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The Age of the Electron

and some thoughts by Dr. Manfred Pohl

and also the question: What is happening in cosmology right now?

Yesterday, I read the following online, without citing an author:

“Electrons, these tiny particles… are among the most stable objects in the universe.

According to the latest experiments, the lifespan of an electron is at least $6.6 \cdot 10^{28}$ years – that's 66,000 yotta years (yotta – 10^{24}) or about five quintillion times longer than the age of the universe (13.8 billion years).”

66,000 yotta years is a timeframe that we can no more distinguish from infinity. If electrons have existed for so long, it is de facto proof that matter exists eternally, and therefore never originated. This is all the more significant because the measurements are also described as "at least" – meaning they could have existed for even longer.

In the second part of the statement, logic is abandoned. According to the measurements, matter has existed almost eternally, but the universe has only existed for a few billion years. This means that at the "beginning" of the universe, when matter is supposed to have arisen from nothing, matter had already existed five quintillion times longer than the hypothetical lifespan of the universe. This age estimate for the universe is never questioned. It is held to as if it were still valid. This way of thinking about the beginning of the universe could be interpreted as the Big Bang in the minds of cosmologists. I feel even more uneasy when I consider that these 13.8 billion years were not determined through measurements or observations at all, but rather through mathematical magic tricks with nonsensical initial assumptions, the origin of which no one can explain.

Now, the electron cannot exist in isolation. The positive charge of the proton, which opposes the electron, must therefore exist for just as long. This would require further measurements. Although a continuous cyclical transformation takes place between the proton and the neutron, their charge must be present for just as long, without being able to be created or destroyed. This follows from the principle of conservation of charge.

Now the author turns to the question of
Why this is important:
and concludes:
Since electrons do not decay, atoms remain together. If they were unstable, there would be no matter – from stars to humans.
This is a completely absurd thesis. Defined in this way, there could be no ions. But they are demonstrably present. On the other hand, there are also unstable nuclei, whose decay, however, does not depend on the electron environment. Their constituents, the protons and neutrons, are stable. This, too, can be demonstrated through measurements. I don't want to elaborate on this in more detail here.

Because, in my opinion, this is not the most important point. Much more significant is that the lower limit of the electrons' age, determined by these measurements and which could certainly be even greater, refutes the idea of matter arising from nothing. This has substantial consequences for cosmology as it is currently practiced. The "origin," that is, the "beginning," of the universe is thus refuted. So, it simply doesn't exist. Consequently, there is no Big Bang with which matter is supposed to have originated

(from nothing, as is still often said), there is no singularity of infinite energy density that supposedly began to expand 13.8 billion years ago, there is no inflationary phase, no expansion of the supposedly "entire" universe – and there is also no "age" of the universe because it is eternal, no "young" universe, no "early phase" or "baby phase," and no primordial nucleosynthesis either. We must familiarize ourselves with the eternally existing sporadic distribution of matter in unlimited space, which is in constant motion.

Some theoretical models, such as the Grand Unified Theories, suggest that electrons could decay over unimaginable timescales. However, after decades of searching, detectors like Borexino and XENONnT have found no evidence of decay.
Thus, the number of $6.6 \cdot 10^{28}$ years is ultimately not definitive. There is no decay, and consequently, no creation of the electron.

In practice, electrons appear to be eternal and anchor the stability of matter in a constantly changing universe.

This is the ultimate consequence. Cosmology must therefore be completely restructured, starting from scratch. There was no starting point, no moment of the creation of matter; matter exists eternally.

What the dialectical-materialist definition of matter in philosophy says about eternally existing matter has been physically confirmed by measurements.

Of course, I did not want to be satisfied with such an authorless statement. So I searched for other sources. I had hoped to find sources that were free from the described loss of logic. The result was disappointing.

A source on Google:
On the age of the electron:

The "age" of an electron cannot be defined in the same way as that of an atomic object, since electrons are elementary particles without known decay. Experimental data indicate that the lifetime of an electron is extremely long, at least 66,000 yotta years (approximately $6.6 \cdot 10^{28}$ years). This corresponds to roughly five quintillion times the current age of the universe (yotta = 10^{24}).
So, here too, despite the almost eternal "lifespan" of the electron, we adhere to the 13.8 billion-year existence of the universe.

- Infinite lifetime:
  There is no experimental evidence for the decay of electrons, which suggests that their lifetime is extremely long (in fact, eternal).
- Lifespan:
  The best measurement to date gives a lower limit of 66,000 yotta years.
- Comparison to the Universe:
  This estimated lifespan is therefore astronomically much longer than the current age of the universe of approximately 13.813 billion years.
  Thus, this illogical postulate, which diametrically contradicts the measured results of the electron age, is maintained without further explanation. This so-called "age of the universe" is the result of calculations with incorrect initial data; it therefore does not go beyond unprovable speculation. Simply put, it is inaccurate. There is no "age" of the universe.
- Elementary Particles:

Electrons belong to the leptons and are, as far as we know, indestructible elementary particles.
If they are indestructible, this is synonymous with the fact that they cannot be created. There is no beginning and no end to their existence.

Using this information, one then calculates the aforementioned useless pseudo-age ratio, which makes no comprehensible statement and is utterly pointless:
6.6×10^{28} years / 13.813×10^{9} years = 4.778×10^{18} (electron age/universe age = approximately 5 quintillion). This is a completely baseless figure, as the findings from measuring electron decay render this assumed age meaningless. In my view, it is sheer stubbornness to cling to such nonsensical mathematical manipulations.

A source from a chemical perspective:
The chemical perspective:

Electrons are considered stable and do not decay, which is related to the principle of charge conservation. In chemistry, atoms and ions with a noble gas configuration are particularly stable because they have an energetically favorable electron distribution. For main group elements, this is generally the octet rule (8 valence electrons), while for transition metals, the 18-electron rule applies, which describes a special stability with 18 valence electrons.

Stability of Electrons

- **Basic principle:** According to the Standard Model of particle physics, electrons are considered stable.
- **Conservation of energy and charge**: Their decay would violate charge conservation and requires energy that is not available.
- **Experimental confirmation**: There is no experimental evidence that electrons decay.
- **Significance**: The stability of the electron is a fundamental assumption of physics, which is confirmed by all previous observations.

Stability of atoms and ions in chemical compounds:

- **Noble gas configuration**:
  Atoms and ions achieve a particularly stable configuration corresponding to that of the noble gases.
- **Octet rule**:
  Main group elements strive for an electron configuration with eight valence electrons (such as neon or argon).
- **18-electron rule**:
  Complexes of transition metals are often particularly stable when they have a total of 18 valence electrons, which corresponds to the structure of the d-orbital system.

Here too, the statement confirms the stability of elementary particles, with no indication of the creation or disappearance of electrons. However, the author doesn't dare to conclude that these measurements have rendered the Standard Model of cosmology absurd.

Another source:
Google – Age of the electron

This source states:

Electrons have no age in the conventional sense, as they do not decay as fundamental, stable elementary particles.
What is incomprehensible is: What is the "conventional meaning" of age?

But the following "statement" now defies all reason and comprehension:
Most electrons were created shortly after the Big Bang and have been continuously present ever since.
This is a complete intellectual failure. Electrons do not decay and are not created. They have existed for 66,000 years – but most were created "shortly after the Big Bang"? Doesn't the author know what he's rambling on about? Or is it just small talk among laypeople for general amusement? Is it meant to be satire? I don't have a suitable explanation. What's clearly evident is this logical somersault I've already outlined: Electrons exist eternally, but only after they have been created. That's absurdity in its purest form.

Key points regarding the lifespan of electrons:

- No decay: The Standard Model of particle physics states that electrons are stable. Their decay would violate the fundamental law of conservation of electric charge.
- Experimental evidence: Although some theories, such as the Grand Unified Theory (GUT), suggest possible decay, this has never been observed. Experiments have found no evidence of spontaneous electron decay.
- Minimum lifetime: From the lack of decay results, a minimum lifetime of at least 66,000 yotta years ($6.6 \cdot 10^{28}$ years) could be derived.

Amazingly, all three points are correct. What could have been going through the mind of the person making the above statement? I don't know.

Summary:
Cosmology clings to its Standard Model even when observational results demonstrate its unsuitability. It lacks both the willingness and the intellectual maturity to acknowledge scientific findings when they don't fit the standard model or lead to its refutation. In psychology, such an attitude is called narcissism: You've conducted measurements, but we're right. With this, cosmology has definitively lost its status as a science; it has become a doctrine that is fundamentally untrustworthy.