

The essence of matter

by Dr. Manfred Pohl

The article on this topic comes to be preceded without comment by a quote from a source showing the opinions of the concept of matter in the early years of the 19th century.

“**Matter** generally means substance or content, the essence of the body, and is usually thought of as the opposite of **form** (l. t.) or shape. We convince ourselves of the presence of matter primarily through feeling; the resistance, however, which one encounters wherever an attempt is made to penetrate the space of a body, is called its impenetrability. Matter, however, does not entirely fill the space of the body, but with interruptions, which are called gaps and pores and which are easily perceived on solid bodies with the naked eye or through magnifying glasses; in the case of liquid bodies, however, one inferred from this that there are spaces in between, because there is no liquid that other bodies cannot absorb. As another general property of matter, experience teaches us to recognize its divisibility, which sometimes goes extraordinarily far; for example with the highly ductile metals (see **ductility**) and the luminous and smelling substances. The term matter is also used in a spiritual sense, and one speaks for example from the subject matter of a conversation, from the subject matter dealt with in a book, etc., where it is then synonymous with the subject matter dealt with. --- **Material** (with the meaning of **physical**) means that which relates to matter or belongs to it and is opposed to the immaterial or spiritual. For example one speaks of the material interests and the material direction of the time and understands by the striving for temporal acquisition and physical well-being. --- **Material** (with the meaning of **stuff**) and, in the majority of cases, materials in general are called things which are necessary as a substance or ingredient for processing or for use for any purpose. For example building materials, writing materials and materials for learned works, which consist of the knowledge and notes collected for them. Under the material of an army, however, the whole of its artillery, ammunition wagons and the other vehicles that belong to the equipment are understood. --- **Materialism** is the name of the philosophical view that regards matter or the physical as the basic cause of all that is present and therefore also denies the spiritual nature of the soul. The adherents of this opinion, which incidentally is based on a purely arbitrary assumption, are called materialists in the philosophical sense, and they include many ancient philosophers, but also more recent and especially French. Writers of the 18th century appeared as defenders of the same. ”

Source: Bilder-Conversations-Lexikon für das Deutsche Volk, a handbook for the dissemination of common knowledge and for entertainment, 4 volumes, F. A. Brockhaus, Leipzig, 1839, volume 3, p. 80

How do we judge the essence of matter from today's perspective?

The concept of matter and the understanding of the essence of matter are system-determining in physics and in other natural sciences. In different worldviews, matter is explained in different ways. In the idealistic worldview and in all religions - objective idealism - the prevailing view is that matter originated or was created by a primarily existing consciousness. The matter is not seen as primary, it is controlled by a consciousness. Subjective idealists consider matter to be a product of the spirit; it only exists because consciousness dictates it.

The dialectical-materialistic worldview, the subject of this article, recognizes in matter the primacy of all being. It exists independently of consciousness and cannot be created or destroyed. Consciousness is a result of material evolution, which takes place on the basis of forces inherent in matter (battle of contradictions). Consciousness is a property, a function of the matter. There is no consciousness outside of matter and none without matter. From this attitude results the dialectical-materialistic definition of the matter as follows:

**Matter is the objectively existing reality outside of consciousness,
which can neither arise nor disappear.
Its conditions of existence are space and time,
Its mode of existence is the movement.**

A different than the dialectical-materialistic understanding of matter leads to the meta-physical consideration of nature, with which many processes in the sciences are misinterpreted and cannot be understood. This is the cause of the emergence of speculative theories apart from a scientific method leading to heresy. From these theories are derived unprovable, untenable and logically erroneous conclusions, with which processes in nature are misinterpreted by the sciences, so that contradicting assumptions and critical phenomena hinder or even exclude the further development of science. This is most clearly visible in theoretical physics and in cosmology, in which views are currently being held that contradict elementary logical principles.

It is therefore an urgent task of scientists of all areas and levels, more purposefully than has been recognized so far, to fathom the essence of matter and to translate it into scientific practice. The present article provides suggestions on the following topics:

- A) the essence of matter,
- B) the connection between matter and consciousness,
- C) The 7 cardinal errors in the explanation of the essence of matter,
- D) The reproduction of the errors in the free encyclopedia Wikipedia and in other sources of the specialist literature.

So what is matter or, to put it another way, what is its essence?

A) The essence of matter

The essence of matter is **1.**

their objective existence outside and independent of consciousness. That means everything that exists objectively and is not dependent on the perception or the explanation of a consciousness, that is, what is existent really and cannot be influenced, what is without the ability to control or determine its existence by a form of consciousness, is matter. The American author Philip Kindred Dick (1928 to 1982) put it very aptly: "Reality is that which does not disappear when you stop believing in it."

The essence of matter is **2.**

- **its eternity in time**, which is derived from the conservation laws, and
- **its infinity in space**, which is derived from the movement.

Space and time are the conditions of existence of matter. There is no matter without space and no space without matter. Coordinate systems are the method for the quantitative determination of the locations in space. There is no beginning and no end to the existence of matter.

The essence of matter is **3.**

its movement. Movement is the mode of existence (also mode of being) of matter. There is no matter without movement, just as there is no movement without matter. Movement is any change that takes place over a duration. Time is the method used to quantify duration. Only matter is subject to movement.

Matter exists as mass and as energy. Both are equivalent to each other ($E = m \cdot c^2$ - the equation of mass-energy equivalence). They are related to one another with a constant factor, the square of the speed of light in the vacuum (c^2).

>> The eternity of matter << is derived from the conservation laws:

From the law of conservation of energy follows:

Energy cannot arise from nothing and cannot disappear into nothing. It can only be converted from one form of energy to another.

The law of conservation of energy states that the energy present in a system is unchangeable unless energy is supplied from the outside or energy is released to the outside. The law of conservation of energy is a certain, proven knowledge. That means, **Energy is a conservation size.**

From the mass-energy equivalence ($E = m \cdot c^2$) follows:

1. The ratio of energy to mass is constant ($E/m = c^2 = const$, because c is a natural constant).
2. There is no energy without mass and no mass without energy (follows from 1.).
3. Mass cannot be converted into energy and energy cannot be converted into mass.

At this reason applies to the mass too: It cannot arise from nothing and cannot disappear into nothing. The mass-energy equivalence is a certain, proven knowledge. That means

Mass is a conservation size.

Since mass and energy are matter, is matter a conservation size.

This leads inevitably to the statement: Matter cannot arise from nothing and cannot disappear into nothing, means it exists eternally, that is

- eternally in the past: it has always existed, and
- eternally in the future: it will always be there.

>> The infinity of matter << is derived from the movement:

In order to show the infinity of matter, we define a straight line G in any direction in the universe. On the straight line G there is a material object M at point P_0 . It is assumed that the object M moves in defined steps of constant path length d in the same direction along the straight line G .

Step 1: The object M moves on the straight line G from point P_0 by the distance d to point P_1 .

Step 2: The object M moves on the straight line G from point P_1 by the distance d to point P_2 .

Step 3: The object M moves on the straight line G from point P_2 by the distance d to point P_3

Step n : The object M moves on the straight line G from the point P_{n-1} by the distance d to the point P_n .

In this sequence arises the question: Is there a point P_m on the straight line G from which a movement by the distance d to a point P_{m+1} is not possible? Answer: All points on the straight line G are of equal rank, that is, there is no preferred point of a different nature and consequently there cannot be such a point P_m . If there would be such a point, it would belong to a preferred coordinate system. However, there is no preferred coordinate system in the universe. This is considered to be a certain knowledge.

Conclusions:

- The movement of the object M along the straight line G by the distance d can be repeated as often as required, that is, the path length of the object M along the straight line G is unlimited.
- The direction of the straight line G is arbitrary, that is, the path length of the object M is unlimited in all directions.

This leads to the following statement:

The universe is spatially unlimited, it is infinite in all directions.

Now where is consciousness to be classified?

B) The connection between matter and consciousness

Consciousness is the result of the evolution of matter. Consciousness is the function of a material organ - the brain. That means, there is no consciousness without matter and none outside of matter.

In the course of evolution, consciousness has developed the ability to depict the material world progressively more completely through targeted research, observation, and periodic succession of analysis and synthesis. Consciousness is an incomplete, progressively more complete image of objective reality. It uses this ability to influence and control the evolution of matter on the basis of the recognized, objectively acting laws. Consciousness cannot decide about the emergence and disappearance of matter, nor can it change or create the laws of nature.

What is the current practice of explaining the essence of matter?

C) The 7 cardinal errors in the explanation of the essence of matter, mostly coming upon and found in many sources:

1. The mass is a property of matter.
2. The energy is a state of matter.
3. The energy does not belong to matter.
4. Matter has arisen from nothing at a defined point in time.
5. Space and time are a material object – the space-time.
6. Forces are material objects and are subjects of spreading in space.
7. Time is an independent material quantity that can run without matter.

Explanations of the 7 cardinal errors

1. The mass is a property of matter.
The postulate is wrong, because it would mean that mass is not matter, because a physical category cannot be matter and one of its properties at the same time. If, however, as elsewhere in the same quote, we hold to the fact that mass is matter, the postulate says that mass is a property of mass. This is an elementary logic error.
(Example: Wikipedia_Physik: "Mass is a property of matter" and elsewhere: "Matter is everything that takes up space and has a mass.")
2. The energy is a state of matter.
The postulate is wrong, because it would mean that energy is not matter, because a physical category cannot be matter and one of its states at the same time. If we hold to the fact that energy is matter, the postulate says that energy is a state of energy. This is an elementary logic error.
(Example: Wikipedia_Energie: "The energy of a system depends on its state, i.e. on the parameters of the system and the current values of its variables.")
3. The energy does not belong to matter.
The postulate is wrong, because it would mean that mass and energy could not be equivalent, because of two equivalent entities one cannot be matter and the other

cannot. This is an elementary logic error. This misconception also leads to the thesis that one can convert mass into energy or energy into mass. Such conversions are not possible. This further leads to the misinterpretation of the mass defect, according to which mass disappears or arises during particle reactions and one cannot say where to or from.

(Example: Wikipedia_Physik: "Physics is a natural science that deals with matter and energy." – means: energy is different from matter)

4. Matter arised from nothing at a defined point in time.

The postulate is wrong, because it contradicts the fact that matter is a conservation size, i.e. matter cannot arise and cannot disappear. As a direct consequence of this wrong attitude, further wrong conclusions are drawn:

- At the point in time when matter was created, were also created space and time.
- However, space and time are not objects that can arise.
- Before matter came into being, the laws of nature did not exist; they developed when matter came into being. - However, laws of nature cannot develop, they are relationships that result from the nature of matter and are therefore always causally valid.
- The matter emerged from a point of infinite energy density, which began to expand at the point of time it was created. This energy was so called pure energy, that is to say, energy without mass. - However, there is no energy without mass and no mass without energy. A point of infinite energy density would therefore also be a point of infinite mass density (big bang singularity) and could not expand because of the infinite gravity existing as a result.

(Examples: Big Bang hypothesis, accelerated expansion of the universe, inflation phase, primordial nucleosynthesis.)

5. Space and time are a material object - the four-dimensional space-time.

The postulate is wrong, because it would mean, for example, that space can exist self-sufficient even without matter, and that matter can be taken out of space or brought into on dependence of the time. There would be "space in itself" and "time self-sufficient". - However, space and time are the conditions for the existence of matter, they are not material objects. Other errors are linked to this error, such as the space can expand or the space can be curved. One consequence of this wrong attitude is the assumption of an inflationary phase in the universe after a big bang. Both could not came to have been.

6. Forces are material objects and are subject to spread in space.

The postulate is wrong, because only matter can be in motion. Forces are not material objects, the terms spread or movement cannot be applied to a force. It is assert that a force crosses space at the speed of light. This wrong posture leads, for example, to the assumption of gravitational waves, which cannot exist. Force is an instantaneous effect between material objects. From consideration of the gravitational force as a material object, the wrong assumption arises that a mass observed individually is surrounded by a gravitational field. However, gravity is a force between exactly two masses. If one of them is zero, that is, it does not exist, the term gravity does not exist.

(Example. Various research projects to find gravitational waves.)

7. Time is an independent material quantity that can run without matter.

The postulate is wrong because it leads, for example, to the view that time can be stretched or compressed. The consequence of this wrong attitude is the failure to

understand the connections between the movement of matter in space and in time, which are determined by various inertial systems. The time dilation is interpreted as an independent measured variable. This leads to various untenable speculations, such as time tunnels in the cosmos or time differences according to processes in different inertial systems. Sometimes it leads to the denial of the vacuum speed of light as a natural constant.

(Example: CERN 2011: neutrinos would have exceeded the speed of light)

How is the essence of matter depicted in various sources in the specialist literature?

D) The illustration of the errors in the free encyclopedia Wikipedia and in other sources

(Sources - blue, quotes - black, comments - red)

[https://de.wikipedia.org/wiki/Materie_\(Physik\)](https://de.wikipedia.org/wiki/Materie_(Physik)):

"Matter (physics)

Matter (from the Latin materia, substance) is a collective term in the natural sciences for everything from which physical bodies can be built, i.e. chemical substances or materials as well as their building blocks." **This is a faulty reduction of matter to mass.**

"The description of the composition, structure and dynamics of matter in its various forms is a central objective of physics." **The concept of matter, however, cannot be tied to a substance. In this way, other objective realities are excluded from matter.**

"In classical physics, matter contrasts with the terms vacuum and force field. Here vacuum and force field have no mass, but describe a state of empty space. In classical physics, however, matter is understood to be anything that takes up space and has a mass." **This is the repetition of the faulty reduction of matter to mass.**

"In modern physics, the concept of matter has been expanded several times, in particular by the theory of relativity and quantum physics, and its delimitation from the concepts of vacuum and field is no longer uniformly defined today. In physics textbooks, it is mostly simply assumed without a more precise definition." **Such an approach is completely useless in science. It is similar to the statement, "Physics explores matter, but we don't need to know what matter is."**

"In its narrowest sense, the term matter today includes all elementary particles with spin 1/2, i.e. quarks and leptons, as well as all objects built from them such as atoms, molecules, solid, liquid and gaseous matter etc. up to stars and galaxies." **In this representation, the energy is indirectly removed from the matter because the gauge bosons with spin 1 and the Higgs boson with spin 0 are not counted as matter.**

The concept of matter is almost completely liquidated in these assertions. Until about mid-2014, one could read explicitly at [https://de.wikipedia.org/wiki/Materie_\(Physik\)](https://de.wikipedia.org/wiki/Materie_(Physik)):

"Electromagnetic waves, such as light, are not counted as matter". **This wording was then removed because it was manifestly untenable. However, without fundamentally correcting the incorrect term, it is now entered in two places:**

"1. Matter (physics):

In classical physics, however, matter is understood to be anything that takes up space and has a mass." **This is wrong, because matter is only defined as mass and the energy is still extracted from the matter. The mass-energy equivalence ($E = m \cdot c^2$) would be wrong according to this representation, because a material entity cannot be equivalent to a non-material entity.**

"2. Mass (physics):

The mass, also rest mass or invariant mass, is a property of matter." **That is also wrong. It is outside of reality because mass is not a property of matter, but matter itself. Such formulations can only be characterized as ill-conceived:**

The entry under 2. Mass (physics) contradicts the entry under 1. Matter (physics). Mass is not a property of matter, mass is matter, is a form of representation, an entity of matter. Properties of matter are always immaterial, otherwise they would be matter themselves. With the above explanation, mass would not be matter. Both entries under 1. and 2. are inextricably opposed.

<https://de.wikipedia.org/wiki/Physik>:

"Physics

Physics is a natural science that studies fundamental phenomena in nature. In order to explain their properties and behavior on the basis of quantitative models and laws, she deals in particular with matter and energy and their interactions in space and time." **In this illustration, energy is not matter, because it becomes the Opposed to matter. We speak of "matter and energy" as if energy were not matter.**

"To explain here means to classify, compare, to classify more general phenomena or to deduce from general laws of nature. This often requires the formation of new, suitable terms, sometimes also those that are no longer accessible to direct observation." **This assumption leads preventative to come a mysticism. There would then be things that are beyond observation.** "Physics cannot provide explanations in the philosophical sense of "why" nature behaves like this. Instead, it deals with the "how". For example, she cannot explain why masses attract one another. This behavior can only be described with different models." **It is not acceptable that the investigation of the cause of the gravitation should be omitted. No serious scientist will go into the capitulation of the problems.** "Newton did this by assuming that there is an attraction between bodies. Einstein had a completely different idea, who explained gravity by saying that matter bends space-time.

The way physics works consists in the interaction of experimental methods and theoretical modeling. Physical theories prove themselves in the application to systems of nature, in that they allow predictions about later states with knowledge of their initial states. Advances in knowledge result from the interplay of observation or experiment with theory. A new or further developed theory can explain known results better or at all for the first time and also stimulate new experiments and observations, the results of which then confirm or contradict the theory. Unexpected results of observations or experiments give rise to theory development in various forms, from step-by-step improvement to the complete abandonment of a theory that has been accepted for a long time." **This would be a good approach, with the help of a general definition of matter, to remove from science all speculations about the creation or the origin or the disappearing of matter, because it is proven to be false. At the moment both physics and also philosophy, are far from such a view.**

"Theoretical physics

Theoretical physics seeks to trace back the empirical models of experimental physics to mathematically into known basic theories or, if this is not possible, to develop hypotheses for a new theory, which can then be tested experimentally. It also derives empirically verifiable predictions from already known theories." **That always depends**

on the defined initial conditions under which currently systemically relevant defects are declared as truths.

“When developing a model, reality is fundamentally idealized; one concentrates initially only on a simplified image in order to survey and research its aspects. After the model has matured for these conditions, it is further generalized.

The language of mathematics is used for the theoretical description of a physical system. Its components are represented by mathematical objects such as scalars or vectors, which are related to one another by means of equations. Unknown values are calculated from known values and thus, for example, is predicted the result of an experimental measurement.” **In these endeavors is at the moment very often thrown overboard the principle that mathematics cannot stand above observation. Mathematical abstractions cannot be stylized as truth if they cannot be verified by observation.** “This view, which is focused on quantities, distinguishes physics significantly from philosophy and has the consequence that non-quantifiable models, such as consciousness, are not regarded as part of physics.

The fundamental measure for the success of a scientific theory is the agreement with observations and experiments. By making a comparison with the experiment, the range of validity and the accuracy of a theory can be determined; however, it can never be "proven". In principle, a single experiment is sufficient to refute a theory or to show the limits of its area of validity, provided it proves to be reproducible.” **This is the only possible approach. But it is not used. Otherwise, for example, the Atlas of Peculiar Galaxies, in which the American astronomer Halton Arp (1927 to 2013) documented 338 galaxies whose movement cannot be explained with the big bang theory, would have to be sufficient to reject the big bang theory. The number of 338 galaxies can be rated as sufficiently reproduced.**

“Experimental physics and theoretical physics are therefore in constant interrelation. However, it can happen that the results of one discipline run ahead of the other: For example, many of the predictions made by string theory cannot currently be verified experimentally; on the other hand, many values from the field of particle physics, some of which are very precisely measured, cannot be calculated at the present time (2009) due to the associated theory, quantum chromodynamics.” **So legitimate doubts about the theories should not be negated.**

[https://de.wikipedia.org/wiki/Masse_\(Physik\)](https://de.wikipedia.org/wiki/Masse_(Physik)):

“Mass (physics)

The mass, overaged called rest mass, is a property of matter.” **This is a false postulate, because mass is matter, it cannot be one of its properties at the same time. If mass were a property of matter, then it could not be matter. Incidentally: It is incomprehensible why the term rest mass is shown here as out of date.** “Both the gravitational forces acting on a body and the gravitational forces it causes are proportional to its mass. It also determines the inertia with which the body's state of motion reacts to forces. This double role of the mass is the content of the principle of equivalence.”

<https://de.wikipedia.org/wiki/Energie>:

"Energy

Energy is a fundamental physical quantity that plays a central role in all areas of physics as well as in technology, chemistry, biology and economics. Its SI unit is the

joule. The practical importance of energy often lies in the fact that a physical system can give off heat, perform work or emit radiation that its energy is reduced. In a system that is closed off from the environment, the total energy does not change (law of conservation of energy). The importance of energy in theoretical physics lies, among other things, in the fact that the law of conservation of energy, originally a fact of experience, can already be deduced from the fact that the fundamental physical laws of nature are invariable over time." Apparently what is meant here is the law of conservation of momentum. It would have to be shown that one can infer the conservation of energy from the conservation of momentum. For this, however, it is certainly not sufficient to dismiss the law of conservation of energy as a "fact of experience". A little more detailed below.

"Energy comes in different forms that can be converted into one another. Examples of forms of energy are potential, kinetic, electrical, chemical and thermal energy. Examples of such conversions of energy are that a person lifts a package or accelerates a bicycle, a battery is charged, that a living being does metabolism or a heater gives off heat.

The energy of a system depends on its state, i.e. on the parameters of the system and the instantaneous values of its variables." This claim is incorrect. "The form of this dependency determines the temporal development of the system in every detail according to the Hamiltonian equations of motion, the Schrödinger equation or the Dirac equation." The total information of a system is determined by the Lagrange function $\mathcal{L}(q, \dot{q}, t)$. The Hamilton equations of motion (the canonical equations) use the generalized (canonical) momenta instead of the velocities at which the Lagrange function operates. From the Hamilton equations of motion or directly from the Lagrange function through the Lagrange transformation, one can obtain its characteristic function, the Hamilton function $\mathcal{H}(q, p, t)$. In this Hamilton function to be defined, the coordinates and the associated velocities used in the Lagrange formalism are replaced by the coordinates and the associated impulses in such a way that the Hamilton function contains the same information of the system as the Lagrange function. The Hamilton function embodies the total energy of a system. But now the partial differential of the Hamilton function to the velocity is zero. This means that the total energy of a system does not depend on its state. The reference to the Schrödinger equation and the Dirac equation is now reduced to the indication that the Hamilton formalism can also be applied to quantum processes. However, this should not be described in more detail here.

"According to the theory of relativity, rest energy and mass are linked by the equivalence of mass and energy ($E = m \cdot c^2$)." One should therefore say here that energy is matter because mass is matter. The author fails to do this.

The entire section avoids a statement that energy is matter. Energy is interpreted as a system state that ultimately faces matter and does not identify the energy as belonging to it.

[Meyers Neues Lexikon, 1974:](#)

"Matter: The M. is eternal, uncreated and indestructible. It is the cause of itself. In all processes of transformation of material things and phenomena, M. can neither emerge nor be lost, as the natural scientific conservation laws prove. The M. has no beginning and no end in time and no boundaries in space. It is infinite and inexhaustible in both the macro- and the microcosm. Their mode of existence is movement, conceived as change in general. M. and movement represent an inseparable unit. There is neither

M. without movement, nor movement without M. The forms of existence of M. are space and time, the structure of which depends on the structure of the moving M." This definition in principle conforms to the explanations of dialectical materialism. The phrase "*it is the cause of itself*" is superfluous, it has no content, because matter has no cause. But the explanation in the last sentence is blurred. Space and time are not "*forms of existence*" of matter, they are its conditions of existence, that is, there is no matter without space and time, just as there is also no space and time without matter. A structure cannot be assigned to the conditions. Matter has a structure, its conditions of existence have not. Forms can have structure in general, but space and time have no form, so the term cannot be used here.

[Brockhaus-Enzyklopädie, 1991:](#)

"Matter, from the Latin materia, "substance";

...

3) Physics: The physical concept of matter is not about ontological determinations, but rather about the mathematically detectable structure of the M. As early as the 19th century, attempts were made to define the concept of mass in a purely operational manner and to purify it from the remainders of the philosophical terms (materiality, substantiality)." This is a paradoxical renunciation from nature. The concept of matter should therefore be understood as a mathematical structure ("*... it is about the mathematically comprehensible structure*") and no longer as an objective reality ("*...ontological determinations*"). Such a representation of the essence of matter is wrong. With it, mathematics is elevated to primacy over nature, observations of reality take a back seat. The "*purification*" of the concept of mass from materiality creates an abstraction that no longer has any relation to nature. Accordingly, matter would not be a researchable object, but a purely mathematical structure. Mathematics, however, can only serve physics, it works out the quantification of observation, and it can derive generalizations, but in no case can it dominate physics. The way in which this definition is formulated is also to be rejected: It does not speak for scientific precision to introduce the definition of an object by explaining what it is not.

"Even after J. Dalton's atomic theory was accepted in the 19th century, microphysics was initially understood as a continuation of classical mechanics. It was not until the physics of the 20th century that the classical concept of matter was dissolved." The aim is now to abolish the concept of matter altogether. Physics in the micro-world is therefore no longer the science of research into matter, because there is no longer a concept of matter, because it has been "dissolved". Is it possible to research matter without a concept of matter?

"The leading function of the sensual perception and the Euclidian space corresponding to it had to be given up." With this, space is also given up as a condition for the existence of matter. The opaque way of expressing the task of "*sensual perception*" as a "*leading function*" means nothing else in clear enunciation than the abolition of nature observation. Everything is judged by the consciousness with the help of mathematical structures. In this way the consciousness is placed above matter, it is then no longer the image of objective reality. Reality is subordinated to consciousness. This is very clearly a transition to the idealistic worldview that cannot be accepted here at all.

"In their place there are macrophysically the relativity-theoretical concept of an interaction between matter and the four-dimensional space-time curved by it, microphysically the laws of probability in the state space (Hilbert space) of quantum mechanics." This shows the "four-dimensional space-time" as a material object that can be bent. The Hilbert space is a "container" for quanta. These are not verifiable

representations. Here, too, matter is only a mathematical model and no longer an objective reality. The same tendency prevails in the following:

"The actual carriers of the M. are dynamic centers which, according to the common elementary particle theory, are presented as quasi-punctiform particles (quarks and leptons), according to the alternative string theory, as state forms of the vibrations of a one-dimensional 'string'. The spatial main part of the macrophysically presented M. is empty in the sense of naive views, ..." Here is constructed a mixture of space and matter that does not exist. Space is not a condition for the existence of matter, but matter itself: "... the spatial main part ... of matter is empty ...", then follows:

"... but filled with intense force effects (field theory). Mass and energy are just different aspects of the same reality." The latter is true, but in connection with the above remark, a force effect is also raised to matter, even a force is subliminally viewed as energy - an elementary fundamental error, because force and Energy are two different physical categories. Force is a property of matter, an effect between material objects, energy is a form of representation of matter, so it is itself matter. In my opinion, the cause of such a misinterpretation can be found in field theory. It lacks the distinction between material and immaterial fields. Thus, at will, a force can be viewed as a material object and energy as non-material. Among other things, this has far-reaching effects on research into gravity.

Viewed as a whole, matter is not defined here; it is rather reduced to a mythical representation, to a purely mathematical category that can no longer be rationally grasped.

With the number 3) at the beginning of the definition it is stated that several different definitions of matter should be accepted in different sciences: "... in the physical concept of matter ...". Can there be other definitions in other disciplines? This undermines an interdisciplinary understanding between the sciences; it fails because of the ambiguous and unclear views on the fundamentals of any science.

The tragedy of this presentation is particularly evident in recent times, in which different natural sciences are becoming increasingly interlinked, so that more and more are produced joint research results complementing and presupposing each other - in view of this currently prevailing misery one must nearly formulate: could be produced.

Summary of the previous:

The "definitions" of matter and mass published on Wikipedia support many unrealistic explanations of current theoretical physics, such as:

- Energy is not matter. Dissolving away of the energy from the matter successively allows the conversion of mass into energy and back completely arbitrarily and freely, so that in the end the sum of mass and energy is constant and not their ratio.
- The explanation that there is mass without energy and energy without mass, so-called "pure" energy. This is confusing nonsense, as one can easily read from the mass-energy equivalence: $E = m \cdot c^2$ means: If the mass is zero, then the energy is also zero, in other words, the ratio of energy to mass is constant.
- The interpretation of space and time (one says: "space-time") as material, that is, independently existing objects. Space and time do not "exist"; they are conditions for the existence of matter. If they existed independently, they would be matter themselves. This leads, among other things, to the very strange invention of an "inflation phase" in cosmology, after which "space itself" expands.

- The "radiation" of gravity from a mass. Such a postulate becomes possible because gravity is understood as a material object that can move.
- The search for "gravitational waves". They don't exist because gravity is not radiation. The search for gravitational waves, which is carried out with considerable human, financial and material effort, is about as ingenious as trying to find an ice cube on the surface of the sun.
- The assumption of an expansion of the universe, even accelerated (!). It becomes possible because there would be "pure" energy, that is, energy without mass, so that a singularity, a point of infinite energy density, could expand.
- Declaring a "beginning" of the universe, even the "emergence" of space and time, and its end. This declaration contradicts the eternity of the existence of matter in the past and in the future. In connection with the "emergence" of the universe, there is even talk of the "emergence" of the laws of nature, which amounts to a completely absurd logical inability.
- The thesis of the "origin" of matter out of nothing (big bang hypothesis). It corresponds to the Catholic idea of creation and is incompatible with physical processes. There is therefore no "young" universe and no "early phase" of the universe, there is only the eternal and infinite universe. The inconsistencies of others or of parallel "universes" are meaningless esoteric talk without content. Even purely linguistically, a plural of universe is incomprehensible.
- The possibility of producing a perpetual motion machine. This way of thinking becomes possible because energy generation from nothing, against better judgment, is not excluded in the standard model. However, this assumption contradicts the law of conservation of energy and therefore belongs to the realm of superstition. Nevertheless, every now and then attempts are made to publish the invention of a perpetual motion machine.

Further source quotes:

<https://de.wikipedia.org/wiki/Urknall>:

The article at this address contains a condensed outline of the entire scope of all errors in the Big Bang theory, which for the most part are completely nonsensical, but are now declared as "scientific findings". I quote this post with comments.

"In cosmology, the beginning of the universe, i.e. the starting point of the creation of matter, space and time, is called the Big Bang." There is no "beginning" of the universe because matter exists forever. So there is also no "creation" of matter. Space and time cannot "arise" at all, since they are not material entities, but the conditions of existence of matter. Terms such as "early phase of the universe", "early" or "young universe" or "infancy" have no logically justifiable meaning.

"According to the standard cosmological model, the Big Bang occurred about 13.8 billion years ago. Big Bang theories do not describe the Big Bang itself, but the early universe in its temporal development after the Big Bang." The calculation of this number is without any physical content. It arises from the extrapolation of spatially and temporally narrowly limited, sometimes even incorrectly explained, unprovable interpretations of observation results. One cannot assume that cosmic parameters which existed within the duration of human existence and in spatial dimensions accessible to human observation were valid for the infinite universe in all eternity of

time. Such an extrapolation is completely meaningless. The nonsense is reinforced by the fact that the narrowly regional supposedly observed expansion does not exist at all due to a misjudgment of measurement results. All initial statements on which the extrapolation is based are incorrect. You can do the math however you want, wrong initial statements do not result in correct solutions.

"The Big Bang does not refer to an explosion in an existing space, but rather the joint creation of matter, space and time from an original singularity." This is the highest form of mysticism, it is a parody of logical thinking. Again one invokes the "origin" of matter, and with it the "origin" of non-material conditions for the "arising" matter. The possibility of the existence of a singularity as a starting point has already been refuted above.

"This results formally by looking backwards in time to the development of the expanding universe up to the point at which the matter and energy density becomes infinite." From the length of time that man had previously available for observing the cosmos, one could deduce that the narrowly limited regional movement parameters found could apply in larger spatial scales and have always been valid afterwards. To mercilessly carry out a linear extrapolation down to a zero point on such a grotesque paradigm. Such extravagant excesses only exist in cosmology. Nobody else would think of asking how one could calculate back when a yeast dumpling rising in the steam was united in one point. Now seriously again. The time span of observation of the universe by humans, it is about a few thousand years, is negligibly small compared to the cosmic processes, which are about billions of years and far beyond, which are altogether of infinite duration. So small that a generalization of the movements found to all cosmic processes is completely beyond a realistic assessment. The likelihood of this is practically zero. The postulated infinite energy density puts the crown on pseudoscience. If there had been such a singularity, the universe would still be there because it could not have expanded.

"Accordingly, shortly after the Big Bang, the density of the universe must have surpassed the Planck density." These are completely unclear empty phrases. What, please, is a "*Planck density*"? A new term to disorient science? And how can one "*surpass*" Planck's quantum of action? The extremely "exact" statement that it "*must have been*" that way hardly adds to the clarity.

"The general theory of relativity is inadequate for the description of this state of affairs; however, it is expected that a theory of quantum gravity, which has yet to be developed, will achieve this." There is certainly no theory at all for the description of such a "state of affairs", not even in the future. The named "state" is a pipe dream that should finally be discarded. There is no need for a theory to describe it. "Therefore, in today's physics there is no generally accepted description of the very early universe, the Big Bang itself, or a time before the Big Bang." Why doesn't it actually exist? The answer is very simple: there is no such thing as a "*very early*" universe. There is also no such thing as the "*Big Bang itself*". And the question of the "*time before the big bang*" is an intellectual own goal. You have to make a decision: Did the time "come" with the Big Bang, as announced above, or did it already exist? Both at the same time is out of possibility.

"Big Bang theories deal with the development of the universe from a point in time more than a Planck time (about 10^{-43} seconds) after the Big Bang to about 300,000 to 400,000 years later, when stable atoms could form and the universe became transparent. The further development is no more counted in the area of the Big Bang." This means that we are not examining the Big Bang itself, "it is the work of God". So said it by Pope John Paul II. And when God spoke, there was light, there was light, and the big bang was over. All that remains is to investigate why he has waited 300,000 to

400,000 years to do this. But we certainly do not have the right to do so, because we do not have to judge the work of God.

You can see very clearly in this article that the entire Wikipedia entry with physics or cosmology, if you want to call both science, has no similarity. The whole Big Bang story is a superstition based on the Catholic doctrine of creation, which is not relevant in physics. The often used saying the Big Bang theory describes the universe best of all theories is probably very far from a fact.

In cosmology, faithful to the errors described in this Wikipedia big bang article, attempts are made to preserve the big bang theory with new additional definitions and freely conceived postulates, although it has long since become untenable. Three following basic errors do not block the way to extensive speculations:

- The non-recognition of the eternity of matter and consequently the assumption of its creation at a determined point in time.
- The non-recognition of the infinity of the spatial expansion of matter, resulting in the assumption of a "whole" universe.
- The consideration of non-material entities as material objects, resulting, for example, in the postulates about the spread of forces in space or the descriptions of the expansion of space itself.

https://de.wikipedia.org/wiki/Expansion_des_Universums:

"The expansion of the universe is the increase in the spatial dilatation of the universe derived from observations." There is always deception here. There are no "observations" about the increase in spatial dilatation. There are only spectral measurements that have been misinterpreted and thus ultimately produce this error. "This is defined by the continuous increase of the distance between objects far apart in space.

In accordance with the Big Bang theory, the expansion of the universe after the initial inflation slowed in the first billion years of its existence. The rate of expansion has increased since then. The explanation of this observed accelerated expansion is the subject of current research and has led to the concept of dark energy." However, the concept is useless because it is based on speculation that has been used exclusively to support the Big Bang hypothesis at any cost. Other views are not permitted and are suppressed enduring. This is by no means a scientific approach to solving problems. At least it is admitted here that the concept of dark energy is not a result of observation, but an arbitrary determination, because the error of the expansion cannot be explained in any other way.

<https://de.wikipedia.org/wiki/Kosmologie>:

"Cosmology

Cosmology (Greek κοσμολογία, kosmología, "the doctrine of the world") deals with the origin, development and basic structure of the cosmos and with the universe as a whole. It is a branch of astronomy closely related to astrophysics." The sentence contains two curiosities that do not exist: the "origin" of the universe and the universe "as a whole". To put it more clearly, it would be about the "origin of eternity" and about "the whole of infinity". Even after pondering about it for a long time, it is impossible to provide any useful information.

“Cosmology describes the universe by means of physical laws. In particular, the “lumpy” distribution of galaxies and galaxy clusters observed today, with large voids in between, in contrast to the spatial homogeneity on larger scales, is to be understood.

Cosmology also describes the overall slight curvature of space, the structures that differ over time (radiation, quasars, galaxies), the cosmic background radiation, the redshift of light interpreted as an expansion of the universe, the numerical values of the natural constants and the abundance of the chemical elements in the universe.“ With the “curvature of space” we have the problems described above, the “background radiation” is a misinterpretation of measurements that have been given a misleading name, the “expansion of the universe” is simply a mistake. What remains are the different structures and the natural constants, the exploration of which contains many worthwhile tasks. Most important, however, are the element abundances giving insights into the development of the solar system. But if you want to draw from close-range results conclusions about the “whole” universe, the next errors are already within sight.

https://de.wikipedia.org/wiki/Dunkle_Energie:

“In cosmology, **dark energy** is a hypothetical form of energy. Dark energy was introduced as a generalization of cosmological constants to explain the observed accelerated expansion of the universe. The term was coined in 1998 by Michael S. Turner *).” It must be made clear here that an expansion of the universe has not been “observed”, and certainly not an accelerated one. Both are based solely on a misinterpretation of the redshift of the spectra of distant objects as a result of the Doppler Effect from the movement of these objects.

"The physical interpretation of dark energy is largely unexplained and its existence has not been directly proven experimentally." Here, too, it must be clearly stated that "*not directly proven*" is an empty phrase used to deceive science, because it has not been proven at all. It cannot be proven either, because it does not exist, it is pure speculation, with which is to be explained the force leading to the expansion of the universe, and explaining the missing 70% of the energy would be required for the Motion sequences in the universe according to the big bang hypothesis. But since the expansion, like the big bang itself, which would have to be assumed for it, cannot be proven at all, the phrase remains empty.

“The most common models associate them with vacuum fluctuations. The physical properties of dark energy can be investigated through large-scale mapping of the structures in the universe, for example through the distribution of galaxies and galaxy clusters. Corresponding major astronomical projects are in preparation.” In preparation, therefore, would once again be the waste of considerable material, financial and human resources for researching phantoms, similar to what is already the case with the search for gravitational waves. In order to save one's honor we can only hope that the measurements will be of importance for other contexts.

“After the expansion of the universe was considered established through the observation of the redshift of the galaxies, more detailed measurements were carried out to determine the speed of the expansion and to determine its change over a lifetime” - what a painterly expression! – “of the universe. Traditional models said that the expansion is slowed down due to matter and the gravity acting through it; Measurements should quantify this slowdown.” That is the first big mistake. To do this, you first have to show the expansion, but that already fails.

“The measurements, which were essentially based on distance determinations of distant supernovae of type Ia (SN Ia), showed, contrary to the predictions, that could be derived from the assumptions valid up to that point, an increase in the rate of expansion (High-Z Supernova Search Team by Brian P. Schmidt, Supernova Cosmology Project by Saul Perlmutter, Adam Riess, both in the late 1990s). Schmidt, Riess and Perlmutter received for this the Nobel Prize in Physics in 2011.” **And that is the second big mistake. In all measurement evaluations by the project groups, the Lambert-Beer law was omitted from which emerge, on the one hand, the radiation transport equation and, on the other hand, the absorption law. Thus, all spectra have been calculated incorrectly, because the calculations do not include the energy loss of the radiation when crossing the cosmic distances. And as farther the object is, as greater it is. Because of this elementary calculation error, the measurements did not show the expected slowdown in expansion, but an increase in the rate of expansion. A mistake with serious consequences:**

"Since then, this unexpected observation has been attributed to an indefinite dark energy." Truly a serious consequence! The calculation error has therefore been sanctioned and instead of a correction, a completely out of thin air speculation of an unknown “dark energy” has been used, with which the following calculations have now lost all meaning: “In the models, the universe exists as the present one Time, approx. 13.8 billion years after the Big Bang, 68.3% from dark energy, 26.8% from dark matter and 4.9% from visible, baryonic matter.” If the calculation is correct of the spectra, however, one can easily determine that there is no expansion of the universe, and certainly not an accelerated one. From this one must immediately come to the compelling conclusion that the motion sequences of cosmic matter can be reliably ruled out on the basis of the big bang hypothesis. That is, there is no expansion of the universe as a result of a big bang, a statement that could already be made above with other considerations.

https://www.mpg.de/4693329/Inflation_Zyklen_Multiversum:

“The Limits of the Big Bang Theory

The most important cosmological discovery of the last century was undoubtedly the discovery of the expansion of the universe by Edwin Hubble in 1929. No other breakthrough has fundamentally changed our view of the world.” **One clarification: It is not true that Edwin Hubble with the redshift of the spectra of distant objects discovered the expansion of the universe. Hubble explicitly distanced himself from this interpretation in 1930 because the redshift has significantly different causes. Hubble had realized that.** Before that, most scientists were convinced that the universe would remain roughly unchanged and static. The expansion of space gave the universe so to speak a story for the first time.” **There is no such thing as an “expansion of space”, that's pure charlatany. A “history” of the universe does not consist in its “expansion”. It is questionable whether the universe has a history at all, even more whether it has to have one. Individual objects in the universe have a story. Stars, planets, solar systems, galaxies, galaxy clusters and others arise and pass away, that is their story. The universe, on the other hand, does not arise and does not pass away, it exists eternally in time and infinitely in space. To speak of his story is meaningless, has no content.**

“This expansion has dramatic consequences: if you trace the universe back in time, it becomes clear that the universe must have been smaller and smaller and therefore denser and hotter. Georges Lemaître was the first to take this idea to extremes by proposing the Big Bang hypothesis. Accordingly, the universe is said to have started

at one point with a huge explosion and this small, hot universe has expanded and cooled since then.” The whole thing is more a homage to the Catholic creation than a science. The Lemaitrean “primordial atom”, which is said to have produced all of the matter in the universe through continuous nuclear fission, is more of a grotesque than a scientific consideration. However, this statement is not surprising. Lemaitre was a Belgian Abbé who was inspired by the idea as a teenager of bringing the Catholic doctrine of creation into harmony with science. But that was an attempt by an undertaking that definitely cannot succeed.

“Shortly after the Big Bang, the energy density was so great that there weren't even atoms, only elementary particles that constantly collided. Even photons (light particles) could only fly straight ahead over short distances until they collided with electrons again. As a result, the universe was completely opaque at that time.” These omissions are so far scientific that they do not require any comment. “About 380,000 years after the Big Bang, it was cold enough for the first atoms to form. Since photons interact much weaker with atoms than with free-flying electrons, for example, the universe suddenly became transparent and the light, which was able to fly free for the first time at this point, still penetrates our cosmos.” The author of this article shows an astonishing imagination with such performances, but their resilience to a truth content proves to be very problematic. “This” cosmic background radiation “in the microwave range was measured for the first time in 1965. It gives us, so to speak, an infantile image of the universe and shows that our universe was almost the same temperature everywhere. Slight temperature fluctuations are shown by the different colors. These small temperature differences later determined the distribution of galaxies. In colder regions the matter was a little denser, and due to the influence of gravity, the matter gradually “clumped” in these areas and formed stars and galaxies. In contrast to this, the slightly warmer areas were also a bit emptier, and have become increasingly emptier over time, because nearby, denser regions have drawn the matter out even further. In this way the great empty spaces of our universe were created. The cosmic background radiation therefore offers us convincing evidence that the universe (almost 14 billion years ago) was dense and hot.” All this is no more and no less than the representation of the Bible with scientific vocabulary. None of this can be substantiated by observations, most of the explanations contradict the laws of nature and elementary logic. And the cosmic background radiation not only offers no convincing, but no evidence at all of a formerly hot and dense universe. Background radiation is a misleading suggestive word, because this radiation has nothing to do with the background or with the words of the author an “infant image of the universe”. It is the radiation that is generated in all processes of creation and destruction of cosmic objects, which run eternally in time and infinitely in space, and which spreads in the universe. The propagation proceeds according to the radiation law, so it is not surprising that it has similar parameters depending on the distances.

“The discovery of background radiation led to widespread acceptance of the big bang hypothesis. However, the big bang theory leaves a number of questions unanswered. One such question is known as the “horizon problem”. It is still unknown how big our universe is, but it extends for at least 14 billion light years in every direction, because that's how far we can see at the moment.” If you want to find out how big the universe is, you have to find out how big the infinity is. That is a nonsensical task. So you don't have to be surprised if this is “still unknown”. But the horizon problem is not the most moving phenomenon in all of these discussions. Much more serious is quite certain that the majority of the energy required for the motion sequences of cosmic matter is missing when viewed with the Big Bang hypothesis. Nor can one find a force with which

one could show the accelerated expansion of the universe. So the “*whole*” universe would have to end in a gravitational collapse after a finite time. So that this does not happen, one finally invented the dark energy to which one assigns these missing quantities, and one has already ingeniously eliminated all the problems that the wrong theory produces and now one does not worry about the substantial errors and must make no more thoughts. "If you take this expansion and trace it back to shortly after the Big Bang using the equations of the theory of relativity, you can see how the universe does not contract to one point, but to a large area." **Aha. We now even have a universe without any space - it "contracts to form a surface". But that's still better than a singularity, because it had no extension at all.** “So the Big Bang did not take place at one point, but over an extensive area! But this area consists of several regions that could not have any contact with each other up to this point, as there should have been nothing before the Big Bang. Nevertheless, the Big Bang is said to have taken place in all of these places at the same time! This hypothesis is not justifiable if one believes in cause and effect, because how can one synchronize countless big bangs when there is no time? It is therefore much more reasonable to assume that the Big Bang was not the beginning, but an event in the history of our universe. But what was before? What could trigger the big bang?” **Then the authors' ideas run wild. One can no longer empathize with the many logical somersaults. It would make much more sense to remove the unspeakable superstitions of the Big Bang theory entirely from science and look for a suitable theory with which one can map reality in a natural way. In the end we see that the ideas and the questions that arise from this theory become more and more incomprehensible, more and more absurd.**

At the above address there now follows another bizarre text with explanations about inflation, that is a movement of matter with a multiple of the speed of light, about "*folds in space*", which are "*tightened*" as a result, about energy, which after the end of this phase is converted into matter - as if it were not yet matter, via a cyclical universe in which before the Big Bang - before which there was supposedly nothing at all - a contraction took place, via a quantum gravity theory, via the String theory, according to which there can be both cyclical and inflationary universes - in which matter is also produced again, and all sorts of ugly peculiarities, so that I consider it inappropriate to quote these omissions again. Interested parties can read in there if necessary. The address is above.

Nobody comes anywhere near a statement with the intention of putting the theory to the test, from which by and large nothing is to be obtained, about which there are countless observations that refute it, and which even support it simple logical considerations fail. The much-invoked word that the big bang theory describes the universe best of all theories is visibly becoming a narcissistic self-adulation of its advocates.

<https://de.wikipedia.org/wiki/Universum>:

"The universe (from the Latin *universus* 'total'), also called the cosmos or the world space, is the totality of space, time and all matter and energy in it." **And again, energy is not matter (!).** “The observable universe, on the other hand, is limited to the existing arrangement of all matter and energy, (!) Starting with the elementary particles up to the large-scale structures such as galaxies and galaxy clusters.

Cosmology, a branch of both physics and the current philosophy of the natural sciences, deals with the study of the universe and tries to answer properties of the universe such as the question of the fine-tuning of natural constants." **Now the "creative Think" becomes bizarre dimensions: One want to tinker with the natural constants. But**

that is then an excessive overestimation of oneself, because one cannot change the laws of nature with one's consciousness.

"The theory generally accepted today for describing the large-scale structure of the universe is the standard model of cosmology. It is based on the general theory of relativity in combination with astronomical observations." **That is a mistake. It is precisely not based on the latter. All observations that contradict the standard model are unceremoniously faded out, hushed up or simply ignored.** "Quantum physics has also made important contributions to the understanding of the early universe in particular shortly after the Big Bang, in which the density and temperature were very high." **When at last will this pseudoscience of an "early universe" from the time "shortly after the Big Bang" be thrown away?** "A broader understanding of the universe will probably only be achieved if physics drafts a theory that combines general relativity with quantum physics. This "Theory Of Everything" or also called the world formula of quantum gravity is supposed to explain the four basic forces of physics in a uniform way." **Let's leave the world formula aside for now. At the moment, as you can see, we really have other worries.**

...

"The classic Big Bang theory, which is widely recognized today, assumes that the universe emerged from a singularity at a certain moment, the Big Bang, and has expanded since then (see expansion of the universe). Time, space and matter came into being with the Big Bang. Times "before" the Big Bang and places "outside" the universe cannot be physically defined. Therefore, in physics there is neither a spatial "outside" nor a temporal "before" nor a cause of the universe." **Clearly to be seen: Here some basic absurdities of today's views are summarized in a few sentences.**

"Since the scientific laws for the extreme conditions during the first 10^{-43} seconds (Planck time) after the Big Bang are not known, the theory does not, strictly speaking, describe the actual process. Only after the Planck time has elapsed can the further processes be physically traced. So the early universe, for example, may assigned a temperature of $1.4 \cdot 10^{32}$ K (Planck temperature).

The age of the universe is measured very precisely thanks to precision measurements by the Planck space telescope: 13.81 ± 0.04 billion years. An earlier determination of the age by the satellite WMAP gave the somewhat inaccurate result of 13.7 billion years." **Compared to the eternity of the existence of the universe, both values are inaccurate enough.** "The age can also be calculated by extrapolating from the current rate of expansion of the universe to the point in time at which the universe was compressed at one point. This calculation depends heavily on the composition of the universe, since matter or energy slows down the expansion through gravity. The dark energy, which has so far only been indirectly detected, can, however, also accelerate the expansion. So different assumptions about the composition of the universe can lead to different ages." **Has it really not occurred to anyone that this whole calculation is meaningless, since the initial values for it were derived on the one hand from errors and on the other hand they were determined locally by transferring the validity measured values have arisen in size ranges in space and time that are many powers of ten larger than the measuring ranges? This completely rules out the validity.** "A lower limit for the age of the universe can be given by the age of the oldest stars. In the current standard model, the results of these methods agree very well." **Completely clear. If everyone counts with the same errors, namely with the Big Bang as an axiom and a logically following expansion, all will end up with similar values. That is not surprising and also not a special quality feature.**

“All calculations for the age of the universe assume that the Big Bang can actually be regarded as the beginning of the universe in time, which is not certain for the state immediately after the beginning of the Big Bang due to a lack of knowledge of the laws of physics.” **Just like that.** “A static universe that is infinitely old and infinitely large can be excluded, but not a dynamic, infinitely large universe.” **Do we come to a ray of hope now?** “This is justified, among other things, by the observed expansion of the universe.” **Oh, no, not.** “Furthermore, the astronomer Heinrich Wilhelm Olbers already pointed out that with infinite expansion and infinite age of a static universe, the night sky would have to shine brightly (Olbers' paradox), since every glance you look at the sky automatically lifts up a star would have to fall. If the universe is infinitely large, but only has a finite age, the light from certain stars simply has not yet reached us.” **I have dealt with this so-called paradox in detail in my book “Matter and Physics. I will only mention the result here: It is a very simple calculation error. It is not a paradox.**

“The space between galaxies is not completely empty, but contains not only stars and dust clouds, but also hydrogen gas, among other things. This intergalactic medium has a density of about one atom per cubic meter. Inside galaxies, however, the density of matter is much higher. Likewise, the space is interspersed with fields and radiation. The temperature of the background radiation is 2.7 Kelvin (about -270°C). It was created 380,000 years after the Big Bang. The universe consists only to a small extent of known matter and energy (5%), of which only 10% emits light and is therefore visible. A larger part (27%) is made up of dark matter. Dark matter has been indirectly detected by a large number of observations, but its composition is still largely not understood. Most of it is dark energy (68%) which is responsible for the accelerated expansion. The dark energy was inferred from the data from distant supernova explosions, its existence is confirmed by satellites such as COBE, WMAP and Planck, balloon experiments such as BOOMERanG as well as gravitational lens effects and the galaxy distribution in the universe.” **All of this can now be finished with a very short comment: Countless other calculations can be made. But if everyone uses the same phantom as a basis, everyone will arrive at the same errors.**

In order to advance in physics and cosmology, two basic evils must be thrown off:

- 1. The concept of matter favoring creation or that one being completely abolished,**
- 2. The Big Bang Hypothesis.**

***) Michael S. Turner**

Michael Stanley Turner (born July 29, 1949 in Los Angeles) is an American theoretical astrophysicist. He works at the University of Chicago. He is primarily interested in cosmology and is considered a leading expert on the early days of the universe.

Turner began his physics degree at the California Institute of Technology. After completing his bachelor's degree, he moved to Stanford University in 1971. In 1973 he made his master's degree, in 1978 he received his doctorate there and was then an instructor. He then became an Enrico Fermi Fellow in Chicago at the Enrico Fermi Institute, where he became Assistant Professor in 1980 and Professor of Astronomy and Astrophysics in 1985. He is also director of the Kavli Institute for Cosmological Physics at the University of Chicago. Since 1979 he has also been a member of the Aspen Center for Physics, of which he was chairman from 1989 to 1993. He also works at the Enrico Fermi Institute, the Fermi National Accelerator Laboratory (from 1983) and the Argonne National Laboratory. At the university, Turner was director of the astronomy and astro-physics department from 1997 to 2003. At Fermilab he founded

the working group for theoretical astrophysics together with Edward Kolb and David Schramm. In 2013 he was President of the American Physical Society.

Work:

Turner did important work for the connection of particle physics and cosmology with regard to the particle formation processes in the early universe. He carried out further research on nucleosynthesis, inflation, dark matter, structure formation in the universe and, most recently, especially on dark energy. This term was coined by Turner himself. The Early Universe, written together with Edward Kolb, is considered the most important book in this field.

Writings: Kolb, Turner The Early Universe, Addison-Wesley 1990.

Source Turner: https://de.wikipedia.org/wiki/Michael_S._Turner

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