



Readings II in Faith & Science

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Time: The Falsest God Of All

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Time: The Falsest God Of All

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Consider this simple switch of very familiar lines: "God said 'Let there be light,' and that was the beginning." This is a mild switch of two verses very near the opening lines of Genesis, an apparently insignificant change in sequence. However, this change signals a tremendous revision in our religious outlook, in our most fundamental image and notions about God.

This essay deals with the relationship between God and time. I assert that God is superior to time, a proposition with which many people would nod in agreement; but I also assert that mankind has inadvertently assigned God a state of subservience to time, and by so doing has caused a lot of harm. The pathway toward truth in religion is blockaded by the very widespread (indeed, built-in) acceptance of the notion that God must obey the rules of time.

God is above and beyond time. He is the one who thought up "time," and is certainly not subject to time or limited by time. To conceptualize God in a way that describes God as subject to time is to put a false god before Him. Don't do that.

The trouble is, our own understanding of life and existence are heavily encumbered by the notion of time. Our information-gathering mechanisms (the five senses) all deal in physical phenomena, the world of space and time. Even more important, our language has a hidden dependence on time built into it at the most fundamental level: every sentence contains a verb, and verbs are usually "action" words, connoting change with time. I can't write three consecutive sentences without tripping over some implicit reference to time.

This is just part of the human condition. We are stuck with time, and therefore we are stuck with *images* of God that are conditioned by time. Never confuse the limited images of mankind with the much deeper reality of God. God is not subject to our limitations; in fact, it demeans God to think that He might be. A variation of this, equally demeaning to God, is to inadvertently limit God by thinking that our human perceptions are the only kind of knowledge or perception there can be.

Creation

A. God's Creative Acts

Scientists have put a great deal of effort into the field of Cosmology, trying to find out what happened at the earliest moments of creation. Observations from astronomy have been combined with earthbound experiments in high energy physics, together with a lot of theory, to reconstruct what the early universe may have looked like. The physics shows that concepts like space and time lose their meaning in the extremely early universe ("big bang"), under conditions of such high radiation density that nothing was as it seems now. To play by the rules of physics is to concede that there can be no such thing as time "before" that initial cataclysm.

God had a much better view of the situation. God's first creative act was to say "let there be light." Why was light the first thing God created?

Remember that it is the speed of light that makes time different from space. It is only because there is light that there is “time” as we know it. The act of creating light was what started it all. There can be no such thing as time in the absence of a relationship to space (a speed of light). In creating light, God didn’t just create an electromagnetic field; rather, he drew out of the infinite manifold of possible dimensions a small subset of dimensions (4, we think (1)), and made one of them very different. Today, scientists distinguish this one dimension as “timelike” and the other three as “spacelike.”

In the language of physics, we say that the symmetry was broken between dimensions $\{x_0, x_1, x_2, x_3\}$, leaving $\{-iCt, x_1, x_2, x_3\}$.

Dimensions are orthogonal (perpendicular) to one another, and there is nothing special about a whole lot of dimensions. It’s pretty boring mathematics to have zillions of unrelated dimensions; you might call it a “formless void.” When one dimension is related to three others by an imaginary number, all sorts of neat things can happen. The symmetry of all the dimensions is broken by introducing a relationship between some of them. The relationship of time to space is characterized by the imaginary constant iC , where C is the speed of light and i is the imaginary number. Deliberately breaking a symmetry is an act of creation. “Let there be light” is equivalent to saying “Let space be different from time, and let there be a relation between them.”

In everyday life, we perceive that time is certainly different from the other dimensions, but basically it is just one dimension. Mathematically, it has no special standing, and it is not recognizably different without light. God’s act of creating light also initiated time, which simply had no meaning at all prior to the creation of light.

Time came into existence with the creation of light. There is no such thing as “before” the creation of light.

What happened next? (Note that now we are starting to use time-like words.) In the subsequent development of the universe, additional symmetries were broken; gravity quickly separated from the other forces; very soon (within sub-micro-micro seconds) strong, electromagnetic and weak forces separated. All this is well described in the book *The First Three Minutes* by Steven Weinberg. Shortly thereafter, the universe took on the physics that has evolved only a little more to the present day. It is fun to look for the guiding hand of God in these other symmetry-breaking events. However, that is not the issue here; our concern is limited to the origin of time.

B. The Words in Genesis

The first three words in Genesis are “In the beginning...”; however, among Jewish scholars there is an alternate phrasing “When God began to create...” Either way, words like “beginning” or “began” implies that time plays an essential part in what is happening. More precisely, time plays an essential role in *what one can write about*. The text of Genesis 1 describes a sequence of creative acts by God, and of course a sequence implies time passing.

Scholars have put a lot of effort into debating the exact or metaphorical meaning of terms like “day,” “formless void” and so forth, but nobody seems to take interest in the phrase “let there be light.” I think it is safe to take this quite literally.

The important thing to notice about Genesis is that there is nothing before “In the beginning...” No statement at all about God, the universe, etc. The reason is that no question (and no answer) has any meaning at all *before* “the beginning.” The word “before” doesn’t exist where there is no time. Time was the first thing created, and all words about time have meaning only when time is already in place. It could not be any other way. Had Genesis begun “God used to live in this neat formless void, see; and then he...,” we would have to conclude that either God was subject to time, or that the human writer of the text was not particularly inspired.

It is fair to ask, “Why didn’t God say so when He inspired the Bible?” Here it is well to remember that man can only handle so much, and language is so intertwined with time that it was beyond the ability of man to grasp such ideas in those days. In his book *Insight, An Inquiry into Human Understanding*, Father Bernard Lonergan speaks of the condition of general bias, in which absolutely everyone suffers from the same erroneous perception. When

there is *general bias*, there is nobody around to correct it. That was the condition on the receiving end of Genesis. And if the prophets couldn't quite catch God's meaning correctly, how much worse off were the translators? It awaited the insights of Einstein in the 20th century for the interrelation between space, light and time to enter human consciousness.

C. What People Think

Over many centuries, the immutability of time in people's lives evolved into a certain respect, indeed awe, towards time; and hence when mechanical clocks came along, it wasn't long before the image of God as "the watchmaker" became prominent. This led naturally to the suggestion that God once wound up the watch, started it running, and never looked at it again. This is a very unsatisfactory image of God, one that led many scientists to a *de facto* atheism, or at least a "God does not matter" outlook. Certainly at the minimum it left God distinctly subordinate to time, only able to tinker with His universe in certain limited ways. That was not too bad as long as time was held to be absolute, and so religious leaders put up with the image and eventually accepted it. But what happens if time loses its pre-eminence?

The dominance of clocks and time lasted into the 20th century. Einstein's discovery of relativity is recounted in *The Ascent of Man* by Jacob Bronowski. While riding on a trolley car, Einstein looked back at a clock on a tower and asked "What if I could ride on the beam of light leaving the hands of the clock? Would any time pass?" The answer is no, and Einstein saw that time does not pass when you're traveling on a light beam, moving with the speed of light. The mathematics of the theory of relativity, which Einstein subsequently constructed, relates time to space through the speed of light. Today, modern man has typically accepted that time is not absolute, but still holds an image of God in which God is subject to time. There is a false god before God.

Consequences

Relativity says that space and time are interchangeable. Little by little, word of this is getting around, and mankind's general bias is starting to crumble. Unfortunately, many religious leaders recoil from this, perceiving it as an "attack." It should be exactly the other way around. Relativity invites the religious person to re-assert God's dominion over time.

For about a century, we have abandoned the idea that heaven is a place; we smile at the image of sitting on a cloud strumming a harp. We have faith in God that He has something much better in mind for heaven. Now it's necessary to take an even bigger leap of faith and concede that heaven is not a *time* either. The logical disconnect between our abandonment of space and our present-day clinging to time is going to prove embarrassing when relativity becomes more widely understood in the years ahead.

By repeating the word "afterlife" so often, we have remained dependent upon time much too long. Any image of God that is confined by time is too limiting; similarly, any image of our ultimate *relationship* with God that is dependent upon time is doomed to fail. We have to start imagining heaven as a totally different kind of existence. To do this, our images drawn from everyday life in the physical world are not going to be much help. (Stanley Jaki speaks of "spiritual *dimensions*," but nobody grasps his images well.)

Heaven is not a time-dependent entity, any more than it is a specific place. Time isn't frozen; time isn't continuous, boring and repetitive; time simply *isn't* an issue at all. It's not one of the dimensions, not part of the heavenly existence. God has something else in mind, and remember, God is a lot smarter than we are. God gets along just fine when outside the realm of time and space.

If there is one absolute cornerstone principle to anyone's religious faith, it is that *reality* is more than meets the eye. The religious person is not willing to surrender to the notion that this physical world is all there is. The standard images of "after" life, where heaven is merely an extension of that physical world, are quite inferior to the full reality that God knows; those images contradict our cornerstone beliefs. When we say that God is almighty, we

are saying that He has power over all reality, of which the physical world is only a subset. Certainly He can create a heaven that grandly exceeds the physical world.

It is too harsh to use the word “heresy” to describe a set of beliefs that most people just naturally drift into; after all, time is with us constantly, and we can hardly speak about anything without implicitly invoking time. Nevertheless, these limited perceptions have endured too long, and it is time to change. It seems strange that in the present age of modern science, when relativity is adequately understood by more than just a few scientists, that people could possibly think that God may be limited in time. This lapse in appreciation of God’s power must arise from an overemphasis on human limits. The only way we can be fair to God is to acknowledge that God is independent of time, external to it, and exempt from its constraints.

Endnote

1 It is separately possible that our existence may involve still more dimensions, but these are not at issue in the physical world, and don’t affect our consideration of “time.”

Questions

What is time? Is it a thought-category or does it exist in the “real world”? Is there more to time than merely being a “measure of the motion” of something else? Have we “reified” the notion, made it into a thing?

God is certainly above and beyond time. There is no doubt about that. But isn’t he also within time? Is not “salvation history” the working out of God’s activity with and among men? How do we reconcile these two “creative aspects” of God?

Is it a leap to go from saying “God is not dependent on time” to saying that “time will play no part in heaven”? Reality is more than what meets the eye. The standard images of “after life” are an extension of the physical world, but is the word “merely” justified? Certainly God can create a heaven that “grandly exceeds the physical world.” Has he?

What did St. Paul mean by saying that “eye has not seen nor ear heard nor has it entered into the mind of man” what God has prepared for those who love him? Is heaven what earth is - only more? Can we even imagine what it will like? What does it matter?

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