

ISSUES IN PERSPECTIVE

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Einstein's Theory of Relativity: 100 Years Later

The Scientific Revolution of the 16th-century changed humanity's perspective and understanding of the physical universe. At the end of the Scientific Revolution (the 17th century), Sir Isaac Newton synthesized the work of others (e.g., Galileo, Kepler, Brahe, etc.) with his own original thinking, and produced a compressive understanding of the laws of the physical world (e.g., inertia, gravity, etc.). We owe him much; indeed the English poet Alexander Pope declared, "God said 'Let there be Newton and there was light.'" But on 25 November 1915, Albert Einstein published a theory that challenged this understanding of the physical world. Based on ten mathematical equations, Einstein established a new concept of gravity, not as an independent physical force, but as the warping of the fabric of space and time. The result was that the description of the physical world in terms of absolute space and time needed to be set aside and replaced with four dimensional space-time (the three spatial dimensions plus one temporal one).

Has Einstein's Theory of Relativity been validated? Consider these important illustrations: (1) The planet Mercury has an egg-shaped orbit that changes 43 seconds of arc per century. Newton's theory of gravity does not explain this but Einstein's theory of the curvature of space-time explains Mercury's behavior perfectly. (2) The apparent positions of stars that were in the same part of the sky as the sun during a solar eclipse with their apparent positions at other times. Because the sun's mass warps space-time, the positions of the stars seem to change when the rays skirt the sun. Einstein's theory explains this. (3) Einstein's theory helped the *New Horizons* to steer its space probe to Pluto through a space "keyhole" about 93 miles wide over a 9½ year journey across 4.67 billion miles!

What does Einstein's Theory of Relativity say about God and matters of personal faith?

- Although born in 1879 of German-Jewish parents, Einstein was not brought up in the Jewish faith. He attended a nearby Catholic elementary school in Munich and then the local high school. A rather slow and dreamy student, Albert was bored with non-scientific subjects, and learned little under the harsh military-style 19th century German education system. He grew up with an aversion to discipline, and a life-long suspicion of all authority.
- Einstein was quite critical of religion and the Jewish people of which he was a proud member. For example, Einstein penned a letter on January 3, 1954 to the philosopher Eric Gutkind who had sent him a copy of his book *Choose Life: The Biblical Call to Revolt*. In the letter, he states: "The word God is for me nothing more than the expression and

product of human weaknesses, the Bible a collection of honorable, but still primitive legends which are nevertheless pretty childish. No interpretation no matter how subtle can (for me) change this.”

- Einstein, who was Jewish and who declined an offer to be the state of Israel's second president, also rejected the idea that the Jews are God's favored people. “For me the Jewish religion like all others is an incarnation of the most childish superstitions. And the Jewish people to whom I gladly belong and with whose mentality I have a deep affinity have no different quality for me than all other people. As far as my experience goes, they are no better than other human groups, although they are protected from the worst cancers by a lack of power. Otherwise I cannot see anything ‘chosen’ about them.”
- Does Einstein's Theory of Relativity require that God be temporal or atemporal to logically interact with His creation? Biblically, God is atemporal. His existence is not dependent on time or any of the four dimensions. Thus, Einstein's theory has no real impact on the nature of God as God. God created time (Genesis 1:14-19) and exists outside of time. God is not an additional “dimension” in our universe.
- “What is God's relationship to time?” (See <http://www.gotquestions.org/God-time.html#ixzz2yWkcFzjP>) “We live in a physical world with its four known space-time dimensions of length, width, height (or depth) and time. However, God dwells in a different dimension—the spirit realm—beyond the perception of our physical senses. It's not that God isn't real; it's a matter of His not being limited by the physical laws and dimensions that govern our world (Isaiah 57:15). Knowing that ‘God is spirit’ (John 4:24), what is His relationship to time? In Psalm 90:4, Moses used a simple yet profound analogy in describing the timelessness of God: ‘For a thousand years in Your sight are like a day that has just gone by, or like a watch in the night.’ The eternity of God is contrasted with the temporality of man. Our lives are but short and frail, but God does not weaken or fail with the passage of time. In a sense, the marking of time is irrelevant to God because He transcends it. Peter, in 2 Peter 3:8, cautioned his readers not to let this one critical fact escape their notice—that God's perspective on time is far different from mankind's (Psalm 102:12, 24-27). The Lord does not count time as we do. He is above and outside of the sphere of time. God sees all of eternity's past and eternity's future. The time that passes on earth is of no consequence from God's timeless perspective. A second is no different from an eon; a billion years pass like seconds to the eternal God. Though we cannot possibly comprehend this idea of eternity or the timelessness of God, we in our finite minds try to confine an infinite God to our time schedule. Those who foolishly demand that God operate according to their time frame ignore the fact that He is the ‘High and Lofty One . . . who lives forever’ (Isaiah 57:15). This description of God is far removed from man's condition: ‘The length of our days is seventy years—or eighty, if we have the strength; yet their span is but trouble and sorrow, for they quickly pass, and we fly away’ (Psalm 90:10). Again, because of our finite minds, we can only grasp the concept of God's timeless existence in part. And in

so doing, we describe Him as a God without a beginning or end, eternal, infinite, everlasting, etc. Psalm 90:2 declares, 'From everlasting to everlasting You are God' (see also Psalm 93:2). He always was and always will be. So, what is time? To put it simply, time is duration. Our clocks mark change or, more precisely, our timepieces are benchmarks of change that indicate the passage of time. We could say, then, that time is a necessary precondition for change and change is a sufficient condition to establish the passage of time. In other words, whenever there's change of any kind we know that time has passed. We see this as we go through life, as we age. And we cannot recover the minutes that have passed by. Additionally, the science of physics tells us that time is a property resulting from the existence of matter. As such, time exists when matter exists. But God is not matter; God, in fact, created matter. The bottom line is this: time began when God created the universe. Before that, God was simply existing. Since there was no matter, and because God does not change, time had no existence and therefore no meaning, no relation to Him. And this brings us to the meaning of the word eternity. Eternity is a term used to express the concept of something that has no end and/or no beginning. God has no beginning or end. He is outside the realm of time. Eternity is not something that can be absolutely related to God. God is even beyond eternity."

Scripture reveals that God lives outside the bounds of time as we know it. Our destiny was planned "before the beginning of time" (2 Timothy 1:9; Titus 1:2) and "before the creation of the world" (Ephesians 1:4; 1 Peter 1:20). "By faith we understand that the universe was formed at God's command, so that what is seen was not made out of what was visible" (Hebrews 11:3). In other words, the physical universe we see, hear, feel and experience was created not from existing matter, but from a source independent of the physical dimensions we can perceive. Since "God is spirit" (John 4:24), God is timeless rather than being eternally in time or being beyond time. Time was simply created by God as a limited part of His creation for accommodating the workings of His purpose in "His disposable universe" (see 2 Peter 3:10-12). Upon the completion of His creation activity, including the creation of time, what did God conclude? "God saw all that he had made, and it was very good" (Gen 1:31). Indeed, God is spirit in the realm of timelessness, rather than flesh in the sphere of time. As John Oakes concludes, "We have a deep sense of comfort knowing that God, though timeless and eternal, is in time with us right now; He is not unreachably transcendent, but right here in this moment with us. And because He's in this moment, He can respond to our needs and prayers."

See *Christianity Today* (13 May 2008); John Oakes, "What is the effect of Einstein's theory of relativity on our understanding of God?," *Christianity Today* (April 15, 2014); Dennis Overbye in the *New York Times* (24 November 2015); and *The Economist* (28 November 2015), pp. 15, 70-73.