

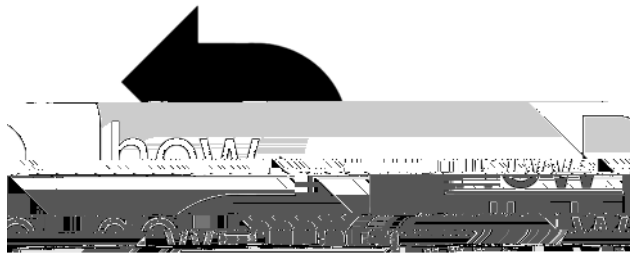
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**Moral Facts and Scientific Fiction:
19th Century Theological Reactions to
Darwinism in Germany**

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Moral Facts and Scientific Fiction: 19th Century Theological Reactions to Darwinism in Germany¹

Bernhard Kleeberg

Abstract

When the German translation of Darwin's *On the Origin of Species* was published in 1860, it intensified a conflict that German theologians had been fighting since the early 19th century. Arguments against the secular relativising or even thorough dismissal of the scientific, philosophical and social importance of the bible now had to be supplemented with arguments against the anti-teleological consequences of Darwin's theory. But though they all agreed in rejecting these consequences, German theologians considerably differed in respect to the epistemological status they granted to Darwinian and biblical accounts of man and nature. Whether they considered the truths of science and religion as corresponding, complementary, independent, or incompatible depended on their judgments on the relation between (scientific) facts, theories, and (cultural) convictions. These judgments were shaped in a specific way: Darwinism in Germany was mainly associated with Ernst Haeckel's monistic evolutionism that explicitly claimed to be science as well as a new religion. Furthermore, romantic and idealistic natural philosophy were very influential in developmental biology, bolstering anti-selectionist theories that were easier to reconcile with religionnnnnnnnnnn

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1. Introduction

[...] the banner of progressive Darwinists carries the words: 'Development and progress!' From the camp of the conservative opponents of Darwin you hear the call: 'Creation and species!' The gulf that divides the two parties is growing from day to day, every day new weapons pro and contra are pulled up; day by day broader circles are taken hold of by this enormous movement.²

When zoologist Ernst Haeckel used these words to describe the

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materialist,” as Vogt had not only regarded the activity of the soul as a mere function of nervous substance, but also claimed that God had been replaced by “blind, unconscious necessity.”⁵ In *Über Menschenschöpfung und Seelensubstanz* (1854), Wagner insisted on the sovereignty of religious doctrines in respect to science, warning of the moral consequences of materialism. He defended the idea of creation, the descent of man from Adam and Eve, the idea of a “substance of the soul,” free will, and life after death.⁶ Vogt reacted with a polemical publication titled *Köhlerglaube und Wissenschaft* that saw four new editions in 1855.⁷ His articulate argument for anti-idealistic and atheistic consequences of science caused a big sensation and led to the emergence of even clearer polemic opposites within the public debates: materialism versus idealism, spontaneous genesis versus creation, atheism versus Christian faith, freedom versus authority, enlightenment versus obscurantism.⁸ For the rest of the century, these opposites shaped all the discussions between science and religion and hampered efforts to reconcile biblical accounts of man and nature with the new Darwinian explanations of natural development and anthropology. Thus, when Darwin’s theory was introduced to Germany, the theological audience was already struggling to fight off the secular relativization (or even thorough dismissal) of the scientific, philosophical and social importance of the bible, searching for

⁵ Rudolph Wagner in the Augsburg *Allgemeine Zeitung*, September 1851, cit. from Andreas Daum, *Wissenschaftspopularisierung im 19. Jahrhundert. Bürgerliche Kultur, naturwissenschaftliche Bildung und die deutsche Öffentlichkeit 1848–1914*, München 1998, 295. Cf. Carl Vogt, *Physiologische Briefe für Gebildete aller Stände* (1845), 3rd ed. Gießen 1861.

⁶ Cf. Rudolph Wagner, “[Menschenschöpfung und Seelensubstanz],” in: *Amtlicher Bericht über die Ein und Dreißigste Versammlung Deutscher Naturforscher und Ärzte zu Göttingen im September 1854. Erstattet von den Geschäftsführern derselben Baum / Listing*, Göttingen 1860, 15–22.

⁷ Carl Vogt, *Köhlerglaube und Wissenschaft. Eine Streitschrift gegen Hofrath Rudolph Wagner in Göttingen*, Gießen 1855.

⁸ Cf. Daum, *Wissenschaftspopularisierung*, 298f.

arguments to underpin its conception of reality and the moral and religious consequences it implied.

The necessity of dealing with these intellectual challenges was even more obvious, as other developments severely threatened the Christian churches. With the confiscation of a vast amount of church property during the early 19th century process of secularization, the political and economic influence of the churches had been severely weakened. Adding to this, since the 1820s Prussia had tried to further its influence on the local protestant denominations by creating the “Union of Prussian Regional Churches,” prompting a reaction of the Reformed and Lutheran churches which ultimately led to a denominational splitting of German Protestantism:⁹ When other German states made similar efforts, more and more so-called “free churches” were founded in an attempt to establish independent and self-sustaining denominational communities.¹⁰ These developments intensified in the 1860s and 1870s, when after the revolutions of 1848/49 most local rulers had made themselves head of the church, resulting in an immense heterogeneity of protestant German theology connected to different theological schools and local environments.¹¹ The situation of Catholicism had equally been affected by the secularization, but again differed considerably from that of the Protestant denominations. Catholicism took a new and thoroughly anti-liberal turn with Pius IX’s return to Rome after the revolutions. Catholicism’s inner struggle with modernism resulted in the publication of the *Syllabus Errorum* (1864), which condemned secular thoughts on nature and society; ranging from moral topics, political positions like communism, socialism and liberalism, to secular philosophical and

⁹ Rohls, *Protestantische Theologie*, 602.

¹⁰ Cf. Georg Froböss, “Lutheraner, separierte,” in: *Realencyklopädie für protestantische Theologie und Kirche* [RE], ed. by Albert Hauck, Vol. 12, Leipzig, 3rd ed. 1903, 4.

¹¹ This is the so-called “High Episcopacy” [“Summepiskopat“] that existed from 1850 to 1918, since 1871 loyal to the German Kaiser; Cf. Froböss, *Lutheraner*, 17.

descent, as his theory of natural selection provided a causal-mechanical basis that connected the transmutation of organic forms with the physiological functions of heredity and adaptation.¹⁵ It was this alliance of Lamarckism and Darwinism that helped to “harmonically and thoroughly explain” the continuous progressive transmutation of species, and further helped to integrate “the totality of the series of phenomena of organic nature into a single great harmonic picture.”¹⁶ Following Goethe’s pantheistic vision of a developing natural whole, for Haeckel the theory of natural selection provided a foundation for the integration of past and present, organic and inorganic, man and nature, and ultimately, even science and religion.¹⁷ He thus proposed a concept of “natural theology,” based on the equation *God = the law of causality*. Devoid of the “unworthy anthropomorphism” of conceiving God as an “aerial vertebrate,” the law of ca

bourgeoisie, as developmental thinki

longer be easily upheld. The content

importance of the differentiation between ideal and literal meaning of the bible, Strauss (in his *Leben Jesu, kritisch bearbeitet* [1835-36]) introduced his “mythical approach” as continuation of the allegorical interpretation: the bible presents a mythology, “a kind of narration, covering primordial Christian ideas.”²⁴ A “speculative de-mythologization” was to eliminate the mythological contents from the gospels in order to get to their real truth content. This truth he conceived as a unity of God and Man, not rooted in the historical Jesus, but in mankind.²⁵ Strauss advanced this approach in his *Christliche Glaubenslehre* (1840-41), introducing a “speculative Christology of mankind,” a post-Christian religion of humanity that allowed for a reconciliation with Darwinism. His *Der alte und der neue Glaube* (1872)²⁶ can be regarded as the most elaborate adaptation of theology to evolutionism, and it is not surprising that he referred to Haeckel’s “monistic religion” when outlining his “new religion”: Not only did Strauss complement Haeckel and Huxley on their position about the first appearance of life on earth (for they had drawn anti-dualistic consequences), but also defended the idea of the descent of man from ape – with the same argument that Haeckel had used: it had to be regarded as an even higher accomplishment of man to have worked all

²⁴ David Friedrich Strauß, *Das Leben Jesu für das deutsche Volk bearbeitet*, Teil I–II, 8th ed. Bonn 1895, I, 75. I translated “Vorstellung und Begriff” with “ideal and literal meaning,” a differentiation that was mirrored in the schools of supranaturalism (Hermann Olshausen) and rational-pragmatist approaches, which Strauß both radically criticized. He also questioned the appearance of “instances of reason” in history. Cf. Rohls, *Protestantische Theologie*, 604.

²⁵ Jesus was only part of the form, not the content of the idea of the divine man.

²⁶ Cf. David Friedrich Strauss04 0e T

his way up the ladder of evolution.²⁷ The development of Strauss' ideas is an excellent example for the secularization of biblical hermeneutics, dismissing all but historical-critical approaches, that is, the historization of scripture leading to an interpretation of the bible as a mythological narration just like *any* other religious mythology. The stress he put on the historical development of religion stemmed from a Hegelian background, but was very easy to reconcile with Darwinism on the basis of the common progressive developmental thinking. So in the end Strauss proposed a monistic religion very much like H

Luthardt argued that Darwinism misconceived the qualitative difference between man and animal, the huge gap that divided them: reason.

A very interesting example which below will be considered at some length is that of the leading conservative Lutheran Otto Zöckler.³⁴ In his *Theologia Naturalis*, published in the same year as the German translation of the *Origin*, Zöckler picked out materialists as the primary foes of a revelatory natural theology, unaware that at the same time, a new and powerful theory was emerging that thoroughly strengthened their counterarguments. But though materialism gained strength in practical life, Zöckler regarded it as “scientifically totally dead,” rendering its further abatement unnecessary: natural theology would simply take away the weapons of materialism – “sensual things” and “evidences of experimental science” – and “integrate the naturalistic element,” fighting “carnal realism” with the “pneumatic realism of scripture.”³⁵ The *Theologia Naturalis* aimed at the “verification of the fundamental consilience of the book of nature and of revelation,”³⁶ trying to conceive God from nature without following the principles of a *theologia rationalis* or any kind of scientific perception of God solely from nature. It was to be based on revelation, on the principle of a “hopeful expectation” of the coming of the

contra-natural ideas of the naked and isolated human mind,
averted from divine light.³⁷

At best, these opi

tie between nature and scripture in biblical imagery, symbolism and metaphorical language as the “sometimes objective, sometimes absolute norms and tests for the interpretation of nature.”⁴² He thus demands scientific explanation of nature to follow principles of biblical hermeneutics, detecting sensually unperceivable patterns of natural symbolism that correspond to types of symbolical, allegorical and parabolical representations used by God, Jesus, the prophets or apostles.⁴³ This “positive criticism of biblical symbolism” results in the insight that “[a]ll natural beings in their innermost divinely determined essence exactly match with the symbolism of holy scripture,” the essence of all natural creatures being their eschatological and teleological character, revealed by “biblical physics.”⁴⁴ The natural sciences only help to extend the biblical symbolism to all the natural things (that were unknown or do not appear in scripture), and help to find a way through the labyrinth of nature, especially if they are based on “exact empirical observation and diligently conducted experiments.”⁴⁵ Thus, biblical physics is the crucial next step in understanding the true essence of natural beings, science only providing a peripheral knowledge of them,

⁴² Ibid., 203; Biblical language has not, like Johann Jacob Schleiden thinks, created *aesthetical* symbols for the inapprehensible (200ff.).

⁴³ Ibid., 204ff. Symbols are used to represent something that cannot be sensually perceived (metaphors, tropes, analon50.lcn0 13.02 277.22183 350.24097105u8579 285.68039 Tm(l)Tj10

final phase, this reference to von Baer served Zöckler as an example for a peaceful coexistence of science and religion, which in the course of the Kulturkampf was increasingly deemed impossible. But though Zöckler held the “Darwinistic-monistic doctrine” to be the malady of the times,⁵⁰ he appreciated the implicit teleology of universal progressive development. To him, natural progress corresponded to the development of the church, and to the history of exegesis.

Zöckler’s reference to the relation between biblical exegesis and the “rational progress of knowle

Christianized Hegelian theory of development, wherein exegesis corresponds directly to the enfolding of salvation history. Science, defined

interpretations of empirical data.⁵⁵ Just as the Darwinists constantly spoke of the “dogma of creation” or the “dogma of the constancy of species” as opposed to true scientific knowledge, Zöckler now calls the theory of descent the “Darwin-Haeckel-Dogma,” or the “ape-origin-dogma.”⁵⁶ The modern theory of descent only *used* “certain experiential statements” from embryology, palaeontology and practices of breeding in a way that suggested a gradual evolution of man from the apes

“insurmountable flaws” of the theory of descent.⁶⁰ Any alleged similarities between man and animal had to be dismissed as mere “pro

dignity has vanished nearly totally.”⁶³ The general notion of linear phylogenetic development was wrong, he stated, pointing to the synchronicity of the asynchroneal: highly as well as very poorly developed cultures coexisted throughout histor

allusion to the number "10" in order to unveil the r

explanatory “gap” in mechanistic approaches could now be filled by an immanent principle of organic formation or even a transcendent principle like divine interference. Encouraged by these new findings about ontogenetic development, conservative Protestant theologians like Zöckler ultimately dismissed Darwinism, holding that the biblical references to nature and man were correct, even if they had to be interpreted with care, as revealed meaning differed from literal meaning. Science might be able to deliver empirical knowledge about nature, but this knowledge had to be interpreted and warranted in order to be understood; it only forms the first step in the process of gaining knowledge. As human reason since the Fall was flawed, the only way to come to a correct interpretation of empirical facts – the next epistemological step – was by way of revelation. Other interpretations of the same data provide wrong answers, for they lack this divine help; even though they work on the same level of interpretation, their means are insufficient. Without the help of the redeemer, knowledge cannot be gained, and no religion of humanity can ever prevail over the “blood-dripping specter of nihilism.”⁷⁰

4. Complementary relations of science and religion in liberal Protestant theology

Within the wide spectrum of theological positions further approaches can be found. One of the most elaborated attempts to reconcile th

be in conflict with Darwin when integrating causal development into a teleological theism.⁷¹ In his *Die Darwin'schen Theorien und ihre Stellung zur Philosophie, Religion und Moral* (1876), he maintained that the “absolute peace” between the “freedom of scientific investigation” and the “unwithered maintenance of religious properties” was due to “one function of the mind directly depending on the other.”⁷² Science and religion formed an epistemological whole of complementary knowledge, each a supplement to the other.⁷³ Similarly the liberal Swiss theologian Heinrich Lang in 1873 argued that religion and the natural sciences should not mutually restrict their explanations, for there was a unity of mind and matter in God.⁷⁴ This idea of an epistemological unity of knowledge had been one of the main principles of pre-Darwinian natural philosophy, a principle to which the romantic followers of Schelling as well as the experimental empiricists in the tradition of Kant and Fries had subscribed: whether the knowledge of nature with Goethe was build upon the mutual relation of analysis and synthesis, with romantic naturalists like Carl Gustav Carus on the juxtaposition of oppositions, or on the complementary supplementation of aesthetics and science like in Humboldt's *Kosmos* and in idealistic morphology up to (and including) Haeckel – arguments like these served to integrate dualistic approaches by declaring them two sides of the same coin.

In order to recharge the allegedly “cold” and “meaningless” findings of natural science, the aesthetics of nature often took the place of religion,

⁷¹ Rohls, *Darwin und die Theologie*, 16.

⁷² Rudolf Schmid, *Die Darwin'schen Theorien und ihre Stellung zur Philosophie, Religion und Moral*, Stuttgart 1876, VI f.; engl. translation 1883; on Schmid and Lang cf. Rohls, *Darwin und die Theologie*, 15 f.

⁷³ Schmid, *Die Darwin'schen Theorien*, 236; Religion would have to expel accommodated scientific ideas, if these were proven wrong, just as science would have to do concerning the religious insights it had picked up. Schmid thought of religious and scientific truths as following the same procedures of warranting, because belonging to the same overall truth – God.

⁷⁴ Heinrich Lang, *Die Religion im Zeitalter Darwins*, 1873.

alluding to nature's beauty, harmony and order in a kind of secularized argument from design. Beauty, it was often argued, opened up a way of intuitive understanding of the ultimate meaning of nature, thus being the second access to knowledge. These ideas, prominent among the followers of Schleiermacher in liberal Protestantism, not only prevailed in most of the liberal theologies of the late 19th century, but were de-secularized to a physicotheological mutuality of science and religion. Just as some English theologians had less problems with coming to terms with Darwinism because of the common roots in William Paley's natural theology, many liberal German theologians shared with German biologists the common tradition of idealism and romanticism. If biologists therefore did not openly challenge Christian religion as such – like Haeckel and his followers did – their positions could often easily be reconciled with religion, espec

problems with integrating religion and evolutionary theory, providing this was only in terms of a general providence (as opposed to direct interference).⁷⁷ Just like Wallace, Schmid based his concept of an interdependency of science and religion, reason and faith, on the idea of an underlying plan of nature, yet he regarded religion as superior to science, claiming that in the end general providence would lead to mind prevailing over matter. He conceived the agency of this plan as an immaterial and external force that affected nature, ultimately part of the divine plan.⁷⁸ If teleology as the crucial principle of any kind of religion could be saved or even integrated with Darwinism, religion and science could peacefully coexist. The inner meaning of the account of creation and other biblical references to nature in the end being nothing more than its teleological structure, biblical hermeneutics in this respect had to reject any kind of literal interpretation of scripture.

5. The uncertainty of knowledge and the certainty of belief

Another very interesting figure is the protestant theologian Emil Pfenningsdorf, who recommended his popular bestseller *Christus im modernen Geistesleben* (1899) as a guide through the “times of uncertainty,” a means to fight the growing number of anti-Christian intellectual currents in the “severe struggle for weltanschauung.”⁷⁹ Pfenningsdorf has a thoroughly positive view on science: The 19th century is the century of new scientific insights and enormous technical progress, the century in which man fulfils God’s command to be the master over nature to a new extent. Accordingly, the “deep breach” between the sciences and Christianity is not the result of science as such, but of new false beliefs in the autonomy of man and nature, which led to immorality and arbitrary action. These beliefs are based on the materialist conviction that the universe is ruled by blind chance and necessity. The latest example for the new scientific religion was Monism. In particular, it was Haeckel’s *Welträtsel* that had put forward an unacceptable account of religion and scripture, condemning the canonical gospels without any “scientific thoroughness,” “clear reasoning,” proofs, or substantiation.

This critique is very illuminating, for it points to the epistemological values that Pfenningsdorf holds to be relevant in science *and* religion: thoroughness, accuracy, necessity of proofs and rational justice is vee7ept89497 469.2

Lutheran systematic theologian Martin Rade, Pfenningsdorf differentiates between the “sensible, perceivable, impersonal” objects of the sciences and the “personal” and “invisible” objects of religion. Science deals with the sensual and quantifiable world, whilst religion is linked to the “invisible spiritual world [...] behind, above and within the visible world.”⁸¹ It is useless to try to find the “soul with a scalpel,” as physiologist Rudolf Virchow once stated, as belief “is not to doubt the not to be seen.”⁸² On this basis, he thought it a “delusion” to suppose that *science* would ever contradict *belief*.⁸³ Only the materialistic interpreC 4-0.00ETEMC /Span AMC5f0o2Sdp2.4

epistemological status of material scientific and mental religious facts is the same, as in both cases there is “no effect without a cause”. Though “mental Facts” like the spreading of Christianity and witnesses of Christian faith (the bible, prayers, sermons, and the churches) were constituted by thoughts, feelings, fears, and hopes, it would be a sign of “stubborn plumpness” to restrict the term “facts” to the material world: “These mental facts i.e. to think, to feel, to fear and to hope are at least as certain as the so-called material ones”.⁸⁶ This line of reasoning is revealing, displaying an amalgam of Platonic-Augustinian thoughts and modern neurophysiological insights: since the early 19th century, physiological concepts on the subjectivity of perception had evoked epistemological uncertainties that scientis

divine origin.”⁸⁹ Pfenningsdorf linked this position to the ideas of Gustav Theodor Fechner, who from his research on the physiology of aesthetic perception drew dualistic consequences that followed in the tradition of the neo-platonic differentiation between *mundus intelligibilis* and *mundus sensibilis*.⁹⁰ Citing Fechner, Pfenningsdorf regarded the appearance of objects in the perceptually restricted human mind as a “weak reflection of the rich variety of the external world.”⁹¹ This epistemological uncertainty has important consequences for the status of belief in contrast to knowledge: even in everyday life all knowledge rests on belief. Due to the physiology of the senses, human perception cannot obtain true knowledge from empirical evaluation. As there is no ultimate certainty about the world, all knowledge is based on trust. While Christian belief can unite individual facts to a harmonic whole, science only explains mechanical connections. Following the philosopher Rudolf Hermann Lotze, Pfenningsdorf now describes natural laws as scientific *constructions* to explain the uniformity of natural phenomena and processes. These constructions are but unconfirmed speculation, unless they are understood as “tools in the hand of a higher being.”⁹² Following from that, as science only knows the intermediate but never the last and ultimate causes, it cannot pose any statements about divine interference in natural processes – only the “faithful human” discerns the glory of God in nature.⁹³

⁸⁹ Ibid., 39. On the “Welträtsel,” he cites Du Bois-Reymond’s “ignoramus and ignorabimus” (37). Despite the immense growth of knowledge, every new answer only led to thousands of new questions: “wir sind umringt von Geheimnissen” (28).

⁹⁰ Cf. Gustav Th. Fechner, *Die Tagesansicht gegenüber der Nachtansicht* (1879), 2nd ed. Leipzig 1904.

⁹¹ Cf. Pfenningsdorf, *Christus im modernen Geistesleben*, 36f.

⁹² Pfenningsdorf, *Christus im modernen Geistesleben*, 42. It would be wrong to mistake natural laws as the ordering force itself, putting them in place of God – an implicit critique of Haeckel’s equation of God and the law of causality.

⁹³ Ibid., 44.

This line of thought affects the interpretation of biblical wonders. As God doesn't break his own laws,⁹⁴ miracles are consistent with them, and it is only flawed human reason that cannot explain them. The miracles of revelation are not arbitrary but a necessary part of the divine salvation management.⁹⁵ God can interfere with nature by adding a new cause to the natural process, which in the case of miracles is a "spiritual-personal" cause. Though he thus might have saved the biblical account of miracles, Pfenningdorf rejects a literal reading of scripture. Of course, the scientific knowledge of the biblical writers is outdated today, just as present scientific knowledge one day will be obsolete: the bible should

beyond the realm of the empirical things, only the “German materialists”
used his theory to re

any literal interpretati

Christianity.”¹⁰⁹ Yet biblical hermeneutics were not to be constrained by ecclesiastical laws or specific dogmatics, especially if these were subject to historical change: the sole and indispensable prerequisite was moral practice, as other criteria for the right interpretation differed from denomination to denomination. The biblical account of creation accordingly was to be understood as a moral narrative, residing on a different explanatory level than the one relevant in science: though the divine creation of nature is an apodictic truth, this kind of true knowledge cannot be warranted, proved, or challenged by any means or methods familiar from the sciences, but only in respect to the morality as the divine *telos* of the bible. Biblical hermeneutics hence ultimately had to follow along the lines of tropological (and allegorical) exegesis. With this approach, Ritschl opened up the possibility of preserving a biblical truth that could not be confronted by any of the new insights of the natural sciences in general, or the theory of descent in particular. But what might seem to have been a successful apologetic strategy concerning the interpretation of scripture, in the end only led to shifting the struggle between science and religion to a different field of discussion: Ritschl’s biblical hermeneutics ultimately relied on the idea of divine teleology. Scientific knowledge not only was very heterogeneous – it could not provide answers to ultimate questions. Yet any interpretation of scripture that stressed the metaphorical character of biblical references to nature would have to be based on a minimum common denominator: the ultimate meaningfulness of nature. Biblical hermeneutics was to correspond to a kind of natural hermeneutics that detected the numinous element in the empirical world. Maybe it is due to the fact that the monists did exactly the same when trying to establish a world view that was supposed to be capable of answering ultimate questions about the “riddles of the universe” that the

¹⁰⁹ Ibid., II, 5.

struggle about the correct interpretation of nature increasingly turned out to be a struggle between different *epistemologies of belief*.

conceived development as a teleological process: “According to its idea and essence every higher stage up to man has to be considered as a total realization of what had already been implemented at the lowest level as something potential.”¹¹³ Development was only a “creative reorganization,” not a descent from the lower level in a passive process of adaptation by natural selection. Not surprisingly, Otto preferred neo-Lamarckist theories, as they proposed an active process of adaptation. And again, like most of his fellow theologians, Otto referred to Driesch and his idea of the “entelechia”¹¹⁴ – a term for the power that directed the developmental potentiality of organic systems, already implemented at their origin.¹¹⁵ This *entelechia* Otto interpreted as a natural purpose, the natural world being a purposeful process, culminating in a being of conscious willing. Christian religion helped to understand this purpose as divine: God had not created a finished world, but a world coming into being, he had set the world as “will to mind.”¹¹⁶ With this allusion to divine providence, Otto could in the end preserve the biblical idea of unique and completed creation, as the constancy of the species could be interpreted as the constancy of the *telos* of species.¹¹⁷ Otto’s concept favours the

Otto, *Naturalistische und religioese Weltsicht* (1904), 3rd ed. Tübingen 1929, 107; cf. Rohls, *Darwin und die Theologie*, 17.

¹¹³ “Der Idee und dem Wesen nach ist jede höhere Stufe, und schliesslich der Mensch die volle Verwirklichung dessen, was schon auf unterster Stufe in der Potenz gesetzt war.” Otto, *Naturalistische und religioese Weltsicht*, 98.

¹¹⁴ *Ibid.*, 130, 210 (Driesch).

¹¹⁵ Cf. Hans Driesch, *Analytische Theorie der organischen Entwicklung*, Leipzig 1894, 157, 162.

¹¹⁶ Gott “...baue sie

idea of the realm of the sciences comprised within a realm of theology. Faith is important not only in order to make scientists understand their objects, but also provides the teleological background to questions of teleonomic development that scien

orthogenesis-theory, "activist" theories of neo-Lamarckism to idealistic, pantheistic, energetic and other accounts of development. Most theologians referred to these approaches to underline what they regarded as the main fundament of Christianity, the idea of a *telos* of nature that lay in a second (spiritual / mental) realm. Thus the struggle of the worldviews to a certain extent was a struggle between dualistic and monistic views of nature. The second realm opened up the possibility of a higher force guiding nature, and therefore reinforced the cr

to their different explanatory aims, objects and methods plays at least an implicit role in the debates about science and religion. It seems as if it was the “imperialist rhetoric” of the sciences, their positivist claim to explain everything, that necessitated a response. The ironic thing is that it is precisely the teleological undertones of these all-embracing interpretations of nature, the attempt to apprehend ultimate meaning of nature through quantitative empirical facts, that necessitated Christian apologetics. If the theologians were willing to abandon the idea that scripture gave a correct account of the objects of the sciences, biblical hermeneutics could retreat to the standpoint of the humanities in general, yet retain relevance in the field of morality.

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