Table A1.1. Six Models of Origins

Names

Used in this book	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
General	materialistic evolution	theistic evolution	theistic evolution	theistic evolution	progressive creation	recent creation
Used by proponents (submodels)	modern synthesis, punctuated equilibrium		evolutionary creation		day-age creation, gap model	scientific creation
Used by opponents[1]	Darwinism	Darwinism, deistic evolution			creationism	creationism

Basic Propositions

Scientific process	random, spontaneous natural processes	universe created, then undirected natural processes	universe created perfectly, no subsequent intervention	intervention by direction of natural processes	major body plans created separately	each kind created separately
Interpretation of Genesis account	ancient myth, no God	ancient myth, God exists	nonconcordist,[2] Adam and Eve not individuals	nonconcordist, Adam and Eve are individuals	concordist, days extended	concordist, days literal

his highlights the dichotomy in the public debate. The two middle positions are more recent (both popularized since 1995). Each has been classified by opponents with the extremes (Darwinism or creationism), but here are significant differences, as shown by comparing the following distinguishing features.
ee appendix 2 for a comparison of concordist and nonconcordist positions. Interpretations of Adam and Eve tend to follow this pattern, but there are exceptions.

Distinguishing Features

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Theology?	no supernatural	Creator	Creator	Creator	Creator	Creator
Teleology?	no purpose	no purpose	purpose	purpose	purpose	purpose
Intervention?	no intervention	no intervention	no intervention	intervention	intervention	intervention
Genealogy?	common descent	common descent	common descent	common descent	de novo creation	de novo creation
Cosmology?	old universe	old universe	old universe	old universe	old universe	recent creation

Underlying Philosophy

Theology	atheistic, agnostic[3]	monotheistic, deistic, other[4]	monotheistic	monotheistic	monotheistic	monotheistic, other
Relationship between science and religion[5]	overlapping or complementary domains:[6] religion inferior	complementary domains: equal	complementary domains: each superior in its area	interacting domains: each superior in its area	interacting domains: equal	overlapping or interacting domains:[7] religion superior
Methodology of science	naturalism: only natural causes	methodological naturalism: only natural causes	methodological naturalism: only natural causes	open inquiry: best natural or supernatural cause	open inquiry: best natural or supernatural cause	imperfect inquiry: secondary to perfect revelation

lany adherents of NE are secular humanists, an atheistic religion that is essentially existentialist.
raditional polytheistic religions rarely try to harmonize their creation story with science. Thus they effectively mirror NTE or YEC positions: either the two represent different realms, answering different questions (as TE) or the religious teaching is held to be correct based on its inherent merit (as YEC). Many other religions, including Eastern pantheism and New Age, reach the same conclusions but for a different reason, ontending that the physical is illusory. Since they do not normally attempt to explain the scientific evidence in light of their religious beliefs, they are not part of the debate and thus are not included here, but logically rould present arguments mirroring one of these two positions.
verlapping means the whole truth can be known by either empirical (scientific) or nonempirical (religious) methods. If this is the case, one must provide a better explanation, eclipsing the other. Diagrammatically, this buld be shown as the overlap of two full circles. Complementary means that each tells us about something different, using different methodologies to answer different questions; the perceived relative importance of ach differs among models. Diagrammatically, this could be shown as two half circles. Interacting means that although each is primarily responsible for one area, the other still has something important to contribute to lat area. Diagrammatically, this could be illustrated by a symbol shaped like the yin/yang.
verlapping = atheism; complementary = agnosticism.
verlapping = do not support ID; interacting = support ID.

Table A1.2. Origin of the Universe

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Explanation	apparent beginning	in the beginning				apparent age
Mechanism	big bang, multiple universes	big bang, singularity as moment of creation				white hole, direct creation of components
Contention	conditions and physical constants are suitable for development of life by chance	conditions and physical constants were established at values suitable for development of life				universe was created essentially as it is now, with apparent age

Changing Universe

Evidence	red shift light from distant galaxies is shifted toward the red end of the spectrum					
Interpretations	expanding universe					apparent age
Evidence	cosmic microwave background radiation (CMBR) background temperature of intergalactic space fits predictions based on cooling rate					
Interpretations	universe ~13.8b years old					apparent age
Evidence	relative abundance of light elements and isotopes (H, H-2, He, Li) ratios are as predicted by big bang and stellar nucleosynthesis theories					
Interpretations	rapid cooling after big bang due to expansion of universe					created as is

Evidence	agreement with theory predictions based on big bang theory have been confirmed observationally					
Interpretations	big bang model is best explanation of observed values					created as is

Fine-Tuned Universe

Evidence	physical constants perfectly balanced if constants were slightly different, elements and galaxies would not exist					
Interpretations	chance	created perfectly for life to develop				created as is
Evidence	universe ideal for life if conditions were slightly different, universe would not support chemistry necessary for life					
Interpretations	chance	created perfectly for life to develop				created as is
Evidence	solar system ideal for advanced life if conditions were slightly different, earth could not sustain life					
Interpretations	chance		created perfectly for life to develop			created as is

Table A1.3. Origin of Life

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Explanation	inevitability			purposeful direction	immediate appearance	
Mechanism	natural law-like processes in combination with random occurrences and selection			direction of low probability events	direct creation of complete organisms	
Contention	no supernatural intervention after creation			agents create by assembly	systems are too complex to have been developed stepwise	
Life from Nonlife						
Evidence	organic precursors can be formed from inorganics in the lab, under highly constrained conditions that differ for each molecule					
Interpretations	conditions could have occurred			conditions carefully designed and controlled		
Evidence	random reactions in the absence of a living system, reactions yield random products, racemic mixtures					
Interpretations	some unknown mechanism determined or selected			order does not naturally arise from disorder		
Evidence	coacervates simple bubbles of lipid can enclose organics					
Interpretations	could have protected and facilitated reactions			very different from cell membrane		
Evidence	cells simplest cells are extremely complex					
Interpretations	stepwise process will be found			directed	too complex for stepwise process	

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Information						
Evidence	nearly universal and ideal code the genetic code is nearly universal, efficient, and minimizes errors in translation					
Interpretations	selected by prebiotic evolution, common descent		planned		common design	
Evidence	independence of carrier origin of random DNA is not the same as DNA that carries information to code for cell products and functions					
Interpretations	effective messages selected by pre-biotic evolution		constructed		created as part of functional cell	
Evidence	specified complexity in everyday experience, information both complex and specific is associated with intelligence					
Interpretations	useful DNA sequences selected, modified naturally		best explained by intelligent agent			
Evidence	irreducible complexity if any part from many molecular systems are removed, they would not work at all					
Interpretations	exaptation and spandrels modify simpler systems		directed		too complex for stepwise process	

Table A1.4. Origin of Species

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Explanation	neo-Darwinian synthesis			non-Darwinian evolution[1]	creation	
Mechanism	natural selection acting on random mutations, in conjunction with random events, reproductive isolation and other natural mechanisms			direction of low probability processes	direct creation of body plans (phyla)	direct creation of kinds (genera or families)
Contention	speciation is gradual, with continuity of all life forms			agents modify teleologically	periods of creative activity	creation week
Fossils						
Evidence	sorting different types of fossils found in each layer, with index fossils in the same relative sequence					
Interpretations	appearance and extinction of species over long time periods					global flood
Evidence	dating rocks lower in a stratigraphic column are usually radiometrically older than rocks above them					
Interpretations	superposition and other natural processes					inaccurate
Evidence	stasis and saltation species appear and disappear abruptly, remaining unchanged for long periods, few intermediate at higher taxa					
Interpretations	incomplete record, relatively rapid change				creative periods	global flood
Evidence	extinctions and explosions several times, almost the entire biota present in one layer is replaced by a totally different one in the next					
Interpretations	mass extinctions followed by adaptive radiation to new niches				creative periods	global flood

[1]A small minority of scientists within NE, NTE and PE also favor a non-Darwinian evolutionary model. Their arguments for the degree of involvement of God would differ from the ones shown for DE, although the scientific mechanism would be similar (see chap. 5).

Evidence	geographical distribution mammals are continent specific, but most earlier fossils are not					
Interpretations	plate tectonics separated, allopatric speciation				separate creations, rarely discussed	
Genetics						
Evidence	selection selection within a population has its limits, and stabilizing dominates in stable environments					
Interpretations	gradual changes in new environments			additional mechanisms needed		
Evidence	population genetics gene frequencies change slowly in populations in absence of strong selection pressure					
Interpretations	many generations or strong selection			directed	microevolution	
Evidence	mutations most mutations have small effects or are deleterious					
Interpretations	rare advantageous selected			teleological	mutations neutral or deleterious	
Evidence	homeotic genes genes similar between species direct overall development					
Interpretations	similar by descent, lead to rapid changes in organism			teleological	similar by design	
Evidence	genome complexity many closely related species cannot interbreed due to differences in chromosome number or structure					
Interpretations	isolating mechanism			directed	created with differences	

Table A1.4. Origin of Species (continued)

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Similarities						
Evidence	embryological similar forms can arise from different processes, or dissimilar forms from similar processes					
Interpretations	common descent, with variation				created differently	
Evidence	vestigial structures many structures once thought to be vestigial have been shown to have function					
Interpretations	formation and reabsorption of primordia shows common descent				all created with function	
Evidence	noncoding DNA much DNA once thought to be junk has been shown to have a function					
Interpretations	common descent transmits nonfunctional			function will be found for most if not all		
Evidence	gene order similar genes are in a similar order on the chromosomes across a broad range of species					
Interpretations	common descent transmits same order			both	functional purpose	
Evidence	molecular sequences differences in DNA sequence can be mapped into trees, but trees are not the same for each gene					
Interpretations	patterns are similar, differences will be resolved			directed	similar by design	
Evidence	symbiosis mitochondria and chloroplasts contain DNA and are structurally similar to prokaryotes					
Interpretations	endosymbiosis				similar by design	

Table A1.5. Origin of Humans

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Explanation	sentient animal	special animal		special purpose	special creation	
Mechanism	undirected evolution of human form and brain	universe created so sentience was inevitable result of evolution, group became human gradually		direction of form, impartation of spirit	separate de novo creation of human form and spirit at the same time	
Contention	mind is only a projection of the brain, there is no separate soul	sentience allows for development of moral capacity, an essential component of the image of god; interpretations of soul vary		first progenitors given spirit	Adam and Eve were two individuals created in the image of god, body and spirit at the same time	
Hominoids, Hominids or Hominins						
Evidence	fossils fossils exist that have some ape-like and some human-like traits, with intermediate brain size					
Interpretations	at least some of the fossils are human ancestors, linked evolutionarily				fossils are either apes or human	
Evidence	artifacts artifacts have been dated as old as 2.5 million years, with the earliest *Homo* fossils, changing over time					
Interpretations	gradual development of use of tools, rapid change with modern humans				*Homo* human	dates inaccurate

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Chimps Versus Humans						
Evidence	chromosome 2 one human chromosome appears to be a fusion of two ape chromosomes					
Interpretations	evidence of common descent				similar by common design	
Evidence	DNA sequence 35 million nucleotide substitutions (1.23%), 5 million indels (10% difference in genome size)					
Interpretations	stress similarity (highlighting percent substitutions)				stress differences (highlighting numbers)	
Evidence	molecular clock differences in polymorphisms can be analyzed to give dates of separation of lineages, minimum population size					
Interpretations	accept inferred dates and population sizes as accurate			varied	question assumptions of method	

Table A1.6. Modern Proponents of Each Model

	Naturalistic Evolution (NE)	Nonteleological Evolution (NTE)	Planned Evolution (PE)	Directed Evolution (DE)	Old-Earth Creation (OEC)	Young-Earth Creation (YEC)
Authors[1]	Dawkins Dennett Gould Mayr Scott Wilson	Barbour de Duve Haught	Collins Falk Lamoureux Miller Van Till	Behe Haarsma Schaefer	Kenyon Meyer Newman Ross	Austin Nelson Bergman Oard Brown Reynolds Ham Sanford Humphreys Sarfati Morris Wise
Organizations[2]	Berkeley ENSI NCSE TalkOrigins		BioLogos		RTB	AIG CMI CRS ICR

Multiple-Model Position		**Intelligent Design (ID)[3]**	
Authors		Dembski Johnson O'Leary Wells Woodward	
Organizations		ARN DICSC IDN ISCID	

[1]This list is by no means complete, but will serve as a starting place to identify some of the more prolific or better-known authors.

[2]Organizations: NE: Understanding Evolution (Berkeley), Evolution and the Nature of Science Institutes, National Center for Science Education, Talk Origins Archive; PE: BioLogos Institute; OEC: Reasons to Believe; YEC: Answers in Genesis, Creation Ministries International, Creation Research Society, Institute for Creation Research; ID: Discovery Institute Center for Science and Culture, Intelligent Design Network, Access Research Network, International Society for Complexity Information and Design.

[3]These authors promote intelligent design, which is compatible with any of the last three models, rather than a specific scientific model. Some authors who do take a position on a particular model (Behe, Kenyon, Meyer) also support ID. Not all those in either DE or YEC would support ID. See chap. 2, sec. 2.2.4 for further explanation.