

An engraving of Isaac Newton, showing him from the chest up, wearing a long, curly wig and a dark coat. He is looking slightly to the right. In the lower left corner, a bird is perched on a surface. The background is a dense, textured pattern of fine lines.

Irena
Štěpánová
NEWTON
Kosmos - Bios
- Logos

Newton

Kosmos – Bios – Logos

Irena Štěpánová

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I. Introduction

Newton was not the first of the age of reason. He was the last of the magicians, the last of the Babylonians and Sumerians, the last great mind which looked out on the visible and intellectual world with the same eyes as those who began to build our intellectual inheritance rather less than 10 000 years ago. Isaac Newton [...] was the last wonderchild to whom the Magi could do sincere and appropriate homage.
John M. Keynes¹

A belief that our comprehension of this world keeps increasing as if our heads were some endlessly inflatable balloons is common. However, the reality is different. Our knowledge resembles sedimentation: new information covers up old knowledge and pushes it into oblivion. While gaining new insights, we lose the wisdom of old. Certainly, some of that loss we may never regret: but the process of sedimentation may also obscure what should have been remembered. We thus may have lost a part of ourselves.

Fortunately, from time to time, and often after years of concentrated effort, we happily return to long-forgotten, even rejected, knowledge. A case in point is *hermetic philosophy*: not just as an example of “recurring” knowledge, but also as a record of gradual change of the overall frame of our learning, of our method, and, eventually, of our way of thinking. Hermetic philosophy (and alchemy as its practical part) represents an entirely different relation to natural world from what corresponds to our abstract rational approach. In fact, it seems to be an ideal topic to study the “history of ideas.”

¹ John Maynard Keynes: “Newton, the man,” in *Essays and Sketches in Biography*, New York: Meridian Books 1956, p. 280.

The present book is a brief effort to show whether, and to what extent, hermetic philosophy may have inspired one of the founders of modern European science.

II. Sources of Newton's Inspiration

Nemo suscipiet caelum; religiosus pro insano, inreligiosus putabitur prudens, furiosus fortis, pro bono habebitur pessimus [...] Haec et talis senectus ueniet mundi: irreligio, inordinatio, inrationabilitas bonorum omnium.
Asclepius, c. 2nd century.²

Wisdom has irretrievably succumbed to news reporting, shallow entertainment and demand. While the past all was (allegedly) rational and serious, now we are prisoners of reports. They float like dust and make existential appropriation of being – as the philosophers call it – impossible.
Petra Gümplová, 2007.³

In every age there were people who clearly saw that in the course of time the human spiritual level changes in a strange way: while knowledge naturally increases, spiritually mankind sinks ever lower. More than eighteen centuries separate the two quotations presented as the central pieces of this chapter, yet both say the same: in earlier times mankind was, spiritually, better off. It was closer to the mystical Beginning. And this idea, too, is characteristic for Isaac Newton: it haunted him.

For some time, it has been clear and generally accepted that Newton believed in *prisca sapientia*,⁴ that he frequently quoted authors from

2 Asclepius, verses 25–26. In: A.-J. Festugière (ed.): *Corpus hermeticum, Tome 2 – Traités 13–18, Asclepius*, Paris: Belles-Lettres, 1983, p. 329. “Nobody will look up to heavens. Religious will be called insane, irreligious prudent, furious strong, the worst one will be called good... This is the world’s senility: lack of religion, lack of order, lack of all reasonable goods.”

3 Petra Gümplová: “Ztraceno v blábolu,” in: *Pátek Lidových novin*, 16. 3. 2007.

4 E.g., Steven D. Snobelen: “God of Gods, and Lord of Lords: the theology of Isaac Newton’s General Scholium to the Principia,” *Osiris* 16, pp. 169–208, here p. 185.

antiquity and that he – so to speak – felt that he was continuing in the antique priest-scientist tradition.⁵

We shall see that he saw himself more as a person who revives the half-forgotten antique wisdom than as a discoverer of entirely new ways of thinking. However, it has not yet occurred to anyone that Newton and his intellectual world literally derived from antiquity. Perhaps no one has yet seriously considered the possibility that the father of European science could have bypassed centuries of evolving European ideas and resumed an ancient line of thought. Nevertheless, we shall try to prove that modern science owes its beginning to Newton's precise following of some thinking patterns that date precisely from ancient times.

Newton's inspirations have been thoroughly studied by a number of authors; e.g. the prominent American scholar, Betty Jo Teeter Dobbs, dedicates a substantial portion of her books on Newton-the-Alchemist to this very problem.⁶

For our purposes, we shall use those sources that may enrich present scholarship in Newtonian studies and open up new topics in them.

The Hexameral literature and the Bible

By Hexameral literature⁷ we mean those texts that study the six days of creation according to the First Book of Moses, Genesis, Ch. 1, verses 1–27.⁸ Although that type of literature is of a very ancient date, starting with Origen around the middle of the 3rd century and ending with John Milton in the 17th century, in Newton's time it was still a matter of interest.

The creation of the world according to the Bible is a mythical event, and, as such, has a timeless meaning: being a myth, it gives man a chance to think about himself and about his place in the world. Newton was certainly one of those who were fully aware that they have to deal with a truth of a higher order, which not only agrees with reality but also raises moral demands, and wields a great power, because it reaches

5 Ibid., p. 187.

6 Betty Jo Teeter Dobbs: *The Foundations of Newton's Alchemy*, Cambridge: Cambridge University Press, 1975. Betty Jo Teeter Dobbs: *The Janus Faces of Genius*, Cambridge: Cambridge University Press, 2002.

7 From Greek ἕξ – six, and ἡμέρα – day.

8 We use here the King James Bible.

beyond plain reason. Myth reaches all the way into the realm of values and emotions.⁹

In the 14th century, Henry von Langenstein wrote an influential book, *Lecturae super Genesim*,¹⁰ where he quotes sixty-four authors and their explanations of the creation of the world; the authors are not only Christian, but also pre-Christian, Arabic, Greek, Roman and Jewish writers. The Hexameral commentaries may be understood as the focus of the beginning of European science. Those studies always tried to find a common ground between Moses' mythical concept of creation and the results of natural philosophy. Perhaps, with some exaggeration, we may claim that natural science gradually arose in the emancipation of Hexameral authors from the confines of Biblical exegesis.

Newton possessed a thorough knowledge of the Bible, and there is no doubt that, due to his profound religiousness, it was an important source of inspiration throughout his life. Here is an instance of Newton's Hexameral commentary touching upon the actual duration of those six days of creation. Newton's acuity is conspicuous:

You may make ye first day as long as you please & ye second day too if there was no diurnal motion till there was a terraqueous globe, that is till towards ye end of that days work.¹¹

We think, moreover, that Hexameral literature influenced Newton's methodology: his division of the world is based on Biblical Genesis, 1,1–27.

The text describes the creation of the world in three steps. Three times the text uses the Hebrew word *bara* which, in the Old Testament, is exclusively reserved for Divine activity. We translate it as “create,” however, the Hebrew original has a profound meaning which we no longer recognize at the present time. Creation in the Hebrew meaning is far beyond human capability. Man always makes one thing out of another: divine Creation is something out of nothing. Not only that, God always made something absolutely new, something that existed never before and did not follow from anything that had been created earlier. Triple use of the word *bara* means that the world was made in three steps, the later and higher levels always being something absolutely, revolutionary new.

9 Jan Assmann: *Kultura a paměť* (i.e. *Culture and Memory*), Praha: Prostor 2001, p. 70.

10 Betty Jo Teeter Dobbs: *The Janus Faces of Genius*, p. 58.

11 Betty Jo Teeter Dobbs: *The Janus Faces of Genius*, p. 62.

We thus reason that the division according to Genesis influenced the Newton's methodological thinking and division of his work. We try to show it in the following table. Corresponding Biblical verses are in the left column. It helps to read the table from the left lower corner and read upward and toward the right side.¹²

3.	<i>Gen 1,27: So God created man in his own image, in the image of God created he him; male and female created he them.</i>	LOGOS <i>Domain of meaning. Man as God's image + Divine Providence.</i>	Freedom of law and determination.	History and theology <i>as study of man's action and God's providence. (Nowadays Humanities, but with a major drawback: man is not an object.)</i>
2.	<i>Gen 1,21: And God created great whales, and every living creature that moveth, ...</i>	BIOS <i>Life is implanted into matter.</i>	Determination <i>often paradoxical with respect to level 1.</i>	Alchemy <i>(nowadays Biology, but, so far, does not know what life is.)</i>
1.	<i>Gen 1,1: In the beginning God created the heaven and the earth.</i>	KOSMOS <i>Lifeless matter.</i>	Natural laws <i>are valid.</i>	Natural philosophy <i>(nowadays Natural Sciences).</i>

The First Domain (starting from the bottom) is Nature without life. God is understood in His intelligent plan that seems to require an Intelligent Creator (the so-called *Design Argument*, see chapter V).

The Second Domain is the domain of Life. Since times immemorial, it was the subject matter of alchemy, which profoundly occupied Newton for a long time. We shall return to it in Chapter IV.

The Third Domain is the most mysterious. For the time being, we shall call it the Domain of the Logos.

The Greek word λογος (logos) has several meanings: word, language, even idea.¹³ Originally, it meant a collection, an assembly of items that naturally fit together.

12 Our inspiration came from two publications: Zdeněk Trtík: *Vztah já-ty a křesťanství*, (ie. *Relation Me-You and Christianity*) Praha: Ústřední rada ČČSH, 1948, and Zdeněk Neubauer: "Apotheosis of Metamorphosis," in *Akademie u sv. Mikuláše, Anthology 2004/2005*, Praha: Blahoslav, 2005.

13 Berry, George Ricker: *The Classic Greek Dictionary*, Follett Publishing Co., New York, Chicago, Pasadena, 1958:

ὁ λόγος word, language, talk, pretence, saying, expression, oracle, maxim, proverb, conversation, discussion, conference, interview, speaking, talking, rumor, tale, story, fable, narrative, history,

Gradually, its meaning was reduced to linguistic usage and it best fits our word “meaning.”

“Meaning” points toward “togetherness,” it is an interconnection of what meaningfully belongs together. We can express such a meaning only by means of language (again *logos*), a unique possession of man as God’s image.

Human language is the only means of comprehending the world and pointing toward its meaning. And language is in fact the only way to carry out this comprehending: it creates a web connecting all those individual events.¹⁴ Those events make up the essence of the world’s history.

We believe that Newton understood the Third Domain as the domain of history, where God and man cooperate as active partners. That is also a heritage of the Old Testament: history is a realm both human and divine. God and man work together in making history. More on that matter will follow in Chapter III.

Newton was not only a modern scientist: he also enjoyed solving the riddles so very popular in the Renaissance. We believe that it was the mystical event from Biblical Genesis and its commentary that directed his methodological conclusions in that field.

Philo of Alexandria (15 B.C. - A.D. 50)

Philo of Alexandria was a Greco-Jewish philosopher educated in the tradition of the Book of Wisdom. He was well-versed in the Old Testament as well as in Poseidonius, and made full use of that knowledge in his work.¹⁵ Today, he represents the mid-Platonic philosophy. Philo tried to join two mutually exclusive domains – philosophy and faith. This alone interested Newton¹⁶ who, likewise, tried to combine the opposites in se-

chronicle, fable, prose, book, speech, eloquence, account, consideration, esteem, regard, calculation, reckoning, relation, proportion, analogy, condition, reason.

In the New Testament: Λόγος Jesus Christ.

14 Zdeněk Neubauer: “Do světa na zkušenou” (ie. an essay about Tolkien’s work), in: *Dodatky k Silmarillionu, Studijní materiál pro potřeby Tolkienovského semináře při Parconu*, ed. Michal Bronec, 1990, p. 39. Furthermore Gregory Bateson: *Mind and Nature: A necessary unity*, Cresskill, N.Y.: Hampton Press, 2002.

15 Zdeněk Kratochvíl: *Prolínání světů*, Praha: Herrmann a synové, 1991, p. 15.

16 According to the book by John Harrison: *The library of Isaac Newton*, Cambridge and New York: Cambridge University Press, 1978, p. 216, Newton had in his library a book by this author: 1300 PHILO, Judaeus: *Omnia quae extant opera. Ex accuratissima S. Gelenii, & aliorum interpretatione...* (Greek & Latin), Lutetiae Parisiorum, 1640.

veral disciplines. We are interested in his work, too, when we investigate the influence of emotional matters upon strictly rational thinking.

Such a joining of wide-ranging influences, typical for Philo's times, is what we now call *syncretism*. Philo was the first who tried to transform the Hebrew legacy into a new doctrine similar to Greek philosophy. He is today known as an inventor of new method, called allegorical exegesis. Philo felt the pressure that the modern man knows quite well: how to retain one's piety when rational criticism threatens the meaning of a sacred text.

Philo interpreted the texts allegorically in order to express their spiritual message. He tried to extend their meaning to encompass the wholeness of the world by means of interpretation, which in fact made up the translation between two cultural areas, Hebrew and Hellenic. It requires a conscious categorization of events into principles, and can be done only at the philosophical level of thinking.¹⁷

Although Philo tried to see God as a living entity, close to the Stoic interpretation, he simultaneously shared the Platonic resistance toward everything material.

Thus God fills everything and encompasses everything in His vital activity, yet He Himself cannot be comprehended: He is One and Everything (*heis kai to pan*; with the Neo-Platonists that term is transformed back into the neuter *to hen kai pan*).¹⁸

Philo finds that matter is the ultimate evil. Therefore his concept of God is purely transcendental.¹⁹ Although Philo had a considerable influence upon Newton, in this fundamental respect Newton departed from him. This will be shown in the analysis of Scholium generale in Chapter VI.

Philo is also connected with the origins of the Alexandrian Metaphysics of the Logos, which, unlike the classical metaphysics, is dynamic. It is therefore questionable whether it is metaphysics at all.

As a rule, European metaphysics studies unchangeable, transcendental principles beyond experience, and examines rational cases. On the other hand, mid-Platonic Philo investigates existence and comprehensibility. Those depend on movement, not on immobility.²⁰

17 Zdeněk Kratochvíl: *Prolínání světů*, p. 25.

18 Ibid., p. 28.

19 František Kovář: *Filosofické myšlení hellenistického židovstva*, Praha: Herrmann a synové, 1996, p. 183;

Ivo Tretera: *Nástin dějin evropského myšlení*, Litomyšl: Paseka 2002, p. 127.

20 Zdeněk Kratochvíl: *Prolínání světů*, p. 30.

Ancient Egypt

The Old Testament describes Egypt as a place of utmost decadence, idolatry, zoophilia, superstition and all kind of abomination that may be overcome by nothing less than exodus and, eventually, by complete oblivion. In other words: it demands an active removal of all reminiscences.

This attitude prevailed in Christianity until the Renaissance, when the opinion changed dramatically. Egypt became a source of everything worthy that came later. It then became the true beginning of the spiritual evolution which advanced via the exodus and Judaism and progressed toward Christ and Christianity. And the 17th century turned the ideas about ancient Egypt into a complete Egyptomania, one that reached its climax in the time of the Enlightenment.²¹

Of course, Christian scholars could not immediately study Egypt, since, for the orthodoxy, Egypt was still the hated paganism incarnate. Such scholars could be accused of heresy and persecuted. But those Biblical scholars who wanted to study secrets of ancient Egypt without prejudice found a way around, due to their thorough knowledge of the Scriptures.

Scholars of Newton's times protected themselves from possible persecution by a single verse from the New Testament, the Book of Acts of the Apostles 7,22.

Stephen the Martyr, in his farewell address before he was executed by stoning, said about Moses:

And Moses was learned in all the wisdom of the Egyptians, and was mighty in words and in deeds.

In the entire Bible, that is the only favourable sentence about Egypt. In the sub-chapters about Spencer and Cudworth, we shall show how this single sentence opened the door for their unexpected and enormous intellectual achievements.

Maimonides (1135-1204)

The Jewish scholar Maimonides²² (Rabi Moses ben Maimon) was the supreme authority for the Protestant scholars of the 17th century. With

21 Jan Assmann: *Moses the Egyptian*, Frankfurt am Main: Fischer Taschenbuch Verlag 2004, p. 85 and afterwards.

22 *Ibid.*, pp. 88-92.