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MARSILIO FICINO'S ALLEGORICAL USE OF OPTICAL PHENOMENA

Abstract: *As a Platonist, Marsilio Ficino (1433–1499) was deeply interested in light and its qualities. As a matter of fact, the metaphysics of light is so fundamental for him that it appears, treated more or less systematically, almost in all of his works. As a physician, he was naturally concerned with the human corporeality and with the relation of human body to the physical world, both terrestrial and astral. However, when discussing astronomical and optical phenomena (e.g. refraction of light in water, camera obscura, and concave mirrors), he sees them primarily not as physical realities but as starting points for his allegorical hermeneutics and analogical interpretations. Similarly, when Ficino situates the Sun in the centre of the universe, as its warming heart, ruling king and animating soul, he does so in the context of a metaphysical, rather than cosmological, heliocentrism. Indeed, physical astronomical “facts” seem generally irrelevant to him, being obscured by their spiritual meaning. This becomes especially conspicuous in the perspective that Copernicus arrived at his heliocentric theory most probably with the knowledge of Ficino’s treatise *On Sun (De Sole)* and even quoting the same sources as Ficino.*

Keywords: *Ficino; metaphysics of light; heliocentrism; incendiary mirrors; optics*

Marsilio Ficino a jeho alegorické využití optických jevů

Abstrakt: *Marsilio Ficino (1433–1499) jako správný platonik projevoval hluboký zájem o světlo, a metafyzika světla proniká celým jeho dílem. Jako lékař se přirozeně zajímal o lidskou tělesnost a vztah lidského těla k vnějšmu světu. Astronomické a optické jevy (lom světla, camera obscura či zápalná zrcadla aj.) však pro něj představují pouze východiska k alegorickým a analogickým interpretacím. Podobně když Ficino umísťuje Slunce do středu světa jako jeho žhnoucí srdce, vladaře a oživující duši, činí tak v kontextu metafyzického, nikoli kosmologického heliocentrismu. Fyzická a astronomická „fakta“ pro něj ve skutečnosti nejsou obecně vzato podstatná, neboť jsou překryta svými duchovními významy. To je zvláště nápadné, uvážíme-li, že Koperník ke své heliocentrické teorii dospěl s největší pravděpodobností se znalostí Ficinova pojednání *O Slunci*.*

Klíčová slova: *Ficino; metafyzika světla; heliocentrismus; zápalná zrcadla; optika*

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1. Introduction

Marsilio Ficino (1433–1499) is generally remembered as the most important Renaissance Platonic philosopher. In the services of Cosimo de' Medici (1389–1464) and later of Lorenzo de' Medici (1449–1492) in Florence, he translated Plato and the *Corpus Hermeticum*, Plotinus and other Neoplatonics, and he commented on them extensively. Being a follower of the Divine Plato, his aim was to create a Christian Platonism,¹ an antidote against the Epicureism and Averroism of his time, to promote a true religiosity and prove the immortality of the soul (see Ficino's *Theologia Platonica de immortalitate animorum*, printed in 1482). Besides being a philosopher, he was also a physician (see his *De vita libri tres*, printed 1489, and *Consiglio contro la pestilenza*, 1479) and an astrologer (see his *De Sole* and *De lumine*, printed together in 1493, *De vita* III, some parts of *De amore*, etc.). He was ordained a priest in 1473. All these interests and fields of activity determined the specific character of his thought.

In this paper, I will focus on Ficino's *allegorical hermeneutics* of natural, especially optical phenomena. It suffices to go through virtually any of his texts to notice that his Platonic theology and philosophy make extensive use of poetic allegories. Besides being theoretical constructions, they also serve practical spiritual goals.

The method of allegorical interpretation was nothing new, of course. For Platonists it was, in fact, quite usual. Plato himself used the famous allegory of the cave in his *Republic* (514a1ff.) as well as other allegories (e.g., the narrative of how men and women had originated from an androgynous being and the account of the creation of the cosmos in the *Timaeus*, the proper interpretation of which was widely discussed in Plato's Academy). In the *Cratylus* (407a8–b2), Plato presents an allegorical interpretation of Homer, and a critique of the rationalisation of myths is given in the *Phaedrus* (229c6ff.). On the other hand, Plato regarded poetical exegesis as potentially dangerous with respect to a city's government (*Republic* 378d), but this is

¹ Marsilio Ficino, *De christiana religione*, "Prooemium," in *Opera omnia* (Basel, 1576), I; Marsilio Ficino, *Theologia Platonica*, Prohemium in *Opera omnia*, 78; English trans. *Platonic Theology*, eds. Michael J. B. Allen and James Hankins (Cambridge, MA: Harvard University Press, 2003–2006), I, 9f.; cf. Jörg Lauster, "Marsilio Ficino as a Christian Thinker: Theological Aspects of His Platonism," in *Marsilio Ficino: His Theology, His Philosophy, His Legacy*, eds. Michael J. B. Allen, Valery Rees, and Martin Davies (Leiden: Brill, 2002), 45–69; Ardis B. Collins, *The Secular is Sacred. Platonism and Thomism in Marsilio Ficino's Platonic Theology* (The Hague: Martinus Nijhoff, 1974).

certainly not to be understood as a rejection of allegorical interpretations as such.

No wonder that allegorical methods were quite common also among Neoplatonists. Plato's texts were interpreted in an allegorical way by Plutarch; Plotinus elaborated an allegorical interpretation of Plato's *Symposium* (*Enn.* III, 5); allegory was used also by Proclus (e.g., in his commentary on Plato's *Parmenides*) and by other Neoplatonists² who tried, with the help of allegorical exegesis (or allegoresis), to understand some of the more complicated passages in Plato's dialogues and searched for their hidden meaning.³ From the point of view of medieval authors, Macrobius's *Commentary on the Dream of Scipio* (ca. 400) was also essential, being not only an example of a Neoplatonic allegorical interpretation but for a long time also one of the few sources transmitting the knowledge of Plato. After Philo Alexandrinus, in the first century AD, had begun to use allegory as a method of biblical exegesis,⁴ with Origen, in the third century, it became one of the common methods to interpret biblical texts also in the Christian world. Medieval scholars then elaborated upon the "fourfold sense of the Bible," distinguishing the literal, the allegorical, the moral (or tropological), and the anagogical (mystical or eschatological) sense according to the motto *Littera gesta docet, quid credas allegoria, moralis quid agas, quo tendas anagogia*.⁵

Thus, Ficino clearly had his sophisticated predecessors, and yet his use of allegory is specific. According to him, Plato was speaking in stories and similes, rather as a priest and prophet than as a philosopher: his words purify us from affects, detach our minds from the senses, and convert it to God so that it is divinely illuminated; all this is achieved by means of similes and dialogues that have a strong ability to persuade and move us deeply.⁶ That is why Ficino himself can say:

² Cf. Andrew L. Ford, *The Origins of Criticism: Literary Culture and Poetic Theory in Classical Greece* (Princeton: Princeton University Press, 2002), 86f.; Ernst R. Curtius, *Evropská literatura a latinský středověk* (Prague: Triáda, 1998), 223–33; Jean-Michel Charrue, *Plotin, Lecteur de Platon* (Paris: Les Belles Lettres, 1978); Radek Chlup, *Proclus. An Introduction* (Cambridge: Cambridge University Press, 2012), 193–200.

³ Cf. Wolfgang Scheuermann-Peilicke, *Licht und Liebe. Lichtmetapher und Metaphysik bei Marsilio Ficino* (Hildesheim: Olms, 2000), 56ff.

⁴ Cf. David T. Runia, *Philo of Alexandria and the "Timaeus" of Plato* (Leiden: Brill, 1986); David T. Runia, *Exegesis and Philosophy: Studies on Philo of Alexandria* (Aldershot: Variorum, 1990).

⁵ This mnemotechnic tool was recorded for the first time by Augustine of Dacia, see Henri de Lubac, *Exégèse médiévale. Les quatre sens de l'Écriture I* (Paris: Cerf/DDB, 1959), 23.

⁶ Ficino, *Prooemium in commentaria Platonis in Opera omnia*, 1129.

I have promised an allegorical and [...] an anagogical [or mystical] exercise of the wits (*Allegoricam [...] et anagogicam ingeniorum exercitationem*), in the name of Phoebus [i.e., the Sun].⁷

[...] In the book *De Sole*, I do not speak about things astronomical but rather, by means of them, I search for allegories and their anagogical relation to things divine [...] in the books *De vita* as well as in the book *De Sole* I quite freely mix philosophy with poetry (*cum Philosophicis poetica miscens, liberius*).⁸

In a due Platonic way, the Renaissance Platonist talks about the beauty of bodies and about bodies as “traces” of souls:

The single centre of everything is God. Around this continually revolve four circles: Mind, Soul, Nature, and Matter. [...] Of those invisible circles of the Mind [...], and of the Soul, and of Nature, this visible circle of the material world is an image, for bodies are the shadows and traces of souls and minds, and shadows and traces show the shape of the thing which they represent.⁹

[...] Love is a great and wonderful god [...]. We enjoy beauty with the faculty by which we learn; we learn with our minds, our sight, and our hearing. [...] With these three we shall hunt beauty and trace in that physical beauty which appears in sounds and bodies, as though in a kind of track, the beauty of the soul.¹⁰

So, the material world serves as an image and indicator of the spiritual realm. It is Marsilio’s task to use nature and its phenomena to trace down and show the truths about the spiritual and the divine, to use them as instruments of spiritual, or “mystical,” exercises.

2. Light

The main motif Ficino uses in his above-mentioned allegorical method is light. His elaborate metaphysics of light is so essential to him that – next to the metaphysics of love described mainly in his commentary on Plato’s *Symposium* (*De amore*) – we can take it for a fundamental principle of his thought. On the one hand, it emphasizes the continuity between the “more than intelligible” and the mundane, a continuity mediated by light itself; on the other hand, it emphasizes an analogy between the spiritual and the

⁷ Ficino, *De Sole* 1 in *Opera omnia*, 965.

⁸ Ficino to Poliziano, August 20, 1494, *Epistolae*, XII in *Opera omnia*, 958.

⁹ Ficino, *De amore* II, 3; English trans. *Commentary on Plato’s “Symposium” on Love* (Washington: Spring Publications, 1983), 135f.

¹⁰ Ficino, *De amore* I, 4; English trans. *Commentary*, 131f.

visible, found on all hierarchical levels of the emanation of the invisible-intelligible light and of the visible light as its “splendour” or rather its “shadow” (*umbra*).¹¹ Thus, light and its manifestations, the highest of which, in this world, is the Sun, are not only an appropriate motif for *allegorical* explanations but they are also serviceable in Ficino’s thinking in *analogies*. Both allegories and analogies are closely connected.

Light has many forms on various levels of reality, and it is a vital and fundamental entity:

Light is something immaterial and most mighty. It fills everything in one instant [...] it begets, vivifies, moves and manifests everything. For that reason, we cannot find anything more divine. It is all in the Sun, all in the firmament: but it is concentrated in the Sun while it is dispersed in the firmament. [...] But next to this light visible to the eyes there is yet another light, hidden in all substance of the heaven, the upper stars and Luna. They both depend on the intellectual power of the world soul. [...] The [visible light] comes from the Sun and [passes through] everything, the [invisible light] similarly comes from the firmament and penetrates everything. Besides, it seems that light is a *spiritus* and an image of the world soul, and it spreads its life, perception and powers through every member of this living being of the world.¹²

In his method, Marsilio Ficino proceeds from the visible to the invisible “by means of similes taken from light”; “from the Sun to God, who made the Sun his sanctuary,” and even his own “visible image” and his “representative.”¹³ But light, for the Renaissance Platonist, is a very special entity, highly appropriate for this noble allegorical-analogical mission. First of all, it is visible but immaterial, thus being the most suitable link between the material and the spiritual realms – similarly to the *spiritus* as a bond between matter and soul:

¹¹ Ficino, *De lumine* 4 in *Opera omnia*, 977.

¹² “Lumen tanquam incorporeum aliquid atque potentissimum momento implet omnia nusquam interim inquinatum: omnia generat, & vivificat, & movet, & atque declarat. Nihil ergo divinus hoc apparet, totum est in Sole, totum in firmamento: sed in Sole quidem collectum, in firmamento vero diffusum. [...] Sed praeter lumen hoc oculis manifestum latet alterum in tota coeli substantia lumen stellisque superioribus atque Luna. Utrumque ab intellectuali animae mundanae virtute dependet. [...] Illud a Sole per omnia, hoc a firmamento similiter per omnia derivatur. Videtur praeterea lumen esse animae mundanae spiritus & imago vitam eius sensumque & vires, per cuncta animalis huius mundani membra diffundens.” Ficino, *In Timaeum commentarium*, cap. 38 in *Opera omnia*, 1462.

¹³ Ficino, *De Sole*, 1, 9 in *Opera omnia*, 965, 970; cf. Ficino, *Le divine lettere*, 1076, where Sun is called the “deputy of God” (*vicario di Iddio*).

Firstly, light appears very pure and very exalted in the realm of the senses. Secondly, of all things it is most easily and widely radiated in an instant. Thirdly, it harmlessly encounters everything and penetrates it very gently and pleasantly. Fourthly, it carries with itself a nourishing warmth [...] life and movement. Fifthly, it is present within everything, spoiled by nothing and mixed with nothing. [...] Nothing is reminiscent of the nature of goodness more than light.¹⁴

What is more, light is not only reminiscent of the Good, it *is* a “visible deity, referring to God and leading us gradually towards moral and divine things” because God himself is “an immense light being in itself.”¹⁵ So, the “divine light” is not just an allegory. Light really is a divine entity. Similarly, the mighty light of the Sun does not come from the Sun itself; it is a natural light but it has been “added from above,” from “God himself.”¹⁶ The visible light is an image of the divine intelligence and of “the most generous goodness,” being poured from the Sun through the plethora of stars with their omniform powers.¹⁷

Ficino, as it has been said, distinguishes a whole hierarchy of lights, from the most subtle down to the most “coarse.” In *De Sole*, we can find such a ladder of lights:¹⁸

1. light “more than intelligible,” i.e., the Good or God;
2. intelligible light in the angelic intellect;
3. intellectual and imaginable (*imaginabile*) light in the “soul of the world” (*anima mundi*);
4. sensible light of heaven;
5. sensible and sensual light in things.

Again, we can apply this hierarchy of lights to a kind of spiritual exercise:

Remove matter from [light] and keep what remains: you will get the soul, immaterial light detachable from bodies, omniform and changeable. Remove this changeability: you will get the angelic intellect, separated light, omniform, yet unchanging. Finally, remove also this multiplicity of forms by which each one differs from the light and each is distinguished from one another [...]. Such is

¹⁴ Ficino, *De Sole* 2 in *Opera omnia*, 966; English trans. Angela Voss et al., “De Sole,” *Sphinx* 6 (1994): 123–48; I am using this translation throughout this paper.

¹⁵ Ficino, *De lumine* 16 in *Opera omnia*, 984f.

¹⁶ Ficino, *De Sole* 11 in *Opera omnia*, 972.

¹⁷ Ficino, *De Sole* 2, 6 in *Opera omnia*, 966, 969; cf. Ficino, *Appendix commentariorum in Timaeum* 20 in *Opera omnia*, 1468.

¹⁸ Ficino, *De Sole* 11 in *Opera omnia*, 973; cf. *De lumine* 13–16 in *Opera omnia*, 982–85.

the Sun, shining immensely, because its nature is shining [...]. And so [...] also God will shine to the eyes of the mind because his image, i.e., the light of the Sun, gives life and sensual perception to all.¹⁹

Thanks to the hierarchy of light and its affinity to (if not identity with) God, Ficino, in his commentary on Plato's *Timaeus*, can establish the following analogies between light and the Good:²⁰

1. the intelligible depends on the Good in the same way as light (*lumen*) outside the Sun depends on light (*lux*) inside the Sun;
2. the intelligible produces the soul of the world from itself in the same way as light (*lumen*) emanates glow (*splendor*);
3. through the soul everything is gradually begotten in the same way as glow begets all bodily things through warmth (*calor*).

With the help of other sources,²¹ we can compile a table 1 showing the (vertical) degrees of the Ficinian metaphysics of light and their relevant (horizontal) analogies:

philosophy	theology	celestial bodies	element	activity	physical form: "powers of the Sun"	physical form: "substance of the Sun"	"powers of the Sun"
the Good	Father	Sun	fire	spreading and converting	natural fertility	essence –Heaven (Ouranos)	fertility – Jupiter and Juno
intellect (divine or angelic)	Son	firmament	air	shining, beautifying, differentiating	manifest light	understanding – Saturn	Light –Apollo and Minerva
world soul	Spirit	Luna	water	vivifying, warming, giving birth	capacity to get warm	life – Rhea	Warmth – Venus and Bacchus

Table 1. Degrees of the Ficinian metaphysics of light (vertical) and their relevant (horizontal) analogies

¹⁹ Ficino, *De lumine* 16 in *Opera omnia*, 985.

²⁰ Ficino, *In Timaeum commentarium* 10 in *Opera omnia*, 1442.

²¹ Ficino, *De Sole* 11, 12 in *Opera omnia*, 972–74.

3. Ficino and His Use of Optical Phenomena

Above, I have more than once quoted from Ficino's two short treatises *De Sole* and *De lumine* (printed together in 1493). They are a mixture of Greek, Roman and Arabic astronomical observations, Greek and Roman mythology, various classical and Renaissance observations of nature, and Neoplatonic concepts. The *De vita libri tres*, published in 1489, added medical lore of Greek, Roman, and Arabic origin, both old and new medical theories and skills, practical instructions for preparing remedies, as well as Ficino's sophisticated "natural magic" as a specific cure. All these sources were used for the ultimate goal, which was knowledge of God. But, for Ficino, God cannot be known by mere rational arguments; God can only be known by means of symbols, allegories and similes or *comparationes*.²² Importantly, allegorical interpretations are, in his view, not merely a rhetorical instrument to describe the unspeakable: they are also, as we have already seen, a *practical* method to attain it. Because light is divine, speculating on light and its phenomena brings us to cognition of God – not only in the sense of an allegorical explanation but as it were directly.

This is a reason – and, as it seems, the *only* reason – why Ficino is interested in optical phenomena, and we could say, in natural phenomena in general (at least outside of his more specific medical interests). In the following text, I would like to give some of the, perhaps, most obvious and interesting examples of his allegorical approach to and analogical use of optical and physical phenomena. Although other examples could certainly be adduced,²³ the following examples will include:

1. light and colours (*De lumine* 13);
2. *camera obscura* (*De lumine* 13);
3. refraction of light rays (*De lumine* 16);
4. concave (burning) mirrors (*De lumine* 11);
5. the Sun as the centre of the universe (*De Sole* 6).

²² Cf. Scheuermann-Peilicke, *Licht und Liebe*, 64f.

²³ Cf., e.g., the origin of the visible light from the invisible which is compared to the moving sparkle creating an impression of a luminous circle, Ficino, *Theologia Platonica* VI, 2 in *Opera omnia*, 162; English trans. *Platonic Theology* II, 152f.

3.1. Colours, Camera Obscura, and Refraction of Light

Let us start with light and colours. In his *De lumine*, Ficino gives the following explanation, or rather an allegorical-analogical interpretation, of these phenomena:

the light infused into terrestrial things, mixed variously of the four elements, takes on the form of various colours. They are, as it were, little bodies containing sparks of light as their little souls. [...] Because the body is absolutely distinct from the soul, it obscures it [to some extent], similarly as the Moon causes an eclipse of the Sun when they are in conjunction, or even as the earthly mixture obfuscates the heavenly light which becomes a colour.

So far, the description may not be purely physical but, at least, its aim seems to be to describe a physical reality. But Ficino's explanation follows immediately, taking a radically different twist:

In such a way, the body surrounding the soul causes the intelligence [= light] to become sensual perception [= colour]. Similarly as the ray [of light] adds warmth to air, while light remains unmixed, so also the soul brings life [= warmth] to the body [= air], but not to the intelligence [= light].²⁴

Another example is Ficino's observation and allegorical use of the *camera obscura*, which can be found in the same chapter of *De lumine*. His description is so obscure that at first it is somewhat uneasy to notice that he is talking about this phenomenon. That he knew and used it, on the other hand, need not be surprising. It had been known since pseudo-Aristotle's *Problemata* (chap. XV), it was known to Euclid, to later Arabic authors (al-Kindi, Alhazen) as well as to Renaissance painters and architects in the European fifteenth (Leonardo da Vinci, Leon Battista Alberti, Jan van Eyck) and sixteenth centuries. Ficino's description of it goes as follows:

²⁴ "In superficie terrae lumen mixtionibus diversis elementorum quatuor maxime terrenis infusum, diversorum colorum induit formas, qua corpuscula, quorum quasi quaedam animulae sunt scintillae luminis illis infusae. [...] Sic enim corpus ab anima diversissimum illi quasi eclipsum obducit, sicut Luna coniuncta Soli, imo vero sicut mixtio terrena a coelo lumen reddit opacum, facitque colorem ex lumine, sic corpus circa animam reddit ex intelligentia sensum. Quemadmodum radius calorem quidem permiscet aëri, lucem vero retinet non permixtam. Sic anima corpori vitam communicat, intelligentiam vero nequaquam." Ficino, *De lumine* 13 in *Opera omnia*, 982.

like light, the [soul], not being compressed, gathers in a narrow place and, undispersed, it expands again. [...] The broadly expanded light squeezes into a hole and through oblique rays it is projected on the other side, taking gradually its original shape, until it has grown into the same breadth it had in the beginning.

Again – so far, a rather physical observation. But why did it matter for the Renaissance Platonist?

Similarly, the soul in us is brought from the broad divinity into the narrowly defined body and affections, but it can without any harm come out again and receive its original form and breadth. The rays which come out to a place and return again in a moment without being separated from the Sun in their emanation show us also the descent and ascent of angels.²⁵

Another example comes from the treatise *De lumine*. Here, Ficino mentions reflection (or refraction) of light in the context of “justice” and being “just”:

It seems to me that light often stimulates us towards justice and keeps us away from injustice when it shows manifestly how powerful is justice and how powerless is injustice. The ray [of light] – being as it were just – that falls straight, in the right angle, and creates two identical angles acts with a great and penetrating power, and when it enters water from the air it does not refract. When it hits something firm it reflects into itself, as if it itself were firm. On the other hand, if the ray – as it were unjust – falls in an oblique way and creates two uneven angles, then it is weak and has little power, it refracts immediately in an oblique way and it never returns to itself but remains on the other side.

To this, Marsilio appends a summarizing – and allegorizing – explanation: “Light itself, as it reflects in mirrors, shows us how much it likes – being light divine – stability, straightness and purity.”²⁶

²⁵ “Instar lucis sine compressione sui se colligit [i.e., anima] in angustum, sine distractione rursus explicatur in amplum. [...] Lumen ab amplo dependens se colligit per formam transversisque radiis prosilit in oppositum, figuram pristinam, mox amplitudinem quoque paulatim subinde recipiens ad eandem denique rediturum. Similiter anima ab ampla divinitate in angustum corpus affectumque apud nos redacta, potest hinc etiam incolumis emigrare, pristinam quandoque formam, et amplitudinem receptura. Qualis etiam descensus ascensusque sit angelorum, radii quoque declarant prosilientes huc resilientesque momento, et prosiliendo Solem minime deserentes.” Ficino, *De lumine* 13 in *Opera omnia*, 982.

²⁶ “Nempe videtur mihi lumen saepe nos ad iustitiam cohortari, ab iustitia deterrere, ubi quam potens ipsa iustitia sit, quam impotens iniustitia manifeste declarat. Radius enim, qui tanquam iustus incidit rectus, aequales utrunque reddens angulos, potenter agit, et penetrat. Et ubi ex aëre transit in aquam, non frangitur per obliquum. Atque ubi tangit solidum, quasi

3.2. Burning Mirrors

Another example of Marsilio Ficino's interest in natural phenomena also has to do with optical phenomena, yet its strange fate, or rather a later use of it by another author, motivate me to dedicate a separate chapter to it.

The capacity of concave mirrors to concentrate solar rays to such a degree as to ignite objects has been known since antiquity. But, as usual, the physical reality of it is not what is interesting for Ficino. We have shown that light is not only an allegory of God; it is itself a divine entity; similarly, the Sun is not only an image of God but rather a divine radiation, emanating "from God."²⁷ What is important now is that the Sun, as an image of God, is endowed with light of an extraordinary, vital, "divine" quality which can be used to our benefit.

This can be read in a *medical* context, which is related to Ficino's *magia naturalis* presented in his *De vita coelitus comparanda*, and, as far as I can see, this is the only *physically* relevant context of his natural observations:

if someone managed to grasp the light and heat of the Sun in their purity and with the quality in which they are in [the Sun], and if someone were able to appropriate them to his own benefit and in his way, he would thereof take eternal youth or could live at least until the age of a hundred and twenty solar years.²⁸

The same vital principle can be seen at work in the case of burning mirrors:

when the reflection of the Sun's rays in a mirror or a hot piece of iron, by way of the accidental quality of fire, sets wool aflame, it is this life, by means of the *living seeds of fire*, that produces the substantial form of fire in the wool.²⁹

Significantly, this holds true only for solar rays (and the rays of the stars which are merely reflections of the Sun's light but their strength is, of course, very limited compared to the Sun): in contrast to terrestrial lights, they are

fortis reflectitur in seipsum. Contra vero radius, qui tanquam iniustus decedit ex obliquo, angulos utrinque faciens inaequales, tanquam debilis vix efficit quicquam, subito frangitur in obliquum, nec in se redit unquam, sed residit in adversum. Quantum vero lumini tanquam divino, constantia, aequalitas, puritas ubique sit grata, declarat ipsum in corporibus specularibus." Ficino, *De lumine* 16 in *Opera omnia*, 984.

²⁷ Ficino, *De Sole* 11 in *Opera omnia*, 972.

²⁸ Ficino, *De Sole* 12 in *Opera omnia*, 974.

²⁹ "Quando reflexio radioꝝ in speculo aut calens ferrum per qualitatem ignis accidentalem calefacit lanam, vita illa per vitalia ignis semina substantialem ignis speciem producit." Ficino, *Theologia Platonica* I, 3; English trans. *Platonic Theology* I, 45.

“living” and “perceiving.”³⁰ Accordingly, also the fire ignited by them will be vital and divine – an idea that Ficino did not develop any further. In this point, his approach can be contrasted to the attitude of a possible inheritor of his metaphysics of light and solar theories, the Paracelsian physician, alchemist, and theosopher Heinrich Khunrath (ca. 1560–1605), who used catoptrics (the optics of mirrors) in the context of alchemy.³¹

In his treatise *De igne magorum* (1608), Khunrath repeatedly recalls that the alchemical fire must be properly ignited not by a mundane fire but by the power of the Sun by means of burning mirrors.³² This is not new in the context of alchemy; what is interesting is Khunrath’s explanation, in which I am tempted to see an influence of Ficino, an author demonstrably known to the German alchemist.³³ For Heinrich Khunrath, such a “heavenly” fire and light have an absolutely different and specific effect: the capacity to bring the alchemical *opus* to its happy end, i.e., to transmute a common metal into a precious one, to bring health to man, to heal (in an eschatological sense of word) the whole world, and even to bring about the “divinization” of man.

Thus, we can see that what for Ficino had primarily, if not exclusively (given the possible medical use mentioned above), an allegorical meaning, could have also had a practical and *physical* relevance for others. That is the case also in the next example.

3.3. *The Sun as the Middle of the World*

To be discussed now is further proof that Ficino’s interest in natural phenomena focused, primarily, on their allegorical use, which was supposed to serve a better understanding of spiritual and theological truths. Let us begin with a longer quotation from Marsilio Ficino’s book *De Sole*:

The ancient theologians, with Proclus as a witness once again, stated that Justice, the queen of all things, proceeds from the middle of the Sun’s throne through everything, directing everything, as if the Sun itself could be the moderator

³⁰ Ficino, *De vita coelitus comparanda* 16 in *Opera omnia*, 553; English trans. *Three Books on Life* (Tempe, AR: Medieval and Renaissance Texts, 1998), 322.

³¹ See Urszula Szulakowska, *The Alchemy of Light* (Leiden: Brill, 2000).

³² Heinrich Khunrath, *De igne magorum philosophorumque secreto externo et visibili* (Strasbourg, 1608), *passim*.

³³ For this, see Martin Žemla, “Ficino in the Light of Alchemy. Heinrich Khunrath’s Use of Ficinian Metaphysics of Light,” in *Platonism and its Legacy Selected Papers from the Fifteenth Annual Conference of the International Society for Neoplatonic Studies*, eds. John F. Finamore and Tomáš Nejeschleba (Lydney: The Prometheus Trust, 2019), 281–95.

of all things. Iamblichus states the opinion of the Egyptians in the following way: Whatever good we have we get from the Sun, that is, either from itself alone, or from another agency as well, in other words either directly from the Sun, or from the Sun through other things. [...] Moses thinks the Sun governs celestial things during the day and the Moon, like a nocturnal Sun, at night. They all place the Sun as lord in the midst of the world, although for different reasons (*Solem quasi Dominum omnes in mundo medium, quamvis ratione diversa, collocaverunt*). [...] The old physicians called the Sun the heart of heaven. Heraclitus called it the fountain of celestial light. Most Platonists located the world soul in the Sun, which, filling the whole sphere of the Sun, poured out through that fiery-like globe just as it poured out spirit-like rays through the heart, and from there through everything to which it distributed life, feeling and motion universally.

And the conclusion the Florentine philosopher draws from this: “For these reasons, perhaps, most astrologers think that just as God alone gave us an intellectual soul, so he alone sends it to us under the influence of the Sun.”³⁴

One may be tempted to read the sentences above as a somewhat timid confession of a heliocentrist, but that would be unfair. Firstly, we may be mistaken by our spontaneous understanding of “midst of the world” and “middle of the planets.” Here, “middle” does not mean that the Sun would be a central point around which everything circles. The cosmological context of the claim is either the Chaldean (Ptolemaic) or the Platonic (“Egyptian”) system of heavenly spheres, as Ficino himself remarks: “The Chaldaean put the Sun in the middle of the planets, the Egyptians between two five-fold worlds: the five planets above, the Moon and the four elements below.”³⁵ (Ficino seems to prefer the Platonic/Egyptian system, but not exclusively.) In both systems, the sphere of the Sun is seen right in the middle among other planetary spheres: in the Chaldean system (Moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn) as well as in the Platonic system (four elements, Moon, Sun, Venus, Mercury, Mars, Jupiter, Saturn).³⁶ The Earth, of course, is still at the centre of both cosmological systems.

Nevertheless, we hear that the Sun is “the heart of heaven,” the “lord of celestial things” in which the Platonists located the soul of the world, and that “Justice, the queen of all things, proceeds from the middle of the Sun’s throne.” The Sun is the “king” and the only ruler whom everything adores,

³⁴ Ficino, *De Sole* 6 in *Opera omnia*, 968f.

³⁵ *Ibid.*

³⁶ Plato, *Timaeus* 38c–d; Ficino, *Appendix commentarium in Tim.* 13 in *Opera omnia*, 1467.

it is endowed with “royal authority.”³⁷ In other texts, we read about the “central light of the Sun” in which the rays converge just like the multiplicity of things converges in the intellect.³⁸ So, even though “the midst of the world” must be taken in the above-mentioned sense of word, the impression of a heliocentrism is quite strong if we add other statements of a similar kind.

substance of the Sun	<i>unitas</i>
substantial and inner light (<i>lux</i>)	<i>bonitas</i>
emanating light (<i>lumen</i>) with its rays (<i>radii</i>)	<i>divina mens; ideae; mundus intellectualis, mundus archetypus</i>
glow (<i>splendor</i>) radiating from light (<i>lumen</i>)	<i>anima mundi; mundus rationalis; rationes</i>
warmth (<i>calor</i>) following the glow	<i>natura rerum; mundus seminarius; semina rerum</i>
procreation (<i>generatio</i>) stemming from the heat (<i>flagrantia</i>) of the warmth	<i>mundus corporeus</i>

Table 2. Analogies between the Sun and its light, and between God and his emanations

And quite rightly so – as long as we stay at the *metaphysical* meaning of heliocentrism. It is true that Ficino remarks that the Sun is constantly moving, for which reason it can be only an *image* of the immovable God, his “second and visible” son.³⁹ But, for Ficino, it is no longer without doubt that motionlessness is, metaphysically, more noble than movement: the Earth “grieves over its own darkneses, its immobility and inactivity,” while heavenly bodies “rejoice, shine and delight in their movement,” they move because of their “overflowing joy.”⁴⁰ Thus, the *metaphysical* nobility of the Sun, although it is *physically* moving, is, obviously, greater than that of the Earth, be it motionless. To put it simply, the Sun is more divine. In the table above, extracted from Ficino’s commentary on the *Timaeus*, we can see

³⁷ Ficino, *De Sole* 7, 10, 13 in *Opera omnia*, 968f., 972, 974f.

³⁸ Ficino, *In Parmenidem* 29, 85, 95 in *Opera omnia*, 1148, 1191f., 1195.

³⁹ Ficino, *De Sole* 13 in *Opera omnia*, 974.

⁴⁰ Ficino, *De lumine* 7, 10 in *Opera omnia*, 978, 980.

(table 2) the elaborate analogies between the Sun and its light, and between God and his emanations:⁴¹

To say it again, it is not the physical reality or the cosmological context as such that is of greatest importance for Ficino. The fact that he ascribes a central position to the Sun in the metaphysical sense, while sometimes using a seemingly naturalist language, is especially obvious and significant when we look at the heliocentrism of Nicolaus Copernicus. In fact, Copernicus most probably knew and read Ficino and his *De Sole*:⁴² He not only became acquainted with Ficino's friend Filippo Buonaccorsi (Callimachus Experiens, 1437–1496) in the 1490s in Cracow. A more striking fact is that, in his *De revolutionibus orbium coelestium* (1453), he was quoting from the same sources (i.e., Hermes Trismegistus) as Ficino using almost the same words: "*In medio vero omnium residet sol [...] Trimegistus visibilem deum [eum vocat].*" "The Sun is situated in the true middle of all things [...] Trismegistus called it a visible god."⁴³ But the conclusion Copernicus drew from this as well as from other inspirations is, of course, totally different. An obvious reason is that Copernicus, unlike Ficino, was eminently interested in natural facts and in cosmology as a natural science, not as a source of allegorical (or analogical) explanations.

4. Conclusion

It was my aim to show that Ficino's observation and use of optical (or more generally: natural) phenomena is very specific. For him, they bear – primarily, if not exclusively – a metaphysical meaning and importance, not a physical one. What matters is that light is immaterial and divine, that light of the Sun is divine light.

But optical phenomena are not used merely as allegories. They are, in fact, manifestations of something that is *per analogiam* present also in the spiritual realm, or rather across all levels of reality. Following light has a didactic aspect (allegory), a mystagogic aspect (the purifying effect of the

⁴¹ Ficino, *In Timaeum commentarium* 10 in *Opera omnia*, 1442.

⁴² Eugeniusz Rybka, "The Influence of the Cracow Intellectual Climate at the End of the Fifteenth Century upon the Origin of the Heliocentric System," *Vistas in Astronomy* 9 (1967): 165–69; Anna De Pace, *Niccolò Copernico e la fondazione del cosmo eliocentrico* (Milano: Mondadori, 2009), 379, n. 240.

⁴³ Nicolaus Copernicus, *De revolutionibus orbium coelestium* I, 10 in De Pace, *Niccolò Copernico*, 276.

similes of light), and a real, physical effect (light being a divine entity infused into the world and into human beings).

Somewhat special is Ficino's use of light and the Sun in medical and natural magical context, especially in his *De vita coelitus comparanda*. But here also we can see that it is not the physical facts what is most interesting for the Renaissance Platonist but their symbolical meaning and qualities. This is the reason why the rays of the stars with their specific qualities will be absorbed by us – why our life ought to be “led according to the stars” as the title of Ficino's book proclaims.

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