Stanley Jaki's Criticism of Platonic Philosophy

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1. The negative role of pantheism

Jaki's thought on the Christian roots of modern science forms part of the broader science-faith discussion as a very original point of view[1]. The originality of his opinion on that intriguing area of research is beyond question, as he contrasted all the visions supporting the negative impact of faith on the progress of the scientific enterprise. Jaki's ideas can be seen as the continuation of the work carried on by the French philosopher Pierre Duhem, who proved the decisive factor of Christian theology in the formulation of the theory of impetus, the first expression of the principle of inertia, by the Scholastic thinker John Buridan in the first half of the Fourteenth Century.

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[1] A. Giostra, *Science, faith and the impassable divide in Stanley Jaki's thought*, European Journal of Science and Theology, Vol. 13 n. 4, August 2017, pp. 1-12.

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Only the belief in a world as a coherent totality, where real causes represent the only way to grasp relations in an entangled reality, led to the achievement of science. The sameness of phenomena depends on God's action, which keeps the world in existence and provides humans with the necessary common sense to interpret natural laws as integral parts of Revelation.

> "Thus says the Lord, He who gives the sun to light the day, moon and stars to light the night; Who stirs up the sea till its waves roar, whose name is Lord of hosts: if ever these natural laws give way in spite of me, says the Lord, Then shall the race of Israel cease as a nation before me forever"[2].

Reading an anthology of the texts written by the main protagonists of the Scientific Revolution would be enough to verify the correctness of Jaki's viewpoint on the key function played by the Christian doctrine for the emergence of the scientific approach. Only a Christian and realistic worldview has allowed the birth of science, that is a quantitative investigation of the universe (*unum in diversis*), as an ordered whole of interacting phenomena. Creation out of nothing, the linearity of time, and the presence of a *Monogenes* as the only emanation from a Divine Person, widened the difference between the Christian cosmos and pantheist cosmologies. That is why only in the Western milieu the mathematical laws on the motion of bodies have been discovered. Deeming the universe a mere creature is "the first manifestation of the saving grace which the Christian doctrine of salvation […] provided for science"[3]. The absence of the Christian principles in other theological milieus brought about the so called 'stillbirths of science'. According to Jaki, in all the main religious cultures of antiquity, although a high level of mathematical knowledge had been acquired, the fundamental laws of motion were not formulated. Furthermore, the salvific aim of the Christian faith and the quantitative dimension of science eliminate the possibility of a real conflict between their respective dominions. The

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[2] *Jer* 31,35-37.

[3] S.L. Jaki, *The Savior of science*, William B. Eerdmans Publishing Company, Grand Rapids 2000, p. 80.

basic tenets of Revelation do not concern measurements and cannot be reduced to mathematical equations.

To put it more simply, Christian doctrine prevented pantheist cosmologies, within which Platonism took a leading role, from prevailing in the Western context. However, given the complexity of Platonic thought, in what follows the attention is devoted only to Jaki's opinion about the natural philosophies of Plato, Plotinus, and Giordano Bruno, as three milestones of that tradition.

2. Plato's cosmology

Plato's two world philosophy affirms the participation of the sensible world in the eternal and perfect life of the ideal forms, as the objectives of true knowledge. The description of material reality lies in the 'likely story' narrated in the *Timaeus*, in which the Demiurge creates the universe after the forms and brings order out of chaos, joining the universal soul with eternal matter. The myth of the divine craftsman, focused on the mathematical arrangement of the world, is not enough to establish a coherent natural philosophy, as the Demiurge can be considered a 'public contractor, albeit on a cosmic scale"[4]. In any case, it exerted a deep influence on following Platonic authors mainly for the fact that pantheism emerges from that dialogue as a distinctive feature of Plato's cosmology. It portrays an animated world because of the interfusion of the universal soul with matter; that action makes the world a 'blessed God"[5].

The early steps of Plato's philosophical education depended on his discipleship to Socrates, namely the main character of his dialogues, who "outlined a new type of physics in which questions about purposes dominated"[6]. More in detail, in all of his major works Jaki refers to an excerpt from *Phaedo*[7], an outstanding work belonging to the central

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[4] S.L. Jaki, *Means to message. A treatise on truth*, William B. Eerdmans Publishing Company, Gran Rapids 1999, p. 181.

[5] Plato, *Timaeus*, 34b.

[6] S.L. Jaki, *Science and creation. From eternal cycles to an oscillating universe*, Real View Books, New Hope 2016, p. 105.

[7] Plato, *Phaedo*, 97c-99d.

period of Plato's philosophy. In that section of the dialogue one can find a clear instance of the reasons leading its author to embrace the idea of a pantheist universe. Plato, through the speech delivered by Socrates, describes the phase of his own youth when he decided to agree with the philosophy of Anaxagoras. He was attracted by the Anaxagorean *Nous*, a supreme intelligence providing natural reality with what was the best arrangement for it. In other words, Anaxagoras' thought offered an ideal solution to the need to believe in a teleological structure of the world. In the continuation of Socrate's speech, however, Plato clarifies why he abandoned Anaxagoras' view: although it had established the existence of a superior principle ordering nature, it adopted only physical bodies and properties to account for phenomena. So, the necessity of a teleological explanation drove him to reject a mechanistic view, according to which all phenomena, under the same conditions, happen in the same way. In other words, Plato rejected the opportunity of a mechanistic science to avoid embracing a whole and all-encompassing mechanistic philosophy. "His procedure was a classic case of throwing out the baby (mechanistic or quantitative science) with the bathwater (mechanistic philosophy)"[8]. That deviation from a quantitative study of nature just culminates in the animistic worldview advanced in the *Timaeus*, where the universe, far from being a creation out of nothing, is conceived as a living *monogenes*, that is an emanation from the perfect forms. "In order then that the world might be solitary, like the perfect animal, the creator made not two worlds or an infinite number of them; but there is and ever will be one only-begotten"[9]. Thus, while the Christian doctrine announces Christ as the Only Begotten Son of God, Plato adheres to a typical pantheist cosmology in which the world is generated by the divine forms. In this way, he became the chief exponent of a philosophical trend aimed at divinizing matter.

> "With the Greeks and Romans the expression "only begotten" (*monogenes* or *unigenitus*) had the universe for its supreme reference point. Such was the use of the expression by Plato, Plutarch,

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[8] S.L. Jaki, *Christ and science*, Real View Books, Royal Oak 2000, p. 18.
[9] Plato, *Timaeus*, 31b.

> and Cicero, to mention only some major Greek and Roman spokesmen of antiquity"[10].

Many pre-Socratic philosophers believed, in one way or another, in the eternal cycles of the universe, which was to die and resurge at regular intervals. In Jaki's mind, Plato had inherited that conception from Pythagoreans, being the cyclic return of the world the natural result of its teleological structure.

> "And yet there is no difficulty in seeing that the perfect number of time fulfils the perfect year when all the eight revolutions, having their relative degrees of swiftness, are accomplished together and attain their completion at the same time, measured by the rotation of the same and equally moving. After this manner, and for these reasons, came into being such of the stars as in their heavenly progress received reversals of motion, to the end that the created heaven might imitate the eternal nature, and be as like as possible to the perfect and intelligible animal"[11].

Plato is the classic example of a pantheist thinker influenced by astrological divination. For instance, the duration of the ideal state is subjected to the periodic revolutions of the celestial orbs.

> "A city which is thus constituted can hardly be shaken; but, seeing that everything which has a beginning has also an end, even a constitution such as yours will not last forever, but will in time be dissolved. And this is the dissolution: in plants that grow in the earth, as well as in animals that move on the earth's surface, fertility and sterility of soul and body occur when the circumferences of the circles of each are completed, which in short-lived existences pass over a short space, and in long-lived ones over a long space"[12].

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[10] S.L. Jaki, *The Savior of science*, p. 79.
[11] Plato, *Timaeus*, 39d.
[12] Plato, *Republic*, 546a.

So, Plato's Great Year is characterized by a perfect number and causes the existence of smaller circles in terrestrial events. That kind of causality was not physical in the modern sense of the word, as it depended on a divine meaning of geometrical proportions.

> "This is why the Platonic scheme of the planets and fixed stars is a system of concentric, transparent shells that have no physical influence on one another. The disconnectedness of the heavenly spheres was retained in substance by Eudoxus (fl. 370 b.c.) who first supplied Plato's scheme with considerable geometrical sophistication to make it a more acceptable model of the actual motion of the planets. To account for their retrogressions, Eudoxus assigned to each planet several spherical shells whose total number amounted to twenty-seven in his system. While the shells of each individual planet were imagined to have some mechanical connection, the system of shells of one planet was in Eudoxus' system physically independent from the system of shells of each neighboring planet"[13].

Aristotle, as a disciple of Plato, conceived a finalistic universe in which qualitative properties of matter relegate quantities in a secondary position. This broad view includes the perfect circular motion of celestial spheres, composed of ether as a quintessential divine element. One can see the influence of Plato's universe on all the main distinctive features of the Aristotelian world, and both those cosmological models show an evident gap with modern physical science.

> "For all his criticism of his master, Plato, Aristotle remained a faithful disciple concerning the primacy of final causes in the art of explanation. As the most persuasive arguments in this respect rested with the conscious experience of man and with the behavior of animals, the primacy of final causes meant in physics its reduction to a biological framework of thought"[14].

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[13] S.L. Jaki, *Science and creation*, p. 111.
[14] *Ibidem*, p. 105.

3. Plotinian emanationism

In Plotinus' philosophy, a full articulation of an animistic view, the universe emanates from a generative Unity, a formless being and supreme energy producing the three hypostases. The existence of the Plotinian One is beyond knowledge and transcends divine intellection, which is unified in the Intellect as the second hypostatic god. The One does not know its own production nor itself, and it causes knowledge in the secondary hypostasis. In this necessary ongoing process, which is due to the *hyperpleres* of the One, each hypostasis radiates in the next lower, and matter follows from the universal Soul as the third hypostasis. Thus, all reality, being the outcome of the lower aspects of the soul, proceeds from the One as a divine hypostasis, which is beyond any substantiality. The consequence of the action performed by the perfect spirituality of the One is a kind of 'Great Chain of Being' linking the cosmos in a magic interaction, in which the spiritual interconnectedness of the parts results from the presence of the One in them. That conception marks a sharp difference with Christian Revelation announcing creation out of nothing as the outcome of the divine will. "By becoming a follower of Christ a pagan instilled in himself a profound antagonism to the universe as the supreme being in an emanationist system which found its vastest articulation in Plotinus' work"[15]. The presence of a universal soul, astrology as the link between microcosm and macrocosm, and a negative physical dimension of matter as the lowest level of the universal generation, represent the basic principles of Plotinus' world, as the outcome of cosmic inevitability. Creatures as necessary emanations, and the eternal matter reflecting the eternity of emanation itself, rejects the linearity and beginning of time, namely an indispensable pre-condition for the mathematical study of the motion of bodies. Moreover, though Plotinus never declares matter to be an absolute evil, the material reality is the last step of the emanative process; in this way, his universe was characterized by a sort of dualistic conception, according to which matter is seen as a decay from the perfection of the One.

In Jaki's thought, Plotinus' view is a clear instance of a cosmology discouraging empirical research:

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[15] S.L. Jaki, *Christ and science*, p. 19.

> "About such universe nothing is so tempting as to figure out its workings on a priori basis. And why not? If the universe and the mind are generated by the same emanation, it should seem natural to assume that an introspecting mind, being an organic part of the universe, should be able to fathom its laws. But then no need, or at least no acute need will be felt to investigate the physical universe on an a posteriori basis, that is, by performing experiments about it"[16].

Arguments about the physical nature of the world are so rare in the *Enneads*, while dwelling on specific details of phenomena is the core of scientific investigation. A part of Renaissance philosophy appropriated Plotinus' emanationism in order to legitimize magic as an essential element of modern occultism. Universal sympathies and antipathies, talismans as ensouled objects, and a mystic language elevated as an absolute form of wisdom, are typical expressions of Neo-Platonism natural philosophy in the modern age. A complete illustration of Renaissance Platonism would go much beyond the goals of this paper. What we can take for granted is that the connection of the *Prisca Theologia* to Neo-Platonic and Hermetic speculation was so close that Jaki has often criticized the 'Re-naissance' as a step back towards occult disciplines.

> "This can best be seen in the programme pursued by Marsilio Ficino, the renowned leader of the Platonic Academy in Florence. The programme centred on demonstrating that Platonism and Christian faith carried the same message. The result was a return to Plotinus and to his emanationist world view. Returns are also departures and this time the departure was from Christianity, from its fundamental tenets, such as the doctrine of Creation and Incarnation."[17].

Ficino was the founder of the Florentine Academy, and the first translator of Plato's and Plotinus' works in Latin. He considered the author of the *Enneads* as a true prophet and his philosophy as a viable system to highlight the similarities between Christian faith and Platonism.

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[16] S.L. Jaki, *Means to message. A treatise on truth*, p. 207.
[17] S.L. Jaki, *Science and Creation*, p. 248.

Moreover, Jaki remarks that Ficino was not an expert mathematician, and he emulated Plotinus in his disdain for natural details.

> "His astronomical knowledge remained within the vague generalities that fill Plotinus' *Enneads* about the circular motion of heavenly bodies. Like his idol, Plotinus, Ficino too had his "astronomical vision" centred on the claim that souls could reach their appropriate or circular motion only after their liberation from bodily bondage"[18].

4. Giordano Bruno's animism

In 1600 Bruno was burned at the stake for heresy, as his own cosmology was considerably influenced by Neo-Platonism and Hermetism. Though the Vatican has more than once expressed regret for that condemnation, Bruno's animistic worldview is incompatible with Christian doctrine. Even if he is best known for his support to the Copernican theory and has adopted Heliocentrism for his mystical philosophy, he is not a scientist in the modern meaning of the term. The motion of a living earth gravitating around the sun, indeed, is based upon the idea of divine matter, and the infinite number of worlds expressed God's infinite power being embedded in physical reality. In his thought, the unity of the world in the One allows true philosophers to reveal occult sympathies, namely the secrets of nature. Despite he is a defender of theories such as the infinity of the universe and the plurality of worlds, he is more familiar with the *Corpus Hermeticum* than mathematical astronomy. Bruno accuses Copernicus to have been only a mathematician, who has not grasped the real essence of natural philosophy, which rests on divination. As a consequence, magical philosophy has become his worhip, and that kind of natural religion aims at restoring the true Hermetism destroyed by Christianity. Bruno's panpsychism, grounded on Hermetic gnosis and magical practices, determines a chaotic universe lacking the mathematical exactness advocated by modern science. To put it more simply, "to look out upon the infinite worlds of Bruno

[18] *Ibidem*, p. 250.

was to be lost on a shoreless sea"[19]. Throughout his research, Jaki has devoted a special attention to Bruno as one of the most prominent supporters of modern pantheism. In 1984, indeed, Jaki issued a translation and critical edition of *The Ash Wednesday Supper*[20], to be considered the most significant of Bruno's Italian dialogues. Furthermore, the four-hundred anniversary of Bruno's execution in 2000 has given the Hungarian philosopher the opportunity to write a very interesting booklet on that unfortunate thinker[21].

In Jaki's mind, celebrating Bruno as a martyr of free thought and a rationalist philosopher is a misleading approach, adopted to agree with ideological biases. Portraying Bruno as an intellectual with scientific credentials is even more erroneous, and also specialist literature hasn't succeeded in dissipating clichés about him. His claims about the infinity and animation of the universe are not inspired by Copernicus' book, which Bruno is not able to read. He "certainly was not a martyr of science, and not even of free thought, unless 'free' stands for freewheeling".[22] Establishing that the four motions Copernicus attributed to the earth cannot be handled by "geometrical rasp" reveals Bruno's real intention to promote an unscientific theory. His lack of geometrical learning prevented him from understanding that the Copernican theory is not able to predict planetary movements better than the mathematical devices designed by Ptolemy and his medieval followers to save the appearances. From an empirical point of view, the Polish scientist did not add more than a couple of new observations to the measurements borrowed from traditional astronomers. In Bruno's vision, the only way to deal with the anomalies of Copernicus' system

> "consists in a recasting of Copernicus and heliocentrism in terms of the Hermetic worldview, where everything turns into everything else, where everything is living and forms part of an eternally

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[19] J. H. Brooke, *Science and religion: some historical perspectives*, Cambridge University Press, Cambridge 2014, p. 114.

[20] G. Bruno, *The Ash Wednesday supper*, translated with an introduction and notes by S.L. Jaki, The Hague, Paris 1984.

[21] S.L. Jaki, *Giordano Bruno: a martyr of science?*, Real View Books, Royal Oak 2000.

[22] *Ibidem*, p. 9.

> living entity, the universe, which in turn can be fathomed by a rhetoric that savors of magic"[23].

Bruno's refutation of geometry depends on the will to establish an unordered world, without precise limits and definitions, in which a confusing mysticism emerges as an all-encompassing uncontestable truth. That is why not only Copernicus, but the other major protagonists of the Scientific Revolution did not feel the need to believe in an infinite world. His adoption of the Copernican theory aims only at the destruction of the Aristotelian closed world, to be deemed an emblem of the limits of traditional learning. Some topics exposed by Bruno in *The Ash Wednesday Supper* contain glaring errors, as when he removes the moon from its orbit and makes it rotate towards the sun. Moreover, discussing the problem of the incidence of light rays as the cause of the warming of bodies, Bruno rejects that theory, as it is only a "mere play of mathematics"[24]. Those mistakes justify the opinion held by Alexander Koyrè:

> "Giordano Bruno, I regret to say, is not a very good philosopher […] he is a very poor scientist, he does not understand mathematics, and his conception of the celestial motions is rather strange […] Bruno's is not a modern mind by any means"[25].

In the final lines of his booklet, Jaki makes an appeal to the admirers of Bruno.

> "Finally, Brunians should ask themselves whether it is 'scientific' to pour contempt on the only religion, the religion of biblical revelation […] which produced the phrase that 'God arranged everything according to measure, number and weight'. Bruno knew full well that phrase from the Book of Wisdom (11,20). It was his being captive to a murky mysticism, so popular nowadays in different forms,

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[23] *Ibidem*, p. 12.
[24] *Ibidem*, p. 25.
[25] A. Koyrè, *From the closed to the infinite universe*, The Johns Hopkins Press, Baltimore 1957, p. 54.

> that prevented him from appreciating that phrase and Copernicus to boot"[26].

Even a comparison with contemporary cosmology demonstrates the unsustainability of the Brunian cosmos. The expanding universe, that is a theory which has received many confirmations from scientists,

> "shows that the universe is thoroughly subject to the flow of time in the very sense in which time stands for irreversibility and therefore for transitoriness. This, however, is diametrically opposite to what Bruno's cosmos stands for"[27].

The fundamental tenets of Bruno's cosmology "and his gross obscurantism were so glaring in his own times that he had no influence until the pantheistic German idealists resurrected him into spurious glory"[28]. That is why one can evaluate as unsuccessful the attempts, made by some scientists and philosophers, to rehabilitate Bruno as an original and modern cosmologist. The unbridgeable gap between Bruno's cosmology and a scientific model of the universe has led Jaki to recall a famous statement by Francis Amelia Yates, an eminent scholar in Renaissance philosophy: "Copernicus might well have bought up and destroyed all copies of the *Cena* had he been alive"[29].

Conclusions

Plato is said to have written over the entrance of his academy: "γεομετρητος μη ειοητω (those ignorant on geometry should not enter"[30]. Platonic academy, however, was dominated by Pythagorean speculation on numbers, whose mysticism culminated in Plato's *Timaeus*, where the mathematical order of the universe depends on the presence

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[26] S.L. Jaki, *Giordano Bruno: a martyr of science?*, p. 29.
[27] *Ibidem*, p. 21.
[28] S.L. Jaki, *Cosmos and Creator*, Scottish Academic Press, Edinburgh 1980, p. 128.
[29] F. A. Yates, *Giordano Bruno and the hermetic tradition*, Routledge & Keegan Paul, London 1964, p.297.
[30] S.L. Jaki, *Giordano Bruno: a martyr of science?*, p. 30.

of the universal soul. That view paved the way for disciplines such as magic and astrology, which were actively cultivated by Platonists. The animistic tendency belonging to Platonism and Neoplatonism has contributed to distance humanity from a correct approach to nature. Jaki, as a strong supporter of the Christian origin of science, cannot accept the revival of Platonic thought in some modern scientific and philosophical circles. All in all, he has included Platonism in his broader criticism towards any kind of pantheist cosmology.

Summary: In all of his works Stanley L. Jaki (1924-2009) has emphasized the key role played by Christian doctrine in relation to the emergence of exact sciences. Adhesion to the basic principles of Christian revelation implies opposition to pantheistic worldviews, Platonism being one of their major philosophical expressions. This paper analyses in more detail the position held by the Hungarian philosopher on the cosmological views of Plato, Plotinus, and Giordano Bruno. Although they belonged to different epochs, we can find in their animistic conceptions a common ground to reject this modern approach to the investigation of nature.

Key words: Stanley Jaki, science-faith relationship, Platonism and Neo-Platonism, birth of science, science versus pantheism.

Sommario: In tutte le sue opere Stanley L. Jaki (1924-2009) ha sottolineato la funzione chiave della dottrina cristiana per l'emergere della scienza esatta. L'adesione ai principi fondamentali della rivelazione cristiana implica l'opposizione alle visioni del mondo panteistiche, essendo il platonismo una delle loro principali espressioni filosofiche. Più in dettaglio, questo articolo analizza la posizione sostenuta dal filosofo ungherese sulle vedute cosmologiche di Platone, Plotino e Giordano Bruno. Sebbene appartengano a epoche diverse, possiamo trovare nelle loro concezioni animistiche un terreno comune per respingere l'approccio moderno alle indagini sulla natura.

Parole Chiave: Stanley Jaki, Rapporto tra Scienza e Fede, Platonismo e Neoplatonismo, Nascita della Scienza, Scienza contro Panteismo.