

Evolution and Theology

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Other language version: [Evolution und Theologie \(Deutsch\)](#)

The biological theory of evolution understands the emergence and further development of organisms as an ongoing process throughout history. This challenged theology to reflect on its own understanding of creation and related questions of the doctrine of God and anthropology. The background to these reflections is the question of the fundamental relationship between theology and natural science. Evolution and creation are related to each other in different ways – from the view that they are incompatible to a synthesis of both concepts.

Not only the theory of the natural origin of species, but also the idea of a naturally explainable evolution of religion has been and continues to be understood as a challenge to religion and theology.

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Editorial Note

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1. Starting Point: The Theory of Evolution

In 1859, [Charles Darwin](#)  published the first edition of his influential theory on the origin of animal and plant species through natural selection processes entitled *On the Origin of Species by Means of Natural Selection*.^[1] In later editions, Darwin himself also used the term “evolution.” At the heart of this theory are the principles of variation and

selection: in a historical process, numerous different organisms of a species emerge, with better-adapted individuals having better chances of survival and reproduction. Since Darwin, later work has confirmed its basic way of functioning. Details have been developed further and elaborated, with the later discovery of genetic codes and their transmission being especially significant.^[2] The connection between Darwinism and genetics is also referred to as the “synthetic theory of evolution,”^[3] according to which evolution can be understood as “changes in the genetic composition of populations over time.”^[4] On the one hand, the random nature of mutations leads to changes that are not conducive to life. As a result, there are developments in the course of evolution that result in dead ends. On the other hand, the large number of mutations also leads to great variability and thus to better adaptability in individuals to their respective living conditions.^[5] Accordingly, chance is said to play a major role in the development of living organisms.^[6] Evolution should be understood as a complex process involving changing environments and changing individuals and populations. The evolution that has taken place so far is a prerequisite for further evolution.^[7]

2. Scope of the Problem

In light of the theory of evolutionary, questions have been raised since the nineteenth century about the significance of the idea of the divine creation of the world – in the sense of the development of living beings.^[8] In addition, the theory of evolution calls into question the doctrine of providence (also known as the doctrine of predestination) due to the high importance it attaches to chance.^[9] This raises fundamental questions about the concept of God. Additional questions for theology relate to the loss of the central position of human beings and to ethical concepts such as humanity in the face of the survival of the fittest.^[10]

In particular, teleological arguments that infer the existence of a creator based on the complexity of the world^[11] can be critically questioned on the basis of the theory of evolution and from theological perspectives.^[12] Accordingly, the following objections are raised:

1. The purposefulness of the universe is questionable in view of diseases and natural disasters, as well as dead ends in the course of evolution.
2. Understanding creation as a theory of the origin of the world involves a mixing of categories.
3. Teleological explanations often rely on gaps in the scientific system.
4. This argument leads to a reductionist view of God that neglects the idea of ongoing creation (creatio continua) or sees God’s continuous intervention as competing with natural causes.^[13]

Even today, science-based naturalism continues to shape many Western societies,^[14] while there are still religious groups or individuals who advocate anti-evolutionism. Accordingly, discussions about the relationship between evolution and theology and how to deal with each other’s positions arise time and again. However, even for theological concepts that do not take an extreme position, it is still necessary to determine the appropriate relationship between creation and development.

3. Determining the Relationship between Creation and Evolution

Ian Barbour  (1923–2013), physicist and theologian, developed various models for defining the fundamental relationship between science and faith, which he also applied to the interplay between evolution and creation. According to Barbour, these can be systematized as follows:^[15]

- Conflict: A conflict between the two approaches exists, on the one hand, when, in the sense of scientific materialism, all complex phenomena are understood as having natural causes. While the theory of evolution is accepted here, the idea of the biblical creation texts is understood as contradicting this. On the other hand, a conflict is seen when, in the sense of narrow creationism, creation is understood to describe the origin and

further development of the world and to have occurred as described in the biblical texts. A variant of creationism is the theory of “intelligent design.” Both scientific materialist and creationist approaches can be criticized for their overly simplistic understanding of the Bible.

- Independence: Creation and evolution can be regarded as independent of each other if they are assigned to different spheres. (1) In dialectical theology, for example, the doctrine of creation is not understood as a theory of the beginnings, but as a reference to dependence on God and the fundamental goodness and order of the world.^[16] (2) Similarly, independence exists when God’s actions are seen as limited to personal life – God would not act in the realm of nature. The concept of creation can stand here for the dependence of one’s own life on God.^[17] Another possibility for an independent relationship exists (3) if creation and evolution are understood as independent linguistic systems, the mixing of which would be inadmissible.^[18] Similarly, evolution and creation do not conflict if questions about the origin and development of the world are considered “religiously irrelevant.”^[19] It is concluded from this that questions of redemption and reconciliation should be central. Approaches based on independence can be convincing insofar as evolutionary theory and creation theology are respected without mixing the spheres of knowledge. However, this also gives rise to a possible point of criticism: theology then makes no reference to current scientific findings.
- Dialogue: One way of bringing both approaches into dialogue with each other without disputing their respective competences is to distinguish between primary and secondary causes. God acts as the primary cause through secondary causes described by the natural sciences. Dialogical approaches attempt not to mix theology and natural science, while at the same time continuing to advocate a goal-oriented approach, for example, when teleology is understood not as an “explanatory variable” but as a “category of interpretation.”^[20] Overall, theological approaches that explicitly refer to evolutionary theory (also known as “evolutionary theology”^[21]) can generally be understood as dialogical or integrative approaches.
- Integration: Barbour envisions an integration of the concepts of creation and evolution primarily in three directions: (1) a natural theology that draws theistic conclusions from knowledge of evolution and understands God as the creator of a self-organizing system; (2) a theology of nature that assumes a process toward greater complexity and greater consciousness, understanding chance as a principle of internal self-organization;^[22] (3) a systematic synthesis in the context of process philosophy that develops a comprehensive metaphysical system capable of integrating evolution and ongoing creation.

4. Current Theological References to the Theory of Evolution and Recent Debates

The challenges posed by the theory of evolution with regard to the relationship between the purpose/creation plan and chance or necessity and contingency repeatedly raise questions about the nature of this relationship and prompt dialogue between theology and the natural sciences. Even today, philosophers continue to question what the biological theory of evolution cannot explain. The philosopher Thomas Nagel ^{GND}, for example, prominently emphasized that scientific approaches lack explanations for “first-person individual experience, for the intersubjective communal use of reason, and for the objective validity of moral facts”^[23] for categorical reasons alone.

In 1988, biologist John Odling-Smee ^{GND} introduced the concept of “niche construction,” which describes how species change their environment “systematically, purposefully, and thus not randomly.”^[24] The fact that organisms shape their environment, i.e., help to construct their own niche in which they live, can be understood as an assumption of an expanded synthesis of evolutionary theory, which considers culture and nature to be more closely intertwined: physical adaptation and culture are intertwined here. This more reciprocal understanding of the relationship between living beings and the environment has been taken up by recent theological concepts of creation; a stronger perception of the connection between human beings and the environment is inferred from this, as well as an emphasis on human dependence on the environment, which is seen as contrary to philosophical traditions that seek to construct human beings as being as independent as possible from the natural environment.^[25] Even though niche

construction is not limited to humans, humans are nevertheless perceived in a particularly prominent way as having an impact on their environment (also in connection with the concept of the Anthropocene). The reference to the niche construction theory leads not only to conclusions in creation theology, but also to related anthropological and ethical conclusions, for example in the context of climate ethics and questions about human responsibility for the environment.^[26] Evolution is given special consideration in process theology.^[27]

5. Evolution of Religion as a Critique of Theology and Religion

The concept of evolution can refer not only to the biological development of living beings, but also to development or transformation in general. Following David Hume's  *The Natural History of Religion*, published in 1757, a new, evolutionarily based form of criticism of religion emerged, which refers to the understanding of the natural origin of religion: based on the realization that religions can be traced back to natural causes, the validity of religion was disputed.^[28] In the twentieth century, this criticism was taken up again in a particularly prominent (and controversial) way by Richard Dawkins . Dawkins derives from a rejection of creationism, which is based on the biological theory of evolution, on the one hand, a rejection of belief in God per se.^[29] On the other hand, Dawkins's genealogical moment is also relevant to the emergence of religion: religion was "evolutionarily advantageous"^[30] and therefore prevailed.^[31] Religion serves to "cope with existential uncertainties."^[32] Once these uncertainties are resolved by scientific explanations or models, religion will become obsolete.

Various objections have been raised against Dawkins's argument:

1. It is problematic to draw conclusions about the (lack of) validity of beliefs based on knowledge of how they develop.
2. Furthermore, it is a category error to attempt to justify or refute a metaphysical worldview using scientific methods.
3. The absolutization of the naturalistic interpretation of the world underlying this argument could also be understood as a fundamentalist narrowing of perspective, which
4. accordingly allows for neither ambiguity nor different interpretations.^[33]

6. Outlook

The debates that repeatedly arise from a theological perspective on the theory of evolution reveal the plurality of perspectives on the world that need to be reflected upon theologically. Even though the biblical concepts of creation already contain ambivalences, the ambivalences that arise in the theory of evolution are still perceived by some theologians as a challenge or even an opportunity. In this context, taking contingency and the lack of purposefulness into account in theology can not only contribute to a fruitful interdisciplinary dialogue between theology and the natural sciences, but also help to take the world's ambivalences into account appropriately and guard against a problematic idealization of naturalness or wilderness.^[34]

Recommended Literature

Various possibilities for determining the relationship between evolution and theology can be found in Barbour, Ian, *Religion and Science. Historical and Contemporary Perspectives*, San Francisco 1997.

Keller, Catherine, *On the Mystery. Discerning Divinity in Process*, Minneapolis 2008, is a process theological text and is an example of a creation theology that takes ongoing evolution into account.

Citations

- ¹ The fundamental idea of the gradual development of living beings to ever higher levels emerged as early as the seventeenth century; particular reference should be made here to the work of Jean-Baptiste Lamarck ^{GND}; see Rensch, Bernhard, Art. Evolutionstheorie, in: Historisches Wörterbuch der Philosophie online (<https://doi.org/10.24894/HWPh.995>), accessed on 26.03.2026.
- ² Cf. Evers, Dirk, Evolution und Schöpfung. Grundsätzliche Überlegungen für einen Dialog zwischen Theologie und Naturwissenschaften, in: Oliver, Roland (Ed.), Kirche im Dialog 2. Wissenschaft, Kunst, Medien, Mannheim 2003, 17–38, 22.
- ³ Cf. Zrzavý, Jan/Burda, Hynek/Storch, David/Begall, Sabine/Mihulka, Stanislav, Evolution. Ein Lese-Lehrbuch, Berlin/Heidelberg ³2024, 96. German: “synthetische Evolutionstheorie.”
- ⁴ Sadava, David/Hillis, David M./Heller, H. Craig/Hacker, Sally D., Prozesse der Evolution, in: Markl, Jürgen (Ed.), Purves Biologie, Berlin/Heidelberg ¹⁰2019 (https://doi.org/10.1007/978-3-662-58172-8_21), 607–641, 608, translation by Jacob N. Cerone. German: “Veränderung der genetischen Zusammensetzungen von Populationen mit der Zeit.”
- ⁵ Cf. Evers, Evolution, 23.
- ⁶ Cf. Evers, Evolution, 24.
- ⁷ Cf. Evers, Evolution, 25. For a brief overview of evolution, see Zrzavý et al., Evolution, 94–99; Sadava et al., Prozesse, offers an introductory textbook for students of natural sciences.
- ⁸ The theory of evolution is not concerned with the origin of the world or of life, but with the *development* of life. However, this has raised questions about the development and also the origins of living beings, which have been addressed in the context of the doctrine of creation. For Darwin’s own views on this, see Gregersen, Niels Henrik, Art. Evolutionary Theology, in: Encyclopedia of Sciences and Religions 2 (2013), 809–817, 810f.
- ⁹ Cf. Evers, Evolution, 28.
- ¹⁰ Cf. Theißen, Gerd, Evolution, in: Wabbel, Tobias Daniel (Ed.), Im Anfang war kein Gott. Naturwissenschaftliche und theologische Perspektiven, Düsseldorf 2004, 147–158, 149.
- ¹¹ Cf. Breul, Martin, Schöpfung, Paderborn 2023, 88f.
- ¹² Particularly prominent is the argumentation of the theologian William Paley ^{GND} (1743–1805), who assumed that living beings adapted to their environment but considered species to be constant, cf. Theißen, Evolution. For Paley’s influence on Darwin, see Lauster, Jörg, Die Verzauberung der Welt. Eine Kulturgeschichte des Christentums, München 2014, 559–565.
- ¹³ Cf. Breul, Schöpfung, 90–93.
- ¹⁴ Cf. Breul, Schöpfung, 80.
- ¹⁵ See the following section of this work: Barbour, Ian, Religion and Science. Historical and Contemporary Perspectives, San Francisco 1997, 243–249.
- ¹⁶ Cf. Barbour, Religion, 244f.
- ¹⁷ Cf. Barbour, Religion, 244.
- ¹⁸ Cf. Barbour, Religion, 244f.
- ¹⁹ Evers, Evolution, 26, translation by Jacob N. Cerone. German: “religiös irrelevant.”
- ²⁰ Breul, Schöpfung, 97, with reference to Christian Illies ^{GND}.
- ²¹ Gregersen, Evolutionary Theology.
- ²² Here Ian Barbour refers in particular to Teilhard de Chardin ^{GND} as an important representative, see Barbour, Religion, 247f.

- ²³ Breul, Schöpfung, 95, translation by Jacob N. Cerone. German: "erstpersönlich-individuelles Erleben, für den intersubjektiv-gemeinschaftlichen Vernunftgebrauch und für die objektive Geltung moralischer Tatsachen."
- ²⁴ Lange, Axel, Die Theorie der Nischenkonstruktion, in: Lange, Axel, Evolutionstheorie im Wandel, Berlin/Heidelberg 2024 (https://doi.org/10.1007/978-3-662-68962-2_5), 209–236, 209, translation by Jacob N. Cerone. The following section is based on the reflections of Schulze, Alwine Dorothea, Transformation der Schöpfung. Warum ein Aufruf zur Bewahrung der planetaren Wirklichkeit nicht angemessen ist, in: Arndt, Megan et al. (Eds.), Vernetzung. Theologie im Dialog (Jahrbuch Systematisch-Theologische Forschung 1), Stuttgart 2025, 137–148.
- ²⁵ On the current inclusion of niche construction in theological considerations of creation, see Schulze, Transformation.
- ²⁶ Cf. Schulze, Transformation.
- ²⁷ See, for example, Keller, Catherine, On the Mystery. Discerning Divinity in Process, Minneapolis 2008.
- ²⁸ Cf. Breul, Schöpfung, 80.
- ²⁹ Cf. Breul, Schöpfung, 81.
- ³⁰ Breul, Schöpfung, 83, translation by Jacob N. Cerone. German: "evolutiv vorteilhaft."
- ³¹ Cf. Breul, Schöpfung, 82f.
- ³² Breul, Schöpfung, 82, translation by Jacob N. Cerone. German: "Bewältigung existenzieller Unsicherheiten."
- ³³ Cf. Breul, Schöpfung, 83f.
- ³⁴ Cf. Arndt, Megan/Kipfer, Sara/Moos, Thorsten/Bender, Lisa, Theologie, in: Meier, Thomas et al. (Eds.), Umwelt interdisziplinär. Grundlagen – Konzepte – Handlungsfelder, Heidelberg 2023 (<https://doi.org/10.11588/heidok.00032132>).

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