

Compatibility of God & Fundamental Physical Theories

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Abstract

A lot of discussion happens across the globe about the how fundamental physics gives evidence for the non-existence of a god or gods. In this presentation, I'd like to directly address this assumption head-on and discuss if we need to adapt our physical theories of nature - and thus, redefine reality itself - or change our notion of a god. To do this, I will explain the framework for a general physical theory of nature, then proceed to introducing the concept one of more all-powerful beings into this picture. By examining this introduction of a god in multiple perspectives - outside of, a part of, or the universe itself - we will flesh-out incompatible models of god and reality. Next, we look at what we truly define a god to be within any compatible models and discuss whether this landscape for reality is one we can accept.

I. INTRODUCTION

THE goal of this paper will be to form an idea of what god(s) look like if we assume that basic experimental physics is correct. We will use four observations of the universe that have been independently verified by very dependable physical theories. Due to our perspective from physical theories, we are assuming that god(s) have some kind of physical nature. When using physical theories, we must do this because if god(s) were not, then we couldn't even talk about them in terms of anything physical. To a physical theory, they wouldn't exist. In this paper, we will construct two compatible models for what god(s) look like if they are physical and our physics is correct.

We will not be considering non-physical gods or a god that will break the laws of physics. For these purposes, what we observe must be intended by this being. Essentially, the laws of physics and these god(s) must be one in the same for consistency with physical theories. If we assumed they weren't, then why have we observed everything like we have? One could

argue that it would be god(s) will, but we will not be taking that into account. There are many perspectives that can rid us of the need to find a compatible model, but if we do want a god or gods that are compatible with how we perceive the universe, we must carry on.

II. FRAMEWORK OF GENERAL PHYSICAL THEORY

A physical theory of the universe is centered around seemingly factual elements of our reality. Observations are so fundamental at times that we use them in a collection to define reality itself. To do this, every theory of reality must contain a consistent mathematical structure to which can be manipulated in order to derive relationships and observable calculations - measurements. Some of the most fundamental observations we have are:

1. Quantum Uncertainty, from the Heisenberg Uncertainty Principal
2. The expansion of the universe, presumably from Alan Guth's Inflationary Theory

3. Dark Energy and Dark Matter from observations by various astronomers

4. The speed of light as a universal speed limit from Einstein's Relativity Theories

Heisenberg's uncertainty principle states that there exist pairs of properties, typically of a particle, that one cannot measure simultaneously. Inflationary theory consists of an ingenious use of the recently discovered Higgs Boson and spontaneous symmetry breaking to explain the rapid inflationary evolution the universe underwent after its conception. Dark Energy is this ethereal form of theoretical energy that exists at all points in space, which is currently causing the accelerating expansion of our universe. We have no idea what Dark Energy really is. Dark Matter is a theoretical matter thought to cause an immense amount of extra gravitational influence observed in even our own galaxy. The speed of light is the maximum rate at which information can be transmitted between reference frames.

With these basic physics principals, we know that the universe has a degree of mystery at small and large scales. Any theory of the universe is required to contain these essential aspects of nature. If the universe is controlled in some fashion, the being doing said manipulation should remain consistent with observation.

III. INTRODUCTION OF GOD(S)

The essential underlying philosophy of theoretical pursuits seems to be that to understand the world is to define it. If we are going to introduce god(s) into a physical theory, we must define them so that we may understand them in even an abstract sense. In this presentation, we will be considering a god or set of gods who have complete and sole power over the all existence.

For the purposes of logical consistency, let us assume that their power is elegant. By elegant, I merely mean that their power is reasonably feasible within the context of what we know about the universe. (a.k.a, god(s) and the laws

of the universe are one in the same) Furthermore, what will we define as 'control'? What does it mean for a being or beings to control existence itself? Are they not part of existence as well, or are they?

IV. MODELS OF GOD(S)

There are three general possibilities for a model of god(s): (1) external god(s) to which has perfect control over the interior reality that we occupy; (2) internal god(s) that are a portion of the universe, somehow controlling the rest of reality by some form of influence; (3) embedded god(s) that are quite literally the universe itself and whose control of the universe is merely the control of its self. These models will be explored individually with an emphasis on their consistency with fundamental observations of nature.

i. External God(s)

For this model, we must imagine three entities: the universe, the god(s), and the external space-time god(s) inhabit. Although, one may quickly see an arising issue to this picture. If we are to assume that the god(s) exist outside of our universe, their must exist an even larger universe. Although, one must then wonder if this larger universe, like our own, is controlled by an even larger being. But, once again, this third universe with its god(s) might then also be controlled by yet another higher and more powerful god or set of gods. The argument goes toward infinity.

Whether an infinite scaling of universe seems unreasonable to you is not what I'd like to bring attention to.¹ Carrying on with this infinite scaling, if god(s) are controlled by a higher

¹After one reads the follow sections on other models, it will become clear why this finite scaling of universes is also not necessarily compatible with physical theories. For if you have a finite scaling, the highest god(s) must either be internal or embedded gods. If you assume they are internal, you run into their logical inconsistencies. If you assume an embedded god(s) then you find a valid model. So this stance of finite scaling is valid in only a very particular case.

god or set of gods, then should they still be considered gods? If so, then perhaps we must re-define our definition of god being all-powerful. If not, then we have a logical problem. Infinity is not a set point, there is no all-powerful god because there are no 'gods' to which aren't controlled by a higher one. Therefore, I defend that the model of an external god or gods is not reasonable due to logical inconsistencies with conventional definitions of god(s).

The main assumption of this picture is that everything must be controlled and organized by an entity or entities. If one were to abandon this assumption, then the topic of this presentation becomes arbitrary. This is a valid opinion but for the purposes of this conversation, let us continue assuming universes are controlled in some fashion.

ii. Internal God(s)

Now we must consider god(s) to be a part of the universe. In this model, it is apparent that the knowledge of Quantum Uncertainty rapidly becomes important. If we assume that god must need perfect knowledge to have perfect control, then the fact that our universe is fundamentally uncertain at its core is destructive. Since the god(s) can not obtain perfect information from the rest of the universe, then they are unable to have complete power over the universe.

Furthermore, if a god has complete power, they must certainly need to know everything in order to enforce this power. Due to the accelerating expansion of the universe and the speed of light, pockets of the universe are becoming isolated from each other. This becomes troublesome when considering that information may only be transmitted at a maximum rate that effectively limits a god's knowledge to only a portion of the universe. This has the troublesome consequence of cutting off major portions of the universe from its god(s) and therefore forcing the all-powerful to be limited. Any reduction of a god's all-powerful nature is in direct contradiction with our definition of a god and can not be taken to be compatible with

current physics theory. Therefore, the model of an internal god is not valid in any sense with fundamental physical observations.

iii. Embedded God(s)

This model must be discussed from two different perspectives, one or many gods. Let us first explore many gods and then an individual god.

iii.1 Many Gods

It is difficult to imagine a logical organization of many gods, all of which having absolute power over the universe. Though let us assume that the potential chaos is somehow avoided due to our apparent continued existence. If these gods are embedded into the universe so that their sum envelopes the universe, we can find two possibilities: each one individually pervades all of space or they have sectioned off the universe so that each god has their own domain.

If each god pervades all of space, then they are in a superposition of power. To any observer, they are essentially the same entity. This leads us to the following consideration: can we think of the superposition of gods into one singular and inseparable entity as one god? If so, then this treatment forces the conversation to end until the next section on a singular god. We will call this specific model the Many God Superposition Model (MGSM).²

Looking toward the second possibility, we see the same problem from the internal god(s) come up once again. For each of these gods must control a set domain with the universe, but do to universal expansion, they can not

²There is an interesting interpretation of this model. In Quantum Field Theory (QFT), there exists a 'field' for each particle in nature. These particles are waves in each field, their energy the amplitude, and speeds corresponding to the 'tension' of each field. You can think of a field as an ocean pervading all of space-time. The connection is that each field may be a god. These fields interact with each other in very specific ways that also use the uncertainty principal. If these god(s) do control the universe together, they must do so in particular ways, which could be understood as the laws of physics according to QFT.

maintain their grips upon their domains because they are becoming too large, too fast for information to be received and acted upon. Therefore, these individual gods are not only limited in their power over the universe, but also limited in their domain. Thus, if the number of gods is constant through time, then the net influence of this set of gods will lose absolute power over the universe. The only way to mend this power collapse of the gods is to increase the number of gods in order to keep the net influence over the universe absolute. Whether you find this position reasonably acceptable is up to you, but to this author, it is not reasonable. The particular reason is that since the universe is accelerating in its expansion, taking the limiting case to infinity causes an infinite number of gods. Additionally, each of their domain of influence is infinity small compared to the size of the universe. If you're domain of influence as a god is essentially non-existent, then how can you say you have power or control over anything? This is, of course, a weak argument for a contradiction to the aforementioned definition of a god, but it is something we must consider.

iii.2 Singular God

Consider a singular god whose composition is the universe itself. This embedded god will have absolute power over the universe because it will not be limited in space or time. This being will not be hindered by Quantum Uncertainty because it will pervade all of space, therefore having perfect knowledge of the universe and the ability to react absolutely. For a very similar reason to that of Quantum Uncertainty, this being will not be hindered by the speed of light or the expansion of the universe. An embedded god or gods exactly follows our definition of god(s) with no inherent complications. We will call this model the Singular God Model (SGM). As we will see in our proceeding exploration of this model, not only is there compatibility between the notion of god and physical theory, there may be indirect evidence of such a being - specifically Dark Energy, Dark

Matter, and the existence of consciousness.

V. A COMPATIBLE MODEL

The only models that were considered compatible were the MGSM and SGM. These two are indistinguishable from potential observation and therefore equivalent for our purposes. For the sake of simplicity, we will combine these two equivalent models into the Compatible Embedded God Model (CEGM). This model has consequences for the concept of power and control as well as interpretations of fundamental observations within physical theory.

i. Consequences of Compatible Embedded God Model

i.1 What is Power to Embedded God(s)?

Power typically refers to one thing having some directed influence over another thing, but what if both things are one in the same? What does it mean to have absolute power over yourself? Perhaps power is the wrong way to express an embedded god(s) influence. Could it be that this kind of god(s), through their mere existence, be imparting their influence over the universe; as if total control over itself was an inherent property of these beings. It is an interesting concept to have absolute control at with no effort, for it to be inherent within you because you are all that exists.

i.2 Potential Limitations on Influence and Implications to Cosmology

Let us assume a limitation within the singular god's ability to control non-cosmic scale objects. The influence exists but it is far easier to control larger portions of the universe. An analogy of this limitation would be your own body: you can not control every molecule that composes you, nor can you control the cells in a precise way. Although you can move your limbs and talk. The same thing may be true for embedded god(s). Following this train of logic, it would only make sense that the mysteries cause of Dark Energy and Dark Matter could be a god

attempting to 'move', to 'control' itself.

This is not to say that these embedded god(s) do not have absolute power. It merely suggests that it may be less effort to affect large scale structures in the universe rather than to control human or quantum scales.

god(s) making adjustments to itself. Additionally, the possibility of a correlation between the god(s) and human consciousness was explored.

ii. Origin of Consciousness and God(s)

It seems only logical that consciousness is something seemingly external to the known world, that there exists some ethereal aspect of a conscious being that isn't sufficiently explained by modern physical theory. If this notion of abnormality within consciousness is correct, then it must have its seed somewhere in the universe. The most likely place is within the universe itself, within the singular and conscious god. Looking to this model for answers to the origin of consciousness, we may observe that conscious creatures have been gaining complexity of body and mind through time. Following this, one may take the limit and observe that god(s) are the most complex entity possible due to the fact that it is the universe itself, thus it will be the most conscious. One does not have to go much further to see that the obvious conclusion is we share a small part of consciousness with god(s). Essentially, our minds are a small part of god's mind. It isn't necessarily the case that god(s) gives us consciousness, but it is evident that we share it.

VI. SUMMARY

We have worked toward and found a potential model compatible with all-powerful god(s) and the fundamental observations of physical theories. The result was an embedded god(s) that was found to be consistent with the considered definition of god. Furthermore, this model calls into question the idea of control and power in reference to god(s) who are the universe itself. While deep questions about influence were asked, possible indirect evidence of god(s) was discussed and found to suggest that Dark Energy and Matter were the result of