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## A SHORT INTERVENTION OF ROGER BACON

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### Abstract

According to Bacon, there are four main obstacles in the search for truth: submission to an unworthy authority, influence of habits, prejudgments and hiding one's ignorance. The latter is the worst among the four. Truth can be reached through reason and experience. Reason is fallible; he reaches a conclusion but does not eliminate doubt. Only the man of experience cannot be wrong, says Bacon. Experience is twofold: external, through senses and internal, a spiritual one in seven steps, among which the first is the illumination regarding natural things and the highest is mystical rapture. Thus, for Bacon faith does not oppose reason and Philosophy is a necessary step for the exercise of faith and for the search for truth. The following text is about such an intervention of Bacon that leads from Plato to Aristotel, regarding a well-known saying: 'Amicus Plato sed magis amica veritas'.

*Keywords:* science, philosophy, experience, truth, error

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### 1. Introduction

Hegel says the following words about Bacon: "Roger Bacon was mainly concerned with Physics; did not exert influence. He discovered gunpowder, the mirror, the lenses. He died in 1294." [1] Bacon intensely promotes the experimental method, but it must be said that by 'experimental method' we do not understand what modernity will understand: the verification and control of experience. Bacon remains dependent on a naive interpretation of experience: it is important to see and know what you have seen without the experimenter being, however, passive to the experience as such. On the contrary, the experimenter helps Nature through art [2]. Hegel, I say, is wrong, Bacon suggests a method of making gunpowder and experimentally proves that the burning takes place only in the presence of air (in a passage in *Opus Majus* and another one in *Opus Tertium* he describes, the first one in Europe, the ingredients from which gunpowder is made). That in Chemistry. In the field of Optics, he studies the lens and anticipates discoveries such as the telescope, the microscope, the scope (he deals with these things in Part V of *Opus Majus*). Bréhier associates him with Jules Verne: "Il y a beaucoup de Jules Verne chez

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Bacon” (There are many Jules Verne in Bacon) [2, p. 256]. The interest in Optics was not accidental at the time, especially among Franciscans attending Arabic treatises on Optics, and according to Bréhier, in his treatises on Optics and Mathematics, Bacon was an interpreter of Arabic science rather than an original experimenter [2, p. 254]. These treatises were known as *Perspectivae*: “science of light, the Optics studied the laws of sensitive light, and this symbolized for them the invisible light with which God illuminates every man born into this world. So nothing was more natural than combining the science of light with the metaphysics and theology of divine enlightenment.” [3] Another Franciscan, John Peckham, is also concerned with Optics, in *Tractatus de perspectiva* [4], a treatise that covers almost everything that was known about Optics in late thirteenth-century Europe. In the introduction, he presents the main subdivisions of Optics; part I deals with the nature and propagation of light, about the geometric figures on which light radiates, examines whether or not vision is the result of a radiation emission, analyses the anatomy and physiology of the eye, the act of visual perception, all before announcing the indispensable conditions that make sight possible. Parts II and III analyse the reflection and refraction of light. I also mention the *De luce* treatise of another Franciscan, Bartholomew of Bologna, a treatise on ‘spiritual optics’, and how not to be so when for Bartholomew, as for Roger Bacon, “Scripture is the sum of all truth. How can we be surprised then that the truth of Optics is found to be involved in the sacred text and that, therefore, Science integrates spontaneously into Theology.” [3, p. 394] In the Gospel of John 8.12, Jesus says to the people, the scribes, and the Pharisees, “I am the light of the world: he that followeth Me shall not walk in darkness, but shall have the light of life” (*Ego sum lux mundi: qui sequitur me, non ambulat in tenebris, sed habebit lumen vitae*).

Indebted is the metaphysics of light, especially to the Arab philosopher, theologian, physician, mathematician, astronomer and physicist Alhazen (965-1040), a polymath, a polytropist with huge contributions in Optics as well, its principles and visual perception in particular are rightly indebted to him. We have his book on Optics translated into Latin by an anonymous person at the end of the 12<sup>th</sup> century, the title is *De aspectibus* (or *De perspectiva*). It enjoyed a great honour and reputation, *De aspectibus* was in terms of Optics a kind of ‘Bible’ of the Franciscans and more. Everything that is said in it can be found in the subsequent treaties in Europe. In fact, Alhazen in Optics, Avicenna in Medicine and Pliny in Zoology are the authorities to which Bacon constantly refers [2, p. 254, note 795].

Let’s see further if Bacon did anything else, that’s exactly what would be missing!, Hegel seems to say. He did do more, Copleston will also intervene, he is not more generous, he is only more correct than Hegel, Bacon is of interest for the attention paid to the experimental sciences and for the application of Mathematics in knowledge, no science can be known without Mathematics. Bacon, says Latourette, is the predecessor of modern science, he is “a first-class mind” [5], a visionary and doctrinaire of experimental science [6], a crater on the Moon is named after him.

Impulsive, intolerant and irritable, Bacon ends up bothering even the Franciscans, he writes a *Speculum astronomiae*, supports astrology against its condemnation by Étienne Tempier (sentence 178), is accused of teaching new sciences, goes to prison in 1278, stays there until before his death, the Franciscans also buried him, where?, in the Franciscan Church in Oxford [7]! He writes *Opus Majus*, Pope Clement IV is his supporter, *Opus Minus* and *Opus Tertium*, somehow summaries of the first plus something additional in their content. *Opus Majus* has seven parts as follows: the first part presents the four causes of human inability to reach the truth; part II tells us that the truth is in Scripture, Theology surpasses the sciences; part III leans on the language and knowledge of the Hebrew and Greek language to understand the sacred text; part IV has as object Mathematics and its importance for the other sciences, Mathematics is *clavis scientiarum*; part V is about Optics, the structure of the eye, the principles of vision and conditions of sight, about mirrors and lenses; part VI focuses on experimental sciences, a kind of theory of adequacy regarding the truth confirmed experimentally; part VII is a breviary of moral philosophy.

Bacon is among the first ones to discuss in reasonable terms the relationship between Theology and Philosophy (*Opus Majus*, Pars II, chap. I-XVIII) and it is to be appreciated that for him the function of Philosophy is to guide man to God. Copleston says one thing that would annoy Hegel: if we were to compare Roger Bacon to Francis Bacon, it is not certain that such a comparison would benefit the Chancellor and “what makes him much more interesting is the fact that his scientific preoccupations are combined with an accentuated interest in Philosophy itself and that these two directions combined in his case with a typical Franciscan emphasis on mystical thinking” [8].

## 2. Identifying a Baconian intervention

Let’s see the place we are interested in, not before saying that European Philosophy had a type of *second-hand* access to Plato and Aristotle at the time. Bacon’s time will enjoy new Arabic versions or Latin translations from Arabic. However, with regard to Aristotle, for Bacon the collection and analysis of facts precede the scientific deduction of truth, the experimental method has priority, the Franciscan does not learn, unless the experimental method is accompanied by the participation of revelation. R. Bacon was not forgiven even if he includes the revelation here, he does it too little, say the co-religious messmates. In short, Bacon was acquainted with Plato and Aristotle. This cannot be criticized even by Hegel, Aristotle is diligently studied at Oxford. Aristotle is an inductor and an empiricist (but not an empiricist who thinks, otherwise his philosophy “would be the worst kind of empiricism, Locke’s kind” [9]). Plato is an intuitive, Plato starts from the top and descends to the empirical realities. This tension will have a happy consequence: the thirteenth century rediscovers Aristotle (it is true, thanks to Boethius and Porphyry more than to Arabs, at least through them!). Hegel is generous with Aristotle: “With these we now leave Plato. We do not part with him gladly” [9, p. 562]. Plato and Aristotle are “the teachers of the

human race” [9]. Aristotle is credited with opposing views to his own philosophy, “Plato is widely read; Aristotle is almost unknown in modern times and the most false prejudices reign over him” [9] (as Plato was unknown in the time of R. Bacon - *my note*). The world believes that Aristotle’s philosophy is the opposite of Platonic philosophy, Aristotle surpasses in speculative depth Plato. It is not enough: when Aristotle became known in the West, an Aristotelian, partly anti-scholastic philosophy was formed together with the reconstitution of Science, and then, Hegel says well about Aristotle in support of Bacon: “Aristotle does not advance by deducing, deriving, but he seems to start empirically, he also makes reflections, he speaks of experiences. His manner is that of ordinary reasoning; at the same time, the peculiarity of Aristotle is that, applying these procedures, he is nevertheless absolutely profound, speculative.” [9, p. 573] Hegel does not like empiricism, that is why he strives to get Aristotle out of this infamous label, he rightly believes, perhaps, especially if it is about the Plato - Aristotle relation. The two cannot be viewed antagonistically, nor is the problem raised. Hegel takes precautions, maybe in excess, he does well, Bacon is an Aristotelian Platonist, the phrase sounds strange!, but it fits Bacon, amazingly and in a Franciscan manner, it was not in vain that his contemporaries detested him, as they much appreciated this *viri eminentissimi*!

*Opus Majus*, Pars I, deals with the four general causes of human ignorance (*Causae Erroris*). These are: 1. ‘authority’ - *videlicet fragilis et indignae auctoritatis exemplum* (‘submission to an authority without merit’). The meaning is that we believe in authority, but not because of authority we understand. 2. ‘habits’ - *consuetudinis diuturnitas* (‘influence of habit’); 3. ‘popular prejudices’ - *vulgi sensus imperiti* (‘prejudices of common thought’) and 4. ‘pride of knowledge’ - *propriae ignorantiae occultatio cum ostentatione sapientiae apparentis* - (‘the temptation to give the impression of wisdom to hide one’s ignorance’, the most dangerous) [10]. I find in a nice manner the four causes of ignorance in Francis Bacon, our late Chancellor to the other Bacon, Roger, the place is to be found in *Novum Organon* [11]: “Four species of idols beset the human mind - Idols of the Tribe, Idols of the Den, Idols of the Market, Idols of the Theatre” (*Quatuor sunt genera idolorum, quae mentes humanas obsident - ut primum genus, idola tribus; secundum, idola specus; tertium, idola fori; quartum, idola theatri, vocentur*); “The idols of the tribe are inherent in humane nature” (*Idola tribus sunt fundata in ipsa natura humana*); “The idols of the den are those of each individual” (*Idola specus sunt idola hominis individui*); “There are also idols formed by the reciprocal intercourse and society of man with man, which we call idols of the market, from the commerce and association of man with each other” (*Sunt etiam idola tanquam ex contractu et societate humani generis ad invicem, quae idola fori, propter hominum commercium et consortium, appellamus*); “Lastly, there are the idols which have crept into men’s minds from the varios dogmas of peculiar systems of Philosophy, and also from the perverted rules of demonstration, and these we denominate idols of the theatre” (*Sunt denique idola, quae immigrarunt in animos hominum ex diversis*

*dogmatibus philosophiarum, ac etiam ex perversis legibus demonstrationum; quae idola theatri nominamus).*

Returning to *Opus Majus*, Pars I, has 16 chapters, we are interested in *capitulum* VII (“Further illustrations, justifying cautions scrutiny of received opinions”) where Plato, Aristotle, Augustine and Boethius prefer the truth to authority. Seneca, Augustine and Jerome are also mentioned, in addition, even if repetitively. Here is the place with Plato, Socrates and Aristotle [10, p. 16]: *Nam Plato dicit: ‘Amicus est Socrates, magister meus, sed magis est amica veritas’. Et Aristotelis dicit, ‘se magis velle consentire veritati, quam amicitiae Platonis, doctoris nostri’. Haec ex vita Aristotelis et primo Ethicorum, et libro Secretorum manifesta sunt* (“For Plato says, ‘Socrates, my master, is my friend but a greater friend is truth’. And Aristotle says that ‘he prefers to be in accord with the truth, than with the friendship of our master, Plato’. These things are clear from the life of Aristotle and from the first book of Ethics and from the book of secrets”, a book attributed to Ammonius Hermiae. The version *Amicus quidem Socrates sed magis amica veritas* looks like this in Greek, transliterated: *Philos Mèn Socrátes, alla philtéra he àletheia* [12]. We find that the closest Latin version of the formula “where both are friends, it is right to prefer truth” is found in Chapter V of *Opus Majus* where are mentioned Cyprian (*consuetudo sine veritate vetustas erroris est, propter quod relicto errore, sequamur veritatem* - “the habit without truth is perseverance in error; therefore, leaving error, let us follow the truth”), Augustine (*veritate manifesta, cedat consuetudo veritati, quia consuetudinem veritas et ratio semper excludit* - “once the truth is known, habit must obey, to follow the truth, since truth and reason always remove habit”), and Isidor (*usus auctoritati cedat; pravum usum lex et ratio vincat* - “the habit must surrender, to submit to authority; law and reason [must] overcome a bad habit”) [10, p. 12].

Thus, on the one hand, in Bacon the proverb *Amicus Platon sed magis amica veritas* seems compressed into an aphorism and refers to the *Secret of Secrets*, a compilation of Pseudo-Aristotle in which the proverb is not mentioned. Plato, for example, is mentioned only once in chapter 22 of the first part, entitled *De regimine vitae per astronomiam* - ‘On the government of life by astronomy’ where it is said: *peritissimus doctor noster Plato* - “Plato, our very skilled teacher” [13], and we observe the presence of the occurrence *doctor noster Plato* in the *Secret of Secrets* followed by the one of Bacon - *Platonis, doctoris nostri*. References to the *Liber Secretorum* seem to be an error of Bacon’s [14]. It is not ruled out a confusion that Bacon may have made between the *Secretum Secretorum* and *Liber de dictis philosophorum antiquorum/Liber philosophorum moralium antiquorum* [13, p. 346-348, 368-369, 370-371]. However, in *Opus Majus, Prima pars*, Bacon refers to the *Libro Secretorum* at chapters IV, VII, IX.

On the other hand, if we follow Bacon’s testimony in chapter VII, according to which version II, quoted here, comes from *Vita Latina*, we can say that for the paraphrase of the *Nicomachean Ethics* (1096a - “We had perhaps better consider the universal good and discuss thoroughly what is meant by it,

although such an inquiry is made an uphill one by the fact that the Forms have been introduced by friends of our own. Yet it would perhaps be thought to be better, indeed to be our duty, for the sake of maintaining the truth even to destroy what touches us closely, especially as we are philosophers or lovers of wisdom; for, while both are dear, piety requires us to honour truth above our friends.” [15] Bacon cannot be indebted only to the *Vita Latina* version and because during his life the passage could not be identified as coming from the first book of *Nicomachean Ethics*, plus that Plato is not explicitly mentioned by Aristotle in the text of *Ethics*. Bacon seems to have known the *Nicomachean Ethics* in the translation of Robert Grosseteste and after the compilations of Eustratius’ Greek commentaries in the first place. Except that, if he knew such a thing, he would realize that 1096a refers to Plato [14]. And the place mentioned in *The Nicomachean Ethics* is Aristotle’s reply to a remark by Plato in *The Republic*, 595b-c: “It must be told, I said. And yet, a certain friendship for Homer, and shame before him, which has possessed me since childhood, prevents me from speaking. For he seems to have been the first teacher and leader of all these fine tragic things. Still and all, a man must not be honoured before the truth, but, as I say, it must be told”. [16]

In passing, I recall that the five variants of the proverb *Amicus Plato sed magis amica veritas* that circulated in the Middle Ages are, in order: *Amicus Plato sed magis amica veritas*; *Amicus Socrates sed magis amica veritas*; *Amicus Socrates, amicus Plato sed praeponderanda veritas*; *Et veritatem diligimus et Platonem sed rectius est diligere veritatem*; *Minime vero veritati praeferendus est vir*.

Harris Rackham claims that Aristotle assumes in his writings a deep knowledge of Plato and the spirit in which differs from it can be seen in the well-known passage from *Nicomachean Ethics*, 1096a [17]. And in note *a* from p. X, Rackham says of the passage mentioned that the sentence itself, copied from Plato (and here Rackham is wrong - *my note*), has become proverbial, and the form *Amicus Plato sed magis (or sed maior) veritas* has crossed the centuries. As for “for, while both are dear, piety requires us to honour truth above our friends”, Rackham thinks it would be about a quoted verse, not telling us how or where [17, p. 17, note d].

### 3. Short final clarifications

Some necessary clarifications in connection with the *Life of Aristotle*. We start from three anonymous *Lives of Aristotle: Vita Marciana* (thus named because it exists only in the *Codex Marcianus Graecus*, a manuscript damaged and almost impossible to read), *Vita Vulgata* (which we have in several manuscripts, 31) and *Vita Latina* (thus named because it exists only in Latin translation). The ‘three lives’ have in common the same source: a biography of Aristotle in use during the Neoplatonic school in Alexandria in the time of Ammonius Hermiae. They are a kind of course notes, hence the interpolations. The noticeable difference between *Vita Marciana* on the one hand and the other

two, *Vita Vulgata* and *Vita Latina* on the other hand, appear when it comes to references to Plato. In *Vita Marciana*, the quoted or paraphrased passages are *Phaidon*, 91c, *Criton*, 46b and *Alcibiades I*, 114e. *Vita Vulgata* and *Vita Latina* refer only to *Phaidon*, 91c. It is just that the latter two ‘lives’ begin the section in question with Plato’s indirect assumption that we must care for the truth more than anything else. Then follows in both the attribution of the phrase *Amicus quidem Socrates sed magis amica veritas* to Plato. Briefly, and according to Guerlac [18], the proverb appears in various forms in a *Vita Aristotelis* found in three distinct medieval manuscripts, two in Greek, one in Latin, *Vita Marciana* and *Vita Vulgata* in Greek, *Vita latina* in Latin, similar but not identical to the *Vita Marciana* version [19]. All three of these versions refer to a Greek version of *Aristotle’s Life* written by a certain Ptolemy, difficult to identify, the name being a common one in Alexandria at that time.

This is Bacon’s intervention in the proverb in question, he did not miss the proverb!

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