What is pseudoscience and how to recognize it?

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The term "pseudo-science" is often found in the confrontation of competing scientific theories. Therefore, the term is often used to discriminate against the opposing opinion, which is why one often finds no clear concept description. It behaves just like the false belief. True faith is always your own and all other beliefs are suppressed by censorship or defamation. That's the simple answer.

The main feature: the contradiction in a theory

For a more detailed answer we have to deal with philosophy. How do you can recognize science from pseudoscience? The occasion for this job was offered to me as my post about the electric universe in a forum was rejected as pseudoscience. I only can speak for the physics field. Physicists have now obviously no insufficient philosophical training more, which is why they succumb to ideas that are beyond reason. What is meant here is the Theoretical Physics. This is not just about the string theory, which also astrophysics is concerned. About other theories I venture no judgment because I know them only superficially.

The history of philosophy has spawned two competing tendencies that early rationalists and empiricists. The view of those rationalists was that they wanted to construct the explanatory theories of science without any recourse to experience, just with the help of reason; because any reasonable proposition (i.e. one which is recommended by its clarity) has to be a true description of the facts. In opposition to this theory, empiricism maintains that only experience can decide upon the truth or falsity of a scientific theory.

According to empiricism, pure thinking alone never can lead to the truth of the facts; we need to use experience and experiment. The struggle between the earlier rationalists and empiricists was thoroughly discussed by Immanuel Kant in his *Critique of Pure Reason* of 1781, in which he tried to refute pure rationalism. That's him not quite succeeded, since he did not yet have the set-theoretic armor. This was achieved only with the predicate logic at the end of the 19th century by Gottlob Frege and Charles S. Peirce. However Kant's thesis proved that the scope of our knowledge, limited to the field of possible experience and that speculative thought beyond this field - an attempt to build up a metaphysical system out of pure reason - has no justification, is for the science of great benefit. He thus marked the beginning of the Enlightenment.

Many philosophers bothered the question: How can the mind grasp the world? The simplest answer is. By means of the senses, as a representation of reality in the mind. It is the image that the spirit creates of reality, not identical with reality but it is similar to it and always incomplete. The image is dependent on the sensory performance of human and the structure of thought, his culturally conditioned beliefs. Here, the image of reality is always a function of reality, which is unique but not invertible unique.

The idealistic notion that the mind could retroactively to the reality, is the position of a Magician that is maintained in religions often. The modern equivalent of the magic is the attempt to get out of a mathematical model more knowledge about reality than has been

inserted into the model, so to generate new knowledge without experience. Thus, the theoretical physics of the 20th century override the drawn borders of Kant, with the result that they always produced new contradictions.

They called these contradictions paradox. One of the most talked contradictions is the twin paradox or clock paradox, called the contradiction between everyday experience and special relativity. Another contradiction of quantum mechanics known as "Schrödinger's cat", whose condition should depend on the viewer.

Now Karl Popper has already proved in his work "What is dialectic" in 1940 that a theory is worthless in which two contradictory statements are tolerated.

> *It cannot be emphasized too strongly that if we change this attitude, and decide to put up with contradictions, then contradictions must at once lose any kind of fertility. They would no longer be productive of intellectual progress. For if we were prepared to put up with contradictions, pointing out contradictions in our theories could no longer induce us to change them. In other words, all criticism (which consists in pointing out contradictions) would lose its force. Criticism would be answered by 'And why not?' or perhaps even by an enthusiastic 'There you are!'; that is, by welcoming the contradictions which have been pointed out to us.* Karl Popper

Contradictions in a theory must be fought, but in practice, the critics of the contradictions to be fought.

It is easy to destroy the clock paradox, if you remember that our mind receives only a representation of reality. Consider once the perspective illustration. Everyone is aware from experience that as a result of the imaging, the depth information is lost. Things appear smaller to us in the distance. The distant observer sees us also smaller than we are actually. This is no contradiction, because experience teaches us that the mapping rules of perspective produce this distortion in the image. The depth is expressed as a function of both plane coordinates of the image. It is no different to the clock paradox.

The Lorentz transformations are in reality not only features that change the point of observation, but also mappings of a supposedly 4-dimensional space-time in the space of intuition, because the time is expressed by the velocity of the observer and clocks are functions of position and velocity and time is not autonomous as always claimed. Clocks physically indicate the cycle of an energy flow. Thereby time is any clocked energy flow. We refer to the flow of sun's energy to earth on its way around. If the velocity is the ratio of change in position per time the time always can be expressed as the ratio of change in location to speed and align the coordinate system so that a coordinate coincides with the path of movement. Thus, the time turns out to be dependent on the location. This is also expressed in the term “local time”. Every place of earth has its own time. If one were a 4-dimensional space with time as a coordinate, then you'd have to stop all the clocks. Then you could tell time as independent of the location. But the contrary is just the clock paradox, since the moving clock should have a different motion than the clock at rest.

Special relativity turns out to be a picture theory. But what use has a theory that describes the perspective from the viewpoint of a fast electron? The same thing goes with the general theory of relativity. It also does not describe the reality but the image of a curved hyper surface in the space, the curvature of which is to be effected by a force of gravity. But forces are tied to masses not to rooms and masses fill off volumes, no surfaces.

The dialectic of science as a defense

Now, however, some people seem to think, the contradiction belongs to the theory and call this a *dialectical* contradiction.

But that is not at all meant but science develops from a thesis or theory. Over the time, new experiences accumulate that eventually come with the theory in conflict. It is then placed a new theory, the antithesis.

Now it may be that the old theory had also worthy of preservation aspects, which is why we try to prepare from thesis and antithesis a synthesis and, in turn establish a new theory that contains both elements of the thesis and the antithesis. After some time, then the process begins again.

Karl Popper states now: If now a dialectician claims that contradictions in a theory are fertile or that they would bring progress, then meets that in a sense, only for as long as we are determined not to tolerate any contradictions in the theory and every theory containing contradictions to change. It is only justified in our conclusion, that criticism, that exposing of contradictions, caused us to change our theories and thus to progress.

In practice, but usually people hold so firmly at their theories that they would often prefer to perish with it, as they were convinced of the inaccuracy of their ideas.

When dialecticians rely on the fertility of contradictions, so they call for abandoning the laws of traditional logic. They argue that the dialectic leads in this way to a new logic - to a dialectical logic. Herein, as Marxists as Theoretical physicists are unanimous. An example of this can be found in *Quantum theory and Philosophy* by Werner Heisenberg.

A theory is pseudo-scientific from the perspective of critical realism if it appears to the outward appearance as a scientific theory, but includes enhanced dogmas, doctrines, which must not be criticized at all costs.

Typical defenses against criticism

Examples of pseudo-scientific theories of Scientific Marxism and the standard theories of Theoretical Physics, especially the Big Bang Theory. About the Scientific Marxism is only to say as much, that the author has witnessed directly its failure and has of course recognized the internal contradictions of its failure and its inability to criticism.

The parallels with the behavior of the representatives of the current representatives of Theoretical Physics are striking.

The term *standard theory* implies already that this theory is beyond criticism.

Pseudoscience must repel any form of criticism, otherwise it could not survive because of its inherent contradictions. Also on the defense mechanisms you can recognize pseudoscience. The defense is not content with arguments, on the contrary, the critics will be fought. Quite prominent scientists, that were fought massively, are Halton Arp for the detection of intriensic redshift and Paul Marmet, who has settled in detail with the faulty logic of relativity apart. Typical defensive patterns are:

- Any contribution to a pseudo-scientific theory begins with, that the founder of the theory will be appreciated by the fact that one confers the founder that he had

already foreseen since the founding person ever has much authority, that it is beyond any doubt. Examples: Karl Marx, Lenin, Albert Einstein. A quote or a reference to a more or less suitable passage should conclude this introduction. If you did that, you can pretty much mortise any nonsense if it serves only the purpose of furthering the glory of theory. Now there is no one dare to voice criticism. All disciples of the theory will prove solidarity.

- The representatives of these theories develop an arrogance that is not justified. They repute themselves as the winner of the history or as the crown of science, for those who go out to discover the world formula and those who want to know God's will.
- They declare the citizens for immature and from their arrogance position they want to protect society from foreign influences. They forbid the reading of critical books and try to control the access to the media through peer-reviews, which is the same in this case as censorship.
- It will be issued from time to time nonsensical reports of success, the occurrence is not to be questioned, such as the discovery of the accelerated expansion of the infinite cosmos or the discovery of gravitational waves, caused by collision of the hypothetical black holes on an Earth that is never quite shake free.
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From the painful experience of history until the mid-20th century democracy in Germany is grown up, supported by the example of the United States history. Democracy is a well balanced equilibrium of social forces. This balance is maintained only through active participation of all members of society. As in Germany, the research lies at federal level, although there are at the Universities Research Councils but not at the federal level. Research is controlled by lobbying. So is a gap between spiritual science on the one hand and industry research on the other. Natural science is neglected, with few exceptions. Besides Senkenberg Society and the connection of science and medicine, there is nothing to read on Google in the first pages. On the other hand shows the decline in voter participation of citizens in Germany that now half of the society is not represented by political parties. This shows that we as a society, have removed ourselves far from the ideals of the postwar period. Increased paternalism associated with a social decline of the middle class leads to a polarization of society. Today, the Internet is still the only platform where democracy is lived. But even here the attempts of censorship are becoming more common, supposedly to protect us and our security. I remember well the “antifascist wall” who has imprisoned citizens of the GDR and collapsed by the peaceful revolution in 1989th. Do we want to actually build so-called protective walls again, particularly in our minds?

For example, the rules on posts in communities at Google include the passage that the marketing of personal alternative theories are undesirable. This is already taken in the community Space as an opportunity to refuse a post to the criticism of the Big Bang Model of cosmology, although it is not about a personal theory nor to any marketing here. Particularly embarrassing is the thing, if the administrator of this community was trained at a state internationally renowned elite university. No, it comes to bring the belief in the

creation in harmony with the nature science[1].

This strategy succumb since the 20s of the last century, increasingly more Astrophysicist due to underdeveloped unilateral philosophy education [2].

As such harmony in the final consequence looks, you can study at the example of China, where state socialism is brought into harmony with the free market economy.

Conclusion

A good education in science would be the better protection of citizens against pseudoscience. Instead, religion is in the focus and creationism is not only in astrophysics, but also in biology on the rise. It is time that we remember in the natural sciences to the engineering traditions and begin to fight the church in our heads.

Faith is not knowledge and knowledge you can not have without doubts.

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1 Ernst Koch: *Von Christi Händen zu einem Urzustand Energiekonzentration: Eine Suche nach Annäherung von Schöpfungsglaube und Naturwissenschaft am Beginn des 21.Jahrhunderts* http://www.amazon.de/gp/search?index=books&linkCode=qs&keywords=9783839157756

2 Laut Studis Online ist die Kombination Physik+Philosophie eine recht exotische Ausbildungsrichtung, wenn man die dortigen Kommentare der Studenten verfolgt.-