himself. Rather, it is about justice. Here life force has been violated, the offender will restore it by losing his own. And will thus learn. That is mythical theology. That is infinitely fascinating. You enter a world full of life that is the antithesis of e.g. the cow which, with all due respect to physics, is represented as a sphere.

2. Second is political theology. About this we are now brief: The gods, goddesses and heroes of the city were the subject of this in ancient cultures.

3. Finally, there is physical theology. This cannot be compared to our current physics. It still applies to living nature; the Greek term "fusus" stands for bubbling up life. The physical theologians no longer expressed themselves in myths, but already in theories. This is the great innovation bequeathed to us by the Greek philosophers.

Let us mention apophatic or negative theology. This states that we know too little of that world to speak of it with our ordinary concepts. Our models and concepts are simply insufficient to represent that mysterious world. It can only be approached through lemmas, through approximate concepts. With the churches just about emptying, it is incredible how religion is actually "in."

Nathan Söderblom, was prof at Upsala, Sweden, and taught in Germany, among other places. He was a religion specialist, and author of "Das werden des Gottesglaubens" (Becoming of the faith in God), (1926) . In it he gives a great deal of detail but does not lose himself in it. He was a Lutheran, and Archbishop, There is much written about religion today, but one does not always learn. Söderblom's book is actually wonderful: for him, the object of religion is the sacred. When the Latins say that they neglect something they say "nec.ligere," at the other, the opposite, respecting something, they use the term "re.ligere. The religious man is characterized by a concern, by an attentiveness to something, namely that which is holy, divine, in French one speaks of 'le sacré'.

Söderblom : all that is sacred has to do with that which contains life force. All non-secularized religions talk about life force. If not there is only an empty structure. Soul belief is all too narrow, animism is spirit belief. For the sub-Saharan tribes, even dead matter contains a mysterious form of life. Plants, animals and humans contain even more life force. Ancestral

souls and deities, the gods of the various pantheons, possess even more particulate power. dead matter does not exist for non-Western cultures. The term "hylozoism," (hulè', Greek for dust and zoe, "life") states that even the so called dead matter possesses a form of life. If what is deity possesses power or energy, an ability to realize something emanates from it. That is a dynamic form of life.

See e.g. in the Gospel of Luke, 8, where Jesus heals the woman suffering from hemorrhage. Touching Jesus means a transfer of life and life force, the laying on of hands is also essentially a touching. When Jesus takes children on his lap he also touches them, there is a transfer of life force: let the children come to me, and whoever is not like a child will not enter the kingdom. If you do not have something of that childlike openness, you do not enter the kingdom of God, Jesus puts it that way. The Jewish axiom: a prophet is too holy to take children on his lap does not apply to Jesus. Jesus healed people, the apostles did, and a number of saints in the early years of Christianity did as well. I thought surely it cannot be that that ability would be completely lost in our time. Jesus felt power going from him to the woman. In Greek it says "echno" (= I was aware of it). Söderblom speaks of power or life force. What truly contains sacred life is powerful, active, and can transform reality and solve life problems, That is dynamism. I have wondered why that no longer exists now, and I have addressed it.

Much of what is sacred or divine also has an *Urheber*, an enabler. The term comes from Söderblom. He distinguishes two levels in life force: on the one hand, there is the kind of supreme being known in many cultures as the origin of a beneficial use. For example, a plant with healing properties has an *Urheber* who pointed people to it. That is not the Biblical God. In addition, then there are the ordinary invisible beings, gods, goddesses, ancestor souls, nature spirits, nymphs, ... and then earthly man.

I think the term "*Urheber*" is well chosen because that supreme being (that is not the Biblical God) gives life par excellence and has helped to cause part of the total reality. All those religions know that there is a mysterious being there, they have names for that transcends the ordinary gods and goddesses, and the ancestors. Those primordial beings from "in the beginning" Soderblom calls causers. One easily situates that in "heaven," never in earth. In the earth are the ancestor souls; the demons and the gods and goddesses who did not behave too well. In many cultures, such beings are addressed as "our father" when addressing that supreme being. So Jesus taps into an ancient tradition when he also talks about "our Father. Jesus does

mean the biblical God here. When that supreme being or group of beings have completed their task, they no longer care about the world. One speaks of a deus otiosus, a god on vacation. 'Otium' means 'going on vacation.' Then one no longer becomes aware of that supreme being. In this, of course, the Jews are the great exception. Yahweh does intervene, does make himself known and does take center stage. For the pagan religions, such a deus otiosus is rather a pious God. Compare this in our history, for example, with the court masters, who were concerned with administrative tasks instead of the king. Those gods and goddesses are like court masters, hence those pagan religions seek and find life and life force from intermediate beings, very exceptionally from their supreme being.