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Ebla Tablets. Sixteen thousand clay tablets from the third millennium B.C. were discovered at Ebla in modern Syria, beginning in 1974. Giovanni Pettinato dates them 2580–2450 B.C. and Paolo Matthiae suggests 2400–2250 B.C. Either period predates any other written material by hundreds of years.

Apologetic Importance of the Tablets. The importance of the Ebla tablets is that they parallel and confirm early chapters of Genesis. Although clouded by subsequent political pressure and denials, the published reports in reputable journals offer several possible lines of support for the biblical record (see ARCHAEOLOGY, OLD TESTAMENT).

Tablets reportedly contain names of the cities Ur, Sodom and Gomorrah, and such pagan gods mentioned in the Bible as Baal (see Ostling, 76–77).

The Ebla tablets reportedly contain references to names found in the book of Genesis, including Adam, Eve, and Noah (Dahood, 55–56).

Of great importance is discovery of the oldest known creation accounts outside the Bible. Ebla's version predates the Babylonian account by some 600 years. The creation tablet is strikingly close to that of Genesis, speaking of one being who created the heavens, moon, stars, and earth. Parallels show that the Bible contains the older, less embellished version of the story and transmits the facts without the corruption of the mythological renderings. The tablets report belief in creation from nothing, declaring: "Lord of heaven and earth: the earth was not, you created it, the light of day was not, you created it, the morning light you had not [yet] made exist" (*Ebla Archives*, 259).

There are significant implications in the Ebla archives for Christian apologetics. They destroy the critical belief in the evolution of monotheism (see MONOTHEISM, PRIMITIVE) from supposed earlier polytheism and henotheism. This evolution of religion hypothesis has been popular from the time of Charles Darwin (1809–1882) and Julius Wellhausen (1844–1918). Now monotheism is known to be earlier. Also, the force of the Ebla evidence supports the view that the earliest chapters of Genesis are history, not mythology (see FLOOD, NOAH'S ; SCIENCE AND THE BIBLE).

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Eden, Garden of. "Now the LORD God had planted a garden in the east, in Eden; and there he put the man he had formed" relates Genesis 2:8 . Since Adam and Eve are presented as real persons with real children from which the whole human race has come (Gen. 5:1 ; 1 Chron. 1:1 ; Luke 3:38 ; Rom. 5:12) , it is also assumed that there was a literal Garden of Eden. Indeed, the Bible speaks of it as an actual place on earth that abounded with trees, plants, and animals. It had rivers and a gate (Genesis 2–3). However, critics point out that there is no archaeological (see ARCHAEOLOGY, OLD TESTAMENT) evidence that such a place existed. They conclude that the story of Eden is just a myth (see BIBLE CRITICISM).

Arguments for a Real Garden. However, strong evidence to support the literal reality of the Garden of Eden comes from various sources.

Since Scripture says that the Lord sealed off the garden in some way following the fall, this is one place where Christians would not expect to find archaeological ruins (Gen. 3:24). Nor is there any indication that Adam and Eve made pottery or built durable buildings. Whatever might have remained of a Garden of Eden would have been destroyed by the flood which covered the earth (Genesis 6–9 ; 2 Peter 3:5–6).

The Bible does give evidence of the location, since two of the rivers mentioned still exist—the Tigris (Hiddekel) and the Euphrates (Gen. 2:14). Even if the rivers have a different flow since the flood, the placement of very names as rivers indicates that the writer believed this to be a literal place. The Bible even locates them in Assyria (vs. 14), which is modern Iraq.

For a discussion of the reality of Adam and Eve, see ADAM, HISTORICITY OF . There is abundant evidence that these were the first human beings and the literal progenitors of the human race. Literal people need a literal place to live. The Bible calls that place the garden God planted in Eden (Gen. 2:8).

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The New Testament refers to events that took place in Eden as historical. It speaks of the creation of Adam and Eve (Matt. 19:4 ; 1 Tim. 2:13) and of their fall into sin (1 Tim. 2:14 ; Rom. 5:12). But these literal historical events need a literal geographic place in which to occur.

The Scriptures affirm that God will one day restore human beings in a literal resurrection body (see RESURRECTION, PHYSICAL NATURE OF) to a literal restored paradise (Rom. 8:18–23 ; Revelation 21–22). But what is a literal paradise regained if there was not a literal paradise lost?

Conclusion. For those who place any credibility in the biblical record, the evidence for a literal Eden is very strong. This place intertwines with central teachings of Christian faith, such as a literal Creation, Fall, and restoration which give it even more importance. To deny a literal Eden is to deny a foundation stone for basic Bible teachings for which there is strong evidence.

Edwards, Jonathan. Jonathan Edwards (1703–1758) was a significant theologian-philosopher, revivalist, and pastor in early America. Son of a Congregational minister, Edwards was a classical apologist (see CLASSICAL APOLOGETICS). After earning a bachelor's degree at Yale (1720), he entered the ministry in the Presbyterian church in New York in 1726. He died only a few weeks after he began his work as president of the College of New Jersey (now Princeton University) in 1758.

Edwards was heavily influenced by John Locke (1632–1704) and Isaac Newton (1642–1727), and to a lesser extent by the British idealism of George Berkeley (1685–1753). A child prodigy, Edwards produced his first works as a teenager. His first philosophical work “Of Being” contains a powerful cosmological argument, as does his other youthful work “The Mind.” Likewise, in his *Miscellanies* he argues for the existence and necessity of God. In his unpublished “Sermon on Romans 1:20” (1743) Edwards provides a detailed cosmological and teleological argument for God. One of his greatest works, *The Freedom of the Will* (1754), is also apologetic in emphasis, as is *A Treatise Concerning Religious Affections* (1746). His great work on apologetics, *A Rational Divinity*, was never completed.

The Apologetics of Edwards. As a classical apologist in the footsteps of Thomas Aquinas and John Locke, Edwards began with proofs for the existence of God. Edwards used both the cosmological and teleological arguments, though his emphasis was on the former.

The Relation of Faith and Reason. Edwards balanced reason and revelation. Reason had eight basic functions:

First, reason must prove the existence of God, the Revealer. Second, reason anticipates that there will be a revelation. Third, reason alone can grasp rationally any “pretended” revelation. Fourth, only reason can demonstrate the rationality of revelation. Fifth, reason must verify any revelation as genuine. Sixth, reason

argues revelation's dependability. Seventh, reason, having anticipated mysteries in any genuine divine revelation, defends them, refuting any objections to their presence. Eighth, though the “divine and supernatural light” does not come from reason, it is reason that comprehends what this light illuminates. [*Jonathan Edwards*, 22–23]

There are, however, four significant limitations to human reason.

First, it cannot make the knowledge of God ‘real’ to unregenerate man. Second, it cannot yield a supernatural, salvific revelation or even ‘sense’ it by mere reason. Third, if it does receive a revelation, it cannot thereafter determine what that revelation may and may not contain. Fourth, it cannot even ‘apprehend’ divine revelation as divine revelation, though it may recognize its presence. [*ibid.*, 27]

Proofs of the Existence of God. Edwards outlines his own approach to God's existence (see GOD, EVIDENCE FOR) in *Freedom of the Will* (2.3). The apologist proves *a posteriori*, or from effects, that there must be an eternal cause and then argues that this being must be necessary and perfect *a priori*. Edwards combined cosmological and teleological proofs. He even argued against an eternal universe (see “Sermon on Romans 1:20”) in the mode of the *kalam* cosmological argument.

God is eternal. That God must be eternal was firm in Edwards' mind from youth. In his essay “The Mind” he concluded that “it is not strange that there should be [something eternal], for that necessity of there being something or nothing implies it.” And since there is something, then there must always have been something. Why? Because nothing is an impossibility, since “we can't have any such knowledge because there is no such thing.”

Edwards' firm conviction that something is eternal springs out of the law of causality (see CAUSALITY, PRINCIPLE OF), which he describes as a self-evident principle, a “dictate of common sense,” “the mind of mankind,” and “this grand principle of common sense” (*Freedom*, 2.3). In “Miscellanies” he declares that the principle that all effects have a cause is a self-evident truth (see FIRST PRINCIPLES). This being the case, “if we suppose a time wherein there was nothing, a body will not of its own accord begin to be.” For to hold that something can arise without a cause is abhorrent to the understanding (*Freedom*, 91 , p. 74).

So convinced was Edwards that something could not arise without a cause that he argued even an eternal world would need a cause. For “if we should suppose that the world is eternal, yet the beauty, contrivance, and useful disposition of the world would not less strongly conclude for the being of an intelligent author.” For “if we should see such a poem as Vergil's *Aeneid*, would it be any more satisfying to us if we were told that it was from eternity. . . . Would it be at all more satisfying that if we were told that it was made by the causal falling of ink on paper?” (*ibid.*, 312, pp. 79–80).

There must be an eternal being. So God's eternity is necessary because an eternal "nothing" is impossible, since nothing cannot produce something. Something is, so something must always have been. There are only two alternatives: Nothing or God. But as Edwards scholar John Gerstner succinctly put it, "Nothing is nothing at all. That is, we cannot form the notion of Nothing. If we think we have an idea of Nothing, then we think we know that Nothing is. *Nothing has become an existent entity*; Nothing then is Something" (Gerstner, "Outline of the Apologetics," 10).

Proofs of the Attributes of God. As Gerstner correctly noted, "Extraordinary theologians such as Thomas Aquinas and Jonathan Edwards find more of God in the ordinary revelation of nature than ordinary theologians find in the extraordinary revelation of Scripture" (ibid., 99).

Edwards summarizes what can be known about God by general revelation (*see* REVELATION, GENERAL): " 'Tis by metaphysics only, that we can demonstrate that God is not limited to a place, or is not mutable; that He is not ignorant, or forgetful; that it is impossible for Him to lie, or be unjust; and there is one God only and not hundreds or thousands" (*Freedom*, 4.13).

God is independent. Since God is eternal and necessary, he must be independent. He is prior to the world, and the world is dependent on him, not the reverse.

God has all perfections. "To have some and not all [perfections] is to be finite. He is limited in some respects, viz., with regard to the number of virtues or perfections." But "this is . . . inconsistent with independent and necessary existence. To be limited as to the virtues and excellent qualities is a contingent being" ("Sermon on Romans 1:20 ").

God is infinite. Edwards asserted that "Nothing is more certain than that an unmade and unlimited Being exists" (*Works*, 97–98). For that which is necessary and independent must be infinite.

God is One. Since God is infinite he must be one. For "to be infinite is to be all and [it] would be a contradiction to suppose two alls" ("Miscellanies," no. 697). All reality is in God, either as his being or in what flows from it. In Edwards' words, "God is the sum of all being and there is no being without His being. All things are in Him, and He in all" (ibid., no. 880).

Edwards' Attack on Deism. Not only did Edwards believe that God existed but that miracles are possible (*see* MIRACLE ; MIRACLES, APOLOGETIC VALUE OF). God is not deistic (*see* DEISM). In fact, Edwards' critique of deism is one of the most penetrating of the eighteenth century.

Deist, in contrast to Christian, theists believed that God created the world and has revealed himself in nature, but he never performs miracles or produces a supernatural revelation. This view was proclaimed in Matthew Tindal 's "Bible of the deists," *Christianity as Old as Creation, or the Gospel, a Republication of the Religion of Nature*

(1730). For Tindal, and other deists, such as Thomas Jefferson , Thomas Paine, and Francois Voltaire , natural revelation was sufficient.

As Gerstner notes, Edwards "refutes the Deists not by an appeal to faith but by rational analysis" (Gerstner, "Outline of the Apologetics," 196). He demonstrates the utter insufficiency of reason as a substitute for revelation (ibid., p. 197). Contrary to Tindal, Edwards argues that, once reason has shown a revelation to be from God, it is reasonable to insist that every doctrine contained in that revelation be true (*Works*, 2.479f.). Once it is known that the Bible is the Word of God, sound reason demands that all its dictates be accepted.

Proof of the Need for Supernatural Revelation. Edwards' argument for divine revelation is threefold: "(1) Though God through nature reveals so much of himself, men do not really 'know' God from nature. (2) Even if they did know God from nature, nature does not reveal whether God will damn or save them. (3) Even if nature did reveal that fact, it would not change man's hostile attitude toward God and salvation" (Gerstner, "Outline of the Apologetics," 198–99).

People do not "know" God from nature. In one of his sermons, Edwards speaks of "Man's Natural Blindness in the Things of Religion" (Edwards, *Works*, 2.247f.). For "there is an extreme brutish blindness in things of religion, which naturally possesses the hearts of mankind" (ibid., 247). This is not the fault of the senses, but the blindness of the heart. From this "plainly appears the *necessity of divine revelation* " (ibid., 253).

People do not know whether they will be saved. However good natural revelation is, it is not salvific. Natural revelation brings condemnation, not salvation. It leaves people inexcusable (Rom. 1:20). If they "will not be convinced for salvation, they shall be convinced by damnation" (ibid., 255).

Natural revelation does not soften enmity. Nature leaves humanity at enmity with God. Edwards concluded, "I am of the mind that mankind would have been like a parcel of beasts, with regard to their knowledge in all important truths, if there never had been any such thing as revelation in the world, and that they never would have risen out of their brutality." Furthermore, "None ever came to tolerable notions of divine things, unless by the revelation contained in the Scriptures" ("Miscellanies," 350). As Gerstner put it, "if there is anything natural revelation reveals, it is that natural revelation is not sufficient" (Gerstner, "Outline of the Apologetics," 200).

Proof of Supernatural Revelation in the Bible. Of course, this only shows that we need special revelation, not that we have it. To establish that the Bible is the Word of God Edwards used a twofold argument: (1) It is internally consistent. (2) It is externally confirmed.

The internal test: Rationality. Stated as a negative, Christianity is not false because it has mysteries (*see* MYSTERY) but no internal contradictions (*see* "MISCELLANIES," 544). Right reason and revelation harmonize, and "the Bible does not ask [human beings]

to believe things against reason” (“Sermon on Isaiah 3:10”). God’s way to the heart is through the head.

The external test: Miraculous evidence. Like other classical apologists, Edwards believed that miracles follow from the existence of the theistic God. If God can create the world, he can intervene in it. This miraculous intervention takes one of four forms.

First, there is the miracle of supernatural predictive prophecy (*see* PROPHECY AS PROOF OF THE BIBLE). In “Miscellanies” he deals with the fulfillment of Old Testament predictions, both general and messianic (443, 891, 1335). Only God could make such predictions.

Second, miracles can be used to accredit a messenger of God. Edwards appeals to the miracles of Christ. Sometimes, as in the case of the raising of Lazarus, Jesus stated in advance he would perform the miracle to prove his claim. “Now can it be imagined that God would hear an impostor or so order or suffer it that so extraordinary a thing should be done immediately in consequence of the word and act of an impostor?” (*ibid.*, 444).

Third, he appeals to the supernatural nature of the content of Moses’ teaching (*see* MIRACLES AS CONFIRMATION OF TRUTH), arguing that no divine thing can come out of a purely human source. “For example, how could the Jews who were not learned in science or philosophy and were as prone to idolatry as the nations around them come forth with their refined and advanced doctrine of God” (*ibid.*, 159, 1158).

Fourth, he argued from the supernatural results of conversion. How otherwise can a person overcome the fear of death? (“Sermon on Romans 14:7”). He went to great lengths in “A Treatise Concerning Religious Affections” to show that the joy and peace that characterize Christian conversion are not present in other religions.

The Need for Subjective Illumination. All of his stress on rational and objective evidence notwithstanding, Edwards did not believe that either general or special revelation was sufficient to open depraved hearts to God’s truth. Only “the divine and supernatural light” could open the heart to receive God’s revelation. Without this divine illumination, no one ever comes to accept God’s revelation, regardless of how strong the evidence. A new heart is needed, not a new brain. This comes by illumination of the Holy Spirit. This divine light does not give new truth or new revelation. Rather, it provides a new heart, a new attitude of receptivity to revealed truth (*see* Gerstner, “Outline of the Apologetics,” 295–97; *see* HOLY SPIRIT, ROLE IN APOLOGETICS).

The Reasonableness of Free Will and Predestination. As a strong predestinarian, Edwards believed that God had no obligation to save everyone. All deserve to go to hell. So, “he might, if He had pleased, have left all to perish, or might have redeemed all” (*Jonathan Edwards*, 119). But God chose to predestine some to heaven and left others to their just deserts in hell. How can all be free and yet God irresistibly predetermine that only some will be saved? Edwards attempts to rationally reconcile these two seemingly contradictory doctrines by affirming that Liberty “is the power, opportunity, or

advantage, that any one has to do as he pleases” (*ibid.*, 311). Free choice is doing what one desires, but it is God who gives only the elect the desire to accept him. Hence, only they will be saved (*see* “HEATHEN,” SALVATION OF ; INFANTS, SALVATION OF ; UNIVERSALISM).

Edwards’ Rational Defense of Hell. Nowhere does Edwards demonstrate his belief in the rationality of Christianity any more than in his defense of the doctrine of eternal conscious punishment. He argued that even one sin deserves hell, since the eternal, holy God cannot tolerate any sin. How much more, then, does a multitude of daily sins in thought, word, and deed make one unfit for his presence? This is compounded by rejection of God’s immense mercy. And add to this a readiness to find fault with God’s justice and mercy, and we have abundant evidence of the need for hell. Thus, he insisted, if we had a true spiritual awareness, we would not be amazed at hell’s severity but at our own depravity (*Works*, 1.109).

Edwards argued that “It is a most unreasonable thing to suppose that there should be no future punishment, to suppose that God, who had made man a rational creature, able to know his duty and sensible that he is deserving punishment when he does it not; should let man alone, and let him live as he will, and never punish him for his sins, and never make any difference between the good and the bad. . . . How unreasonable it is to suppose, that he who made the world, should leave things in such confusion, and never take any care of the governing of his creatures, and that he should never judge his reasonable creatures” (*Works*, 2.884).

Edwards answers some of the most difficult questions about hell ever posed by a rational mind:

Why do people not repent in hell? It would seem, once they get to such a horrible place, that the damned would want to leave. No so, reasoned Edwards. For how can a place devoid of God’s mercy accomplish what no efforts of his grace could accomplish on earth, namely, effect a change of the heart and disposition of wicked people? If hell could reform wicked sinners, then they would be saved without Christ, who is the sole means of salvation (*ibid.*, 2.520). Suffering has no tendency to soften a hard heart; it hardens it more. Edwards might find that the high rate of recidivism and hardened criminality in modern prisons confirms his point.

Why are temporal sins due eternal punishment? God’s justice demands eternal punishment for sins because “the heinousness of any crime must be gauged according to the worth or dignity of the person it is committed against” (Davidson, 50). Thus, a murder of a President or pope is more heinous than that of a terrorist or Mafia boss. Sin against an infinite God is an infinite sin, worthy of infinite punishment (*Works*, 2.83).

Why cannot hell have redeeming value? Hell both satisfies God’s justice and glorifies it by showing how great and fearful a standard it is. “The vindictive justice of God will appear strict, exact, awful, and terrible, and therefore glorious” (*ibid.*, 2.87). The more horrible and fearful the judgment, the brighter the sheen on the sword of God’s justice.

Awe-inspiring punishment fits the nature of an awe-inspiring God. By a majestic display of God's wrath, God gets back the majesty he has been refused. An awful display of punishment in the afterlife will bring to God what human beings refused to give him in this life. Those who give God no glory by choice during this life will be forced to give him glory in the afterlife.

All are either actively or passively useful to God. In heaven believers will be actively useful in praising his mercy. In hell unbelievers will be passively useful in bringing majesty to his justice. Just as a barren tree is useful only for firewood, so disobedient men are only fuel for an eternal fire (ibid., 2.126). Since unbelievers prefer to keep at a distance from God in time, why should we not expect this to be their chosen state in eternity?

Would a merciful God permit suffering in hell? To suppose that God's mercy does not permit suffering in hell is contrary to fact. God allows plenty of suffering in this world. It is an empirical fact that God and creature-pain are not incompatible (Gerstner, "Outline of the Apologetics," 80). If God's mercy cannot bear eternal misery, then neither can it bear lesser amounts (*Works* , 2.84).

Further, Edwards contended that God's mercy is not a passion or emotion that overcomes his justice. Mercy so construed would constitute a defect in God. It would make him weak and inconsistent, not a fit judge.

Finally, our attitudes and feelings will be transformed and correspond more to God's. Hence, we will love only what God loves and hate what he hates. Since God is not miserable at the thought or sight of hell, neither will we—even in the case of people we loved in this life. Edwards devoted a whole sermon to this: "The End of the Wicked Contemplated by the Righteous." In Gerstner's digest of it, "it will seem in no way cruel in God to inflict such extreme suffering on such extremely wicked creatures" (Gerstner, "Outline of the Apologetics," 90).

Evaluation. It is possible only to touch on the implications for apologetics found in Edwards' work.

Positive Evaluation. Jonathan Edwards was a noted American revivalist and a great intellectual—a rare combination. His defense of the Faith was in the tradition of the classical apologists.

Whatever one may think of Edwards' answers to the difficult questions about hell, he attempted to confront the most difficult theological problems. He believed that God's truth is in harmony with right reason. His defense of Christianity began with one of the most rational and powerful arguments for God's existence ever offered by a theist.

Despite his stress on reasoning, Edwards was not a rationalist. He argued for the need of special revelation. He believed that reason was insufficient to bring people to Christ.

Nothing short of the supernatural work of divine illumination of the human heart could do that (*see* HOLY SPIRIT, ROLE IN APOLOGETICS).

Edwards saw clearly the need to give a rational defense of the existence of God before he attempted a historical defense of Christianity. However, he also perceived that the truth of Christianity cannot be justified without an appeal to external evidence. There is a factual, as well as a rational, test for the truth of Christianity.

Negative Criticism. Some justified and some unjustified criticisms have been made of Edwards. Criticisms common to Reformed theology are covered elsewhere (*see* FREE WILL). For an accurate understanding of his thought, however, two charges should be answered: that his Platonic (*see* PLATO) idealism leads him into pantheism, and that his God lacks mercy.

The charge that Edwards is a pantheist (*see* PANTHEISM) because he identified God with all Being is carefully answered in Gerstner, "An Outline of the Apologetics of Jonathan Edwards," pt. 2, 99–107. Edwards' God is only "all Being" in the sense that all being is either of his essence or flows from it. He makes clear distinctions between God and creation, Necessary Being, and contingent being. And his emphasis on individuals being eternally elect or eternally damned is incompatible with a pantheistic worldview (ibid., 104).

One of Edwards' arguments for hell is that God has no obligation to be merciful to all. Mercy, he insists, is a choice and not a duty. God only has to bestow his mercy on those he chose to do so. This argument seems to negate what Edwards says he believes: God is an all perfect being which would include omnibenevolence. But if God is all-good, then something in God obligates him to help sinners in need. Certainly, we would not think a person completely good who did not attempt to save everyone he could from a sinking ship or a burning building.

According to Edwards, no one is moved to act unless God acts upon him. Free choice is doing what one desires, but it is God alone who gives the desire to it. When applied to Lucifer's choice to rebel against God, this would mean that God gave him the desire to sin. But God cannot sin (Hab. 1:13), nor can he give free agents the desire to sin (James 1:13–14). Hence, Edwards' (and the closely connected strong Calvinist) concept of free choice would seem to be rationally incoherent.

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Enlightenment. The period of modern history known as the *Enlightenment* began in the late seventeenth century and dominated the eighteenth and much of the nineteenth centuries in Europe. It was rooted in Dutch and German rationalism, particularly Benedict Spinoza’s rationalistic and antiper supernatural work, *Tractatus Theologico-politicus, Tractatus Politicus* (1670). Christian Wolfe (1679–1754) set the tone for the period when he sought the way to truth through “pure reason.” Immanuel Kant later defined it in his *Religion within the Bounds of Reason Alone* (1793) as “man’s emergence from a self-inflicted state of minority. A minor is one who is incapable of making use of his understanding without guidance from someone else. . . . Have the courage to make use of your understanding, is therefore the watchword of the Enlightenment” (Douglas, 345; see RATIONALISM).

Other writers who contributed to the Enlightenment include David Hume, especially in his *Inquiry Concerning Human Understanding* (1748) and *Dialogue Concerning Natural Religion* (1779); Hermann S. Reimarus (1694–1768), and the deists (see DEISM). John Toland (1670–1722), Matthew Tindal (1656–1733), Thomas Paine (1737–1809), and Francois-Marie Voltaire (1694–1778). Gottfried Lessing’s work, *Nathan the Wise* (1779) argued for religious toleration, since truth was not exclusive to Christianity, but was found in many religions.

The Enlightenment stressed both reason and independence and elicited a pronounced distrust of authority. Truth is to be obtained through reason, observation, and experiment. It came to be dominated by antiper supernaturalism (see MIRACLES, ARGUMENTS AGAINST). Religious pluralism was the result (see PLURALISM, RELIGIOUS). Out of this context came deism, biblical criticism, and rejection of divine revelation (see BIBLE CRITICISM; BIBLE, EVIDENCE FOR). Natural religion was emphasized. Its more radical forms encouraged agnosticism, skepticism, and atheism. This radicalized form lives on in

secular humanism. Karl Barth characterized the Enlightenment as “a system founded upon the omnipotence of human ability” (cited in “Enlightenment”).

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Einstein, Albert. Albert Einstein was born in Ulm, Germany, in 1879. He graduated from engineering school in Zurich in 1901. In 1905 he wrote his first paper on the theory of relativity, which gained him a Ph.D. from the University of Zurich. He later gained world fame overnight in 1919 when the British Royal Society announced that his new theory of gravity had toppled the 300-year-old theory of Isaac Newton. In 1921 he won the Nobel Prize for Physics for his work in the field of theoretic physics. Rising antisemitism in Europe prompted Einstein to move to the United States in 1933 where he taught at Princeton University until his death in 1955.

Einstein embraced pacifism, liberalism, and Zionism. His life-long quest was to find a unified field theory to unite all the basic forces of nature—a goal that eluded him throughout his life. His first publication was titled “A New Determination of Molecular Dimensions” (1905). His next article, “On a Heuristic Viewpoint Concerning the Production and Transformation of Light,” postulated that light is composed of quanta (later called photons) that, in addition to wave-like behavior, demonstrate certain properties unique to particles. In “On the Electrodynamics of Moving Bodies” he postulated that both time and motion are relative to the observer. His next paper, “Does the Inertia of a Body Depend upon Its Energy Content?” postulated his famous $E = MC^2$ (Energy = mass times the speed of light squared). In 1916 he wrote “The Foundation of the General Theory of Relativity,” in which he contended that gravity is not a force but a curved field in the space-time continuum created by the presence of mass.

View of God and Religion. Despite his support for the Zionist movement, Einstein was not a practicing Jew. His relation to Judaism was more ethnic than religious. Judaism played little part in his life, but he insisted that a Jew can shed his faith and still be a Jew. In a war-time letter to physicist Paul Ehrenfest, Einstein expressed a sense of bitterness toward God in the face of the European holocaust: “The ancient Jehovah is still abroad. Alas, he slays the innocent along with the guilty, whom he strikes so fearfully blind that they can feel no sense of guilt” (ibid., 156; see CANAANITES, SLAUGHTER OF).

As to the interaction of religion and science, Einstein believed that “To the Sphere of religion belongs the faith that the regulations valid for the world of existence are rational, that it is comprehensible to reason. I cannot conceive of a genuine scientist without that

profound faith. The situation may be expressed by an image: science without religion is lame, religion without science is blind” (Frank, 286; *see* FAITH AND REASON).

The Order of the Universe. For Einstein the universe was a marvel of mathematical order:

The more a man is imbued with the ordered regularity of all events, the firmer becomes his conviction that there is no room left by the side of this ordered regularity for causes of a different nature [than a Creator]. For him neither the rule of human nor the rule of divine will exists as an independent cause of natural events. To be sure the doctrine of a personal God interfering with natural events could never be refuted, in any real sense, by science, for this doctrine can always take refuge in those domains in which scientific knowledge has not yet been established. [ibid.; *see* TELEOLOGICAL ARGUMENT]

A biographer explained that Einstein believed that “from a mathematical standpoint the system of physical laws is very complex, and that to understand it very great mathematical capacities are required. Nevertheless, he has hope that nature actually obeys a system of mathematical laws” (cited in Herbert, 177).

The Nature of God. In a 1929 reply to a cabled inquiry from Rabbi Goldstein of New York, Einstein described his belief in a pantheistic (*see* PANTHEISM) concept of God: “I believe in Spinoza’s God who reveals himself in the harmony of all that exists, not in a God who concerns himself with the fate and actions of men” (Clark, 38; *see* SPINOZA, BENEDICT). He added elsewhere, “The main source of the present-day conflicts between the spheres of religion and of science lies in the concept of a personal God” (Frank, 285). Thus, he rejected theism in favor of pantheism.

Accordingly, he denied that there would be any day of reward or punishment after death. “What I cannot understand is how there could possibly be a God who would reward or punish his subjects or who could induce us to develop our will in our daily life” (Bucky, 85). He said, “I do not believe that a man should be restrained in his daily actions by being afraid of punishment after death or that he should do things only because in this way he will be rewarded after he dies. . . . Religion should have nothing to do with a fear of living or a fear of death, but should instead be a striving after rational knowledge” (ibid., 86).

God and Miracles. With the caveat that the existence of miracles could never be disproved, Einstein joined Spinoza in denying that they could occur: “The natural laws of science have not only been worked out theoretically but have been proven also in practice. I cannot then believe in this concept of an anthropomorphic God who has the powers of interfering with these natural laws. . . . If there is any such concept as a God, it is a subtle spirit, not an image of a man that so many have fixed in their minds. In essence, my religion consists of a humble admiration for this illimitable superior spirit that reveals itself in the slight details that we are able to perceive with our frail and feeble minds” (ibid.; *see* MIRACLES, ARGUMENTS AGAINST).

The Origin of the Universe. There is a strange irony about Einstein’s view of God. His reluctant acceptance of the big bang origin of the universe should have led him away from his pantheism to a more theistic position. For Einstein failed to find an explanation of his general relativity equation that would not require a beginning or a Beginner for the universe. Even the late twentieth-century physicist and antitheist Stephen Hawking raises the question of who put “fire into the equations” and ignited the universe (Hawking, 99).

Einstein first opposed the mounting evidence for a big bang origin, perhaps realizing its theistic implications. In order to avoid this conclusion, Einstein added a “fudge factor” in his equations, only to be embarrassed later when his maneuver was noticed. To his credit, he eventually admitted his error and concluded that the universe was created. Thus, he wrote of his desire to know how God created this world. He said, “I am not interested in this or that phenomenon, in the spectrum of this or that element. I want to know His thought, the rest are details” (see Herbert, 177).

Evaluation. Logically, after reviewing the evidence that the cosmos had a beginning, Einstein should have concluded with the British physicist Edmund Whittaker: “It is simpler to postulate creation *ex nihilo* —divine will constituting nature from nothingness” (Jastrow, “Scientist Caught,” 111; *see* CREATION, VIEWS OF). Even Robert Jastrow, a confirmed agnostic, said, “that there are what I or anyone would call supernatural forces at work is now, I think, a scientifically proven fact” (*God and the Astronomers*, 15, 18). Jastrow observes that “astronomers now find that they have painted themselves into a corner because they have proven, by their own methods, that the world began abruptly in an act of creation. . . . And they have found that all this happened as a product of forces they cannot hope to discover” (ibid., 15). Unfortunately, we lack evidence that Einstein drew the conclusion that his scientific breakthroughs support (*see* ANTHROPIC PRINCIPLE ; EVOLUTION, COSMIC ; KALAM COSMOLOGICAL ARGUMENT ; THERMODYNAMICS, LAWS OF).

If it is a scientific fact that the universe exploded into being by supernatural forces, Einstein should have accepted miracles. This was the biggest miracle of all.

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Epistemology. *Epistemology* is the discipline that deals with theory of knowledge. The term can be broken down into *epistem-ology* (Gk. *episteme*, “to know; *logos*, “study”). It is the study of how we know.

The various epistemologies include rationalism (*see* SPINOZA, BENEDICT), empiricism (*see* HUME, DAVID), agnosticism (*see* KANT, IMMANUEL), idealism (*see* PLATO), positivism (*see* Comte, Auguste), existentialism (*see* SØREN KIERKEGAARD), phenomenology (*see* * HEGEL, W. F. G. ; HEIDEGGER, MARTIN), and mysticism (*see* PLOTINUS).

Epistemology considers whether ideas are innate or whether we are born a *tabula rasa* , that is, a blank slate. It also deals with tests for truth (*see* TRUTH, ABSOLUTE NATURE OF) and whether true ideas merely cohere (*see* COHERENTISM) or need an ultimate foundation (*see* FOUNDATIONALISM) in self-evident first principles.

Epistemology also treats certainty (*see* CERTAINTY/CERTITUDE) and doubt (*see* SKEPTICISM). Agnosticism claims we cannot know reality, whereas realism asserts that we can know reality. The degree of our certainty in what we know ranges from low probability (*see* INDUCTIVISM) to rational necessity (*see* FIRST PRINCIPLES ; LOGIC ; TAUTOLOGIES).

Eschatological Verification. See VERIFICATION STRATEGIES .

Essenes and Jesus. *Essenes* were a break-away Jewish sect who established a community near the Dead Sea (*see* DEAD SEA SCROLLS). Their name may derive from *Hasidim* (“loyal [or, pious] ones”). This may reflect their belief that they lived in the end times of apostasy. The evil reign of Antiochus IV Epiphanes in the second century B.C . may have been the impetus for founding such a sect. Their community lasted until the second century A.D . According to Josephus (*Jewish War*, 2.8.2), the Essenes, Pharisees, and Sadducees were the primary sects of Judaism. The elder Pliny linked them with Qumran. Their life was marked by asceticism, communism, and the rejection of animal sacrifice. In New Testament times they numbered about 4000 (Cross, 471).

Jesus and the Essenes. Some scholars, such as I. Ewing (*The Essene Christ*) have claimed that Jesus was the Essene “Teacher of Righteousness” mentioned in the Dead Sea Scrolls.

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It is reasoned that John the Baptist and even Jesus were members of the Essene community. During his recorded ministry in the Gospels Jesus only opposed the Pharisees and Sadducees. Never was he critical of the Essenes. Jesus certainly thought of himself as a teacher of righteousness. When he was baptized he said, “Let it be so now: it is proper for us to do this to fulfill all righteousness.” Then John consented (Matt. 3:15). Jesus was a priest. According to the New Testament, Jesus was a priest forever after the order of Melchizedek (Heb. 7:17). He fulfilled the typology of the Aaronic priesthood. Likewise, “the Teacher of Righteousness” of the Essene community was a priest. Jesus spent time in the wilderness near the Essenes. He also had a similar anti-establishment emphasis, as did the Essenes.

Evaluation. There are numerous flaws in the Essene theory. The three basic arguments in favor of the Essence view will be treated in order.

That Jesus did not criticize the Essenes is a fallacious argument from silence. He is recorded to have said nothing about them at all. Essenes were not part of official Judaism, which opposed Christ. The *Talmud* did not oppose the Essenes, either, yet it was not an Essene book. This is also an instance of the “black-and-white” fallacy. It overlooks the fact that Jesus could have been a member of no group at all. And it overlooks crucial differences between the teaching of Jesus and Essene doctrines. Jesus

- opposed ceremonial purity which they radicalized.
- opposed legalism, and they were decidedly Mosaic Law legalists.
- stressed the kingdom of God. They did not.
- preached love. They did not.
- claimed to be sinless Messiah. They placed a heavy burden of sin on each person.
- opened salvation to the Gentiles. They were Jewish nationalists.
- taught that there was one Messiah; they looked for two.
- taught the resurrection of the body; they stressed the immortality of the soul, but not the body.

In general, Jesus’ ethical teachings far more closely approximated rabbinical Judaism than Qumran austerity.

While Jesus taught righteousness, it does not follow that he was the Essene “teacher of righteousness.” Such an identification overlooks crucial differences. The Essene leader

- was a priest, while Jesus was a Prophet, Priest, and King.

- was a sinner needing purification, but Jesus was sinless (*see* CHRIST, DEITY OF).
- thought of himself as a creature, not a Creator.
- atoned for no one at his death.
- was not resurrected from the dead as was Jesus.
- was not worshiped as God.
- lived long before Jesus.

There is no real evidence that Jesus ever visited the Essene community, but casual affiliation with Essenes is irrelevant, anyway. His identity remained with no one except God. In many regards, Jesus was an iconoclast of established Judaism. Though he came to fulfill, not destroy, the law (Matt. 5:17–18), he opposed official Judaism for different reasons than did the Essenes. The Jewish hierarchy rejected him as the Messiah, the Son of God. This was not true of the Essenes. Further, Jesus was not an ascetic. He was even criticized for eating with sinners (see Christ, Deity of).

Conclusion. There is no evidence that Jesus ever had contact with the Essene community. But if he did, it does not make him an Essene or disprove his unique claims. His teachings differed in important respects. Jesus alone claimed to be the Jewish Messiah (*see* PROPHECY AS PROOF OF THE BIBLE), and Son of God (*see* CHRIST, DEITY OF).

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Essentialism, Divine. *Essentialism* (Lat. *esse* , “to be”), as it relates to moral principles and God’s will, is the view that ethical principles are rooted ultimately in the unchangeable divine essence (*see* GOD, NATURE OF), not simply in God’s changeable will. It is opposed to divine *voluntarism* which asserts that something is good because

God wills it. Essentialism, on the contrary, holds that God wills something because it is good.

There are two basic kinds of essentialism: platonic and theistic. Plato believed that God, the *Demiurgos* , wills all things in accordance with the Good (the *Agathos*), which is outside God and to which he is subject.

Theists (*see* THEISM), on the other hand, believe that God wills things in accordance with his own unchangeably good nature (*see* GOD, NATURE OF). So the ultimate good is not outside God but inside him, his own unchanging nature. This is called divine essentialism.

Arguments for Essentialism. Christian essentialists offer three basic lines of argument in favor of their view: philosophical, biblical, and practical.

Philosophical Arguments for Essentialism. Traditional theists argue that God is unchangeable in his nature. Thomas Aquinas offered three basic arguments for God’s immutability (*see* GOD, NATURE OF).

The argument from God’s pure actuality. The first argument is based on the fact that a God of pure Actuality (“I Am-ness”) has no potentiality. For everything which changes has potentiality. But there can be no potentiality in God (he is pure Actuality). Therefore, God cannot change (Exod. 3:14). For whatever changes has the potential to change. But as pure Actuality God has no potential to actualize through change.

The argument from God’s perfection. The second argument for God’s unchangeability argues from his absolute perfection. Whatever changes acquires something new. But God cannot acquire anything new, since he is absolutely perfect; he could not be better. Therefore, God cannot change. God is by his very nature an absolutely perfect being. If he lacked any perfection, he would not be God. However, to change one must gain something new. But to gain a new perfection is to have lacked it. A God lacking in some perfection would not be the absolutely perfect God who is.

The argument from God’s simplicity. The third argument for God’s immutability follows from his simplicity. Everything which changes is composed of what changes and what does not change. But there can be no composition in God (he is an absolutely simple being). Hence, God cannot change.

If everything about a being changed, it would no longer be the same being. In fact, that would not be change at all but annihilation of one thing and a recreation of something entirely new. If in every change something remains the same and something does not, the thing that changes must be composed of these two elements. Since an absolutely simple being, such as God, cannot have two elements, it follows that God cannot change.

Biblical Arguments for Divine Essentialism. Scriptures that support theistic essentialism are those that declare God to be unchangeable in his nature.

Old Testament evidence of immutability. The Old Testament psalmist declared: “In the beginning you [LORD] laid the foundations of the earth, and the heavens are the work of your hands. They will perish, but you remain; they will all wear out like a garment. Like clothing you will change them and they will be discarded. But you remain the same, and your years will never end” (Ps. 102:25–27). First Samuel 15:29 affirms that “He who is the Glory of Israel does not lie or change his mind; for he is not a man, that he should change his mind.” The prophet added, “I the LORD do not change. So you, O descendants of Jacob, are not destroyed” (Mal. 3:6).

New Testament evidence of immutability. The New Testament is equally strong about God’s unchangeable nature. Hebrews 1:10–12 quotes Psalm 102 with approval. A few chapters later the author of Hebrews asserts, “God did this so that, by two unchangeable things in which it is impossible for God to lie” (Heb. 6:18a). The apostle Paul adds in Titus 1:2, “God, who does not lie, promised before the beginning of time.” James 1:17 points out that “Every good and perfect gift is from above, coming down from the Father of the heavenly lights, who does not change like shifting shadows.”

Now if God is unchangeable in his nature, then his will is subject to his unchangeable nature. Thus, whatever God wills must be good in accordance with this nature. God cannot will contrary to his nature. He cannot lie (Heb. 6:18). He cannot be unloving, nor unjust. Divine essentialism must be correct.

Practical Arguments for God’s Moral Immutability. Two practical arguments are offered in favor of divine essentialism, the need for moral stability and moral repugnance. These are supported by what we experience of God’s trustworthiness and the scriptural testimony that God can be trusted not to change.

The Argument from the Need for Moral Stability. If all moral principles were based on God’s changing will, then there would be no moral security. How could one be committed to a life of love, mercy, or justice only to find out that the rules had changed about whether these were the right things to do? Indeed, how could we serve God as supreme if he could will that our ultimate good was not to love him but hate him?

The Argument from Moral Repugnance. Divine essentialists insist that it is morally repugnant to assume, as voluntarists do, that God could change his will on whether love is essentially good and will instead that hate be a universal moral obligation. Likewise, it is difficult to conceive how a morally perfect being could will that rape, cruelty, and genocide would be morally good. Since it is morally repugnant for creatures made in God’s image to imagine such a change in God’s will, how much more must it be for the God in whose image we are made.

The Argument from God’s Trustworthiness. The Bible presents God as eminently trustworthy. When he makes an unconditional promise he never fails to keep it (cf. Gen.

12:1–3 ; Heb. 6:16–18). Indeed, the gifts and callings of God are without change of mind on his part (Rom. 11:29). God is not a man that he should repent (1 Sam. 15:29). He can always be counted on to keep his word (Isa. 55:11). But this ultimate trustworthiness of God would not be possible if he could change his will at any time about anything. The only thing that makes God morally bound to keep his word is his unchangeable nature. Otherwise, he could decide at any moment to send all believers to hell. He could reward the wicked for murder and cruelty. Such a God would not be trustworthy. The God of the Bible is unchangeably good.

Objections to Essentialism. Objection from God’s Supremacy. Voluntarists, such as, William of Ockham, object to essentialism. One argument is from the supremacy of God, which can be stated:

1. Either God wills it because it is right, or else it is right because God wills it.
2. But if he wills it because it is right, then God is not supreme because there is something outside him to which he is subject.
3. Hence, it is right because God wills it.

Essentialists note two problems with this argument. Premise 1 presents a false dilemma. It need not be an either/or; it could be a both/and. That is, perhaps moral principles flow from the will of God as rooted in the nature of God. If so, then a voluntaristic conclusion does not follow. Also, premise 2 wrongly assumes that the supreme ethical standard to which God’s will must be subject is “outside” of God. But if it is “inside God,” namely, his own supreme moral nature, then the dilemma vanishes.

Objection from the Nature of Morality. Those opposed to essentialism argue that moral principles by their very nature flow from the will of God, not from his nature. For a moral law is a prescription, and prescriptions come only from prescribers. It is an ethical command, and commands come only from commanders. Hence, it is of the very nature of moral law that it come from a Moral Lawgiver. They insist that to claim (as essentialists do) that moral laws flow from God’s essence, not his will, is to misunderstand the nature of a moral principle.

However, essentialists respond that voluntarists again wrongly assume that it is either/or, rather than both/and. The problem is resolved if one posits (as essentialism does) that moral principles flow from the will of God as rooted in the unchangeable nature of God. That is, God wills what is right in accordance with the unchangeably good character of his moral nature (*see* MORALITY, ABSOLUTE NATURE OF).

Objection from God’s Sovereignty. The argument from God’s sovereign will is based more on a specific interpretation of certain Scriptures than on philosophical reasoning. Did not Job declare to God: “I know that you can do all things; no plan of yours can be thwarted” (Job 42:2)? And did not the apostle Paul affirm of God: “ ‘I will have mercy on whom I have mercy, and I will have compassion on whom I have compassion.’ It does

not, therefore, depend on man's desire or effort, but on God's mercy" (Rom. 9:15–16). Does not God do everything "in accordance with his pleasure and will" (Eph. 1:5)?

One need not reject the sovereignty of God to see the fallacy of this argument. These passages are not speaking of the ultimate basis of moral principles but of God's election. Even biblical texts that speak of God's will as the ultimate source of what is morally right do not prove voluntarism. Moral principles could come ultimately from God's will *as rooted in his unchangeable nature* . This is, in fact, exactly what the Bible declares of God's unchangeable character.

Objection That God Has Changed His Will. According to essentialists, there are examples in Scripture where God changed his will. Did he not "repent" of making mankind in the days of Noah (Genesis 6)? Did God not "repent" or change his mind about the destruction of Nineveh (Jonah 3)? Did not God change his mind about destroying Israel after Moses prayed (Numbers 14)?

Divine essentialists point out that God did not *actually* change in any of these cases. Human beings changed in relation to God and, hence, it only *appeared* from a human standpoint that God changed. The wind appears to change when we turn from pedaling a bike into it and ride with it at our back. A water fall has not changed its flow, simply because we right a downward-turned cup and suddenly find that it is full. As Thomas Aquinas noted, when the person moves from one side of the pillar to the other, the pillar does not move in relation to the person. Rather, the person moves in relation to the pillar.

Conclusion. Divine essentialism is rooted in good arguments philosophically, biblically, and practically. The objections against it fail to make their points stick. Hence, while ethical principles do flow from God's will, nevertheless, they are rooted in his unchangeable nature. Thus, God cannot will anything that is contrary to his essentially good moral nature.

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Eusebius. Eusebius (ca. 260–340) was bishop of Caesarea and the "father of church history." His *Ecclesiastical History* is the principal source of information from the apostolic period to the fourth century. It contains an immense amount of material on the Eastern church, though little about the West. Eusebius also wrote *The Martyrs of*

Palestine , an account of the Diocletian persecutions (303–310). He also wrote a biography of the emperor Constantine.

The apologetic and polemic writings of Eusebius were extensive. They include: *Against Hierocles* (answering anti-Christian rhetoric of a pagan governor of Bithynia), *The Preparation for the Gospel* (why Christians accept the Hebrew tradition and reject the Greek), and *Demonstration of the Gospel* (arguments for Christ from the Old Testament). Eusebius also wrote a work on the incarnation, *The Theophany* . *Against Marcellus, Bishop of Ancyra* is a collection of Old Testament passages foretelling the coming of Christ. To the latter he added a theological *Refutation of Mar cellus* . Eusebius wrote *The Defense of Origen* on Origen 's views of the Trinity and incarnation (see Schaff, 2d series, 1.36). He wrote a book on *Problems of the Gospels* , *On Easter* , *On the Theology of the Church* , and *On the Names and Places in the Holy Scriptures* .

Eusebius is a crucial historical link between the apostles and the Middle Ages. After the apostles and earliest apologists, he is a prime example of the form taken by early Christian apologists. Further, he played a key role in the transmission of Scripture (see Geisler and Nix, 278–82) by preparing fifty copies of the Bible only 25 years after Diocletian had ordered its extinction in 302.

Other early witnesses are covered in the article NEW TESTAMENT, NON-CHRISTIAN SOURCES .

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Evil, Problem of. If God is absolutely good, then why is there evil (*see* GOD, NATURE OF)? The problem of evil is a serious challenge to the defense of Christianity. Actually there are many problems relating to evil, for example, the problems about its origin, nature, purpose, and avoidability. The problems of evil can be divided among moral, metaphysical (*see* METAPHYSICS), and physical.

Worldviews and Evil. Although every worldview has to deal with the problem of evil, it is an especially acute problem for theism. Of the three major worldviews, Atheism affirms the reality of evil and denies the reality of God. Pantheism affirms the reality of God but denies the reality of evil . Theism affirms the reality of both God and evil.

Herein is the problem; how can an absolutely good Being (God) be compatible with evil, the opposite of good?

As compared with the other worldviews that affirm both God and evil, theism would seem to be in a more disadvantageous position. Finite godism, for example, can claim that God desires to destroy evil but is unable to because he is limited in power. Deism, likewise, can distance God from evil by stressing that God is not immanent in the world, at least not supernaturally. We are on our own. And for pantheism evil is a necessary part of the ongoing progress of the interaction of God and the world (his body).

The problem for theism is that it not only believes God is all-powerful and could destroy evil, but he is all-loving and should destroy it. Further, the theistic God is all-knowing and created this world fully aware of what would happen. What is more, God created the world freely (*see* CREATION, VIEWS OF), so that he could have done otherwise.

It is in the context of this kind of theistic God that we approach problems of evil.

The Origin of Evil. Where did evil come from? An absolutely good God cannot create evil. Nor, would it seem, can a perfect creature give rise to imperfection. Whence, then, evil? The problem can be summarized:

1. God is absolutely perfect.
2. God cannot create anything imperfect.
3. But perfect creatures cannot do evil.
4. Therefore, neither God nor his perfect creatures can produce evil.

However, in a theistic universe these are the only two sources for moral evil. Therefore, there seems to be no solution for the origin of evil in a theistic universe.

The basic elements in the theistic response to this problem are found in Augustine and Thomas Aquinas. Theists since then have followed the contours of their thought. Both agreed on the response that can be stated as follows:

1. God is absolutely perfect.
2. God created only perfect creatures.
3. One of the perfections God gave some of his creatures was the power of free choice.
4. Some of these creatures freely chose to do evil.

5. Therefore, a perfect creature caused evil.

God is good, and he created good creatures with a good power called free will. Unfortunately, they used this good power to bring evil into the universe by rebelling against their Creator. So evil did arise from good, not directly but indirectly, by the abuse of a good power called freedom. Freedom in itself is not evil. It is good to be free. But with freedom comes the possibility of evil. So God is responsible for making evil possible, but free creatures are responsible for making it actual.

Of course, other questions attach to this free choice solution to the origin of evil. One is, what caused the first creature to choose evil?

Theists distinguish between the primary cause of a free action (God) and the secondary cause (a human being). God gave the power of choice. However, God is not responsible for the exercise of that free choice to do evil. God does not *perform* the free action for us. Human free choice is not a mere instrumental cause through which God works. Human beings are the efficient, albeit secondary, cause of their own free actions. God produces the *fact* of free choice, but each human performs the *act* of free choice. God then is responsible for the *possibility* of evil, but we must bear the responsibility for the *actuality* of it. God neither wills evil to be done, nor wills it not to be done. He wills to permit evil to be done, and this is good.

But if God cannot will evil, then what is the cause of it? No action can be uncaused, since this violates the first principle of causality (*see* CAUSALITY, PRINCIPLE OF) that demands that every event has a cause.

To respond to this question it is necessary to unpack the nature of free choice. There are three basic views of the nature of free choice: In determinism, a free act is caused by another; in indeterminism, it is uncaused, and in self-determinism it is caused by oneself. Determinism would eliminate human responsibility, since another caused the action, not ourselves. Indeterminism is irrational, since a fundamental rule of reason is that every action has a cause. It follows, then, that every free choice must be self-caused.

Of course, a person uses the *power* of free choice to make free choices. However, the person is not free choice. He simply *has* free choice. It is wrong to say I *am* free choice; I simply *have* free choice. So, I am the efficient cause of my own free actions, but the power of free choice is the means by which I freely act.

The Nature of Evil. There is another dimension to this difficulty. What is the *nature* of evil? That is, what is the essence or identity of evil? This too, is a particularly pesky problem for a classical theist (*see* CLASSICAL APOLOGETICS). For God alone is eternal, and everything he created was good. What, then, is evil?

Theists reject dualism. Evil is not a coeternal principle outside of God. For not all opposites like good and evil are first principles. This wrongly assumes that just because something can be essentially good (God), something can be essentially bad. But once

dualism is rejected, one has great difficulty explaining the reality of evil. If evil is not something outside of God, and it cannot be anything inside of God, then what is it? The problem can be summarized this way.

1. God is the Author of everything.
2. Evil is something.
3. Therefore, God is the Author of evil.

Rejecting the first premise leads to dualism. Likewise, denying the second leads to illusionism which denies the reality of evil (*see* PANTHEISM). Neither is acceptable to a theist. What, then, is the solution? To agree that God did not create all things is to deny his sovereignty. To say evil is nothing denies reality. However, to admit that God caused all things and evil is something is to acknowledge that God caused evil—a conclusion rejected by Aquinas. But this conclusion seems to follow logically from these premises. Unless one rejects the truth of one of the premises, he must accept the truth of the conclusion.

The theist responds that evil is not a *thing* or substance. Rather it is a *lack* or privation of a good thing that God made. Evil is a deprivation of some particular good. The essence of this position is summarized:

1. God created every substance.
2. Evil is not a substance (but a privation in a substance).
3. Therefore, God did not create evil.

Evil is not a substance but a corruption of the good substances God made. Evil is like rust to a car or rot to a tree. It is a *lack* in good things, but it is not a thing in itself. Evil is like a wound in an arm or moth-holes in a garment. It exists only in another but not in itself.

It is important to note that a privation is not the same as mere *absence* . Sight is absent in a stone as well as in a blind person. But the absence of sight in the stone is not a privation. Absence of something that *ought to be there* . Since the stone by nature ought not to see, it is not deprived of sight, as is the blind man. Evil, then is a deprivation of some good that ought to be there. It is not a mere negation.

To say that evil is not a thing, but a lack in things, is not to claim that it is not *real* . Evil is a real lack in good things, as the blind person knows only so well. Evil is not a real substance, but it is a real privation in good substances. It is not an actual entity but a real corruption in an actual entity.

Evil as privation comes in different kinds. There are physical privations, such as mutilations and there are moral privations, such as a sexual perversity. Privation can be in substance (*what* something is) or in relationships (*how* it relates to others). There are not only bad *things* but there are bad relations between things. A relationship of love is a good one; hate is an evil one. Likewise, when a creature worships its Creator, it relates well; blaspheming the Creator is an evil relationship.

From this perspective, it follows that there is no such thing as something that is totally evil. If it were totally deprived of all good, it would be nothing. A totally rusty car is no car at all. And a totally moth-eaten garment is only a hanger in a closet. Evil, like a wound, can only exist in something else. A totally wounded arm means the person is maimed.

In view of this, something cannot be totally private, at least not in a metaphysical sense. A totally corrupted being would not exist at all. And a totally incapacitated will could not make any moral actions. One must take care not to carry human depravity so far that one destroys the ability to sin. There cannot be a supreme evil, for although evil lessens good; it can never totally destroy it. Nothing can be complete, unmitigated evil. For if all good were entirely destroyed—and this would be required for evil to be complete—evil itself would vanish since its subject, namely good, would no longer be there.

The fact that evil cannot be total in a metaphysical sense by no means implies that it cannot be total in a moral sense. A being can be *totally* (or, *radically*) depraved morally in the sense that evil has invaded every part of being. But the moral total depravity can only be extensive, not intensive. It can extend to every part of a person's being, but it cannot destroy personal being. If it destroyed one's person, there would no longer be a person to do evil. Total evil in this sense would destroy a person's ability to do evil.

Classical theists described things in terms of their four causes: (1) efficient; (2) final; (3) formal, and (4) material. A human being has God as the *efficient cause* , God's *glory* and their *good*; as *final cause* , a soul as *formal cause* and a body as the *material cause* . However, since evil is not a substance, it has no formal cause, and its material cause is a good substance.

Efficient Cause—Free choice

Final Cause—None. Evil is the lack of order.

Formal Cause—None. Evil is the privation of form.

Material Cause—A good substance

The efficient cause of moral evil is free choice, not directly but indirectly. There is no purpose (final cause) of evil. It is lack of proper order to the good end. Evil has no formal cause of its own. Rather, it is the destruction of form in another. Its material cause is a good but not its own. It exists only in a good thing as the corruption of it.

The Persistence of Evil. There is another aspect of the problem of evil. Why does God allow it? Even if he did not produce it, he does permit it. Yet he is all-powerful and could destroy it. So why doesn't he do so?

The classical way to state the problem of the persistence of evil is this:

1. If God is all good, he would destroy evil.
2. If God is all powerful, he could destroy evil.
3. But evil is not destroyed.
4. Therefore, there is no such God.

Put this way, the argument leaves open the possibility of a finite god, but theists reject such a concept. For every finite or limited being has a cause (*see* COSMOLOGICAL ARGUMENT). So a finite god is only a creature that needs an infinite Creator. And since God is powerful, then he must be infinitely powerful. Likewise, since he is good, he must be infinitely good. So, a finite god is not an option for a theist. God has both the desire and ability needed to do anything possible.

Is it possible to destroy evil? The theist responds as follows:

1. God cannot do what is actually impossible.
2. It is actually impossible to destroy evil without destroying free choice.
3. But free choice is necessary to a moral universe.
4. Therefore, God cannot destroy evil without destroying this good moral universe.

It is impossible for God to do what is contradictory. He cannot make an affirmation to be true and false at the same time. He can do nothing which involve such an impossibility, such as, making a square circle or a stone so heavy he cannot lift it.

Even an omnipotent being cannot do anything. It can only do what is possible. But it is not possible to force people to freely choose the good. Forced freedom is a contradiction. Therefore, God cannot literally destroy all evil without annihilating free choice. The only way to destroy evil is to destroy the good of free choice. But when there is no moral free choice, then there is no possibility of moral good. Unless hate is possible, love is not possible. Where no creature can blaspheme, no creatures can worship either. Therefore, if God were to destroy all evil, he would have to destroy all good too.

However, theism holds that even though God could not *destroy* (annihilate) all evil without destroying all good, nevertheless, he can and will *defeat* (overcome) all evil without destroying free choice. The argument can be summarized as follows:

1. God is all good and desires to defeat evil.
2. God is all powerful and is able to defeat evil.
3. Evil is not *yet* defeated.
4. Therefore, it will one day be defeated.

The infinite power and perfection of God guarantee the eventual defeat of evil. The fact that it is not yet accomplished in no way diminishes the certainty that it will be defeated. Even though evil cannot be destroyed without destroying free choice, nonetheless, it can be *overcome* .

An all-powerful God could, for example, *separate* good persons from evil ones according to what persons freely choose. Those who love God will be separated from those who do not. Those who desire the good but are hindered by evil will no longer have their good purposes frustrated. And those who do evil and are hampered by good influences will no longer be nagged by the proddings of good. Each, whether in heaven* or hell, will have it according to their free choice. In this way God's victory over evil would not violate free choice.

Not only *can* a theistic God defeat evil, but he *will* do it. We know this because he is all good and would want to defeat evil. And because he is all-powerful and is able to defeat evil. Therefore, he will do it. The guarantee that evil will be overcome is the nature of the theistic God.

The Purpose of Evil. No evil is good, but some evil has a good purpose. Warning pains for example are painful, but their painfulness has a good purpose. Of course, not all evil seems to be of this type. What, then, of evil which seems to have no good purpose? The problem can be summarized as follows:

1. An all-good God must have a good purpose for everything.
2. There is no good purpose for some suffering.
3. Therefore, there cannot be an all-good God.

It seems evident that there is useless suffering in the world. Some people get better through suffering, but others get bitter. Broken bones are stronger when they heal, but some never heal. Many die. What about all the purposeless evil in the world?

The theistic answer to apparently purposeless evil is fourfold. First, God has a good purpose for everything. Second, we do know a good purpose for much evil. Third, some evil is a byproduct of good. Fourth, God is able to bring good out of evil.

God Has a Good Purpose for Everything. The antitheist overlooks an important distinction: God knows a good purpose for all evil, even if we do not. Simply because finite minds cannot conceive of a good purpose for some evil does not mean that there is none. Since God is omniscient, he knows everything. And since he is omnibenevolent, he has a good purpose for everything. Hence, God does know a good purpose for all evil, even if we do not know it:

1. An omnibenevolent God has a good purpose for everything.
2. There is some evil for which we see no good purpose.
3. Therefore, there is a good purpose for all evil, even if we do not see it.

The fact that finite beings don't see the purpose for some evil does not mean there is none. This inability to see the purpose for evil does not disprove God's benevolence; it merely reveals our ignorance.

The purpose for much evil is known by us. In spite of the fact that we do not know everything, we do know something. And what we do know is that there is a good purpose for much evil. Warning pains have a good purpose. In fact, the ability to have pain has a good purpose. For if we had no nervous system we could destroy ourselves without even feeling any pain. Also, physical pain can be a warning to save us from moral disaster. As C. S. Lewis noted, pain is God's megaphone to warn a morally deaf world. And if we as finite beings know a good purpose for much evil, then surely an infinite Mind can know a good purpose for the rest.

Evil sometimes is a byproduct of a good purpose. Not every specific evil needs a good purpose. Some evil can simply be a necessary byproduct of a good purpose. The early bird gets the worm, but the early worm gets eaten. What is life for higher forms is death for lower forms. Plants and animals die so that man may have food to live. Thus, evil results indirectly from good because it is the consequence of a good purpose. Hence, the response may be put this way:

1. God has a good purpose for everything he does.
2. Some good purposes have evil byproducts.
3. Therefore, some evil is a byproduct of a good purpose.

Not every *specific* event in the world needs to have a good purpose; only the *general* purpose needs to be good. The blacksmith has a good purpose for hammering the molten iron into a horseshoe. However, not every spark that flies has a purpose for its destiny. Some sparks may ignite unintended fires. Likewise, God had a good purpose for creating water (to sustain life), but drowning is one of the evil byproducts. Thus, not every specific drowning needs to have a good purpose, even though making the water in which they drown did. So many good things would be missed if God did not permit evil to exist.

Fire does not burn unless air is consumed. Neither just retribution is inflicted nor patience is achieved, but for the evil of tribulation.

God can bring good out of evil. Of course, God is all-powerful and he is able to redeem good even from evils. A drowning person may inspire acts of bravery. Although sawdust is an unintended byproduct of making lumber, it can be salvaged to make paper. Likewise, God in his providence is able to redeem much (if not all) good out of the evil byproducts in the world. God would in no wise permit evil to exist in his works unless he were so almighty and so good as to produce good even from evil.

That does not mean that this present world is the best of all possible worlds. It means that God has made it the best possible way to attain his ultimate goal of the greater good. God may not always redeem good out of every evil byproduct in a fallen world. This could be true in both the physical and the moral realm. Like radioactive waste, some evil byproducts may resist reprocessing. Indeed, in view of the second law of thermodynamics, the physical world is decaying. But God has the power to recreate it (cf. 2 Peter 3:13). Human death can be overcome by resurrection (cf. Romans 8; 1 Corinthians 15). Neither of these is any problem for an omnipotent God.

The Problem of Physical Evil. The above solution to the problem of evil do not appear to solve the problem of natural disasters. Why tornadoes, hurricanes, and earthquakes? It does not suffice to say that the free will of creatures caused all these. Further, many innocent people are killed in them. How, then, can natural evil be explained. In logical form:

1. Moral evil is explained by free choice.
2. But some natural evil does not result from free choice.
3. Natural evil cannot be explained by free choice of creatures.
4. Hence, God must be responsible for natural evil.
5. But natural evils cause innocent suffering and death.
6. Therefore, God is responsible for innocent suffering and death.

Theists question several premises of this argument. One response to premise 5, for example, is that in this fallen world no one is innocent. We sinned in Adam (Rom. 5:12) and as a consequence deserve death (Rom. 6:23). Natural disaster is a direct result of the curse on creation because of the fall of humankind (Genesis 3; Romans 8). It will not be removed until Christ returns (Revelation 21–22).

Likewise, proposition 6 is mistaken, since it implies God is morally culpable for taking the life of a creature. This is a category mistake, since it wrongly assumes that, since it is wrong for a creature to take innocent life, it is also wrong for the Creator to do

so. But God gave life and alone has the right to take it (cf. Deut. 32:39 ; Job 1:21). We did not give life, and we do not have the right to take it.

Premise 3 is definitely untrue. For theism can explain all natural evil by reference to free choice. In biblical language, the free choice of Adam and Eve brought natural disaster on this world. In addition the free choice of evil angels accounts for the rest of human suffering. But even putting this possibility aside, which could in itself explain all natural evil, physical suffering can be explained in reference to human free choice.

1. Some suffering is brought on directly by our own free choice. The choice to abuse my body can result in sickness.
2. Some suffering is brought on indirectly by free choice. The choice to be lazy can result in poverty.
3. Some physical evil to others can result from our free choice, as in the case of spouse or child abuse.
4. Others suffer indirectly because of our free choice. Alcoholism can lead to poverty of one's children.
5. Some physical evil may be a necessary byproduct of a good process. Rain, hot air, and cool air are all necessary for food and life, but a byproduct of these forces is a tornado.
6. Some physical evil may be a necessary condition for attaining a greater moral good. God uses pain to get our attention. Many have come to God through suffering.
7. Some physical suffering may be a necessary condition of a greater moral good. Just as diamonds are formed under pressure, even so is character.
8. Some physical evil is a necessary concomitant of a morally good physical world. For instance, it is good to have water to swim and boat in, but a necessary concomitant is that we can also drown in it. It is good to have sex for procreation and enjoyment, even though it makes rape possible. It is good to have food to eat, but this also makes dying of food poisoning possible.

At this point the critic could always ask why a physical world is necessary. Why did not God make spirits, who could not hurt their bodies or die. The answer is: God did; they are called angels. The problem is that, while no angel can die of food poisoning, neither can they enjoy a prime rib. While no angel has ever drowned, neither has any angel ever gone for a swim or went water skiing. No angel has ever been raped, but neither has any angel ever enjoyed sex or the blessing of having children (Matt. 22:30). In this kind of physical world, we simply must take the concomitant evil along with the good.

Eventually, of course, Christian theists believe God will redeem us from all physical evil too, giving us immortal and incorruptible bodies. But if we had those before we were morally ready for them, we would not have made the necessary moral progress toward being suited to them.

The Avoidability of Evil. If God knew evil would occur, why did he create it? God was free to create or not to create. Why did he choose to create a world he knew would fall? Theists believed God is all-knowing, all-good, and free. As all-knowing, God foresaw evil. As free, he could have avoided creating the world. But this conflicts with God as all-good, for such a God must have had a good purpose for creating a world he knew would fall. Why then did he create it?

There were other better alternatives open to God. He could have not created at all. He could have created a nonmoral world where no sin could occur. He could have created a free world where no one would have chosen to sin. He could have created a world where sin occurred but where everyone was ultimately saved. Any one of these worlds would have been better than the world conceived by the orthodox Christian theist, where evil occurs and where not everyone will be saved in the end (*see* HELL ; ANNIHILATIONISM ; UNIVERSALISM). The problem takes this form:

1. God could have chosen a better alternative by: (a) not creating at all; (b) not creating a free world; (c) creating a free world that would not sin; (d) creating a world that sinned but would all be saved.
2. But God did not choose one of these better alternatives.
3. Therefore God did not do his best.
4. But to do less than his best is an evil for God.
5. Therefore, no all-perfect God exists.

Some theists challenge the fourth premise, arguing that God does not have to do his best; he merely has to do good. And what he did in creating this world was good, even if there could have been something better. But assuming, for the argument, that God must do his best, is any other alternative really better than this world? Theists say No.

A nonworld is not better than some world. Nothing is not better than something. This is a classic category mistake. Something and nothing have nothing in common, so they cannot be compared. It is not even like comparing apples and oranges, since they both are fruit. It is like comparing apples and nonapples, insisting that nonapples taste better.

A nonfree world is not morally better than a free world. A nonfree world is a nonmoral world, since free will is necessary for morality. A nonmoral world cannot be morally better than a moral world. Since a nonfree world is not a moral world, there is no moral basis for comparison. This too is a category mistake.

A free world where no one sins or even a free world where everyone sins and then gets saved is *conceivable* but it may not be *achievable*. As long as everyone is really free, it is always possible that someone will refuse to do the good. Of course, God could force everyone to do good, but then they would not be free. Forced freedom is not freedom at all. Since God is love, he cannot force himself on anyone against their will. Forced love is not love; it is rape. And God is not a divine rapist. Love must work persuasively but not coercively. Hence, in every conceivable free world someone would choose to do evil, so a perfect evil-free world may not be possible.

A world where sin never materializes is *conceivable* but it may not be the *most desirable* morally. If evil is not permitted, then it can not be defeated. Like automobiles, a tested world is better than an untested one. Or, to put it another way, no boxer can beat an opponent without getting into the ring. God may have permitted evil in order to defeat it. If evil is not allowed, then the higher virtues cannot be attained. No pain, no gain. Tribulation works patience. There is no way to experience the joy of forgiveness without allowing the fall into sin. So, a world where evil is not defeated and the higher goods attained would not be the best world achievable. Therefore, while a world where sin does not occur is *theoretically conceivable*, it would be *morally inferior*.

Conclusion. No one has demonstrated that any alternative world is morally better than the one we have. Hence, no antitheist can show that God did not create the best world, even given the privation of good. This, of course, does not mean that the theist is committed to the belief that this present world is the best world that can be achieved. God is not finished yet, and Scripture promises that something better will be achieved. The theist's assumption is that this world is the best way to the best world achievable.

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The Metaphysical Problem of Evil

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Evolution. Evolution covers three basic areas: the origin of the universe; the origin of first life, and the origin of new life forms. Respectively, these are called cosmic evolution, chemical evolution, and biological evolution (*see* EVOLUTION, BIOLOGICAL ; EVOLUTION, CHEMICAL ; EVOLUTION, COSMIC). Because differing implications and arguments set apart the apologetics relating to each of these evolutionary highways, they will be discussed in separate articles.

In the broad sense, *evolution* means development, but more specifically it has come to mean the theory of common ancestry. It is the belief that all living things evolved by natural processes from earlier and more simple forms of life. Theistic evolution posits a God who got the process going (by creating matter and/or first life) and/or has guided it. Naturalistic evolution believes the entire process is natural including the origin of the universe and first life by spontaneous generation.

For other discussions relating to a critique of evolution science, see ADAM, HISTORICITY OF ; ANTHROPIC PRINCIPLE ; BIG BANG THEORY ; CREATION, VIEWS OF ; DARWIN, CHARLES ; MISSING LINKS ; ORIGINS, SCIENCE OF , and TELEOLOGICAL ARGUMENT .

Evolution, Biological. Some ancient Greeks believed in evolution. However, before Charles Darwin (1809–1882), theories of evolution tended to arise out of a pantheistic worldview (*see* PANTHEISM) and lacked scientific credibility. Darwin theorized a mechanism, called “natural selection,” to make evolution work. This placed evolution in the naturalistic framework that has been its stronghold ever since. Much of what Darwin taught has been rejected and surpassed, but his doctrine of natural selection has been maintained.

Biological evolution is divided into micro-evolution (small scale) and macro-evolution (large scale). Opponents of macro-evolution generally accept micro-evolution, since this process simply describes the ability of various forms of life to adapt to their environment. For example, there are several hundred kinds of dogs, but they are all canines. Their differences in breed “evolved” (developed) through both natural and artificial selection. Macro-evolution embraces evolution on the large scale, from microbe to man, from the first one-cell animal to human beings as the highest animal so far developed in the chain.

Most macro-evolutionists believe that life first began as a result of chemical reactions in what Darwin called a “warm little pool.” Research has shown that it is possible to generate the essential proteins necessary for life using only a few basic gases and water. This has encouraged the view that life arose from nonliving matter (*see* EVOLUTION, CHEMICAL). New life forms are said to have evolved through mutations and natural selection. As conditions on earth changed, animals adapted new characteristics to meet the challenges. Those who adapted survived and those that did not passed into extinction. The great variety of extinct animals represented among fossils, and their similarities to living species are used to confirm this thesis.

Scientific Basis. Evolution, like other approaches to past events, is a *speculative* , rather than an *empirical* , science. Speculative science deals with past singularities for which there are no recurring patterns of events by which they can be tested. Theories of evolution and creation also are called theories of *origin science* (*see* ORIGINS, SCIENCE OF), rather than *operation science* . Operation science is empirical science; it deals with the way things operate now. It studies regular and repeated phenomena. Its answers can be tested by repeating the observation or experiment. Its basic principles are *observability* and *repeatability* . Micro-evolution is a legitimate study of operation science, especially as it relates to genetics.

Since origin science deals with past singularities it is more of a *forensic* science. Past events of origin were not observed and cannot be repeated. They must be reconstructed by viewing the evidence that remains. Just as a forensic scientist attempts to reconstruct how the homicide occurred from physical evidence, so the origin scientist tries to reconstruct the origin of the universe, first life, and new life forms from the evidence.

The Principles of Origin Science. Instead of observation and repetition, the origin scientist uses principles of causality and analogy. The principle of *causality* (*see* CAUSALITY, PRINCIPLE OF ; FIRST PRINCIPLES), which is at the root of modern science and all rational thought, states that every event has an adequate cause. In science, the principle of *analogy* (or uniformity) states that the present is the key to the past. Or, more precisely, the kinds of causes that produced certain kinds of effects in the present are the kinds of causes that produce similar events in the past.

Two Kinds of Causes. Causality comes in two basic varieties: *natural* and *intelligent* . Intelligent causes are sometimes called *primary causes* and natural causes are called *secondary causes* . Most sciences seek natural causes in the laws of physics or chemistry.

Others, however, deal with intelligent causes. Archaeology, for example, seeks an intelligent cause for the cultural remains of the past. Astronomers in the SETI (Search for Extra Terrestrial Intelligence) Program have tuned their radio telescopes into outer space, searching for a message from intelligent beings. Both of these sciences believe they can tell when they have found an effect that demands an intelligent cause by the special marks a mind leaves on what it produces. For example, there is an obvious difference between alphabet cereal spilled on the table and the arranged series of letters: “Tom, take out the garbage. Mom.” Those who believe there is an intelligent cause for the origin of the universe, first life, and/or new life forms are called “creationists.” Those who believe these can be explained by purely natural, nonintelligent causes are called “evolutionists.” “Theistic evolutionists” try to synthesize the two views.

Three basic areas of dispute separate creationists and evolutionists on the question of *origins*: (1) the origin of the universe (*see* EVOLUTION, COSMIC), (2) the origin of first life (*see* EVOLUTION, CHEMICAL), and (3) the origin of human life. Historically, these areas have been called “cosmogony, biogony, and anthropogony” (*see* MISSING LINKS), in distinction to the operation sciences cosmology, biology, and anthropology.

Origin of New Life Forms. Naturalistic Explanation of Origins. New life forms have come either from natural or supernatural (intelligent) causes. Darwin made one of his greatest contributions to the theory of evolution with his analogy of selection by breeders to selection in nature. This principle of natural selection became the hallmark of evolution because it provided a system by which new developments of life forms could be explained without recourse to a supernatural cause.

Darwin was aware that there were serious flaws with the analogy between breeders and nature, but he hoped that what humans could do in a few generations could be done by nature in several hundred generations. However, time is not the only factor which weakens the analogy. E. S. Russell wrote:

It is unfortunate that Darwin ever introduced the term “natural selection,” for it has given rise to much confusion of thought. He did so, of course, because he arrived at his theory through studying the effects of selection as practiced by man in the breeding of domesticated animals and cultivated plants. Here the use of the word is entirely legitimate. But the *action of man in selective breeding is not analogous to the action of “natural selection,”* but *almost its direct opposite* Man has an aim or an end in view; “natural selection” can have none. Man picks out the individuals he wishes to cross, choosing them by the characteristics he seeks to perpetuate or enhance. He protects them and their issue by all means in his power, guarding them thus from the operation of natural selection, which would speedily eliminate many freaks; he continues his active and purposeful selection from generation to generation until he reaches, if possible, his goal. Nothing of this kind happens, or can happen, through the blind process of differential elimination and differential survival which we miscall “natural selection.” [cited in Moore, 124]

Evidence of the Fossil Record. It is seldom fully appreciated that the only real evidence for or against evolution is in the fossil record. Every other argument for evolution is based on *what could have been*. Only the fossil record records examples of *what actually did happen*. Darwin recognized this as a problem as well and wrote in *On the Origin of Species*, “Why then is not every geological formation and every stratum full of such intermediate links? Geology assuredly does not reveal any such finely graduated organic chain, and this, perhaps, is the most obvious and gravest objection which can be urged against my theory” (Darwin, 280).

In the century and a half since Darwin wrote, the situation has only become worse for his theory. Noted Harvard paleontologist Stephen Jay Gould has written, “The extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology. The evolutionary trees that adorn our textbooks have data only at the tips and nodes of their branches; the rest is inference, however reasonable, not the evidence of fossils” (Gould, 14). Eldredge and Tattersall agree, saying, “Expectation colored perception to such an extent that the *most obvious single fact about biological evolution—non-change—* has seldom, if ever, been incorporated into anyone’s scientific notions of how life actually evolves. If ever there was a myth, it is that evolution is a process of constant change” (Eldredge, 8).

What does the fossil record suggest? Evolutionists such as Gould now agree with what creationists from Louis Agassiz to Duane Gish have said all along, that the fossil record includes two features particularly inconsistent with gradualism:

Stasis. Most species appear in the fossil record looking much the same as when they disappear; morphological change is limited and directionless.

Sudden appearance. In any area, a species does not arise gradually. It appears all at once and fully formed (Gould, *ibid.*, 13–14).

There is no real indication that one form of life transforms into a completely different form. While these two features seem to invalidate classical evolution, they are somewhat problematic to creationists also.

Some creationists say that the fossil record reflects the debris of the great flood, either because some animals were better able to escape the waters or by hydrodynamic sorting as the remains settled. These scientists are concerned with preserving evidence of a young earth because they believe creation was in seven literal twenty-four-hour-periods and that there are no large gaps in the early genealogies of Genesis.

Others, known as “old-earth creationists,” hold that the earth need not be only thousands of years old. This group understands the fossil record to show that creation was accomplished in a series of stages, each new appearance in the geological strata pointing to a new moment of direct creation. Invertebrates appeared first, followed by a long period of nature balancing itself before the next burst of creation. Fish appeared next and then amphibians, until man was created. The latter view does agree with the fossil record, but there is no consensus among creationists about the age of the earth. This is a hotly

debated issue, but both sides agree that the fossil evidence supports creation better than evolution.

Some evolutionists have attempted to deal with the fossil evidence by introducing the idea of punctuated equilibrium. These scientists say that the jumps in the fossil record reflect real catastrophes which induced sudden major changes in the existing species. Hence, evolution is not gradual, but punctuated by sudden leaps from one stage to the next. The theory has been criticized because no evidence has been shown for a mechanism of secondary causes needed to make these sudden advances possible. Their theory appears to be based solely on the absence of transitional fossils. This view breaks with Darwin, who understood evidence of suddenness to be evidence in favor of creation. To accept the idea of punctuation as a result of a primary cause comes dangerously close to a creationist view.

The Evidence of Vestigial Organs. Evolutionists have used the presence of “vestigial organs” in humans as a support. They argue that, since the human body has organs for which there is no known use, they are left over from an earlier animal stage in which they were useful. The fact that vestigials can be removed with no apparent harm to the body indicates that they are useless. The appendix, ear muscles, and the third eyelid are placed into this category.

However, just because functions for these organs are not known does not mean that none exist. Since scientific knowledge is finite and progressive, there may be functions of which science is not yet aware. That they can be removed without apparent harm to the body is meaningless. Other organs may compensate for their loss. Also, a loss may exist that is not readily detectable. Some organs, such as tonsils, may be more important at an earlier stage in the person’s development as, for example, during early childhood to help fight off diseases. And organs such as a kidney or a lung can be removed without serious loss, yet they have a function.

It is significant that the list of vestigial organs has shrunk from around 100 when the idea was first proposed to about a half dozen today. There are hints about purposes for some of those. The appendix may aid in digestion and may be helpful in fighting off disease. Rabbits have a large appendix, and complete vegetarians may get more benefit from theirs. The muscle of the outer ear helps protect against freezing in colder climates. The “third eyelid” or *nictitating membranae* is used in humans to collect foreign material that gets in the eye. The “tail” or coccyx is necessary for sitting with comfort. The endocrine glands, once thought to be vestigial, are now known to be of great importance in the production of hormones. The thymus has been found to be involved in protecting the body against disease.

Even if some organs are truly leftovers from an earlier period in human development, this would not prove evolution. They may be left over from an earlier stage of the human race, rather than from prehuman species. One might even say that an organ has lost its function would not demonstrate that we are evolving, but devolving—losing some organs and abilities. This is the opposite of evolution.

The Evidence of the Genetic Code. Creationists reason that there are real limitations to evolutionary change that are built into the genetic code of every living being. Changes within this structure indicates design for each major category of life form. Each new life form came into being by an act of intelligent intervention that arranged genetic information to fit functions. Just as letter sequences vary to form different words, DNA patterns vary to produce different species. If it requires intelligence to create *King Lear* from a selection of the words found in a dictionary, then it also requires intelligence to select and sort genetic information to produce the variety of species which work together as a system in nature.

The sudden appearance of these life forms strengthens the case that a supernatural intelligence was at work to accomplish this organization. In accordance with the principle of uniformity, this is the most plausible solution to the problem. So, the greatest problem for evolutionists is not “missing links,” but an explanation for the origin of complex new systems of genetic information.

The Evidence from Specified Complexity. Not only was the first living cell exceedingly complex, but higher forms of life are even more complex. If the genetic information in a one-cell animal exceeds that in a volume of the *Encyclopedia Britannica*, the information in the human brain is greater than that in the Library of Congress. If it takes an intelligent cause to produce the simple first life form, no less is needed for human life.

Complexity has always been a major problem for evolution. It amounts to the same problem encountered in examining the origin of first life (*see* EVOLUTION, CHEMICAL). The breeding analogy used to illustrate how natural processes did it all contains a great deal of intelligent intervention that is overlooked in the theory. Breeders manipulate according to an intelligent plan for encouraging specific developments. Informationally speaking, this is going from a state of complexity in the DNA code to a higher, or at least more specific, state of complexity. It is like changing the sentence,

“She had brown hair.”

to the more complex statement,

“Her auburn tresses shone in the sun.”

This increase in information encoded into the DNA strand requires intelligence just as surely as did the original coding to produce life. Indeed, if Darwin’s analogy proves anything, it shows the need for intelligent intervention to produce new life forms. The principle of uniformity leads unhesitatingly to this conclusion once it is realized that we are working within origin science, not operation science.

The Evidence from Systemic Change. Macro-evolutionary changes demand large-scale changes from one type of organism to another. Evolutionists argue that this occurred gradually over a long period. One serious objection to this view is that all

functional changes from one system to another must be simultaneous (see Denton, 11). For example, one can make small changes in a car gradually over a period of time without changing its basic type. One can change the shape of the fenders, its color, and its trim gradually. But if a change is in the size of the piston, this will involve simultaneous changes in the cam shaft, block, and cooling system. Otherwise the new engine will not function.

Likewise, changing from a fish to a reptile or a reptile to a bird calls for major changes throughout the system of the animal. All these changes must occur simultaneously or blood oxygenation will not go with lung development, will not match nasal passage and throat changes, autonomic breathing reflexes in the brain, thoracic musculature, and membranes. Gradual evolution cannot account for this.

To make this same point in terms of the genetic code, one cannot go from small gradual changes in a simple genetic code to a more complex DNA molecule without major simultaneous changes, particularly not by random mutations. Small, random changes to “Mary had a little lamb. . .” will never produce *King Lear*, even if all the letters of the alphabet and punctuation are present. The first small random change might read, “Mary sad a little lamb.” The next, “Mary sad a litter lamb.” And the next, “Mary sad a litter lgmb.” With each single change the message gets more garbled. It is a long way from *King Lear* and going in the wrong direction. Only an intelligent being can reform the same letters of the English language into *King Lear*—by simultaneous and systematic redevelopment.

The English alphabet has twenty-six letters; the genetic alphabet has only four, but the method of communicating by sequence of letters is the same. Information scientist Hubert P. Yockey insists, “It is important to understand that we are not reasoning by analogy. The sequence hypothesis applies directly to the protein and the genetic text as well as to written language and therefore the treatment is mathematically identical” (Yockey, 16). It turns out that a single strand of DNA carries the same amount of information as one volume of an encyclopedia.

Each new form of life has its own, unique code that, although it is similar in the letters used, differs vastly in the message conveyed. One can use the very same words and convey an entirely different message. Hence, the evolutionist argument from the high similarity of the words in an ape and a human being do not prove common ancestry. The two sentences “You do love me” and “Do you love me?” have the same words but convey a totally different message. With ingenuity one could construct a paragraph (or even a whole book) in which exactly the same sentences which conveyed a completely different message. A very rudimentary example might go something like this:

John came before Mary. Mary came after John [= later than]. So John and Mary came together [= at the same place].

Compare this with the same sentences in a different order which convey a different meaning:

Mary came after [= pursued] John. John came before Mary [= in her presence]. So John and Mary came together [= in a personal relationship].

A high degree of similarity of genetic information in an ape and a human means absolutely nothing. It is the way the pieces are put together that makes a world of difference. Hear this evolutionist's testimony: "When we get down to the business of trying to establish an evolutionary series of sequences, we cannot find the linear, primitive-to-advanced arrangement we had expected." In fact, "instead of a progression of increasing divergence, each vertebrate sequence is equally isolated [e.g.] from the cytochrome sequence for the dogfish." Thus, "in this and countless other comparisons, it has proved impossible to arrange protein sequences in a macro-evolutionary series corresponding to the expected transitions from fish > amphibian > reptile > mammal" (Thaxton, 139–40).

Conclusion. Now that we have new evidence about the nature of the universe, the information stored in DNA molecules, and further fossil confirmation, the words of Agassiz resound even more loudly than they did when first written in 1860:

[Darwin] has lost sight of the most striking of the features, and the one which pervades the whole, namely, that there runs throughout Nature unmistakable evidence of thought, corresponding to the mental operations of our own mind, and therefore intelligible to us as thinking beings, and unaccountable on any other basis than that they own their existence to the working of intelligence; and no theory that overlooks this element can be true to nature. [Agassiz, 13]

There are two views of the origins of new life forms. One says that everything came about by natural causes; the other looks to a supernatural (intelligent) cause. The overwhelming evidence support is in favor of the latter.

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Evolution, Chemical. Chemical evolutionists claim that purely natural laws can explain the origin of first life by spontaneous generation. Creationists insist that an intelligent cause is necessary to construct the basic building blocks of life. Contrary to widespread opinion, the positive evidence for an intelligent cause is not based on the statistical improbability of life arising by chance. Rather, it is because science is not based on chance; it is based on observation and repetition (*see* ORIGINS, SCIENCE OF).

In spite of the well-established fact, based on the work of Louis Pasteur (1822–1895), that life does not begin spontaneously from nonlife, all naturalistic scientists believe that it did at the beginning. The scientific basis for this conclusion is the experiments of Harold Urey and Stanley Miller. They showed that the basic building blocks of life (amino acids) can be obtained from purely chemical elements (hydrogen, nitrogen, ammonia, and carbon dioxide gases) by natural laws without any intelligent intervention. By passing an electrical discharge through these cases they produced these fundamental elements of life. Supposing lightening passing through similar cases in a primal atmosphere, first life may have arisen by a purely natural process on earth or somewhere else.

The theory is that shortly after the earth was cooled enough to allow it, the combination of hydrogen, nitrogen, ammonia, and carbon dioxide reacted to form elementary amino acids, which in time developed into the DNA chains and finally into cells. This process is said to have taken several billion years and the extra energy of the sun, volcanic activity, lightning, and cosmic rays was needed to keep the process going.

The Problems. That life could arise by purely natural causes is subject to serious objections.

It is contrary to the universal scientific experience that life never arises from nonlife. The premodern, fallacious belief that it could be based on ignorance of microscopic bacteria. Once Pasteur sterilized the container, killing the bacteria, no life emerged. The same inability is recognized by principles of causation. A fundamental causal concept demands that an effect cannot be greater than its cause (*see* CAUSALITY, PRINCIPLE OF). Just as nonbeing cannot produce being, nonlife cannot produce life. Water does not rise higher than its source on its own.

The origin-of-life experiments involve illegitimate investigator interference. For example, intelligent intervention is manifest at several levels. Why are certain gases (such as hydrogen) included and others (such as Oxygen) excluded? Is this not an intelligent choice, based on a knowledge of what will and will not work? Further, who constructed the apparatus for the experiment? Why does it not have a different design? Why did they choose to inject an electrical discharge? Obviously, intelligent choices were being made at several levels.

There is an unwarranted assumption that primal conditions on earth (or elsewhere) were similar to those in the experiment. Two crucial conditions are now known to have been different. Since the experiment will not work with oxygen present, it was assumed that the earth's early atmosphere had no oxygen. But this is now known to be false. That fact in itself is sufficient to falsify the experiment and the chemical evolution theory. Further, as even many chemical evolutionists admit, chemicals in the concentration used in the experiment are not found anywhere on earth. The whole primal soup scenario is a myth (see Thaxton, chap. 4).

The analogy between the Miller experiment and known conditions on the early earth is invalid, since it overlooks the presence of destructive forces. Oxygen would destroy the process. The energy needed from the sun and cosmic radiation damage the very substances produced. Under the conditions required for life to have arisen spontaneously, it is more likely that the elements would be destroyed faster than they could be produced. Nature is filled with destructive forces that tear down and bring disorder. This is part of the second law of thermodynamics (*see* THERMODYNAMICS, LAWS OF).

Even if the right chemicals could be produced, no satisfactory answer has been given for how they could have been arranged properly and enclosed in a cell wall. This would require another set of conditions altogether.

Further, evolutionists have never shown any mechanism that can harness the energy to do the work of selecting amino acids and sorting out which will build each gene to develop a living organism. It doesn't do any good to have a drawer full of batteries if there is no flashlight—a mechanism for harnessing energy—to contain them. The DNA molecule is very complex. See a description of this complexity in EVOLUTION, BIOLOGICAL .

Granting that there may have been enough energy available to do the work, the only systems that can harness the energy to do this kind of work are either living or intelligent.

It is easy to pump a lot of energy into a system at random to make it hot, but to organize it and create information requires intelligence.

Finally, even with all the intelligent interferences in the Miller experiments, which invalidate the results for a purely natural processes, the result has not been a single living cell. An amino acid is only a chemical. However biologically interesting it may be, it is not alive. One crucial missing ingredient—the code of life or DNA—is positive evidence for a creative intelligence.

Other Naturalistic Theories. Other theories have been advanced to explain the origins of first life on earth. One is that natural laws were involved that have not yet been discovered, but scientists can only point out the need when the laws they do know about militated against creation of life. Others suggest that life may have come to earth from somewhere else in the universe, either on a meteorite or on an ancient spaceship, but both of these solutions just push the question back one step: Where did that life come from? Thermal vents in the sea floor and clay deposits are being studied as possible breeding grounds for life's beginnings, but this does not account for a way to harness energy to make specified complexity possible. The most probable cause, and the only one that the evidence supports, is an intelligent cause. The only significant debate is between pantheist and theist, both of whom insist there must be a Mind behind the specified complexity in living things, differing only on whether it is beyond the universe or only in it.

Evidence of Intelligence. Evidence is lacking for a natural cause of origin, but is there positive evidence pointing to an intelligent cause of first life?

The key to knowing which kind of cause is involved in questions of origin is the principle of analogy (uniformity). This is one of the fundamental principles in any scientific understanding of the past. Archaeology uses it to posit an intelligent cause for artifacts that might have originated with past civilizations. The SETI program sorts through radio waves from the cosmos in its search for extraterrestrial life, looking for something that breaks with uniformity.

The Principle of Analogy (Uniformity). By observing over and over what kinds of effects are produced by causes, we can determine which kind of cause is needed to produce life. We know that round stones are regularly caused by natural laws involved in the motion of water and rubbing one another. Flint and obsidian will not turn into a spear or arrow point that way. The only question, then, is whether a living cell is more like a round stone or a projectile point. Anyone viewing the faces on Mount Rushmore knows these stone shapes were formed by an intelligent cause. It is not just that natural causes never produce the kind of specified information shown on Mount Rushmore. It is also known by repeated observation that intelligent causes do produce this kind of specificity.

Specified Complexity Points to an Intelligent Cause. The kind of evidence that indicates an intelligent cause of life is called specified complexity. Carl Sagan said that a single message from outer space would confirm his belief that there is extraterrestrial life.

Such communication would be *specified complexity*. Or, to be more precise, since we know that complex messages always result from an intelligent cause, it remains only to see whether a living cell contains a complex message. With the discovery of the DNA code of life, the answer is clear. In all of nature, only living cells have complex messages known as specified complexity. A chunk of quartz has specificity but no complexity. The message in a crystal is repetitive, like the message: starstarstarstar. A chain of random polymers (called a polypeptide) is complex, but it does not give a specific message. It looks more like this: *fppizgenyatkpvno*. Only a living cell has both specificity and complexity that is not repetitious and communicates a message or a clear function, such as: *This sentence has meaning*. Hence, a living cell calls for an intelligent cause. Science speaks of simple life and complex life. Even the simplest one-celled organism has enough information that if spelled out in English would fill a volume of the *Encyclopedia Britannica*.

A clear and distinct message—a complex design with a specified function—was caused by some form of intelligence that intervened to impose limits on the natural matter that it would not take by itself. Some natural phenomena are orderly and awe inspiring, but clearly caused by natural forces. The Grand Canyon and Niagara Falls required only the blind forces of wind and water to shape them. The same cannot be said for Mount Rushmore or a hydroelectric plant. These required intelligent intervention.

The Confirmation of Information Theory. Studies in Information Theory confirm that one can determine an intelligent cause simply by the letter frequencies. In a series of letters that carry a message (even if we do not know what the message is) there is a certain letter frequency. This is what makes unknown codes decipherable and makes it possible to remove background noise from a tape and clarify the message.

What could explain the sudden appearance of life and also provide for the informational organization of living matter? If we apply the principle of uniformity (analogy) to the question, the only cause that we know routinely does this kind of work is intelligence. The reasonable assumption is that it also required intelligence to do it in the past. Uniform experience proves this to us, and, as David Hume said, “as a uniform experience amounts to a proof, there is here a direct and full *proof*, from the nature of the fact” (Hume, 122–23). Since it is not possible that we are speaking of human intelligence or even living beings in the natural sphere, it had to be a supernatural intelligence. This does create a disjunction in the course of nature, which irritates most scientists; however, once it is admitted that there is a radical disjunction from nothing to something at the beginning of the universe, there can be little objection to the idea of one more intervention when the evidence clearly points to it.

The Confirmation from Molecular Biology. Michael Behe’s book, *Darwin’s Black Box*, provides strong evidence from the nature of a living cell that it could not have originated or evolved by anything but intelligent design. The cell represents, in many cases, irreducible complexity that cannot be accounted for by small incremental changes called for by evolution.

Darwin admitted: “If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down” (*Origin of Species*, 154). Even evolutionists, such as Richard Dawkins, agree:

Evolution is very possibly not, in actual fact, always gradual. But it must be gradual when it is being used to explain the coming into existence of complicated, apparently designed objects, like eyes. For if it is not gradual in these cases, it ceases to have any explanatory power. Without gradualness in these cases, we are back to miracle, which is a synonym for the total absence of [naturalistic] explanation. [83]

Behe provides numerous examples of irreducible complexity that cannot evolve in small steps. He concludes,

No one at Harvard University, no one at the National Institutes of Health, no member of the National Academy of Sciences, no Nobel Prize winner—no one at all can give a detailed account of how the cilium, or vision, or blood clotting, or any complex biochemical process might have developed in a Darwinian fashion. But we are here. All these things got here somehow; if not in a Darwinian fashion, then how? [187]

Other examples of irreducible complexity that Behe points out include aspects of DNA reduplication, electron transport, telomere synthesis, photosynthesis, and transcription regulation (*ibid.*, 160). “Life on earth at its most fundamental level, in its most critical components, is the product of intelligent activity” (*ibid.*, 193). Behe adds, “The conclusion of intelligent design flows naturally from the data itself—not from sacred books or sectarian beliefs. Inferring that biochemical systems were designed by an intelligent agent is a humdrum process that requires no new principles of logic or science” (*ibid.*). Thus, “the result of these cumulative efforts to investigate the cell—to investigate life at the molecular level—is a loud, clear, piercing cry of ‘design!’ The result is so unambiguous and so significant that it must be ranked as one of the greatest achievements in the history of science. The discovery rivals those of Newton and Einstein” (*ibid.*, 232–33).

Conclusion. As Hume showed, in the empirical world we posit causal connections only because we see certain events conjoined over and over. And since the present is the key to the past, the same applies to causes of origin. Hence, it is unscientific to posit anything but an intelligent cause for the first living cell, since repeated experience tells that the only kind of cause known to be able to produce specified complexity, as life has, is an intelligent cause. Chemical evolution, then, fails the scientific test. And it is beside the point to speculate that a natural cause is still possible, since science is based on evidence which points clearly in the direction of an intelligent cause by constant conjunction which David Hume called a “proof.”

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Evolution, Cosmic. Either the universe had a beginning or it did not. If it did have a beginning, then it was either caused or uncaused. If it was caused, then what kind of cause could be responsible for bringing all things into being?

An Eternal Universe. Traditionally, cosmic evolutionary scientists have believed that the universe, in some form, always existed. Matter is eternal. The main scientific support is the first law of thermodynamics (*see* THERMODYNAMICS, LAWS OF) that "energy can neither be created nor destroyed."

Creationists respond that this is a misunderstanding of the first law which should be stated: "The actual amount of energy in the universe remains constant." Unlike the misstated version of the first law, this is based on scientific observation about what occurs and is not a dogmatic philosophical assertion about what can or cannot happen. There is no scientific evidence that the universe is eternal.

Fred Hoyle proposed his steady-state theory to avoid this conclusion. It affirms that hydrogen atoms are coming into existence to keep the universe from running down. This also calls for the universe to be constantly generating hydrogen atoms from nothing. This hypothesis has fatal flaws. There is no scientific evidence that such an event ever occurred. And such an occurrence would be contrary to the principle of causality (*see* CAUSALITY, PRINCIPLE OF), which affirms that there must be an adequate cause for every event. Creationists quickly note that only a Creator would be an adequate cause for the creation of new hydrogen atoms out of nothing (*see* CREATION, VIEWS OF).

Holding to such beliefs as the steady-state theory or the eternity of matter theory has a high cost for the scientist, for both violate a fundamental law of science: the principle of causality. Both views require that the scientist believe in events happening without a cause. Even the great skeptic David Hume said, "I never asserted so absurd a proposition as that anything might arise without a cause" (Hume, 1:187). Yet this absurd proposition is accepted by scientists who make their living by the law of causality. If the whole universe is uncaused, why should we believe that the parts are caused? If the parts are all

caused, then what evidence could suggest that the whole is uncaused? Nothing in the principle of causality supports this conclusion.

Some cosmic evolutionists argue for some kind of rebound theory, whereby the universe collapses and rebounds forever. But there is no evidence that enough matter exists to stop and pull back by gravitational forces the expanding universe even once. What is more, this hypothesis runs contrary to the second law of thermodynamics, which dictates that, even if the universe rebounded, it would, like a bouncing ball, eventually peter out (*see* BIG BANG THEORY).

Universe with a Beginning. Creationists can offer evidence that the universe is not eternal but had a cause. Though he is not himself a theist, Robert Jastrow, founder and former director of NASA's Goddard Institute for Space Studies, has summarized the evidence in his book *God and the Astronomers*. Jastrow points out three lines of evidence—the motions of the galaxies, the laws of thermodynamics, and the life story of the stars—indicate that the universe had a beginning (Jastrow, 111). Now if we are speaking of a movement from no matter to matter, we are clearly in the realm of unrepeatable events covered by origin science.

The Second Law of Thermodynamics. Perhaps the most significant piece of evidence is the second law of thermodynamics. According to this law, "The amount of usable energy in the universe is decreasing." Or, stated another way, "In a closed isolated system, the amount of usable energy is decreasing." Or, "Left to themselves, things tend to disorder." No matter which way it is stated, this law shows that an eternal universe would have run out of usable energy or reached a state of total disorder. Since it has not, it must have had a beginning.

The first law of thermodynamics says that the actual amount of energy in the universe remains constant—it doesn't change. The second law of thermodynamics says that the amount of *usable* energy in any closed system (which the whole universe is) is decreasing. Everything is tending toward disorder and the universe is running down. Now if the overall amount of energy stays the same, but we are running out of usable energy, then what we started with was not an infinite amount. You can't run out of an infinite amount. This means that the universe is and always has been finite. It could not have existed forever in the past. So it must have had a beginning. And, if it had a beginning, then it must have been caused, since every event has an adequate cause (*see* CAUSALITY, PRINCIPLE OF).

The Motion of the Galaxies. Scientists argue that the universe is not simply in a holding pattern, maintaining its movement from everlasting to everlasting. It now appears that all of the galaxies are moving outward, as if from a central point of origin, and that all things were expanding faster in the past than they are now. Looking out into space, we are also looking back in time. We are seeing things as they were when the light was given off by those stars many years ago. The light from a star 7 million light-years away tells us what it was like and where it was 7 million years ago. Using a 200-inch telescope, Allan Sandage compiled information on forty-two galaxies, as far as 6 billion light years away.

His measurements indicate that the universe was expanding more rapidly in the past than it is today. This result lends further support to the belief that the universe exploded into being (Jastrow, *God and the Astronomers*, 95).

The Radiation Echo. A third line of evidence that the universe began is the radiation “echo” which seems to come from everything. It was first thought to be a malfunction or static on the instruments. But research has discovered that the static was coming from everywhere—the universe itself has a low-level radiation from some past catastrophe that looks like a giant fireball. Says Jastrow,

No explanation other than the big bang has been found for the fireball radiation. The clincher, which has convinced almost the last doubting Thomas, is that the radiation discovered by Penzias and Wilson has exactly the pattern of wavelengths expected for the light and heat produced in a great explosion. Supporters of the Steady State theory have tried desperately to find an alternative explanation, but they have failed. [ibid., 5]

The Discovery of a Great Mass of Matter. Since Jastrow first recorded the three lines of evidence for the beginning of the universe a fourth has been discovered. According to the big-bang theory there should have been a great mass of matter associated with the original explosion of the universe into being, but none was known until 1992. By means of the Hubble space telescope, astronomers found the very mass of matter predicted by big-bang cosmology. Thus the combined evidence provides an overwhelming case for the fact that the universe had a beginning.

Cause of the Cosmos. If the universe is not eternal but came into existence, the law of causality tells us that it must have had a cause. For whatever comes to be is caused. Hence, the universe was caused.

Logically, if we are looking for a cause which existed before the universe (nature) began, we are looking for a supernatural cause. Even Jastrow, a confirmed agnostic, has said as much: “That there are what I or anyone would call supernatural forces at work is now, I think, a scientifically proven fact” (ibid., 15, 18). Since he is speaking from the viewpoint of operation science, he probably means that there is no secondary cause which can explain the origin of the universe. But with the recognition of origin science, we can posit a supernatural primary cause that seems to be the most plausible answer to the question.

Conclusion. Jastrow sums up the cosmic evolutionists enigma well. He concludes his book:

For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries. [ibid., 105–6]

After being embarrassed by the evidence that the cosmos had a beginning, Albert Einstein declared his desire “to know how god created this world. I am not interested in this or that phenomenon, in the spectrum of this of that element. I want to know his thought, the rest are details” (cited in Herbert, 177).

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Evolution, Human. See DARROW, CLARENCE ; DARWIN, CHARLES ; DEWEY, JOHN ; EVOLUTION, BIOLOGICAL ; MISSING LINKS .

Evolution, Theistic. *Definition.* Broadly speaking, theistic evolution is the belief that God used evolution as his means of producing the various forms of physical life on this planet, including human life. However, there are several kinds of evolution in which God is said to be involved. Indeed, there are various conceptions of God connected to evolution.

Kinds of Evolution Involving God. Not all forms of evolution involving God are technically forms of theistic evolution, since many of them do not involve a theistic concept of God. The following typology is intended as suggestive, not exhaustive.

Theistic Evolution. By “theistic” evolution is meant the belief that a theistic God used an evolutionary process he had created to produce all living species of life. In addition, “theistic” means that God performed at least one miracle after his original creation of the universe *ex nihilo* (see CREATION, THREE VIEWS). Otherwise, there is no difference between theism and deism on the matter of origins. Of course, a theistic evolutionist (who does not deny more than two supernatural acts of creation) could still believe in other miracles in the Bible after creation, such as the Virgin Birth or resurrection .

Minimal Theistic Evolution. The minimal theistic evolutionist believes that God performed two supernatural acts of creation: (1) the creation of matter out of nothing, and (2) the creation of first life. After that every other living thing, including human beings, emerged by natural processes that God had ordained from the beginning.

Maximal Theistic Evolution. The maximal theistic evolutionist holds that God performed at least three supernatural acts of creation: matter, first life, and the human soul. After the initial creation of matter and life, all animal organisms, including the human body, evolved by natural laws God established from the very beginning. This is the traditional Roman Catholic view, at least for the last century.

The belief in any more supernatural acts of creation would probably be better called a minimal form of creationism (though this is an arbitrary line), since it would hold that God supernaturally intervened at least four times in creation. Most scholars who hold this, also believe that God supernaturally intervened many more times than this. They often refer to themselves as Progressive Creationists. Bernard Ramm and Hugh Ross (*The Fingerprints of God*) fit into this category.

Deistic Evolution . Deism does not believe in any supernatural acts or miracles after the initial act of creating the material universe out of nothing. As far as the evolutionary process and the production of life forms, including human beings, there is no real difference between deistic evolution and naturalistic evolution, which includes atheism and agnosticism .

Pantheistic Evolution. Another form of evolution involving a belief in God is called pantheistic evolution. Pantheism , unlike theism and deism, believes that God is all and all is God. God is the universe or Nature. Benedict Spinoza and Albert Einstein held this kind of belief. Former atheist Sir Fred Hoyle adopted this view in his book *Evolution from Space* (1981). According to this view, God created first life and then many basic forms of life at various times after that, as is indicated by the great gaps in the fossil record. However, the God who intelligently intervened to form these various kinds of life did so from within the universe, not from outside it. For God is the Mind of the universe. God is Nature.

Panentheistic Evolution. Unlike pantheism, which believes God is All, panentheism holds that God is in all. Panentheism is distinguished by its belief that God is the Vital Force within the universe and within the evolutionary force. Henri Bergson expressed this view in his book *Creative Evolution* in 1907. This seems also to be the position of the Roman Catholic evolutionist, Teilhard de Chardin. According to this position, evolution is a continuous process that moves forward, sometimes even “leaps” forward, by virtue of the immanent divine Force within the universe.

Evaluation. Since the essence of all these views are critiqued elsewhere under deism, pantheism, and panentheism, it is not necessary to do so here. It remains only to point out that its view of evolution of living organisms assumes the antisupernaturalistic

presuppositions of atheism and agnosticism. Only theism truly believes in supernatural acts from a God who is beyond the universe and who occasionally intervenes in it.

Many of the same arguments used against naturalistic or materialistic evolution apply also to these other forms of evolution involving God. For it makes no difference whether the natural processes were created by a theistic God or not. The evidence shows that nonintelligent natural laws do not have the ability to bring life or new life forms into existence, to say nothing of human beings (*see* DARWIN, CHARLES ; MISSING LINKS).

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Existentialism. As an atheistic movement, *existentialism* flowered in the mid-twentieth century, yet its effects lingered. Existentialism has had a negative effect on evangelical Christianity.

Theological Influence. Several theological movements, broadly known as neo-orthodox, have been influenced by existentialism? Karl Barth stressed personal encounter with God, stressing that the Bible is a fallible human record of God’s Word. Emil Brunner emphasized that revelation is personal, not propositional. Rudolph Bultmann developed the demythological method of stripping the Bible of its outdated supernatural worldview to get at the existential core (*see* MYTHOLOGY AND THE NEW TESTAMENT).

Major Proponents of Existentialism. An eclectic group of philosophers and theologians contributed to what became modern existentialism. They include Lutheran

theist Søren Kierkegaard (1813–1855), German atheist Friedrich Nietzsche (1844–1900), French atheists Jean-Paul Sartre (1905–1980) and Albert Camus (1913–1960), German Jewish theist Martin Buber (1878–1865), German non-theist Martin Heidegger (1832–1970), French Roman Catholic Gabriel Marcel (1889–1964), and German Eastern Orthodox layman Karl Jaspers (1883–1969).

Emphases and Contrasts of Existentialism. Existentialism emphasizes living over knowing, willing over thinking, the concrete over the abstract, and the dynamic over the static, love over law, the personal over the propositional, the individual over society, the subjective over the objective, the non-rational over the rational, and freedom over necessity.

At the heart of existentialism is the belief that existence has precedence over essence. All existentialists hold this view in some form. They differ in other respects, but most existentialists, especially atheists, tend to accept certain other propositions:

Humans are primarily animals who have learned to choose. They are not seen as rational, political, or mechanical beings.

Humanity as an object is not free, but individuals as a subject are free.

“I” am not “myself.” The “self” can be studied and described as an “it.” But the “I” behind the it transcends description; it is utterly free.

Objectivity lacks being. Only the subjective really exists.

Meaning and value are found in being, living, willing, and acting. Form, essence, and structure are irrelevant and valueless.

Meaning and values are created, not discovered. Theistic existentialists such as Kierkegaard would demur at this point.

Getting from Essence to Existence. All this sounds more philosophical than practical, and existentialists struggle with the movement from the abstract to the concrete. Different existentialists describe this move in different ways. The Christian existentialist Kierkegaard depicted it as a of faith” (*see* FIDEISM) in which one has a personal encounter with God. The atheist Sartre called it an attempt to move from being for itself to being in itself. He believed that to do this is, in the end, impossible, and that life is absurd. Atheistic existentialists, with Sartre and Camus, have insisted that no authentic existential experience is possible. The best one can do is to recognize one’s own inauthenticity. Theistic existentialists believe that a genuine existential experience is possible but not without a personal encounter with God. Whether this is done alone as an individual (Kierkegaard), or in community (Marcel) is moot. At least it is possible. For the Jewish existentialist Martin Buber, it was a movement from I-it to I-thou relationships. Gabriel Marcel believed one can have a true existential experience only in the move from “me” (the individual) or “they” (the crowd) to “we” (the community).

Evaluation. Existentialists are so diverse that general comments inevitably fall short of accurately portraying one or more groups under the heading. There are a few generalities that can be made of the movement.

Positive Contributions. Existentialism’s stress on love over legalism fits the teaching of Jesus (Mark 2:27) and is something of a corrective to the ever-present legalism within some spheres of Christian life. Emphasis on the practical as opposed to the purely theoretical fits with the Christian emphasis on a living faith (cf. James). The New Testament avoids the abstract in teaching that good works follow from true faith (Eph. 2:8–10 ; James 2). All evangelicals believe in human freedom, though some groups disagree about nuances of what that means (*see* DETERMINISM ; FREE WILL).

In the root sense that “existence is prior to essence,” Thomas Aquinas can be classed as an existentialist. He portrayed God as Pure Existence. God who is prior in order and significance to every other being is pure Actuality with no potentiality whatsoever. God is pure “Is-ness.” This is the ultimate in Christian existentialism from the perspective of realism.

Errors and Dangers. But existentialism does not adequately address the essence of existence. If existence is prior to essence then the essence of existence cannot be known. Existentialists, however, do attempt to explain, describe, and know it. They write books about it. To be consistent, the moment they acknowledge that there is an essence to existence, they cease to be existentialists in the accepted meaning of the term. Existentialism sets up a radical disjunction between essence and existence. But we never encounter pure “ of existence in life without some “whatness” of essence. We never know *that* something is without knowing a little of *what* something is.

Existentialism is so subjective that it tends toward the mystical (*see* MYSTICISM). Without some objective criteria, there is no way to differentiate an encounter with the real from an illusion. For theistic existentialists, there is no way to know one has encountered the true God rather than the subconscious—or even Satan (2 Cor. 11:14).

In our knowledge of other persons and God, the personal cannot be totally split from the propositional. We can say something about persons through propositions or declarations about them. Pen pals who have never met can still become intimately acquainted. Likewise, the Bible is a propositional revelation about the personal God (*see* BIBLE, EVIDENCE FOR).

The freedom espoused by atheistic existentialists is impossible. We do not have absolute freedom. And if there is a God, all other wills are subordinate to his absolute will.

Irrationality does not correspond with what life is like. God and ultimate reality are not contradictory. God is Father of all reason. Logic flows from his nature (*see* FAITH AND REASON). Existentialists do not practice irrationality. They are quite rational when

expounding and defending their system. They inevitably try to make rational sense of their view of existence. The very attempt is self-defeating.

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Exodus, Date of. See ARCHAEOLOGY, OLD TESTAMENT ; PHARAOH OF EXODUS .

Experiential Apologetics. Experiential apologetics is the form of defending the Christian faith that appeals to Christian experience as evidence for the truth of Christianity. In its appeal to internal, as opposed to external, evidence, it contrasts sharply with other apologetic systems (see APOLOGETICS, TYPES OF).

Proponents of Experiential Apologetics. Many Christian thinkers have stressed experience, some mystical and some not. Meister Eckart in the medieval period is considered heretical in theology, but he wrote cogently on the implications of Christian mysticism. In the modern period, existentialism (see KIERKEGAARD, SØREN) and neoorthodoxy (see BARTH, KARL) place high value on religious experience and its proofs of Christianity. Classic liberals and modernists reject objective Christian truth, so a general experiential religion is virtually the only possible foundation on which to build a Christian apologetic (see MIRACLES, MYTH AND ; SCHLEIERMACHER, FRIEDRICH). Among evangelicals, Elton Trueblood has defended experientialism. While usually remaining outside apologetics discussions, experiential apologetics characterizes Pentecostal, charismatic, and the third-wave movement.

Types of Experiential Apologetics. Experiential Christian apologists fall into several categories. Some appeal to religious experience in general, though this is not often used to prove the unique claims of Christianity so much as the existence of teachings common to several religions. This might include the existence of a transcendent God or immortality of the soul.

Other Christian experientialists appeal to special religious experiences. Within this category are those who focus on mystical experiences and those who look to supernatural Christian conversions. Jonathan Edwards ' classic description of the nature of conversion, *A Treatise Concerning Religious Affections* argues for God from conversion experience, though Edwards generally emphasized reason.

General Religious Experience. The value of religious experience in general is limited in drawing uniquely Christian claims. Logically it is difficult to see how this argument can be used to support even a distinctively theistic God. At best it establishes some credibility for a supreme being of some kind. Proofs from religious experience have been offered by Christians and others, however.

The value of general religious experiences is that they are available to all. Even the atheist Sigmund Freud admitted having a sort of "feeling of absolute dependence" like that described by Friedrich Schleiermacher . Paul *Tillich called this an experience of "ultimate commitment." The humanist John Dewey believed everyone experiences a religious experience in their pursuit of goals in spite of obstacles.

Special Religious Experience. Special, in contrast to general, religious experience is not so widely shared. For those who do have such experiences, they can be a powerful demonstration of the proof of Christianity. These come in mystical and existential varieties.

Christian mystical experience. Christian mystics (see MYSTICISM) claim a special experience of God. Mystical experiences differ from general experiences in another way: They claim direct, unmediated contact with God. Proving such a claim is impossible, but Christian mystics often claim such evidences are unnecessary. The experience is self-evidently true, as basic to reality as the sensory experience of seeing color. For them at least, nothing needs verification.

Existential experiences. Although existential encounters with God are not mystical, their proponents claim they too are self-authenticating. There are occasions when one is grasped by God in a nonrational, direct encounter that is more basic and real than a sense experience. Although not all would consider such experiences as evidence, they do serve to vindicate the authenticity of faith for the one who experiences them. Properly speaking, those who appeal to such experiences reject apologetic approaches in their traditional sense. They spurn appeal to rational, factual evidence in favor of what they believe to be a self-verifying experience.

It should be noted that not all who experience special encounters with God regard these moments as apologetic proofs for Christianity to themselves or others. Those who focus on those experiences as a primary component of their Christian belief system, however, tend to view them as verifications of their beliefs.

Evaluating Experiential Apologetics. While some Christians seem to base their beliefs largely on experience, others totally debunk the apologetic value of such subjective arguments. However, properly seen, experience has a significant role in religion.

Positive Aspects. All religious truth should be experienced. Religious truth, in contrast to other forms of truth, is preeminently a truth to be experienced. As William James noted, at the very heart of religious experience is the aim to have a satisfying, transcendent relationship. Religious truth, Kierkegaard said, is personal, rather than merely propositional. It is an experience that provides a living relationship with the living God. In this sense, religious truth is far more than what we know; it is what we live. It is not simply truth for believers to grasp; it grasps them.

All truth is experienced. In the most general sense, all truth must be experienced. At its root, experience means awareness—consciousness of the Ultimate. This extends from awareness of God to awareness of a mathematical truth. If it is not experienced, than one does not “know” it. So experience in this sense is not only important to religious faith; it is essential.

Conceptual truth is empty without experience. A corollary to the necessity of experiencing truth is that sterile concepts are empty because they have not been rooted in experience (*see* TAUTOLOGIES). While there are different levels and objects of experience, there is no truth about reality that is totally disjointed from experience. Unless one has an awareness of an object through experience, one cannot know it directly. Hence, experience is indispensable to knowing truth of any kind, including religious truth.

Negative Aspects. While all truth, even religious truth, should be experienced in the broad sense of an awareness of it, no religious truth claim should be based in uncritical, untestable, experience (*see* TRUTH, NATURE OF).

Experientialism confuses categories. It is a confusion of categories to speak of experiential religious truth. There are true religious *experiences* (experiences of God), but these are different from *expressions* (statements) about those experiences. Truth is found in expression about the object of our experiences, not in the experiences themselves. So, technically there are no true or false religious experiences. There are true or false statements about whether one was really experiencing God and about the God experienced. But experience itself, in its primary sense, is neither true nor false.

Reason is needed. If reason is taken in the secondary sense of reflection on our primary experience (particularly rational reflection), then it is crucial to knowing the truth

about our primary experience. Primary experience, as defined by many who stress it, is unreflective and uncritical. There is allegedly no use of logic or reason. It is preconceptual. This kind of experience, if indeed it is possible, is dangerous and has no definitive function in determining truth in religion. It is “bare” experience with no way in or of itself to know whether it puts the experience in touch with divine reality. Unless so-called “secondary experience” using reason can evaluate and make judgments about this raw experience, it has no truth value. As Jonathan Edwards would say, God wants to reach the heart, but he never bypasses the head along the way.

Contrary to the claim of some, there are no self-evident religious experiences that can demonstrate the truth of Christianity. There are significant differences between a sense experience and a special religious experience. First, one is a general experience and the other is special. Second, one is continuous experience and the other only occasional. Third, one is public and the other private. Fourth, one is sensible and objective, while the other is spiritual and subjective. No comparison between the two is valid.

This leaves unsettled the claim of John Calvin and others that all men have an innate knowledge of God. If they do, it is certainly not specific enough to establish any more than the existence of God (and perhaps immortality) but not the unique truths of Christianity, such as the deity of Christ (*see* CHRIST, DEITY OF), the Trinity, and Christ as the only way to God (*see* CHRIST, UNIQUENESS OF ; “HEATHEN;” SALVATION OF ; PLURALISM ; WORLD RELIGIONS, CHRISTIANITY AND).

A “*source of*” truth is not a “*support of*” truth. Those who use experience in its root sense to demonstrate the truth of Christianity engage in a basic misunderstanding. Religious experience is certainly a *source* of truth about God, but it cannot be used as a *test* for that truth. Such an apologetic use of religious experience begs the question, since it appeals to the experience to prove the truth of the experience.

Religious experiences are not self-interpreting. No religious experience, certainly none of the special (mystical) variety, is self-labeled. Other interpretations are possible, which are readily given by Ludwig Feuerbach, William James, and Freud. The fact that the religious person experienced it with a certain label on it does not mean this is the only interpretation or the proper interpretation. Hallucinations, illusions, and mental projections have occurred throughout religious experience. One needs more than a subjective experience to demonstrate objective truth.

Religious experiences lack objective value. Some objective, demonstrable criteria for determining the truth of religious experiences are needed. This is obvious from the facts that similar experiences can be interpreted in differing ways and that religious experiences conflict with one another. This is why the Bible warns against false prophets (Matt. 7:15) and teachings (1 Tim. 4:1f ; 1 John 4:1f). Indeed, it even provides objective criteria by which falsehood can be known (cf. Deut. 18:9–22).

Indescribable experiences have no truth value. Mystics often claim to have ineffable experiences. Whatever subjective value these may have to the one experiencing them,

they can lay no valid truth claim on others. Subjective states are binding, if at all, only on those having them. By their very nature they are experienced by only one person. Second, an indescribable experience cannot be tested because it is not even known. One would have to know it before he could test it. If it is not rationally understood, then it cannot be rationally tested.

Conclusion. General religious experience is not specific enough to support the unique claims of Christianity. At best it can only support some vague claims about a transcendent “other,” but not the unique claims of a trinitarian God who has revealed himself in Scripture. Nor are special religious experiences objective or verifiable. They afford no critical, rational scrutiny. Objective criteria are needed for all subjective experiences to be meaningful to anyone other than the person who has them. Objective testing is certainly needed before they can be used to establish a truth claim. The mind must understand and scrutinize what the heart is feeling. Otherwise, we cannot know whether it corresponds to reality (*see* TRUTH, ABSOLUTE NATURE OF).

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