About Big Bang and Inflation

It is considered certain that reality emerged from a ***Big Bang***, then expanded through ***inflation*** at an exponentially increasing rate, and that this inflation stopped ***at exactly the right time*** and entered a phase of "normal" expansion. For structures to form, an unknown kind of matter, called ***dark matter***, is needed in ***exactly the amount required*** for the universe to become as we know it.

At a certain point in time – earlier than known matter – it must decouple from radiation so that the structures we observe can emerge. Naturally, dark matter has ***precisely the properties*** required for the evolution of our universe.

Since the expansion of the universe is not slowing down, as previously assumed, but rather accelerating, the existence of an unknown form of energy, called ***dark energy***, must be postulated, again at ***exactly the amoun***t that matches the observations.

The ***ad hoc assumptions*** are highlighted in bold.

However, the absurdity of this merry-go-round of invented entities and freely assignable parameter values is hardly noticed, and the same applies to the fact that the simulation of the evolution of the universe based on it works best when it is initially constructed only from dark energy and dark matter, i.e. *exclusively* from postulated entities with postulated properties.

It is therefore doubtful whether the entire scenario deserves the designation "science": hypotheses constructed *ad hoc* to such an extent can essentially only be accepted if they prove themselves not only in the one case to which the construction refers, but also in other cases, which, however, is not possible with hypotheses about the origin of our universe, since it only occurs once.

Fortunately, known, "normal" matter only makes up 4 percent of the total content of the universe, so it doesn't contaminate the simulation too much.

Even the fact that the principle of conservation of energy, previously considered fundamental, has to be abandoned due to the expansion hypothesis seems to bother only very few people.

I, on the other hand, am convinced that there is no Big Bang, no inflation, no expansion, no dark matter, and no dark energy.

Why am I convinced of this?

Let's start with the claim of the variable size of the universe.

Size is a ***relational concept****:* something is ***compared*** to something else.

The universe, *by definition*, is everything that exists.

Therefore, it cannot be compared to anything *else*, but only to a *part of itself*. So let's consider any such part – an arbitrarily chosen object that exists in the universe. Its size bears a certain ratio to the size of the universe.

Now, what does it mean if this ratio changes over time – or if it even tends toward zero or infinity?

Can I then claim that the universe is becoming infinitely large or that it is disappearing?

No, of course I can't claim that. It would mean setting the size of a *part* of the universe ***absolute***, which would be nonsensical: The universe is not only everything that exists, it also ***creates*** everything that exists within it. Setting such a thing created by it *absolute* and using it to demonstrate the disappearance of that ***by which*** it was created – that is, the universe – is obviously **contradictory**: if the size of the universe is assumed to be ***variable***, then no part of it – no object that it created – can be attributed an ***absolute*** size.

Here, the logical and ontological primacy of the universe over every part of it when comparing size, is sufficiently clearly emphasized, and it follows that a change in the size relationship between the universe and the scale must always be at the expense of the scale, because otherwise one would commit a logical error.

Proposition:

The size of any object can be measured by another object, and if this measurement varies over time, then it can be claimed that the size of the measured object changes.

However, since the universe is everything that exists, its size cannot be measured by anything else but only by a part of itself. This means that if this measurement varies over time, then this change must always attributed to the part chosen as the measure.

There is only one thing that would contradict this: the postulate of the *complete ontological separation* of space and matter: only under this assumption could space change its size, while the size of matter would remain absolutely unchanged – until it is compressed by its own gravity.

However, this ontological separation has long been abolished even in standard physics: in GR, matter curves space-time, in quantum field theory, there essentially no longer exists any boundary between matter and space. Thus, even in standard physics, the postulate of the absolute size of matter appears more and more to be pure arbitrariness, a suggestion that stems from everyday experience with objects, then solidifies and is retained without reflecting it.

However, I think that my argument – quite independently of what is going on in standard physics – excludes this absolutization anyway, because the statement *"something whose size is assumed to be variable cannot produce anything whose size is absolute"* is obviously true: there can be no ontological separation between the *producing whole* and any *part produced by it*, and therefore also not between the parts among themselves. [1]

Regarding the observation that led to the expansion hypothesis – the redshift increasing with distance – assuming a shrinking scale is obviously equivalent to assuming the expansion of the universe.

What irritated me for a long time, however, is that the assumption of shrinking scales seemed to face an almost insurmountable obstacle:

The choice of scale with which we measure the expansion of the universe is completely arbitrary, and that means: not only the *chosen* scale, but *everything* that could serve as a scale – in other words, ***everything that exists*** at all – would have to shrink by the same amount, and there is simply no plausible justification for this in standard physics.

So I found myself in an awkward position: On the one hand, there was the ontologically compelling argument demanding a shrinking scale, but on the other hand, there was no physical argument in sight by which the identical shrinking of everything that exists could be justified or at least be understood.

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1 There are physicists who believe that one could embed the entire scenario just presented in *another* coordinate system and thereby justify the changing size of the universe. This is absurd: without reference to being, it is neither possible to define a unit nor to determine its temporal evolution – the assertion of its (absolute) constancy would be an unjustifiable postulate.

But then the following happened:

Based on my equation, which describes the process that creates reality – *permanently*, and not in the form of a Big Bang *event* (localizable in nothingness by spatial and temporal coordinates) – the structure of the quantum mechanical atomic model can be reconstructed. (See my book The Structure of Reality page 171ff.) This reconstruction establishes a connection between all wavelengths occurring in atoms and molecules, from which follows that *all these wavelengths change to the same extent*, when the *fundamental* wavelength changes, which here corresponds to the Planck length.

This solves the aforementioned physical problem: the alternative: "expansion of the universe" or "shrinkage of ***all*** scales" has been simplified to the alternative: "expansion of the universe" or "shrinkage of the fundamental wavelength".

So the decision against the expansion of the universe and in favor of the reduction of the scale becomes obvious, because only in this way can the absolutization of the scale be avoided, as required by ontology, and the size of the universe remains unaffected.

This necessary congruence between ontology and physics was by no means intended, nor even anticipated – it arose surprisingly and naturally.

Back to the history of the universe:

If there is no expansion, then the hypotheses of the Big Bang, inflation, dark energy, and dark matter are also superfluous – the latter, however, only insofar as it is required for the development of material structures in the early phases of expansion; its necessity for structure formation and maintenance in general is only called into question by my new view of gravity, which (among other consequences) results in a significantly greater rotation speed of galaxies than the theories of Newton or Einstein.

Again, it should be noted that this consequence of my theory of gravity was not intended, i.e. not *ad hoc*.

(I didn't even notice it at first. I repeated the well-known tests of general relativity with my own theory, and when the results agreed with those of general relativity, I assumed that the two theories were identical – at least with regard to their results. Only much later did I realize that this is only the case if the total torque of the system under consideration is negligibly small. This is true precisely where general relativity has passed all tests – in solar systems and in the gravitational field of planets – but not in galaxies: here, the total torque is usually enormously large, and then Einstein's and my theory lead to results that differ significantly from each other.)

Let's summarize: If you replace the assumption of the expansion of the universe with the assumption of the shrinking of the fundamental wavelength, you get rid of all the nonsense listed above at a stroke.

The (small) price for this much-needed cleanup is that it raises the question of what causes the change in the fundamental wavelength. I haven't answered this question, but I'm sure the answer requires significantly less ludicrous inventions than assuming expansion.

The reason for this certainty is that, in my construction of reality, the universe is a system that organizes itself ***through metric changes***, and these changes must also affect the basis of the system.

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