

Institute for Christian Teaching  
Education Department of Seventh-Day-Adventist

**CREATIONISM VERSUS EVOLUTIONISM  
IN THE UPPER DIVISION COURSE  
AT BOGENHOFEN ACADEMY**

by

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## Introduction

We know that the belief in a creation that took 6 days is an integral part of the biblical message. The Adventist church as a messenger of the three angels' message is particularly interested in the 6 - day - creation work as the belief in creation is the prerequisite for the futurist hope of the new earth. Beyond this, Hebrews chapter 11, connects the belief in creation with the belief in God (Heb. 11: 3 + 6); this means that the one belief is not possible without the other. We are experiencing where this negation of the belief in creation is leading to - a theology after the death of God by Dorothea Sölle where, on the one hand, theology becomes just a moral philosophy, and on the other (the Catholic side), it leads to an amalgamation of the belief in creation with the theory of evolution, which leads to insoluble contradictions on the one hand and naturally to a complete breakdown of the 6 - day creation work on the other.

Austria is a Catholic country and therefore has a traditional Catholic school system. We must not forget that the Counter Reformation (started by the Jesuit schools) also affected the

universities: the highest institutes of education in Austria. Although the school system is now managed by the state, there are many private Catholic schools, and Catholic priests are representative in all organizations dealing with the country's schools. Just to mention, it is interesting to note that even the recognition of religious congregations in Austria is decided upon by the priests, which shows clearly that one cannot speak of a separation between church and state in Austria. The exact opposite is true. Austria is bound to the Vatican because of contracts between the countries. Naturally, this has an effect on the school system.

It is, therefore, clear that the theory of evolution must be taught in schools nowadays. In the 50's the theory of evolution, together with the theory of Marxism, was seen to be from the devil and rejected (as stated in the encyclical *Humani generis*)<sup>1</sup>. However in the following years the page turned, and the theory of evolution is now an unrelinquishable part of the Catholic philosophy of nature, and has, therefore, also found a place in the curriculum of Austrian secondary schools (=Gymnasien). In Austria, however, there is a framework within which teaching curriculum are set up, i. e. the teacher can decide on what is important and what topics are to be stressed in his or her classes. However a biology teacher is obliged to teach the theory of evolution, because it is considered a theory that has made inroads into practically every science (this point is not contested). With this background in mind, we can see it only as guidance from God that it has been possible to establish a secondary school with public recognition in Bogenhofen.

## Main part

Of course, connected with this was the injunction to keep to the Austrian curriculum, which means that the theory of evolution must be taught especially in the last year of secondary school because the curriculum states, that "the system of organisms should be recognized as the evidence of natural relationships"<sup>2</sup> (that means be represented in the customary version of genealogy).

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*1 Humani generis: An encyclical that was published by Pius XII (12. 8. 1950). Here he protests against false perceptions that "destroy the Catholic teachings". Therein he establishes that the Biblical explanation (Biblical exegesis) given to the teaching profession...creationism is unimpeachable, all men are descendants of Adam & Eve. From: Brockhaus Encyclopaedia, Wiesbaden, 1969, Bd. 8, S. 731. Particularity the last passage is interesting, because it shows that the Catholic church still held fast to the creation teaching in the 60's and condemned all modern ideas. Therefore it is possible to explain, why the writing of the Jesuit priest Teilhard de Chardin were banned and not allowed to be published.*

*2 Federal law paper, Nr. 607/1976,470/1982*

So it is quite clear, on the one hand, that although the teaching of the theory of evolution nowadays is an essential part of scientific thinking, on the other hand, it is contradictory to the Holy Scriptures. This is not to be understood, as if the theory of evolution contradicted the account of creation. This is not possible, because the account of creation is not a scientific theory. Darwin refuted the so - called 'constant theory' of his time, but not the account of creation. Still we can assume that the theory of evolution with its claim that all life today stems from a few original molecules, with its theory of millions and billions of years of development, diametrically opposes the spirit of the Holy Scriptures as well as the writings of E. G. White.

The problem, briefly stated, therefore lies in educating students in scientific thinking and scientific methods while making it clear that the basis of modern scientific work is false.

Sister White has stated clearly that the Book of Nature and the Bible do not contradict each other and that science correctly understood should not lead to any contradictions in regard to this matter<sup>3</sup>.

As Christian teachers we are challenged to present to the students the weaknesses of the evolution theory and so refute the theory on scientific grounds. This is certainly a feasible option, and I will try, in this way, to illustrate the difficulties of this theory by giving a few examples. If one takes as a basis that there can be no absolute truth in science, that every theory has its weaknesses and shortcomings (which, in turn, leads to the fact that scientists do not become unemployed), then this method alone falls short of the purpose. A theory cannot be simply discarded because it has weaknesses - every theory has weaknesses. Normally contradictions lead to a modification of the theory. Seldom is a theory totally rejected.

It is important, therefore, to make it very clear to the student why we are not in agreement with modifying the evolution theory, but reject it.

Our motto is: Do the one and do not leave the other: On the one hand, we will show the weaknesses of the evolution teachings and, on the other hand, we will make it clear what modern science is based on and that we are not in agreement with this foundation.

Here Austria benefits from circumstances which elsewhere would first need to be established: in the 8<sup>th</sup> grade of every Austrian secondary school philosophy is a compulsory subject. As a result, we have the opportunity to be fundamentally more critical than it would be possible if we showed only the weaknesses of the evolution theory.

#### Philosophy and Christianity, a contradiction?

First we need to repair the somewhat broken relationship that exists towards philosophy. In general, the Apostle Paul's words in Colossians, chapter 2:8 are applied. They say: "Beware lest any man spoil you through philosophy and vain deceit, after the tradition of men, after the rudiments of the world, and not after Christ"<sup>4</sup>. In applying these words some Adventists totally reject philosophy. Therefore, we need first to help the student to understand how to work with this Bible text. A possible answer to the apostle's statement is found in Acts 17:32: "And when they heard of the resurrection of the dead, some mocked and others said, we will hear thee again of this matter"<sup>5</sup>. A few texts before, we read

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<sup>3</sup> "God is the Creator of all things. True science agrees with this work; true education leads us to obey God's will. It opens our eyes to new wonders. It examines heights and depths without contradicting the revelations of God. Ignorant people may call upon science to try to confirm their false statements about God. However the book of nature and the written word of God complement each other. They lead us to worship the creator and to have faith in His word." E. G. White, *Patriarchs and Prophets*, Saatkorn Verlag, Hamburg, 1973, p. 93

<sup>4</sup> *The Holy Bible, Authorized King James Version*, The World Publishing Company, Cleveland and New York

<sup>5</sup> Nr. 4, *ibid*, NT p. 123

that Epicureans and Stoics argued with him (Acts 17:18)<sup>6</sup>. Acts does not report the reason for the argument. However, if we study only the superficial teachings of those schools of philosophy, we find enough reasons for far-reaching arguments. So the apostle preached that we can overcome our shortcomings through the power of Christ. The Stoics, however, taught that a person must overcome negative character traits in his own power. The apostle's message applies to all people, each one is of priceless worth to Jesus. However, the Stoics taught that most people are fools, and therefore their message applied to the elite. The Stoics were Pantheists: The reason of the world lies in the world itself. The world is everlasting, immeasurable and so unchangeable that it is rich enough to explain itself<sup>7</sup>. Everything happens according to reasonable regularities, which lie in matter. The cosmos and the world are, therefore, idolized.

In contrast, the apostle does not preach the everlastingness of matter, but the eternal Creator - God.

The Epicureans did not reject the Greek gods, because this would have contradicted the spirit of the times. They thought that the gods did not concern themselves with us, so we should not concern ourselves with them. Therefore, they had a hostile relationship with the theologians of their time, and naturally rejected a God who had come from heaven and died on a cross because of our sin, so that we could be saved. A message of this nature was completely against their teachings. We can imagine the intense words they aimed at the apostle Paul. Surely, we do not miss the mark when we assume that the apostle Paul meant such thoughts, when he warned against philosophy. In parentheses it should be mentioned that in those times the term philosophy was not limited to the part that we know today, but actually included all sciences. Having this in mind, it should not be difficult to release philosophy from the prejudices that are sometimes attached to it.

Naturally, this does not mean that we accept the thoughts of the philosophers without being critical, but it means that we learn about the tools they used, how knowledge is gained and what ground the scientific world-view of our times rests on. Amongst Christians and Adventists there is a lot of confusion concerning these questions. People accept facts and theories without being informed about how these things came about. The pre-knowledge of modern scientific thinking is to be found in philosophy. Therefore the student at Bogenhofen receives an overview into the History of Philosophy, particularly that of the last century, i. e. the 19<sup>th</sup> century is discussed. In this way, the student learns about the intellectual climate in which the theory of evolution matured.

#### The 19<sup>th</sup> century, Atheism versus The Three Angels' Message

It can be no coincidence that in a time in which the Millerite movement and the hope in the soon coming of Jesus was awakened in many believers (The Three Angels' Message was proclaimed and eventually the Adventist Church established by the disappointed Millerites) the theories arose which totally contradicted the Word of God. Thus the modern time of humanity which at the same time is the last time for the story of redemption is characterized by the fact that atheism is even more prevalent. Up till now the arguments have been about which church is the right way or which theological opinion is the correct one. Now the question is about whether God exists or not. Is the Bible the Word of God or a history book that a person can do with what he likes. This debate (in this form) is something totally new. Therefore the Bible speaks about a time of trouble as has never been. Because never before have God and His Word been so strongly dragged through the mud as now. Therefore, in the 19<sup>th</sup> century, we

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<sup>6</sup> Nr. 4, *ibid*: "Then certain philosophers of the Epicureans, and of the Stoics encountered him. And some said, what will this babber say? others said, he seemeth to be a setter forth of strange gods: because he preached unto them Jesus, and the resurrection". NT p. 123

<sup>7</sup> Hirschberger J., *Geschichte der Philosophie*, Herder, Freiburg, Basel, 1976, p. 254

experienced the appearance of theories that justified this trend: The theories of evolution<sup>8</sup> and dialectical materialism<sup>9</sup>. Both theories rest on positivism. Positivism, however, dates back to the continual debate between the natural sciences and the theology of the Middle Ages. Because of this alienation, and provoked by the successes of the natural sciences, philosophy felt obliged to distance itself, in the same way, from theology. Of course we find this with positivism. Here Comte formulated his "three stages" law, which applies to the individual as well as to all of mankind: the first stage is the theological, where man or rather the child believes. The second is the philosophical, where fundamental questions such as, where do I come from? where am I going to? are central. Here the childlike belief is replaced by philosophical questions. In the third stage, the scientific one, not to mention the naturally scientific one, man eventually recognizes that he must give up these questions and must concentrate on answerable questions, precisely those of a scientific nature<sup>10</sup>. The main thought here is: theology is surmounted by the natural sciences - knowledge replaces faith. An opinion which we find in its fulfillment with Engels and Marx (see also footnote Nr. 9). By the way, this thought, quite naturally, was very popular among the working class, because the church always supported the rich and in those times, to some degree, brutally exploited the workers.

Some fundamental weaknesses in the evolution theory.

Now, we will give a few examples to show the striking weaknesses (of which there are many), because the great successes of science in modern times were the result of a skeptical and not a dogmatic attitude. Also the successes of so called modern physics are the result of Albert Einstein's courage to question the classical physics of Newton. In so doing, he proved that Newton's laws represented approximations and were in no way as infallible as they seemed. The lesson that the students should be taught from this is not to blindly accept what is put before you, but to look at the knowledge of your time with a critical eye and to dare to question dogmas. We have a relevant example from the sciences, why we should question seemingly stable realizations. We will return to this later when we look at the theory of science.

We teach the theory of evolution but no one can forbid us to discuss its weaknesses. Naturally we do not want to proceed dogmatically!

The question concerning the origins of life is particularly suitable at this stage as the students in the 12<sup>th</sup> grade have already enough knowledge of chemistry.

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*8 The theory of evolution is ages old. We find it already in the Greek philosophy with those before Socrates. However it did not assert itself as a leading scientific theory until Darwinism and the publication of Darwin's main work, On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle of Life, 1859*

*9 Lenin: "If there is an objective truth (as the Materialists claim), if natural science alone, as far as it makes the outside world a part of human experience, is able to impact objective truth to us, then any kind of fideism must be rejected". (quoted in H. Sachsse, Erkenntnis des Lebendigen, Vieweg, 1968, P. 139)*

*"...matter is a greatness that is people - dependent, but which can be completely recognized by them; it includes the whole truth - nothing exists outside of matter...to say that such a term 'ages' is, therefore, childish chatter, a senseless repetition of the argument of reactionary fashion philosophy." M. M. Rosental, Der dialektische Materialismus, Dietz Verlag, 1993, p. 67*

*10 Auguste Comte, Cours de philosophie positive (Die Soziologie, Blaschke, Leipzig, 1933, P. 5): "Every branch of our knowledge undergoes three stages that follow each other, namely the theological or fictional state, the metaphysical or abstract state and the scientific or positive state." (H. J. Störig, Kleine Weltgeschichte der Philosophie, Fischer Taschenbuch Verlag, Frankfurt, 1984, Bd. 2, p. 139)*

Since Miller Urey's attempt<sup>11</sup> nothing really decisive has happened, as it was believed that this question had been solved. Although knowledge in the field of molecular biology has increased dramatically, the solution to this question is more elusive than ever. As a result, a scientific magazine concluded a few years ago that nowadays there are no ideas or theories relevant to this question<sup>12</sup>. Some scientists, such as Vollmert, even concluded that it was impossible for life to have come from a primeval bog, as this contradicts fundamental theories in chemistry<sup>13</sup>. We cannot discuss this matter in detail here, but it must be impressive for the student to hear that, as far as this question is concerned, there is widespread consensus among scientists (although scientists do not acknowledge the ideas of creationists): There are no macro molecules in a primeval bog and therefore there is no life either.

In the meantime scientific circles have discussed the idea that in the field of geology one must also let go of the relevancy principle. There are many geologists today who say clearly, that they cannot explain the history of the earth without taking into account the possibility of an enormous world-wide catastrophe. As a result, a distinguished Austrian geologist, together with his wife, published a book with the title: "Und die Sintflut gab es doch" ("So the flood really happened")<sup>14</sup>. Naturally this puts into question the idea that life on earth is millions of years old (as has been accepted), because catastrophic events are shortlived.

Ultimately it was the discovery of the Burgess Fauna which led Gould to conclude that survival was a matter of pure chance and did not depend upon the competence or conformism or beauty of an organism, as Darwin and the neo-Darwinists claimed<sup>15</sup>. In the meantime such fauna has also been discovered in China, so that today we can really forget Darwin's theory.

#### The fundamental principles of modern science

All this is important, and there is certainly a place for this in the instruction of biology at an Adventist school, because in order to be able to penetrate the fundamental principles of modern scientific understanding it is not enough just to criticise Darwinism - many non-Christian scientists do this too. We are concerned (as has been mentioned) that the student is guided in scientific understanding, and in this light to show him the nature of faith.

So the student understands that there are wide-spread contradictions in fundamental areas of the theory of evolution. Even further investigations will not be able to show that life began in a primeval pond as has been accepted since Haeckel. We can also assume that Darwin was wrong because his methods were not conclusive enough to be able to explain an evolution theory, and in the end we can also separate ourselves once and for all from actualism, with regard to the uniformity theory<sup>16</sup>. Through this the fundamental principles of the

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*11 On Urey's request Miller simulated an ancient atmosphere in a glass flask containing ammonia, hydrogen, water vapour and methane, but no free oxygen. He subjected this mixture to electrical impulses. In addition to acetic and other acids he produced amino acids. The latter are elements of proteins. Proteins, however, are macro molecules, which do not form in the presence of impurities (connections with only one functional group). Thus this attempt turned out to be in vain, and the question regarding the origin of the first "living" molecules remained - theoretically - unsolved.*

*12 L. Organ, Der Ursprung des Lebens (The origin of Life), Spektrum der Wissenschaft, Spezial: Leben und Kosmos (Life and cosmos), 1995*

*13 B. Vollmert, Das Molekül und das Leben (The molecule and life), Rowohlt, 1985*

*14 Tollmann A. u. E., Und die Sintflut gab es doch (So the flood really happened), Droemer Knauer, München, 1993*

*15 Gould J., Die Evolution des Lebens, Spectrum der Wissenschaft, Spezial: Leben und Kosmos and Gould J., Zufall Mensch, dtv Sachbuch, 1994*

*16 the founders of the Uniformity theory are Föchsel: Geschichte des Landes und des Meeres aus der Geschichte Thüringens durch Beschreibung der Berge, 1761, Von Hoff (1771 - 1837) and especially Lyell (1797 - 1837) must be*

evolution theory have been shattered and Darwin's sentence,..."herewith I have a theory with which I can do something"<sup>17</sup> is false today. Nowadays we cannot work with a theory of evolution that has Darwinistic characteristics. Therefore, the search for alternative theories is made possible. But why does Darwinism not die out. With this question we hit the root of modern scientific understanding. To be able to answer this question to the satisfaction of the students we teach philosophy at Bogenhofen. We have already established that atheism had taken hold of in the 19<sup>th</sup> and 20<sup>th</sup> centuries as never before. But how did the atheistic understanding of science of modern times come into existence? This fact is underlined by Marcuse's remark that science is the latest world religion<sup>18</sup> or the remark of the well-known physicist & philosopher Mach, who speaks about the "scientific church"<sup>19</sup> etc. In this way, these thinkers express the skepticism that modern man has against the sciences, and the dogmatism that prevails within science today.

In the first place we have to deal with the question of how do I gain understanding or knowledge, or (quoting Popper): sure knowledge<sup>20</sup>. The history of philosophy is naturally a history of falsehoods, but it is also a search for sure truths. The students learn about two of the fundamental ways: empiricism and rationalism. Empiricists are the more skeptical of the two, whereby rationalists are always trying to lay a sure foundation on which to erect a building of knowledge. The climax of this debate in modern times is to be found with Immanuel Kant. He tries to bring about a synthesis between the two. At the same time pure reason is radically criticized<sup>21</sup>.

What is interesting for our theme is the development after Kant, especially in the 19<sup>th</sup> century. But this has already been discussed. The arguments between Galileo or Kepler and the Catholic theologians about the helio-centric concept of the world, led von Weizsäcker to conclude: "that theology has lost all the battles against the sciences"<sup>22</sup>. This remark still belongs to the 19<sup>th</sup> Century. It is true that when we investigate the philosophical tendencies (this is also the case at the beginning of the 20<sup>th</sup> Century), we see them on bended knee before the sciences. As a result, this idea manifested itself at the end of the last century like a boarded-up building that could not be shaken by anything. Haeckel even thought that through Darwin's teachings on evolution the last brick in the building of the sciences was laid. There is nothing more to investigate. He thought, the 20<sup>th</sup> century a century of technology and no longer one of scientific realism. Haeckel thought, as did the Marxists, that a belief in God had been overcome once and for all: 'before our time man believed, today we know'<sup>23</sup>. A clear distinction can be drawn here. Starting with the beginning of modern times, science consequently released itself from the subordination brought about by theology. At the beginning there were the irrational arguments between theology and astronomy. Then, by means of exact research, we experienced an incredible upswing in the sciences, which was, however, also achieved by limiting the questions. Consequently, philosophy recognized that it was falling

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*mentioned. They turned sharply against catastrophism, and accepted only powers which they could observe today in nature. Therefore it was possible to establish the concept of millions of years of time in geology. Look also to: Zimmermann W. Evolution, die Geschichte ihrer Probleme und Erkenntnisse, Alber, Freiburg, München, 1953 and Zachhuber K., Evolution oder Schöpfung, EIFF, Bern, 1983*  
 17 Oeser, Schubert-Soldern R., Die Evolutionstheorie, Braumüller, Univ. Buchhandlung, Wien, Stuttgart, 1974, p. 79  
 18 Liessmann K., Zenaty G., Vom Denken, Braumüller Univ. Verlagsbuchhandlung, 1996, p. 57

19 Frey G., Erkenntnis der Wirklichkeit, Kohlhammer Verlag, Berlin, 1965, p. 27

20 Popper K., Logik der Forschung, Mohr, Tübingen, 1934/1989

21 footnote 17, p. 29 ff

22 From a broadcast at 8. 12. 1992, ORF 1: Ein Gespräch zwischen Cardinal Franz König und Carl Friedrich von Weizsäcker, (A talk between cardinal Franz König and Carl Friedrich von Weizsäcker), Editor: Hubert Arnim-Ellissen

23 Haeckel E., Die Welträtsel, Kroner Verlag, Leipzig, 1908

behind and proclaimed that only scientific knowledge was true (positivism). Eventually, in dialectical materialism, science became the substitute for religion. It, therefore, also postulated the possibility of investigating the world completely and attributed godly characteristics to matter<sup>4</sup>.

From security to possibility, from objectivity to subjectivity in the sciences.

Although the change in medieval philosophy was brought about through the sciences, it was the helio-centric concept of the world that smashed the supremacy of philosophy and theology, and so it was again the sciences that introduced a new epoch in the modern age i. e. the 20<sup>th</sup> century. It was the young physicist Albert Einstein, who was the first to show that the laws of classical physics that existed at the time and which were thought to be unshakably valid and relevant were not actually so. When we get closer to the speed of light, these laws become false. Accordingly, these laws are coarse approximations and are not unshakably valid. This paper does not have the scope to go into more details. It is enough to say that Einstein described the speed of light as the ultimate border-line speed for material bodies. With this statement the war against Newton was declared de facto<sup>5</sup>.

Still harder to understand, though, were further discoveries in the field of nuclear physics. Here one had to recognize that not only was there a border-line speed, but also clear boundaries to knowledge. It was Heisenberg, who proved with his indistinct relation that it is pointless to speak about an electron pathway, as this pathway could never be made visible. The electrons are energetically so lightweight that illuminating them with only one photon is enough to sling them out of their pathway. One realized that in the smallest components of matter, energy and matter could no longer be separated, but rather that one could describe light or an electron as a wave, but also as a small part of matter.

Science first had to realize that its knowledge would always be partial and the complete investigation of the world an illusion. There will never be an objective description of the world, because we ourselves are a part of this world as well as science: "Science does not simply describe and explain nature as it is. It is much more a part of the interrelation between nature and ourselves. It describes nature, which is exposed to our questions and methods...in this way a strong separation between the world and "I" is impossible"<sup>6</sup>. The Laplace' demon is dead (Laplace believed that if it were possible to comprehend all situations in the world in one moment, then the future as well as the past of our world could be calculated exactly, because every action is based on a cause, and everything rests on a cause and effect)<sup>7</sup>.

The philosopher's answer to the "new" science.

The Marxists knew why they described Heisenberg as a sanctimonious scholar. Yet the discoveries of this physicist brought about the turning point. The total dominance of the sciences was broken. The question of knowledge, true knowledge, was again at the forefront.

It is interesting to note that Kant reacted, with his critique of reason, to, on the one hand, Hume's great skepticism and, on the other, to Newton's great discoveries. Kant asked himself the question that if all knowledge really is empirical (as is the case with the English empiricists, Locke, Berkeley and Hume), then we must first ask ourselves what distinguishes empirical knowledge. And when we know this, then we will probably discover what part our mind plays in all this. It was Locke and Hume's skepticism that, in his own words,

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<sup>24</sup> Hirschberger J., *Geschichte der Philosophie*, Herder, Wien, 1984, Bd. 2, p. 468

<sup>25</sup> Fuchs R., *Knaurs Buch der modernen Physik*, Droemer Knaur, 1965

<sup>26</sup> Heisenberg W., *Physik und Philosophie*, Ullstein Bücher, Berlin, Wien, 1959, p. 60

<sup>27</sup> Frey G., footnote 18, P. 75



woke Kant from his dogmatic slumber<sup>28</sup>. However, Newton's discoveries were just as significant in adding to the opposition against this enormous skepticism. A development from this, as has been mentioned, was the critique of pure reason, where Kant does not underestimate the value of empirical experience, but at the same time also acknowledges the important role that knowledge has, and in so doing, for the first time in the history of philosophy reconciles empiricism and rationalism.

We again find a similar situation between science and philosophy at the beginning of this century. We have already mentioned Albert Einstein, who managed to renew physics from ground level. His theory of relativity rightly belongs to the greatest achievements of the human mind. Here, too, there were some philosophers who were impressed. One was Sir Karl Popper. Whereas Kant investigates the question about the function of the human mind at its coming into being from the angle of knowledge, Popper (through Einstein) experienced that a science which was seen as unshakeable truth could be falsified by a brilliant mind. The question then that was uppermost in Popper's thoughts was, if such sure knowledge could be shaken up, can there be such a thing in science as sure knowledge<sup>29</sup>.

At approximately the same time the Vienna Circle of Moritz Schlick, Viktor Kraft etc. also asked this question about sure knowledge. They, however, in contrast to Popper, were not inspired by the sciences. They waged a campaign against everything theological and can, therefore, be seen as late-comers in the circles of atheistic theories of the 19<sup>th</sup> Century. They thought that one must free philosophy from metaphysical details (many attempts were made at this idea throughout history), and then it would be possible to have verifiable theorems in science. Therefore they divided all scientific theorems into 2 categories: into meaningful theorems and meaningless theorems. All theorems that could be verified or falsified belonged to the first category. The sentence: "Five green men on Jupiter are playing cards", would be meaningful for the Vienna Circle, because I could fly to Jupiter and investigate and look for the little men. In comparison the sentence: "An angel guards the door to Paradise" is meaningless, because, according to the Vienna Circle, it cannot be empirically proven<sup>30</sup>. Popper's experience was very different. It orientated itself according to science. And here he discovered two things:

1. Scientific conclusions are always inductive conclusions, because we can investigate only single facts which elucidate all other cases. Naturally, this is logically incorrect because the danger always exists that we will find the exception to the rule, which falsifies the single fact and destroys the theory. For centuries Newton was blindly trusted, but a single fact, namely the constancy of the speed of light, was enough to destroy a theory which up till then had been seen as absolutely valid<sup>31</sup>. Simply stated, if I see a thousand swans and I discover that they are all white and I formulate the theory, all swans are white, then it only needs one more to be black to destroy this assumption. Popper clearly recognized, it is humanly impossible to prove all cases in the realistic sciences, therefore there can be no sure knowledge in the sciences. Or scientific theories are falsifiable, but never verifiable. Our knowledge remains conjecture. We can, therefore, not proceed from truth to truth to try to get closer to a world formula, rather at best, we proceed from error to error. In this way we can come upon new theories because we cannot find them on a sure path, "we do not know, we guess"<sup>32</sup>.

Even more interesting is another of Popper's important discoveries. We have already spoken about the criterion for belonging to the Vienna Circle. This circle only acknowledged sentences as scientific, if they were empirical and could be verified. Popper says the exact opposite. A scientific sentence and a scientific

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<sup>28</sup> Störig J., *Kleine Weltgeschichte der Philosophie*, Fischer Taschenbuch Verlag, Frankfurt, 1984, Bd. 2, p. 57

<sup>29</sup> Geier M., *Sir Karl Popper*, Rowohlt Taschenbuch Verlag, Hamburg, 1994

<sup>30</sup> Nr. 17, *ibid* p. 59

<sup>31</sup> Nr. 28, *ibid*

<sup>32</sup> Nr. 19, *ibid* p. 223

theory could be recognized by their falsifiability<sup>33</sup>. Therefore Popper (as a young man) did not praise the theory of evolution because it is so extensive and so vague, that it is not falsifiable. Therefore it is (at least according to a young Popper) not a scientific theory, but belongs to the metaphysical theories. With this we could show that, as a result of modern physics, a change came about the theory of science. The Vienna Circle took the verifiability of scientific theories as their starting point, wanting to go this way by means of empirically describable facts (and by the way wanting to put up a front, especially against theology), but Popper could take the wind out of the sails of this approach. "For we know in part"<sup>34</sup>, as stated by the apostle Paul, is still valid today. Of course, Popper was also, at least partly, contradicted. And the question remains unsolved. How is it possible that despite all the weaknesses in large areas of science the theory of evolution remains uncontested and valid. In the same way we could naturally ask the question why did it take so long for man to catch onto the geo-centric view of the world. Up to the 19<sup>th</sup> century Catholics were forbidden to read the books of Galileo Galilei. The question that comes up here is, how does science function, how do scientists work? Popper assumes that knowledge accumulates, it multiplies, he is, therefore, a plurality theorist. Scientists add one stone of knowledge onto another and therefore build the building of knowledge on a strictly rational foundation. Although they cannot verify their theories, only falsify them, and although most new discoveries are by chance, "we don't know, we guess", we still experience a steady and continual growth of knowledge.

Science does not mean pure rationality

If scientists really did proceed in this way, then pure rationality would triumph within science. Why then did it take so long for man to catch onto the geocentric view of the world, even though there were many good arguments for it? And this is indeed one of the most spectacular turning points in the history of science. However, such examples come up often enough. Thomas S. Kuhn stated: there are no continuous advances in science, rather there are scientific revolutions. Why? Scientists are people and scientific theories are not made up of only rational observations but also emotional ones, which means, generally formulated, non-rational thoughts<sup>35</sup>. Let us look once more at the transition from a geo - to a heliocentric worldview. Why did it take so long? We all know the answer - the power of the theologians prevented an unbiased discussion on this fact. The amalgamation of Scripture and human thoughts and world views led to the well known conflict. Here it was not so much about finding the truth, as it was about the petty self-opinionatedness of partly incompetent theologians. As we have already concluded, this conflict considerably influenced the development of the sciences. Now further interference was feared and a bulwark was put up against anything metaphysical. Statements by Mach: "Questions about the aim are prohibited by the scientific church", or Marcuse: "Science is the latest world religion", prove this. Earlier theology was dogmatic, nowadays it is science. A relevant example is the following. A leading publisher of scientific publications and books refuses to accept any manuscript if there is, in the preface, only one mention of the term creation. We can find many such examples. Coincidence? No, we are also here dealing with nonrational reasons. Kuhn proves that scientists like to adhere to a specific scientific opinion, which agrees with the vast majority, and he calls such opinions paradigms, "A paradigm is that which the members of a scientific community have in common, and in reverse, a scientific community consists of people who share a paradigm"<sup>36</sup>. Because our human vanity forbids us to just simply say goodbye to our beloved theories, any change is

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33 Nr.19, *ibid* p. 214 ff

34 I Corinthians 13:9

35 Nr. 17 *ibid*, p. 67 ff

36 Nr. 17, *ibid* p. 67

violently opposed<sup>37</sup>. We need only remember how doggedly the physicists clung to their theory about ether (which was supposed to have many contradicting characteristics) until eventually the opinion that light is an electromagnetic wave which needs no medium to be spread prevailed. At the same time this theory was not considered ideological! Much tougher was the hold on the geo-centric world view because here there were dogmatic barriers in the way, and this is exactly the case with the theory of evolution, with the only difference that here the dogmas are being erected by the other side. Today, as has already been established, it is science which has sworn itself to atheism and in so doing has prevented all discussions about the obvious problems of the evolution theory. Can we rationally verify the foundation (its paradigm) on which modern science is based? The answer here must be "no". Positivism and neo-positivism do not prove the non-existence of God, but accept this as a starting point. This is a premise and not a conclusion.

If paradigms do not allow themselves to be rationally investigated, if there is no possibility of judging their validity or fallibility, then this must be true for all basic assumptions, therefore for all paradigms. Therefore Feyerabend, one of Kuhn's students, concludes that no paradigm may be given preference - the creationist view has as much a right to be allowed into the field of science as the evolutionistic view. That the latter is given preference cannot be justified. This decision is purely an irrational whim, pure dogmatism on the part of science<sup>38</sup>.

Whether we are creationists or evolutionists, this decision cannot be made on a rational basis. This decision falls into the same category as the decision for or against God.

#### Conclusion

The development of the natural sciences in the 20th century has clearly shown their limits, which, as a consequence, has led us to a new understanding of science. Besides, philosophy has been enlivened, and new insights have been gained. All the same, both the scientist and the philosopher have become more modest. The statistical approach has replaced the strict cause-effect principle, falsification has done away with verification. Our concern is to explain these developments in their context - from the Middle Ages to the new era, 19th and 20th centuries. The goal of all instruction must be to prepare the student for the university, which, at least in Europe, has lost its Christian stamp. The student should be in a position to evaluate the theories which he is confronted with at that level, because on the lower level he has learned the prerequisites on which they are based. He must comprehend why science acts as it does, and why the theory of evolution prevails. All this depends on the world view of the scientists, but not on the facts<sup>39</sup>.

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*37 i.e. that scientific progress does not occur purely rationally, but it strongly influenced by irrational dements. Scientists tend to cling to theories long after the facts have been made clear. The situation is further aggravated in cases where there are absolutely no historical facts or findings, as is the case concerning the origin of life. According to Kuhn, this is due to the fact that scientists are human beings who find it very difficult to abandon old theories and worldviews. (See examples in the text).*

*38 Nr. 17, ibid p. 68*

*39 Naturally this does not mean that facts, which would be better suited to an evolutionist or a creationist world-view, could not exist. However, it does mean that no scientist can approach his work without prerequisites. However, according to Kuhn and Feyerabend these prerequisites can no longer be investigated logically. They cannot be wrong or right. Whether there is a Creator or not, whether I consider the Bible to be God's Word or not is such prerequisite and not a consequence of scientific thinking. With these prerequisites the scientist approaches the facts and interprets them in this light. Accordingly, his world-view does not depend on facts, but is ultimately an irrational preliminary decision.*

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