PSEUDOSCIENCE AND WHAT WE CAN DO ABOUT IT

Come visit me, dear neighbor, by golly.
We'll discover something together… and you'll
teach me... some calculations.

A. P. Chekhov. Letter to a scholarly neighbor

Suppose, reader, that you have to explain to a Martian what is meant by the term “beautiful person” and by what features he can be distinguished from an ugly one. Think for a moment, and I hope you will agree with me that the task is not so simple. It is difficult to explain the obvious. The situation is similar with pseudoscientific theories. For a professional scientist, it is usually not difficult to determine what is in front of him, but it takes effort to explain it clearly.

What should a reader who sincerely wants to understand the problem do? As you know, it is useful to take the side of the opponent and repeat his path, i.e. in this case to create your own pseudoscientific theory. Of course, it is quite difficult to develop a good, well-developed pseudoscientific theory. Applicants must realize the enormity of the enterprise. To help the reader, the author offers the world's first “Short Self-Tutorial on the creation of pseudoscientific theories”. Its value lies in the fact that all the advice is taken by the author from real life and, therefore, well-tested.

A short self-tutorial on creating pseudoscientific theories

Your action	Examples	Comment
1. Select a field	There are 4 possible options: a) biofield; b) information field; c) energy field; d) an arbitrary mixture of the previous three or any new field unknown to science.	It is better not to deviate from the proposed options. Usually people don't ask questions like “what does ‘biofield’ mean and what laws does it obey”, but they may ask about unfamiliar things.
2. Links to articles by great scientists	Examples: Euler, Leibniz, Poinca-Re. Einstein is obligatory. Do not refer to Newton - bored at school.	It is also good to have the writings of another refutation of the laws. Then in disputes it is possible to ask with surprise “How, you are not familiar with the works of X?”. And it does not matter that these works were published at a conference on speleology 20 years ago. The effect is assured.

Your action	Examples	Comment
3. Determine exactly how all of humanity benefits from it	Promise a visible effect in 2 to 5 years. Less than two - they will not forget and will demand to show it; more than five - they will not wait and will lose interest.	Your pilot plant, of course, is already in operation, but it is impossible to inspect it at this very moment (explanation options: it is in another city, it is being finalized, it is visible only to those who believe in all this).
4. Find a rationale for why no one has discovered "it" so far	This is the most difficult, if we take into account point 3. This is where you have to use your imagination. For example, your field can be detected only by some human organ (preferably the brain, although variations are possible).	It is desirable to have a device to "catch" your field. If they want to study it in detail, tell them that you can do it after obtaining a patent and smile understandingly.
5. Introduce something Japanese	Examples from "ordinary" science: Lie derivative, Kobayashi - Maskawa matrix.	Gives mystery and depth. You can't use Lifshitz's potential - he's not Japanese.

Dangers and how to avoid them

Professional scientists overshadow the existence of pseudoscientists and are a major danger for them. Unfortunately, contact with the professionals cannot be avoided for the development of your offspring. Therefore, you need serious preparation. It is necessary to know many sections of physics. Read popular science magazines. At first public dispute with scientists is undesirable. You can start with absentee disputes or with people who know physics even worse than you.

Publications. In the journals devoted to ordinary science, reviewers "cut off". It can be explained, for example, by a conspiracy of "relativists" (from a real conversation with the participation of the author of this text; they meant supporters of the special theory of relativity). Publish in the works of any institutes - for money now sometimes it turns out, participate in any conferences, where it will be possible to get.

After a little bit of mastering, you can enter into disputes with a scientist. In disputes often introduce new terms, refer to scientists of the beginning of the last century, firmly stand on the fact that you - "another science", and your opponents - shortsighted retrogrades without a drop of imagination. To understand you, it is necessary to rise to a new level of consciousness, which is inaccessible to professional scientists digging into minutiae. And the most important thing is to work on your mistakes! After every argument with any scientist, analyze his objections and think of counter moves. In this way, over time, your position will only become stronger.

About pseudoscientists

I hope that after reading the Self-self-tutorial, readers will already be able to understand the situation, even without going into the details of a particular theory. The more elements from the Self-Tutorial you find, the more surely you can claim that you are facing a pseudoscientific theory. The author himself was repeatedly convinced of the amazing effectiveness of the Self-Tutorial, written a decade ago.

The pseudoscientists themselves do not represent any characteristic type, although their variety is limited. One thing they have in common is that they do not understand the field of physics, the terms of which they use. Let us take a closer look at them.

The first type are sincere benefactors of mankind. These are good, but unhappy people who do not understand why everyone dismisses them. After all, their idea is so simple and promises such benefits! So, what if it contradicts, say, Maxwell's equations. Then those equations need a little tweaking! The fate of such people is sad.

The second type are the refutationalists of the fundamentals of physics. These are also more or less harmless people publishing at their own expense whole textbooks with New Physics (by the way, they are easily identified by a large number of exclamation marks in the text and a large number of words beginning with a capital letter).

A digression is appropriate here. After all, ordinary scientists also propose new laws and introduce new fields. So why one - just a scientist, and the other - with the offensive prefix “pseudo-”? In fact, the man who dares to any innovation in science, takes on a heavy burden: he must prove that his idea does not contradict all the experimental data. This is what distinguishes the scientist from other people also trying to explain natural phenomena. So, once again: the scientist, developing a new theory, constantly checks whether it does not contradict the experimental data. It is not necessary to conduct all the experiments anew. Already existing laws are built on them. So, it is necessary that the new theory “only” does not contradict the already tested laws in the area of applicability of the latter. False scientists, on the contrary, having created their theory, naively believes that his work is done and it remains only to slightly adjust the known laws. This can be done by other people less talented than him. The reader, I hope, realizes how naive this point of view is.

The third type are crooks, clever and unscrupulous. It is hard to say where they get their initial capital. Perhaps they find simple-minded officials and, promising golden mountains in a few years, receive cash subsidies. Some of this money is spent on articles about themselves in ordinary newspapers and magazines, which need any sensation (the author has been repeatedly amazed at what nonsense is published even in well-known publications, in the absence of popular reviews of modern discoveries, which write scientific journals), and then you can go to the officials again. This type of pseudoscientist does the most harm. They divert the already scarce money going to science and discredit it at the same

time. While the first two types are relatively harmless, the third type is a serious problem. In a normally developing society, this phenomenon can be minimized. Journals that print all of these things will lose the trust of their readers.

Now, oddly enough,

On the benefits of pseudoscience

If we consider science with all its sections and directions as a kind of spontaneously developing system, it is obvious that its development cannot go perfectly smoothly. On the contrary, only due to a large number of theories-tries, the bulk of which are dead-ends, the right path is gradually chosen. Who can say in advance which direction will be the right one? Serious scientists have also made mistakes. Ostrogradsky was dismissive of Lobachevsky's work, the French Academy refused to recognize the existence of not only perpetual motion machines, but also meteorites for the simple reason that “stones cannot fall from the sky”. Of course, in the ordinary cases described above, the diagnosis is obvious, but there are also intermediate variants. At any conference on cosmology something like this will slip through.

What to do? As far as possible to fight with swindlers and, for the sake of future Lobachevskys, to tolerate simpletons.