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Phenomenology and the Human  
Positioning in the Cosmos

The Life-world, Nature, Earth:  
Book One

Edited by

Anna-Teresa Tymieniecka

 Springer

# PHENOMENOLOGY AND THE HUMAN POSITIONING IN THE COSMOS

THE LIFE-WORLD, NATURE, EARTH: BOOK ONE

*Edited by*

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# Cosmo-Transcendental Positioning of the Living Being in the Universe in Anna-Teresa Tymieniecka's New Enlightenment

Jadwiga S. Smith

**Abstract** The latest focus of Anna-Teresa Tymieniecka on the phenomenological investigation of transcendentalism is placed in the context of modern science, taking into account the fact that the compartmentalization of science, so beloved by positivist thinkers of the nineteenth century, has not yielded the expected answers to the questions of the nature of human consciousness, and that neither has the Husserlian transcendental reduction since it does not resolve the problem of the dichotomy of matter and mind. Tymieniecka's inclusion of cosmos is the most important component of her search for rationality as tied to the evolutionary progress of nature and the emergence of human creativity as the stimulus to the development of human culture with its aesthetic, moral, and intellective senses. These intellective senses and their corresponding passions have been the subject of numerous volumes of the *Analecta Husserliana* series. According to Tymieniecka's philosophy, Imaginatio Creatrix liberates the human spirit from one-sided dependence on nature and opens it to the acts of interpretation of organic processes. The creative act is an act of self-individualization. Moreover, the evolution of the universe is to be seen as fundamentally connected to the process of self-individualization.

Already in 1962 in her *Phenomenology and Science in Contemporary European Thought*, Tymieniecka's interest in science so crucial to her developing philosophy was based on the notion of meaning. Thus, only meaning allows ontological continuity because only conscious acts bring out crystallized themes among multiple heterogeneous objects and events. Even in the absence of consciousness—Tymieniecka stresses the relationship between the mental and physical; she sees no usual emphasis on dualism. Rather, her view of reality encompasses three ontological categories: the physical, the vital, and the meaningful; though

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conceptually they are distinguished, even when not experienced, they are always present. On the one hand, the individual transcends the natural processes of nature in acts of creation in relations with other human beings and their existing social horizons, and, on the other hand, in relation to the entire cosmos. As mentioned, the process of self-individualization underlies the evolution of the universe. Thus, all sciences are to be treated as having a common base, without the standard classification.

These grounding ideas of Tymieniecka's philosophical work, already espoused in 1962, are further elaborated in her 1964 study of Kant, published in *Kantstudien*, in which she investigates two questions essential to her study of consciousness: What is the "constructive emergence of the world for human consciousness" and what is its involvement in "the universe of cognition"? In her study she criticizes the typical twentieth-century phenomenological mantra that objects are only accessible within consciousness. She observes that, as a result of this mantra, there is no way to account for continuity of perception, and there is no explanation of how the multiplicity of perceptual aspects can lead to a unified mental construct. She criticizes Gurwitsch and Merleau-Ponty for their embrace of passive synthesis, that is, for their interpreting of perceptual object's internal condition as being purely formal, dependent on the noemata's internal features. She points out the major problem with the unifying of the various phases of the perception of an object when adopting a passive procedure in the construction of a perceptual object. However, Tymieniecka stresses the need to recognize the active function of consciousness in perception, the function of interpretation, and also interpretation and correction. This originary constitutive variation of any idea is based on the Husserlian concept of eidetic variation, though she adjusts it to her own line of thought. This originary constitutive variation is responsible for an organization of perceptual chaotic multiplicity into "significant fields" (374). This is an important step in Tymieniecka's philosophical development because it establishes a crucial link with her present investigation of the flux and stasis problem. In other words, it is in the 1964 study that Tymieniecka establishes her distance from the Kantian and Husserlian approaches to the notion of transcendentalism. In contrast to Kant's transcendental idealism, she underscores the autonomous status of the object of perceptual content as guaranteed by the noetic laws of consciousness. Thus, there is no meaning without the sensory manifold being assumed into consciousness. And, in contrast to Husserl, in her 1965 "Existence Vindicated or 'A Hundred Real Dollars,'" she re-established trust in the world as the system of connections and interconnectiveness of the individual within the world.

What Tymieniecka will add to this vision of the world and the individual is ultimately the cosmic dimension, introduced in her 1964 work *Leibniz' Cosmological Synthesis* and the 1966 book *Why Is There Something Rather Than Nothing*. In the Leibniz study she is now firmly committed to elaborating a theory which will deal with the issue of continuity in development and spontaneity in the constitution of individual reality, as well as the presence of patterns of stasis in flux and chaos. Her stress on universal interconnectedness in her first work is reinforced as the "intrinsic

[and] constant functional system of beings...seen as *integral elements of the framework of actual existence*" (4) in the latter. She now fully explores the "life course" of the individual, an entire process of individual development that involves a principle of creativity, allowing for both—a particular intrinsic design and individual spontaneity. Tymieniecka states that the individual lacks "*both sufficient reason and final end*" (71). As a result, the individual's sufficiency can be justified only by the "world totality" (76). Thus, humankind has a constitutive function, but this function is restricted by the larger constitutive system of the universe/cosmos. Tymieniecka, at this point, is ready to explore both—the principle of human individualization through the creative experience, on the one hand, and the cosmic dimension of existence in the world in its entirety.

Tymieniecka's four-volume *Logos and Life* makes a point to treat phenomenology as a philosophy dealing with the whole experience, refusing to view the relationship of cognition and reality as being antithetical. Thus, human creativity allows going beyond the limits of objectivity. It is a process in which the natural world is transcended, thanks to pre-intentional forces. As a result, creativity allows the individual to go beyond the transcendental horizon framed by intentionality and the horizon of survival values provided by nature. It also allows one to transcend the pre-established intentional system and, finally, it provides means to thematize a pre-intentional analysis of human life. Thus, Tymieniecka's critique of knowledge refutes the notion of pure consciousness as the ultimate foundation of true knowledge. Instead, she stresses that knowing and being are inseparable in constitutive consciousness.

The fourth volume of *Logos and Life* (2000) is an expanded treatment of this conviction. In other words, Logos and Life are inseparable. She further elaborates on the architectonic structure of the Logos along with its dynamism. The two sides co-exist because without each other's co-presence there would be either stasis or chaos. Instead, there is stability in the midst of change.

In the eyes of postmodern critics the investigation of the Logos may be an act of ultimate transgression, but Tymieniecka shrugs off the postmodern antagonism toward logocentricism; she points out the critics' blindness to the very basic connection between logos and the nature of reality. Again, the critics' relativism does not probe life adequately because there would be "no world, no life, no human beingness, and [even] no possibility of them without the universally...relevant systems of the Logos to which the process of the world of life refer" (98).

At the same time, and this would certainly please postmodern critics, Tymieniecka believes that subjectivity is fundamental to all human knowledge and creative acts. She points out, though, that knowledge and creativity exist analogically across the living universe. Life in all its richness and variety stores information to which human cognition is one of many possible modes of access. Knowledge, latent in nature, has no meaning unless it is approached by consciousness. Nevertheless, it is essential to the logos and its involvement in cosmic transmutation.

In her latest work, an essay titled, "Transcendentalism Overturned," in a volume titled *Transcendentalism: Overturned* (2011), the cosmic dimension of logos is

further explored. She elaborates on the essential connection between the nature of earth and the forces of the cosmos:

The living being draws from the earth's essential nutrients sustenance for its existence in union with the celestial forces of the cosmos. Life has its celestial complement in the cosmic conditions, its earthly complement in the resources of the earth. Its very foundations are in the forces and laws of the cosmos, which in life become sustaining and transformatory (light and motion, atmospheric and climatic forces, etc.). (ibid, p.7)

The above statement proves Tymieniecka's continuous interest in the consciousness of the human being as rooted in the totality of life, including its cosmic dimension. "The passions of the soul"—crystallizations of the human significance of nature's vital forces—are the cornerstone of Tymieniecka's philosophical thought, and her latest treatment of the "passions of the soul" in the context of "cosmic architectonics" is now a crucial element in her discussion of transcendentalism and what she calls the New Enlightenment or the cosmo-transcendental positioning of the living being in the universe.

In her philosophical investigation of the passions in her essay "The Passions of the Skies," in the volume *Astronomy and Civilization in the New Enlightenment* (20) she stresses all along their role in crystallizing the Human Condition within the unity-of-everything-there-is-alive, but her latest revisionist work on transcendentalism is a culmination of her study of the transcendental conditions of knowledge as grounded in the "progressive development of life in its various stages of organization...culminating in the creative achievements of human life. As there is unity-of-everything-there-is-alive, the transcendental reference of cognition consists in the principles of that unity" (xiii). Such a statement is contrary to Kant's and Husserl's treating the transcendental as a prerogative of human consciousness. Again, she re-affirms that the geo-cosmic principles are not independent objects of knowledge, but that they play a role "within the transcendental agency of life" (xiii). In other words, her investigation is not just focused on the mind "unfold [ing] against the horizons of life and of the cosmos" (xiii). Again, she points out the originary genesis of beingness and life's geocentric-cosmic orientation resulting in "an individualizing human being, not confined to any static ontological framework but sustained within the stream of the onto-poetic unfolding of the Logos of Life" (xiii).

Under the name of the New Enlightenment, Tymieniecka proposes a way out of the proliferation of various scientific directions by suggesting that astronomy can provide an order among the various sciences and the universe, thus linking science and philosophy. According to her, the present-day natural sciences acknowledge unpredictability, chance, and blurred demarcation between determinism and freedom. She acknowledges such modern thinkers as Poincare, Mandelbrot, Thom, Kojève, and their investigation of subjectivity in science. She connects here her own work on the creative human condition with their investigation of the subject in scientific inquiry. As a result, she submits that "only the creative mind of the human being can fulfill all the conditions set by Kojève" (5). She is aware of the key problem: finding how the creative act of the human being can reach the depths of nature's workings, rules, laws. She proposes that the scientific investigator should not be

neutral but “an immersed conscious subject, immersed in the lifeworld, within the human-condition-in-the-unity-of-everything-there-is-alive” (6). She stresses again that the transcendental realm of logos is not to be identified only with human consciousness but also with the entire manifestation of the forces of earth and cosmos. Thus, Tymieniecka makes a statement that cognition, soul, mind, experience can be elucidated by their existence in the architecture of the universe.

In other words, she wants to explore the “correlation between the subject and object, between the life of the human mind and the ultimate cosmic horizon” (8). In Tymieniecka’s philosophy, therefore the ontopoietic perspective and life and consciousness are ultimately on even terms: The living individual, as a receiver of life signals from outside processes and then inside processes, provides an objective dimension of “existential conditions” (11) throughout the entire life process of that individual, gradually developing into a self-consciousness, a center of formulation of sense amidst the ever-changing experience in progress. Thus, there gradually emerges a universally objective logos, only initially connected to subjective experience, a logos that is not autonomous, detached, universalized. Still, this is not an emergence of pure consciousness (as is the case with Husserl’s thought) unconditioned by empirical data but, instead, consciousness in an existential bond with “the vital-empirical genetic net of the logos of life” (13). As a result, the objective content, ever dependent on the vicissitudes of life, its ever-changing horizons, is never fully accomplished. At this point, Tymieniecka proposes the overturning of the transcendental supremacy of mind over life:

the human mind or pure consciousness—or the living agent—is not a self-instituted independent entity. Being an integral functional processor of life, it is modeled by the logos, it having attained this level of constructivism upon the basis of the rules, the prerequisites of the logos, the furthest architectonic of life. This so powerful mind, the center of our world, is but *transcendentally positioned* within this dynamic network of life preordained by the forces, laws, and flow of the logos... The world of life that man projects around himself is indeed transcendental but not in its fundamental origins in constitutive consciousness/mind—with its specific centrality—but rather with respect to its *positioning within the dynamic of the geo-cosmic architectonics of life. It is life-transcendental.* (17)

The New Enlightenment, proposed by Tymieniecka, has to deal then with the fluid nature of reality, its linear apprehension by the human mind in the process of gathering experience throughout one’s entire life. She is inspired by the teaching of Heraclitus of Ephesus in her investigation of flux and stasis in relation to the nature of reality. She points out that it is Heraclitus who stresses the power of the logos because it “sustains the order of change and repose,” and thus, essentially the human soul. The individual searching for the sense of identity has to deal with the identity of the universe, ultimately the very foundation of cosmos. Thus, “Logos is the transmitter of the interchangeable communication of nature, man, and the cosmos” (qtd. from proof). It conveys the continuity of life.

Tymieniecka paraphrases Descartes’ “cogito ergo sum” and Ortega y Gasset’s “I live, therefore, I think,” and proposes her own “I live, therefore, I am” (paraphrased from proof). She stresses, then, that “*life’s individualization, accomplished through the intrinsic ordering of all that is and by the processing*

*of sense* that carries on the relative stabilizing of spheres into becoming from the anonymous flux” (qtd. from proof).

The logoiic foundation of the human condition underlies the existential perspective of reality as well as all the realms of vital cycles of the psychic, social co-existence essential to the intellective and spiritual ascent of a human being. Thus, the human soul is able to reflect the universal ordering of the universe in the passions of the earth, the skies and, ultimately, the cosmos.

# Part I

# Cosmos, the Meaningful Construct

**Halil Turan**

**Abstract** According to the modern conception, nature is essentially a mechanism devoid of will. However, the distinction between the scientific and the artistic modes of describing nature appears to be a result of the evolution of human thought. The ancients did not draw a distinction between cosmic and psychic phenomena. According to the Platonic view, the physical existence embodies value and meaning: it is the product of a will. The Epicureans, in contrast, viewed nature as a mechanism without value, but they too introduced will as a power capable of changing the deterministic causal order. Epicurus, like Plato, saw human life as having an aim; he too introduced value by recognizing free will as a constitutive power of the cosmos. Although modern natural sciences avoid teleology in their descriptions of the structure of nature, the modern conception of the human being as capable of understanding the mathematical language of the cosmos seems to bear a teleological element in the will to understand this language. Conceiving cosmos as a part of the world in which science is a practice among others, I argue that attribution of value to it is not only possible, but fruitful, provided that naïve and wicked views are avoided.

Questions concerning the structure and the meaning of nature or cosmos appear to have been considered as equipollent in the history of early philosophy. Nature has always been the concern in any activity one may think of: elements and mechanisms underlying change of any recognizable and useful kind constitute a realm in which people were inclined to seek a meaning; history of culture abounds in examples which suggest that what now appears to be accidental has been taken as embodying signs for the future, or directions for right conduct. The relative positions

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of the heavenly objects, rare appearances like eclipses, flights of birds, shapes, textures and colors on the surfaces of certain objects have been carefully inspected as if they were statements of an intelligent and powerful being whose language can be deciphered. The modern conception of nature as displaying regularities, but no design, or as yielding useful products in the frames designed by us is essentially a machine devoid of will. Of course, we may still encounter accounts in which nature is conceived as embodying various meanings, as in aesthetical contemplation the legitimate domain of which is clearly distinguished from that of science, or in esoteric mystical interpretations which still survive though are not permitted to be openly publicized through education and the media. The established view makes it clear to everyone that there are no moral significations in natural events, no signs of a will or a design in them. Facts are facts as they are, that is, they are devoid of value, unless they are made to serve for a purpose, for some exploitation such as drawing matter or power to a place or for using them in communicating with the others.

No doubt, one can still claim to have access to meaning in nature, and to be able to convey it to others, or simply to express one's emotions by means of descriptions of natural phenomena. Art has always depicted facts by endowing them with value. However, the distinction between the two modes of describing, namely the scientific and the artistic, was not as obvious as it appears today, as a look at the history of representations of nature will clearly show. The modern attitude of debarring value from the scientific description of the natural may be conceived as an evolutionary process, but the idea that this evolution had to rule out the idea of *telos* appears to be contingent through the same perspective. Art seems to remain unchanged in this matter since it departed with science: it depicts not for use or production but for reproduction of pleasure and pain, thus it may still legitimately ask questions involving "why?" Hence, the order of nature assumes meaning in art, or in its aesthetical contemplation.

## Cosmos, a Design with Meaning: Plato

Plato makes Socrates say the following in the *Phaedo*:

I discovered that [Anaxagoras] made no use of mind and assigned to it no causality for the order of the world, but adduced causes like air and æther and water and many absurdities. It seemed to me that it was just about as inconsistent as if someone were to say, The cause of everything that Socrates does is mind – and then, in trying to account for my several actions, said first that the reason why I am lying here now is that my body is composed of bones and sinews, and that the bones are rigid and separated at the joints, but the sinews are capable of contraction and relaxation, and form an envelope for the bones with the help of the flesh and the skin, the latter holding all together, and since the bones move freely in their joints the sinews by relaxing and contracting enable me somehow to bend my limbs, and that is the cause of my sitting here with a bent position. Or again, if he tried to account in the same way for my conversing with you, adducing causes such as sound and air and hearing and a thousand others, and never



troubled to mention the real reasons, which are that since Athens has thought it better to condemn me, therefore I for my part have thought it better to sit here, and more right to stay and submit to whatever penalty she orders.<sup>1</sup>

Sarcastically enough, Socrates draws a distinction between the philosophical perspective through which Anaxagoras takes the physical explanation of the nature as his primary task and his own that one has first to understand why things are as they are. Socrates wants to understand “the real reasons” of the unjust case against him, and “why” he has to abide by the laws of Athens. It is clear that these questions are cannot be answered in terms proper to a philosophy of nature like Anaxagoras’. Anaxagoras’ active element *nous*, or mind, conceived as the element or the power governing all alterations in nature cannot explain the meaning of the facts concerning one’s relation and communication with one’s citizens. The description of nature as a mechanical system is totally insensitive to moral or political facts in one’s life, that is, in one’s life with the others where one has to consider and speak of responsibility, duty, happiness or misfortune. Hence, a discourse employing elements and powers to explain how the unchanging mechanism of nature runs cannot account for why one has to suffer as one does, why one has to seek virtue, and why one has to have concern for the others whether they are one’s rivals or friends. Socrates complains of Anaxagoras’ neglect of meaning and value in the cosmos, he says that he expected answers to questions concerning why natural order is as it is: “It never entered my mind that a man who asserted that an ordering of things is due to mind would offer any other explanation for them than that *it is best for them* to be as they are. I thought that by assigning a cause to each phenomenon separately and to the universe as a whole he would make perfectly clear what is best for each and what is the universal good.”<sup>2</sup> It is a general historical interpretation that with Socrates and Plato a chasm opens between the traditional representation of the cosmos as a non-human mechanism, and the one according to which a will creates and governs the universe. Socrates in the *Phaedo* manifests that the task of the philosopher is to explain the order common to *all* phenomena, the cosmic and the psychic. Socrates asserts that his existence has a meaning, and seems to suggest that there must be clues to it in the structure and order of nature. Shapes, dimensions, descriptions and measures of alterations of matter should not be devoid of value; virtue or duty, must be capable of being accounted for in terms of the properties of matter and the unchanging measures of its alterations; the order of nature must show one the way to be followed in one’s conduct. The Platonic ideal consists in the hope for the unity of mathematics and ethics (and aesthetics), and for such an explanation which can comprise all phenomena.

That will is a constituent part of the universe, of the order of the Earth and the heavens can today be a meaningful conception in poetic discourse, but not in science. However, there seems to be a natural impulse in the human being to seek

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<sup>1</sup> *Phaedo*, 98b–e; in *The Collected Dialogues of Plato*, ed. E. Hamilton, H. Cairns, New Jersey: Princeton University Press, 1989; p. 80; trans. H. Tredennick.

<sup>2</sup> *Ibid.* 98a–b; trans. H. Tredennick; my italics.

meaning in the sensible qualities of natural objects; it is conceivable that one asks lifeless objects or animals, or that one points out to a setting as signifying the meaning of life.<sup>3</sup> An object of sensation may easily assume a meaning, and may appear to reveal the meaning one is seeking. It must not be inconceivable that natural appearances assume meanings concerning value and continue to bear them throughout one's life; experiences of value consist in perceptual memories, or at least they must be coupled with such perceptions. Thus, memories of certain natural settings formed by the peculiar combinations of shapes and colors, the intensity of light, the relative positions and the motions of the objects in the surroundings, the heat, the sounds, in short everything capable of being measured and represented in mathematical terms may come to be associated with what one points at as the experience of a certain aesthetical (and/or ethical) value. Creativity in arts and even in sciences seems to be related to this now scorned tendency of attaching meaning to natural phenomena. It appears that such representation of value must have an affinity with the ancient belief that natural events can be construed as signs, that the course of events indicates what will happen in the future. Today it has almost become a stereotype that the objective of prediction in modern natural science has its roots in prophecy.

Plato has an extreme Pythagorean confidence that the structure of matter can be consummately accounted for in terms of mathematics.<sup>4</sup> Plato's cosmology is essentially speculative like the Pythagorean, and in general like the Pre-Socratic philosophy of nature. His account for the geometrical structure of minute parts of matter<sup>5</sup> and the shape of the universe,<sup>6</sup> for example, makes it clear that for Plato properties of matter are signs of the language of a creator who informs the humans about the best life. Nature is unavoidably subject to change, but the mathematical must be unchanging. The cosmos is a work of a mind, it is designed, and further it conveys a message to one who attends to its wonderful structure. There is an order in the heavens; the planets, the Sun, the Moon and the constellations have long been

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<sup>3</sup> Wittgenstein, for example, tried to refute the view that happiness can be described in terms of facts. See his "A Lecture on Ethics", *the Philosophical Review* 74(1), 1965 pp. 3–12. Whether he was justified or not is an open issue. For many powerful expressions of art which are intended as descriptions or representations of various mental states are descriptions of phenomena or objects intended to describe a state of mind. Should we take it for granted that there must be distinction between two? How could a state of mind, an emotion be represented or communicated without the mediation of signs which also can be made to denote facts in terms of perceptual qualities in an objective description of nature?

<sup>4</sup> The Pythagoreans thought that mathematical principles underlie not only the structure of matter, but of every conceivable entity. They held that even conceptions like justice and opportunity are expressible in numbers: "Since of these principles numbers are by nature the first, and in numbers they seemed to see many resemblances to the things that exist and come into being – more than in fire and earth and water (such and such a modification of numbers being justice, another being soul and reason, another being opportunity – and similarly almost all other things being numerically expressible)"; Aristotle, *Metaphysics*, 985b 26; trans. W. D. Ross.

<sup>5</sup> *Timaeus*, 55d ff.

<sup>6</sup> *Ibid.*, 33b–c.

observed with the assumption that there must be an unchanging order, and this hypothesis seems to have justified itself in discoveries of further periodical phenomena. Although Plato seems merely to have assumed that the problems concerning the irregularities are solved or can be solved in a Pythagorean spirit, he has no doubt that the regularity embodies signs by the creator god, the artisan who models the universe, the demiurge:

And the motions which are naturally akin to the divine principle within us are the thoughts and revolutions of the universe. These each man should follow, and by learning the harmonies and revolutions of the universe, should correct the courses of the head which were corrupted at our birth, and should assimilate the thinking being to the thought, renewing his original nature, so that having assimilated them he may attain to that best life which the gods have set before mankind, both for the present and the future.<sup>7</sup>

The Platonic view that the physical has value and meaning, that it teaches one how to live, how to reason and act, is exemplary in history. Hence all phenomena are related in such a way that the stars indicate what the right order in society and in private life is; men and women should, for their expectations, desires, deliberations and acts consider nature's order as a guide for living in a community. Hence the account concerning cosmology, astronomy and mathematics becomes a political, that is, an ethical issue. The regular change in the physical world, change in place and time embodies decipherable inscriptions for the meaning and value in life. In the *Phaedo*, Socrates says the following concerning Anaxagoras:

I assumed that he would begin by informing us whether the earth is flat or round, and would then proceed to explain in detail the reason and logical necessity for this by stating how and why it was better that it should be so. I thought that if he asserted that the earth was in the center, he would explain in detail that it was better for it to be there... I was prepared ... to receive information about the sun and the moon and the other heavenly bodies, about their relative velocities and their orbits and all the other phenomena connected with them – in what way it is better for each one of them to act and to be acted upon as it is.<sup>8</sup>

Questions concerning the reasons why things are as they are tragic questions, they are poetically penetrating and suggest one that their appearance in a context where Socrates was about to drink the poison is not accidental. Socrates asks why the sun, the moon and all other things are as they are; he seems to say that his tragedy must have some explanation in the order of the heavens, just as the position and place of the earth must have an explanation in terms of intentions of a divine will. Therefore, Socrates appears to pray, and to ask the heavens what gods indicate for justice, for the good, just as Homer's heroes asked birds to learn what is good and what is destined for them.

The belief or the tendency to seek meaning in the way things are, that is in the non-human world seems to be universal. I have argued that everything that bears a value must come to be recorded in memory as a meaningful whole of experience as

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<sup>7</sup> Ibid, 90d; in *The Collected Dialogues of Plato*, ed. E. Hamilton, H. Cairns, New Jersey: Princeton University Press, 1989; p. 1209; trans. B. Jowett.

<sup>8</sup> *Phaedo*, 97d–98; trans. H. Tredennick.

associated with a set of measurable phenomena. Considering the distinguishable memories in the past, one remembers one's perception of objects like the sun, the moon, trees, stones, water, winds, birds and the like have constituted the setting of the prominent event to which one attaches a meaning and value. This record which has a unity must doubtless be related to one's perceptions of oneself as a human being among others, to one's expectations from the others whether they belong to an actual or an imagined community. It goes without saying that one's interests are primarily in the community, not in the non-human nature unless one is not alone in some wilderness. The will to be recognized as a part of the community, to have a satisfactory share in the numerous necessities of life which multiply as the community one has in view expands seem to be one's primary concern in life. Thus, the will to prove one's competence in a science, for example, may be seen as an interest to be part of the common understanding or intelligence, as the will to be a recognized by others in the same profession. Objects lose their charm if the others are not concerned with them.

Nature is meaningful and assumes values at every instant of life. Could a view, a sound, or a touch be without an aesthetical value, however ordinary it is? Any perceptual experience in contemplating nature or a work of art, or in observing the setup of an experiment appears to be already in the realm of values, since what is perceived is an object of interest for one; for, if it were not, it would not even be perceived. Needless to say, natural objects, for example those observed with the expectation that they will reveal an order or those which are made signs are all objects of interest. It is clear that if the object or phenomenon under consideration is not a primitive means of survival for one who lives alone in the wilderness (which seems to be an almost improbable experience), one is always affected by it because it is an object of interest for a community, and hence it is important for one who deems it so for her/himself.

As it is clear that there can be no phenomenon or object devoid of value, could Socrates' or Plato's words in the *Phaedo* be considered as referring to a trivial matter? No doubt the historical interpretation that Plato (or Socrates) changes the course of philosophy and make philosophy of nature subservient to ethics and politics cannot be objected. Thereafter, physics came to be subservient to ethics until the modern separation of the two.

## **Will, a Natural Power: Epicurus**

The same attitude is dominant in the two most influential traditions of philosophy, namely in stoicism and Epicureanism. Epicureanism, in its approach to the physical has exemplified a unique stance. The Epicureans viewed nature as without value, and made this their starting point in their doctrine of ethics. Epicurus' conception of the physical world as the product of chance collisions of atoms is generally considered to stand in contrast to Plato's teleological cosmology; therefore, these two accounts can serve us as models in terms of their dissimilarity.

The Epicureans held that the cosmos is the product of collisions and coalescences of atoms without any divine interaction; they conceived the cosmos including the human existence as the outcome of interactions of matter in void, accounted for change in terms of dissolution, and not excluding the soul from their accounts, they conceived death as the dispersing of the soul atoms. They recognized no design and no divine interaction in the universe, and depicted the gods of the tradition as leading a happy eternal life with no interest in the human affairs; thus, by almost caricaturizing them, they (at least in their closed circle of friends) abolished the mythological belief of interference of divine powers in the course of events and the underlying conception of hylozoism which is remnant of mythological accounts in cosmology. However, the historical turn marked by Socrates' words to which we referred above is discoverable in the Epicurean philosophy too. Philosophy of nature is subservient to the Epicureans' main interest, namely ethics. On the other hand, they felt themselves responsible to discover the best way of living in a world in which there are no divine signs or directions for it. Thus, the Epicureans had to cope with the determinism of atomism, according to which there can be no signs of a superior mind, a design or a will in the cosmos. The existence of the human race should therefore be a chance event as rain or sunshine is, an occurrence determined merely by the structure, position and velocity of atoms. If all phenomena are the effects of collisions which one may account causally in a satisfactory manner, how could one explain the will to avoid pain, and how could one account for that philosophical interest in the question how to live? If it is conceded that pain and pleasure are perceptions of one's own state of mind and body, could contentment with one's state of mind, for example, be explained in terms of a succession of causes in which one has no part? Is the feeling of pleasure or painlessness the effect of causes one can only observe (or speculate), and not due to one's own conceptions about virtue, good life and death? It appears that Epicurus sensed a serious problem for the possibility of a philosophy of life in Democritus' deterministic atomism,<sup>9</sup> and hence left room for freedom in a blind causal order by recognizing volition as a power capable of changing the natural course of atomic motions in the universe, as in effecting changes in one's thoughts about one's state. Although it is difficult to understand how atoms at a particular place could 'swerve' by volition,

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<sup>9</sup> Diogenes of Oinoanda, the second century Epicurean whose wall inscription at Oinoanda (Fethiye, Turkey) supplies additional material for Epicureanism, makes Epicurus' argument against the strict determinism of Democritus clear: "If anyone adopts Democritus' theory and asserts that because of their collisions with one another the atoms have no free movement, and that consequently it appears that all motions are determined by necessity, we shall say to him: 'do you [not] know, whoever you are, that there is actually a free movement in the atoms, which Democritus failed to discover, but Epicurus brought to light, a swerving movement, as he proves from phenomena?' The most important consideration is this: if fate is believed in, all admonition and censure are nullified, and not even the wicked [can be justly punished, since they are not responsible for their sins.] Martin Ferguson Smith, *Diogenes of Oinoanda, The Epicurean Inscription*, Naples: Bibliopolis, 1992; p.394; Martin Ferguson Smith's translation.

the intention to attribute a substantial power to the will is clear in Epicurean texts. Lucretius writes the following:

[W]hen the atoms are being drawn downward through the void by their property of weight, at absolutely unpredictable times and places they deflect slightly from their straight course, to a degree that could be described as no more than a shift of movement. If they were not apt to swerve, all would fall downward through the unfathomable void like drops of rain; no collision between primary elements would occur, and no blows would be effected, with the result that nature would never have created anything (2. 217–224)...

Moreover, if all movements are all invariably interlinked, if new movement arises from the old in unalterable succession, if there is no atomic swerve to initiate movement that can annul the decrees of destiny and prevent the existence of an endless chain of causation, what is the source of this free will possessed by living creatures all over the earth? What, I ask, is the source of this power of will wrested from destiny, which enables each of us to advance where pleasure leads us, and to alter our movements not at a fixed time or place, but at the direction of our own minds? For undoubtedly in each case it is the individual will that gives the initial impulse to such actions and channels the movements through the limbs (2. 251–262).<sup>10</sup>

Lucretius explains freedom from natural necessity through volition in terms of an assumption concerning the formation of compounds, and seems to recognize the effect of will in the creation of things through a “swerve” of atoms. That will is a natural power is evident, he says, as its effects are visible in all living beings which seek pleasure and avoid pain. Interestingly enough, he seems to argue for the role of will in the creation of the cosmos by relying on its evidence in animals. Further, he appears to argue that one is free to think the best for oneself and act accordingly:

[T]he initial movement is produced by the mind: it originates from the act of mental will, and is then diffused through every part of the body (2. 269–271)...

But the factor that saves the mind itself from being governed in all its actions by an internal necessity, and from being constrained to submit passively to its domination, is the minute swerve of the atoms at unpredictable places and times (2. 289–293).<sup>11</sup>

It seems that the Epicureans recognized will as a complementary power in the material mechanism, as a power already inherent in it from the beginning of the formation of the cosmic order. Hence, the human (or animal) will becomes a causal power capable of changing the course of material flow which appears as various perceptions in the mind. Thus it is possible to choose and avoid; this freedom “enables each of us to advance where pleasure leads us”. Epicurus argued that we are responsible for what we do and what we are: “that which we develop – characteristics of this and that kind – is at first absolutely up to us; and the things which of necessity flow in through our passages from that which surrounds us are at one stage up to us and dependent on beliefs of our own making.”<sup>12</sup> Thus, if perception is understood in terms of the motion produced in the soul by the impacts of the continually flowing particles on the sense organs, it is possible for one to shape

<sup>10</sup> Lucretius, *De Rerum Natura*, trans. M. F. Smith. Indianapolis: Hackett, 2001; pp. 40–41.

<sup>11</sup> *Ibid.* p. 42.

<sup>12</sup> Epicurus, *On Nature*; 34.26 ff., in *the Hellenistic Philosophers*, ed., trans. A. A. Long, D. N. Sedley, Cambridge: Cambridge University Press, 2003, vol. 1, pp. 102–103.

one's perceptual field and hence one's affections. Further, how to interpret those perceptions is dependent on the beliefs one has the power to form concerning their import. As in theorizing upon the structure of nature in terms of atomism in order to show that the fear of supernatural beings and that of an afterlife is nonsense, Epicurus argues to the same end that one is free in choosing one's way of life, in believing that one has the power to avoid certain perceptions and passions that ensue them and seek certain others. And, if thoughts are formed after perceptions, it follows that one has the power to think the thoughts which can lead him or her to an unperturbed state of mind. One's judgments are one's own making he says, exemplifies this freedom in his philosophy, and advises the others to follow his arguments to attain *ataraxia*.

Strangely enough, it seems that there is an affinity between Plato and Epicurus with respect to their accounts of cosmology. Plato puts forward a teleology which rests on the conception of a creator god in the *Timaeus*. In this matter the Epicurean argument stands in contrast to the Platonic. However, it appears that both philosophers have seen will as a power to break the chains of submission and ignorance – though from different perspectives and with different intentions. Plato thought that the wise can and must study the signs he believed to be embodied in the cosmos: the unchanging mathematical order discernible in the revolutions of the heavenly bodies as exemplified in the shapes and functions in the organisms, in the (imaginary) structure of minute parts of matter suggests him that the cosmos is the work of a mind. He thought that it must be the responsibility of the wise to decipher those signs which must be read as indicating value through order. Mathematics, ethics and aesthetics are thus merged in the Platonic cosmology. The naïve conviction that nature speaks to humans, which must certainly predate Plato and even Pythagoras, suggests that the principal motives for rational inquiry are essentially aesthetical and ethical. The Epicurean philosophy of nature displays the same belief most visibly: Epicurus seems to have followed Plato in making philosophy of nature subservient to ethics. Further, there must be an aesthetical pleasure in conceiving the cosmos as the product of collisions of atoms, and still more in assigning will a power to break the chain of causes to make life endurable. Epicurus, like Plato, must have seen himself responsible to render the cosmos and human life intelligible; accordingly, he must have acted with ethical, and, provided that he thought it possible to attain this ideal, with aesthetical motives.

## Meaning and Value in Modern Science

The idea that will is a constituent of the cosmos does not at first sight seem to be a recurrent theme in modern philosophy. However, the question concerning the existence of an “external world” which appears to have no reference to its possible meaning seems to invite a new conception of will in the practice of science. It will be sufficient to note that the modern skeptical arguments have led to various conceptions of idealism which represent God as the architect of the cosmos.

# Competing Concepts of the Cosmos in the Sixteenth and Seventeenth Centuries

Oliver W. Holmes

*Insight into the spiritual universe of the millennial Jewish mystical tradition may be obtained by a phenomenological explication of two fundamental yet contrasting attitudes found throughout the course of its development, which can be called the moderate and the intensive modes of mystical concern or experience...occasionally the two did link up with one another...in the late medieval and early modern periods.*

(Moshe Idel, **Mysticism**)\*

**Abstract** The recovery and revival of ancient philosophy in the Renaissance gave rise to both an acceptance and rejection of the authority of ancient thought, responses that sparked the famous “Quarrel between the Ancients and the Moderns.” The Philosophy of the seventh century has often been viewed as a gradual change from the religious, mystical worldview to a modern world characterized by rationalism and empiricism. The driving force ushering forward this transformation usually has been identified with the scientific revolution. This essay will attempt to demonstrate the degree to which the hermetic, organic and mechanical traditions interpenetrated each other during the intellectual transformation of the seventeenth century, a trend which carried forward into the eighteenth century. The works of Francis Bacon, Descartes, Anne Conway and Fontenelle will constitute the framework by which to analyze the issues surrounding those who supported ancient wisdom over the “new philosophy,” as well as the contrary. Their respective works will be discussed within the context of the influence of writings of the Paracelsians and the Kabbalah.

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During the course of the eighteenth century the secularized concept of the “new age” identifies the epochal threshold as having its beginning around 1500. The idea that a great revival or “rebirth” of literature, thought and arts occurred after a thousand years of cultural stagnation, in the fourteenth and fifteenth centuries originated with the Italian writers of the Renaissance. In this historical rediscovery and restoration of writings and artifacts from antiquity preceded and then accompanied the experience of absorbing knowledge of a “New World.” The discovery of the new world, and the beginning of a close acquaintance with tropical territories, released a plethora of new data and a mass of descriptive literature which itself was to have stimulating effects. Geographical exploration and territorial expansion had been dramatic and transformative forceful manifestations of a Europe engaged in traversing preexisting boundaries. Through this proactive mode of expanding consciousness, perspective and knowledge, one discerns a parallel to the discovery (in space) of unknown worlds and their additional transformation of European culture and the concept of the individual. Thus, the Italian Renaissance appeared for the first time as a distinct epoch in cultural history, and became not only a revival or rebirth of human intellect and personality but the beginning of the modern world.

The historical line of cultural and intellectual trends in the period from 500 to 1500 has been punctuated by three so-called “Renaissance.” Each of these movements—in the Carolingian era (eighth and ninth centuries), during the twelfth century, and in the fourteenth and fifteenth centuries—occurred in a society that was consolidating itself after a period of acute disorder. Each was characterized by a return to Antiquity for materials and exemplars in the task of consolidation. However, each movement had its own distinctive scope, content and objective and each followed a singular trajectory. The differences are marked that certain scholars argue that the term “Renaissance” becomes meaningless when applied to all three.<sup>1</sup>

The term “Renaissance,” here, incorporates some dominant characteristics of the fourteenth and fifteenth centuries’ movement, to discern certain intellectual tensions within European philosophy that it both expressed and exacerbated. This movement brought to light a vast amount of forgotten classical literature—a great deal of which had been transcribed in centuries immediately following the “barbarian” invasion of the German tribes and the Huns—for example, in Greek Archimedes, Galen, Ptolemy, Plato, Latin Celsius and Lucretius. The revival of Greek language, virtually forgotten in non-Arabic sectors of Western Europe, provided scholars a sense of immediate and vivid contact with the most philosophical and ancient societies. Renaissance philosophies differed not at all from their medieval predecessors in thinking that the “modern” individual ought to ground himself and herself firmly on the teachings of antiquity, but the individual was expected to achieve this directly, ignoring all that had been written in between, and more broadly in scope. Interestingly, Plato became the hero of the Renaissance, for some, rather than Aristotle, especially in the Tuscan region; analogously, but later, others preferred the atomism of Epicurus and Lucretius to Aristotle’s qualitative theory. The Presocratic philosophies were read and quoted widely, as were the Pythagoreans. Copernicus found in Plutarch, another Renaissance discovery, and quoted in Greek the information that Philolaus the Pythagorean had suggested that the earth moved,

as did Heraclites and Ephantus. Copernicus also refers to Aristarchus of Samos, to Anaxagoras, Empedocles and Leucippus, displaying knowledge of a great tradition which the medieval period had hardly considered. New horizons brought new varieties of thought, new problems to unravel and, for some innovative thinkers, a “new philosophy.”<sup>2</sup>

Where the late fourteenth, fifteenth and sixteenth centuries turned toward classical antiquity for intellectual guidance, intellectuals in the seventeenth and early eighteenth centuries spurned imitating the classical model. The detachment from ancient models was set in full motion by the famous “Quarrel of the Ancients and the Moderns” in the late seventeenth century. Within the context of these debates, and in this historical and cultural experience, two mental patterns which have relevance for the geographical discoveries of the new world and a heightened sense of individual consciousness, become discernible. First, the mental attitude which generally accompanied criticism of traditional philosophy was the spirit of adventure, of experiencing what lies beyond the closed boundaries of knowledge, of widening the limits of acquired truths, combined with the optimism that such expansion was possible. Another attitude stressed the need of an unbiased and critical mind, and of freedom of thought and discussion. If servility to the authority of the ancients precluded examination of traditional beliefs, no hope could be offered for increased knowledge, and if assent were too easily granted without clear proofs and demonstrations, no certainty would reside in learning. Both within and outside the debates “new philosophies” emerged, “new” in the sense of “non-Aristotelian,” which proposed alternative paths to knowledge and truth. The exponents of this “new philosophy” were conscious of their respective contributions to intellectual history, a process which began in the Renaissance and extended throughout the seventeenth century.

Upon proposing alternative intellectual categories to the Neoaristotelianism of their contemporaries, the “new” philosophers refused to reject antiquity completely in that they continued to seek inspiration in varying ancient philosophical systems. Furthermore, while seeking to perpetuate ancient philosophical traditions, these philosophers identified with the newness of their approach to distinguish themselves from “old” school Aristotelian philosophy. They drew inspiration from neglected philosophies and texts of antiquity, in proposing comprehensive alternatives to Neoaristotelianism, and formulated their systems outside the philosophy faculties of the universities. Through their challenges to the current academic curriculum, this group of philosophers proposed new natural philosophy or logos, new theories of physics, new cosmologies and, among others, new philosophies of languages, all of which contained theological implications and challenges for Christian orthodoxy.<sup>3</sup>

The alternative visions of the cosmos, proposed by these exponents of this “new philosophy,” initiated after the geographical exploration of, and encounter with, the new world and the disclosure of the new Copernican universe in the late fifteenth and sixteenth centuries. The distinction between the imperfect unchanging heavens and the imperfect earth was obliterated. Traditional scientific assumptions and Christian cosmology were also undermined by Copernican theory and territorial expansion beyond European boundaries. Thus, the triumph of Copernican cosmology, the success of mechanical philosophy, and the rejection of ancient authority by a

cluster of influential new philosophers were important transitions to the “modern” thought of the seventeenth. Upon examining this transition, I intend to study the philosophical issues raised on both sides of the divide, with the objective of analyzing the process by which competing concepts of the cosmos helped spawn the “new philosophy” of early modern thought. A new philosophy that contained as much continuity as change with respect to the past, evidenced in the works of Francis Bacon, Descartes, Anne Conway and Fontenelle.

## Humanists, Classical Revival and the Hermetic Tradition

Prior to the Renaissance, there were two great textual transfusions into Latinate Europe, one in the twelfth and thirteenth centuries, which brought medieval science to the forefront, the second in the fifteenth and sixteenth centuries, which was considerably more sophisticated in scholarship. The revival of learning, towards the middle of the twelfth century, was the period during which ancient Greek and more recent Arabic and Jewish thought became available to Western Europe in increasing quantities. Though the search for “lost” Greek scientific and philosophic writings was clearly not unprecedented, one discerns the process by which a tremendous amount of science was apprehended from the second classical revival, which provided Europe virtually all Galen, the “pure” Ptolemy, Archimedes and other Greek mathematicians, the pre-Socratics and above all Plato. The medieval period had accepted Aristotle’s spurning his teacher Plato (and all of his predecessors) at its face value and, indeed, had sought out nothing of Plato’s writings beyond the *Timaeus* which had made little impression. Among Plato’s writings, up to the middle of the twelfth century, learned scholars in Western Europe knew only the *Timaeus*, and therefore Plato, to them, was primarily the author of the *Timeus*. Furthermore, the *Timaeus* had been one of the first books to attract the attention of commentators, from early Greek commentaries to those in Arabic, Hebrew and Latin. The study of the other Platonic works, such as the *Republic*, would pursue similar paths.

The medieval tradition of Plato (in Greek, Arabic, Latin and Hebrew) was quite complex in that each version introduced a few innovations and new names. Plato’s reputation had grown tremendously, first during the Byzantine renaissance of the ninth and tenth centuries, then under the patronage of the School of Chartres, finally under that of the Plato Academy of Florence, established by Cosimo de’ Medici. In the fifteenth century, most markedly with the Florentine Neoplatonists, all this changed, for no obvious reason except that Plato was new and intellectually exciting. The importance of this Platonic revival in the second half of the fifteenth century for the development of modern science has been recognized by scholars throughout the history of ideas: “magic, astrology, and alchemy—all the outgrowth of Neoplatonism—gave the first effectual stimulus the observation of nature, and consequently to natural science.” The scholars emphasize Platonism and Neoplatonism as mental operations which encouraged empiricism in opposition to the “rationalistic dogmatism” of the scholastic schools. Yet the various threads in the skein of ideas are mingled confusedly, and appear to lead from uncertain origins to very different ends. This Platonic influence encouraged thinking individuals toward mathematics, for it was considered shameful to be

ignorant of geometry. Upon emphasizing mathematics, Plato put forward the notion of “pure” mathematics which provides us a vision of eternal truth and affords the best means of raising one’s soul to the Idea of Good and to God. He conveys this perspective in the statement that “God is always geometrizing” (God is primarily a mathematician). The point of view is further illustrated by the traditional inscription over the door of the Academy: “Nobody should enter who is not a mathematician.”<sup>4</sup>

The philosophers and mathematicians were primarily interested in the theory of numbers, to which Pythagoreans and the Platonists had provided cosmological significance. The mathematical mysticism of the Pythagoreans contributed to regularities in the celestial motions and to discern planetary laws. According to Plato, “as the eyes are fixed upon astronomy [and the stars], so are the ears fixed upon [and hear] the movement of harmony, and that these sciences are closely akin, as the Pythagoreans say and we agree with them.”<sup>5</sup> This perception exemplifies the Pythagorean concept of the unity of mathematics, music, and astronomy, which influenced astronomic thinking through Copernicus to Johannes Kepler.

The rediscovery of ancient pure and applied mathematics pushed in the identical direction. Mathematics proper, along with its close relation astronomy, was to flourish rapidly during this period as never before. Algebra on the one side, trigonometry on the other, made tremendous strides while mathematics was applauded everywhere as the key to navigation and exploration, military science, geography (effectively shedding its legacy of travelers yarns) and even aesthetics. Leonardo da Vinci demonstrated this profound interest in geometry and algebra, in his notebooks and, in carrying out his own research in mathematics, would frequently pursue mechanical solutions to geometric and algebraic problems. Undoubtedly, during this period, he began to appreciate both the aesthetics of mathematics and the mathematics of aesthetics, and continued to seek mathematical demonstration of the laws of nature.

However, of greatest general interest, was the idea that mathematics offers a unique key for understanding nature and the cosmos; yet this was not a *single* idea since it had two chief and distinct branches: firstly, the conviction that nature is inherently mathematical, because God eternally geometrizes, or as Leonardo da Vinci observed: “Proportion is not only found in numbers and measurements but also in sounds, weights, times, positions, and in whatsoever power there may.” The observation suggests that not only may we expect nature to be rationally ordered in some way for, if it were not, our seeking an understanding of it would be futile and because (as Descartes emphasized) if it were not the case God would be impossibly, deceiving individuals, but we may also expect this rationality to be realized mathematically. And secondly there is the purely logical conviction that mathematical reasoning remains the most certain that we may command; to quote da Vinci again: “There is no certainty where one can neither apply any of the mathematical sciences nor any of those which are based upon the mathematical sciences.”<sup>6</sup>

The most truly Platonic thread, stemming from the *Timeus*, held that God the architect of nature is, like the human architect, a geometer. This strand may lead to the patterns of crystallography or the patterns of the periodic table in chemistry, or it may lead to certain elements in Freemasonry, where the neophyte is (or was) addressed in terms beginning thusly: “Adam, our first parent, created after the

of the Twelfth Century.” Pico undertook one of the most ambitious projects in translating Kabbalistic works in the Renaissance. To this end, he solicited the services of Flavius Mithridates, a converted Sicilian Jew, to translate the Kabbalah for him.<sup>11</sup> After the twelfth century, in Talmudic Hebrew “Kabbalah,” connoting “receiving” or “that which is received,” referred to the post-Mosaic tradition, that is, traditional rabbinic and biblical laws and doctrines contained in the Five Books of Moses (Pentateuch) also known as the “Written Law.” Furthermore, the word connoted “tradition,” or “that which is received,” in that it was understood to represent the esoteric and written aspects of divine revelation given to Moses on Mount Sinai, while the Five Books of Moses represented the exoteric, written component of this very revelation. As an esoteric tradition, the term was understood as a teaching intended only for a small group possessed with exceptional intellectual acumen and moral character and, thereby implied an intellectual endeavor inherently difficult to comprehend and master. Exoteric teaching, on the other hand, signified a teaching that was intended for a broader audience. In the fourteenth and fifteenth centuries, commentators of the Kabbalah engaged in homiletical, philosophical, or mystical lines of thinking. The Kabbalah, in pursuing these paths, sought to reveal the hidden secrets of the five Books of Moses by use of the *sefirot* (“ciphers” or numbers). Among these enciphered forms, or “secrets,” was the disclosure of the Neoplatonic doctrine of the world’s creation by means of emanations from the Divine Being. The individual letters of the alphabet each controls various aspects of the creation, in the cosmos, in time, and in the body.<sup>12</sup> Within this worldview, Pythagoras assumed a new significance as the model of a mathematician who sought and encountered mystical combinations of numbers. Mathematics, in this new worldview, possessed the key to a world of unchanging realities, close to, if not identical with, the Divine Mind. The first part of these mystical writings demonstrated the degree to which Jewish thought had been profoundly influenced by Philo of Alexandria and by Neoplatonism long before it was affected by the philosophy of Islam.<sup>13</sup>

In the thirteenth century, the term came to dignify the new mystical doctrines and systems, often referred to as “ancient theology,” that had been developing in northern Spain and southern France, particularly in Provence, since the twelfth century which reached their literary height in The Book of the *Zohar*. This work, composed of several literary units, has been recognized by the Kabbalists since the late thirteenth century as the most important work of mystical teaching, and the book achieved in certain circles a sanctity only slightly less than that of the Bible. The *Zohar* has been characterized by commentators as a combination of theosophical theology, mystical psychology, anthropology, myth, and poetry. Old Gnostic doctrines, mystical traditions, theurgic speculations, popular superstitions, and mythological motifs coexisted alongside Neoplatonic and Aristotelian philosophic theories concerning the nature of the cosmos and about the relationship between a transcendent God and a finite world. The work develops the notion of the *sefirot* or divine emanations into a comprehensive presentation of the nature of God and creation, and their interrelationship. The mysterious Godhead, *Ein Sof* (“no end,” the infinite unknowable divine being) manifests itself through the ten *sefirot*, the realms of the divine universe. The central doctrine of the *Zohar*

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