



MARCO SGARBI

## Thomas White, an Aristotelian Response to Scepticism

**ABSTRACT:** The paper aims to examine straightforwardly Thomas White's *Sciri, sive Sceptices et scepticorum jure disputationis exclusio* (1663) and to contextualise it in the broadest intellectual framework of the seventeenth-century Aristotelianism. From the examination of the *Exclusio* we can see the novelty and freshness of White's Aristotelian positions in attacking all kinds of scepticism. These originalities are the subject of the present article, rather than the well-known controversy with Joseph Glanvill.

**KEY WORDS:** White • Aristotle • scepticism • seventeenth-century Aristotelianism • Glanvill

**T**homas White (1593-1676), an Aristotelian and a Catholic priest, is a neglected figure in the history of scepticism. By comparison to his philosophical opponent, the sceptic Joseph Glanvill (1636-1680), who has enjoyed a great scholarly reception since the first pioneering studies of Nicholas Petrescu and Richard H. Popkin<sup>1</sup>, White is barely mentioned in the recent work on modern scepticism. To my knowledge, White's perspective on scepticism has been analysed by one short Italian paper, which focuses more on his confutations of Glanvill's ideas<sup>2</sup>, and by some insightful contributions by Beverley C. Southgate, who, however, gives detailed reconstructions of the intellectual context rather than of his philosophical ideas<sup>3</sup>.

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<sup>1</sup> Cf. N. Petrescu, *Glanvill und Hume*, Berlin 1911; R.H. Popkin, *Joseph Glanvill: A Precursor of Hume*, "Journal of the History of Ideas", 1953, v. 14, No. 2, p. 292-303; *Idem*, *The Development of the Philosophical Reputation of Joseph Glanvill*, "Journal of the History of Ideas", 1954, v. 15, No. 2, p. 305-311; *Idem*, 'Introduction' to J. Glanvill, *Essays on Several Important Subjects in Philosophy and Religion (1676)*, New York 1970, p. v-xxxiii; *Idem*, *The Scepticism of Joseph Glanvill*, [in:] *idem*, *The Third Force in Seventeenth-Century Thought*, Leiden 1992, p. 246-253.

<sup>2</sup> Cf. A. Lupoli, *Scetticismo moderato e aristotelismo antiscolastico: la polemica tra Joseph Glanvill e Thomas White*, [in:] *La storia della filosofia come sapere critico. Studi offerti a Mario Dal Pra*, Milan 1984, p. 122-155.

<sup>3</sup> Cf. B.C. Southgate, *Excluding Sceptics: The Case of Thomas White, 1593-1676*, [in:] *The Sceptical Mode in Modern Philosophy*, Dordrecht 1988, p. 76-81; *Idem*, *Cauterising the*

Indeed, White was a leading figure of the seventeenth-century British philosophy, the so-called “Blackloism”, a philosophical movement which derived its name from White’s alias (Blacklo) and which included philosophers such as Kenelem Digby and John Sergeant<sup>4</sup>. White was in contact with members of the Mersenne-circle and appreciated also by thinkers such as René Descartes<sup>5</sup>. Neither the discovery and the publication of Thomas Hobbes’ criticism of White’s *De mundo* (1642) in 1976 has restored interest in his anti-sceptical positions, which have a broad Aristotelian anthropological framework<sup>6</sup>. Probably because White was an Aristotelian and a Catholic, he has been wrongly considered, like a large part of the Aristotelians of the time, as a conservative and reactionary thinker, related to the old scholastic and university philosophy, even if his theological views were accounted dangerous by both the English Parliament and his Church<sup>7</sup>. Instead, as Southgate correctly suggests<sup>8</sup>, White was a part of a new generation of Aristotelians, who, far from being anchored to the old philosophical traditions, responded to the new emerging philosophies<sup>9</sup>. As Charles B. Schmitt has rightly pointed out, from the end of the sixteenth century Aristotelianism began

*Tumour of Pyrrhonism: Blackloism versus Skepticism*, “Journal of the History of Ideas”, 1992, v. 53, p. 631–645; *Idem*, *Torn between Two Obligations: The Compromise of Thomas White*, [in:] T. Sorrell (ed.), *The Rise of Modern Philosophy: The Tension between the New and Traditional Philosophies from Machiavelli to Leibniz*, Oxford 1993, p. 107–127; *Idem*, ‘Covetous of Truth’: *The Life and Work of Thomas White, 1593–1676*, Dordrecht–Boston 1993, p. 78–82.

<sup>4</sup> Cf. B.C. Southgate, *White, [Blacklo], Thomas (1592/93–1676)*, [in:] *Oxford Dictionary of National Biography*, Oxford 2004; online edition, Oct 2006 [<http://www.oxforddnb.com/view/article/2974>, accessed 21 Oct 2012]. On the historical context of Blackloism, see J. Henry’s articles: *Der Aristotelismus und die neue Wissenschaft, Kenelm Digby and Thomas White*, [in:] *Grundriss der Geschichte der Philosophie. Band 3: Die Philosophie des 17 Jahrhunderts—England*, ed. by Jean-Pierre Schobinger, Basel 1988, p. 354–355; 359–562; 364–366, respectively.

<sup>5</sup> Cf. AT, Vol. 3, p. 578; AT, Vol. 4, p. 210.

<sup>6</sup> Cf. T. Hobbes, *Critique du ‘De Mundo’ de Thomas White*, ed. H. W. Jones, London 1976.

<sup>7</sup> Cf. Southgate, *Cauterising the Tumour of Pyrrhonism: Blackloism versus Skepticism*, p. 632.

<sup>8</sup> Cf. Southgate, *Torn between Two Obligations: The Compromise of Thomas White*, p. 108, 110; Southgate, *Cauterising the Tumour of Pyrrhonism: Blackloism versus Skepticism*, p. 635.

<sup>9</sup> For a re-evaluation of early-modern Aristotelianism, especially in England cf. C.B. Schmitt, *John Case and Aristotelianism in Renaissance England*, Kingston-Montreal 1983; M. Sgarbi, *Towards a Reassessment of British Aristotelianism*, “Vivarium. An International Journal for the Philosophy and Intellectual Life of the Middle Ages and Renaissance”, 2012, v. 50, p. 85–109; M. Sgarbi, *The Aristotelian Tradition and the Rise of British Empiricism. Logic and Epistemology in the ‘British Isles (1570–1689)*, Dordrecht 2012.

“to show some of the vigour it had previously enjoyed on the Continent”<sup>10</sup>. However, it would be misleading to consider early-modern Aristotelianism as a survival of fourteenth-century Scholasticism. It was a very different kind of Aristotelianism which addressed the problems of the new philosophical movements. The reawakening of Aristotelianism was probably due to a direct reading of the Greek text of Aristotle’s writings and to the wide diffusion of his Greek commentators. In particular British Aristotelians focused on logic and epistemology, following the dissemination of Jacopo Zabarella’s works in England. This is particularly evident in early authors such as John Case (1540/41-1600)<sup>11</sup> with his *Summa veterum interpretum in universam dialecticam Aristotelis*<sup>12</sup> and his *Lapis philosophicus* (1599)<sup>13</sup>, Griffin Powell (1560/61-1620) with his *Analysis analyticorum posteriorum sive librorum Aristotelis de Demonstratione*<sup>14</sup> and John Flavell (1596-1617) with his *Tractatus de demonstratione methodicus & polemicus*<sup>15</sup>. As Schmitt has noted, these works are the best indication of the fundamental change in the conception of philosophy, which represents a turning away from the language arts of the humanists back to the “solid *scientia* of the Stagirite”<sup>16</sup>.

In this particular philosophical framework we must understand White’s *Sciri, sive Sceptices et scepticorum jure disputationis exclusio* published in 1663 in direct opposition to Glanvill<sup>17</sup>. It will be unfruitful to dwell on Glanvill’s well-known sceptical positions, for which the reader is pointed to valuable existing studies<sup>18</sup>. Instead, it will be more useful to reassess White’s anti-scepticism in the broadest context of the seventeenth-century Aristotelianism and to examine his philosophical work straightforwardly, lest we fall into the error of considering him primarily as a polemicist, who renounced Aristotelianism to re-establish it surreptitiously, thus transform-

<sup>10</sup> Schmitt, *John Case and Aristotelianism in Renaissance England*, p. 6.

<sup>11</sup> On the life and works of Case, cf. *Ibidem*, p. 77–105.

<sup>12</sup> Cf. J. Case, *Summa veterum interpretum in universam dialecticam Aristotelis*, London 1584.

<sup>13</sup> Cf. *idem*, *Lapis philosophicus*, Oxford 1599.

<sup>14</sup> Cf. G. Powell, *Analysis analyticorum posteriorum*, Oxford 1594, A1r.

<sup>15</sup> Cf. J. Flavell, *Tractatus de demonstratione methodicus et polemicus*, Oxford 1619.

<sup>16</sup> Schmitt, *John Case and Aristotelianism in Renaissance England*, p. 36, 43.

<sup>17</sup> Cf. T. White, *Sciri, sive Sceptices & Scepticorum Jure Disputationis Exclusio*, London 1663.

<sup>18</sup> On Glanvill see also F. Greenslet, *Joseph Glanvill: a study in English thought and letters in the seventeenth century*, New York 1900; H. Habicht, *Joseph Glanvill, ein spekulativer Denker im England des XVII. Jahrhunderts: eine Studie über das frühwissenschaftliche Weltbild*, Zürich 1936; J.I. Cope, *Joseph Glanvill. Anglican Apologist*, St. Louis 1956; S. Talmor, *Glanvill: The Uses and Abuses of Scepticism*, Oxford 1981.

ing Aristotle into a mechanistic philosopher and putting the new science on the footing of an Aristotelian epistemology<sup>19</sup>.

On the contrary, White's work demonstrates the connections of seventeenth-century Aristotelianism to university philosophy. From the examination of the *Exclusio* we can see the novelty and freshness of this philosophical tradition; these originalities are the subject of the present article, rather than the controversy with Glanvill. Thus Thomas White's episode within the history of early-modern scepticism, it is a chapter which includes scepticism into the broader Aristotelian tradition.

White's work, as I have already mentioned, was published in 1663, two years after Glanvill's *The Vanity of Dogmatizing*<sup>20</sup>. Glanvill, in fact, was merely White's most explicit opponent; but behind the critique of Glanvill, White's *Sciri* represents an attack on all kinds of scepticism, in defence of a very personal philosophical position. In 1665 Glanvill replied to White with his *Scepſis Scientifica: or, Confest Ignorance, the Way to Science, in an Essay on the Exceptions of the Learned T. Albius*, which contains an appendix entitled *Scire-i tuum nihil est, or the Author's Defence of the Vanity of Dogmatizing, against the Exceptions of the Learned Tho. Albius in his late Sciri*<sup>21</sup>. Contemporaneously with Glanvill's reply – in 1665 – White published the English translation of his book with the title *An Exclusion of Scepticks from all Title to Dispute: Being an Answer to the Vanity of Dogmatizing*<sup>22</sup>.

White's work, which I consider here in its Latin version to which Glanvill replied, is original in many aspects, first and foremost in its claims for Aristotle's empirical and geometrical scientific method. The *Exclusio* is comprised of eleven pleas in defence of Aristotelian philosophy against the attacks of sceptical thinkers.

In the "Preface" to his work, dedicated to the young wits of the British universities, the enemy is immediately revealed: White argues against the "destructive contagion of Pyrrhonism", which was revitalized without any "public cauterization" by the "tumour" of Glanvill<sup>23</sup>. In particular White attacks Glanvill's rhetorical attitude to prattle about unknown and uncertain

<sup>19</sup> This Lupoli's opinion from Lupoli, *Scetticismo moderato e aristotelismo antiscolastico: la polemica tra Joseph Glanvill e Thomas White*, p. 130.

<sup>20</sup> Cf. J. Glanvill, *The Vanity of Dogmatizing: or Confidence in Opinions manifested in a Discourse of the Shortness and Uncertainty of our Knowledge and its Causes; with some Reflexions on Peripateticism; and an Apology for Philosophy*, London 1663.

<sup>21</sup> Cf. J. Glanvill, *Scepſis Scientifica: or, Confest Ignorance, the Way to Science, in an Essay on the Exceptions of the Learned T. Albius*, London 1665.

<sup>22</sup> Cf. T. White, *An Exclusion of Scepticks from all Title to Dispute: Being an Answer to the Vanity of Dogmatizing*, London 1665. The English edition is full of errors in translation.

<sup>23</sup> White, *Sciri*, p. 1.

things, betraying young scholars with false precepts and teachings and setting them out to the world. White, therefore, is primarily concerned with ethical and pedagogical issues of this dangerous philosophical perspective, as many Aristotelians were at that time. White makes it clear that he is not personally against Glanvill himself, but rather against the Pyrrhonic claim that nothing is known or knowable, against those who fill the bookshops with mighty tomes skirmishing with solid knowledge, and finally against the imprudence of many moderns, who loudly denigrate Aristotle and his metaphysics<sup>24</sup>. White rhetorically asks if all the many magnificent structures of the English colleges have been devised only to delude people with fancy talk and not to advance reason and science, or if so many prodigious men in the past have been sent abroad all over the world, only to sell smoke and bubbles for jewels and pearls, or again if young men studied only emptiness and useless subtleties<sup>25</sup>.

In contrast to this sceptic pointless perspective, the young students should maintain Aristotle as their master, not superstitiously adoring him, but knowing the few things that he teaches, which fructify into thousands more, such as the knowledge of metaphysical substances, principles of physics and of empirical judgment<sup>26</sup>. Of course, knowledge is not always perfect, but, according to White, this is not a good reason to renounce it; instead, we should build the edifice of science on solid foundations, which are denied by the harmful sceptical standpoint. Therefore, White's first step is to prove against the sceptical non-philosophers that demonstration and science are possible.

From the "Preface" on, White seems to associate scepticism with Epicureanism. In White's eyes scepticism was born "by an unlucky miscarriage of Nature [...] and buried by the steadiness of Christian Faith"<sup>27</sup>. According to White, in modern times Pierre Gassendi with his *Exercitationes paradoxicae adversus Aristoteleos* (1624) was the main responsible for having revitalized scepticism, "mother of infinite errors and all heresies", a "very seductive philosophy and vain fallacy, which the Saints, warned by the Apostles, have taught us to beware of"<sup>28</sup>. Therefore it is particularly clear that White's target

<sup>24</sup> *Ibidem*, p. 3–7.

<sup>25</sup> *Ibidem*, p. 8–11.

<sup>26</sup> *Ibidem*, p. 10–11.

<sup>27</sup> *Ibidem*, p. 13.

<sup>28</sup> *Ibidem*, p. 13–14. On Gassendi's scepticism cf. R.H. Popkin, *The History of Scepticism. From Savonarola to Bayle. Revised and Expanded Edition*, Oxford 2003, p. 78–81, 85, 87, 89, 91–98, 105, 112–113, 119–128, 133–5, 145, 162–165, 167, 172–173, 189–192, 221, 255, 257, 264, 279–280, 282; G. Paganini, *Épicurisme et philosophie au XVIIe siècle, convention, utilité et droit selon Gassendi*, "Studi filosofici", 1989–90, v. 12–13, p. 5–45.

was not properly, or at least not only Glanvill, but all the sceptical positions and more generally all those philosophies against and contrary to the Aristotelian doctrines, including the Cartesian scepticism. In fact, White explicitly reveals that the publication of Glanvill's book was only the occasion of his undertaking, and that his original design was "to force back into its grave this carcass [scepticism] that would be rivalling science"<sup>29</sup>.

There are two general kinds of response to scepticism in White's work. One is methodological and the other concerns the defence of some particular issues of Aristotelian philosophy. The first important methodological step is to establish the existence and the necessity of *scientia*<sup>30</sup>.

In order to prove the existence of demonstration and science, White begins with a common general observation: nature teaches that man is an animal endowed with reason to govern his actions and thoughts. White does not doubt this truth; nor can the sceptic thinkers disagree, since otherwise their sceptical "reasoning" would not be valid. Denying this, White says in the second plea, means to frustrate the whole bent of nature, destroying any human conversation and negotiation, and so transforming human beings into non-humans<sup>31</sup>.

Of course, White is aware that actions and thoughts are subject to an infinite mutability and variation, and for this reason they are not specifically scientific knowledge. But daily experience also shows that in using reason man acquires prudence, which depends on two previous powers: art and induction, or experiment<sup>32</sup>. Although it owes its birth to experience, art is sustained by universal and unfailing rules, but it does not imply the necessity and the efficacy of its rules, being content with the testimony of corresponding effects. Induction, or experiment, on the other hand, is true for the most part, but does not require assent, because it is not properly universal, but particular, for it is based on personal experience<sup>33</sup>. Prudence, like art, clearly shows for White the necessity of principles for governing human life, "in as much as it is human"<sup>34</sup>. The truth of this claim is not immediately evident, but relies on the fact that reason is a natural feature of all human beings and

<sup>29</sup> White, *Sciri*, p. 14–15.

<sup>30</sup> On the survival of the Aristotelian *scientia* in early modern philosophy cf. T. Sorell, J.G.A. Rogers, and J. Krayer (eds.), *Scientia in Early Modern Philosophy: Seventeenth-Century Thinkers on Demonstrative Knowledge from Initial Principles*, Dordrecht 2010.

<sup>31</sup> White, *Sciri*, p. 36.

<sup>32</sup> *Ibidem*, p. 15–16. In the English edition, evidently in error, "inductione" is translated by "inference".

<sup>33</sup> *Ibidem*, p. 16.

<sup>34</sup> *Ibidem*, p. 17.

that to act humanly or to think humanly, there must be some principles of reason that establish acting and thinking.

About this matter, White has no doubt: the first and most evident principle of all sciences, unshakable by any art of the sceptics, is that of identity<sup>35</sup>, which asserts “what is is” (*quod est esse*), like for instance “Peter is Peter” or “a stone is a stone”. Nothing will appear more simply or originally manifest and self-evident than this principle, wherein “what is is” formally includes that what is so is, that, whilst it is, it cannot not be<sup>36</sup>. White distinguishes his principle from René Descartes’ “cogito ergo sum”. The difference for White is clear: although science may be considered either in its generation or in its subsistence, Descartes takes the former method, himself the latter. White does not deny that by a careful examination of the degrees by which science is born in a man, we can see that the first development is to have a passion formed in our bodies, and that the first evident thing that strikes us is that we think; nonetheless, considering the already existing science, nothing is more certain than the principle of identity<sup>37</sup>. On the self-evidence of this principle relies the certainty of self-known propositions, which are of two sorts: in one the general notion is predicated of a species, in another the species are predicated of the genus, for instance “a man is an animal” means “a rational animal is a sort or one of the animals”<sup>38</sup>. Since these self-evident propositions constitute syllogisms and demonstrations, they are evident in the same manner. And since demonstrations are the constituent blocks of science, there must be some science of something, in opposition to what the sceptics argue<sup>39</sup>.

In the second plea, White attacks scepticism following Aristotle’s demonstration of the principles of contradiction, namely by confutation. White considers the sceptical claim that nothing can be certain, because many things appear true to us, so that nothing is properly true. He replies that at least “nothing is properly true” appears true, and therefore there is something true, which is exactly what sceptics deny: no truth is possible from the sceptic standpoint. Furthermore, the claim that “many things appear true to us” means only that they deceive us as a similitude of the certain or true, but to do so, we must have the notion of “truth” or of “certainty” to be able to

<sup>35</sup> White draws this idea from his friend Kenelm Digby, cf. K. Digby, *Two Treaties, in One of which, the Nature of Bodies; in the Other, the Nature of Mans Soule, is Looked into: in Way of Discovery the Immortality of Reasonable Soules*, Paris 1944, p. 369f.

<sup>36</sup> White, *Sciri*, p. 20.

<sup>37</sup> *Ibidem*, p. 21–22.

<sup>38</sup> *Ibidem*, p. 22.

<sup>39</sup> *Ibidem*, p. 24–27.

say that we are deceived, but from the sceptic standpoint no truth is possible, and thus once again sceptics are self-contradictory and inconsistent<sup>40</sup>.

White considers also that for some sceptics the appearance is enough for human action, because every action is singular, depending on infinite circumstances upon which demonstration and science have no force, and prudence or the “power of conjecturing” is favourable in this case. But White objects that in every action governed by prudence, which is an intellectual virtue, at least two things always fall under consideration, one of which must be chosen to attain the end of action. But since for the sceptics only an appearance should guide our action, it would be impossible for prudence to choose one of the two things, without any previous knowledge of similar cases. Therefore either the action is wholly suspended or every action is indifferent, thus denying any possibility of a morality. We must conclude, according to White, that all actions of the sceptics are not human, but only brutish, or rather worse than brutish because they force reason to submit to and serve the senses and appearances<sup>41</sup>.

Last, but not least, for White, sceptical professors of sciences undervalue themselves. In fact, persons can be either masters or disciples: those who have already acquired the habit of science, or those who are seekers of truth. If there is no scientific knowledge, as sceptics profess, they are not the masters, but only the seekers of truth. But it is a contradiction to say that one seeks what he thinks is nowhere or which cannot be found. And finally, since there are no appropriate rules and reasoning, sceptics do not even have a method of seeking: sceptic position is incoherent<sup>42</sup>.

White believes that the sceptical perspective is not only inconsistent, following Aristotle’s arguments, but also very imprudent. In the third plea, White asserts rhetorically, without raising any relevant philosophical issues, that the sceptical account denies those things that human life is full of and without which it is impossible to live commodiously. White is thinking of the arts and sciences which are of extreme utility for everyday life. Of course, arts and sciences are not perfect, as the Aristotelian philosopher admits, but at least they are perfectible and certain, and rarely fail. Sciences such as mathematics, geometry or metaphysics are without doubt very hard to learn and they require a strong demonstration in making their object evident. But, White argues, the difficulty of knowing does not imply its impossibility. This is particularly evident in White’s reply to Glanvill’s objections to some

<sup>40</sup> *Ibidem*, p. 28–29.

<sup>41</sup> *Ibidem*, p. 29–32.

<sup>42</sup> *Ibidem*, p. 32–33.

particular issues of Aristotelian philosophy, such as the tides, the problem of the magnets (fourth plea), the unity of body and soul (fifth plea), animal generation (sixth plea), to which Lupoli devoted his careful investigation. What I find more interesting is White's defence of the Aristotelian doctrines and his attacks on sceptic positions in the last five pleas, because they maintain the correctness of Aristotle's scientific method, pointing out its empirical and geometrical nature: a position that he shares with many other Aristotelians of his time.

The seventh plea inquires into the causes of the errors and ignorance of modern philosophers, which has led the sceptics to false conclusions. The first cause of errors is the laziness or vanity of the age. According to White, modern thinkers descend into the mines from which Aristotle dug out science and climb up on his shoulders, without any personal effort, instead criticizing him with every subtlety but without any real justifications, and failing to acknowledge his immense endeavour. Such kinds of "philosophers" read the eminent and highly elaborated works of Aristotle, "as if they were romances invented for pleasure, or as spectators watch a comedy": if something is more knotty and complicated than ordinarily occurs, out of laziness they let it pass unregarded or make jokes about it, as it were something false or obscure<sup>43</sup>. Another cause of error of modern thinkers is their misleading idea of demonstration, since they require that no objection with any likelihood may be raised against its conclusions. This claim reveals a double ignorance for White, because it identifies a single demonstration with the entire system of science, and because it denies the perfectibility of scientific knowledge – in fact, according to White, there is always the possibility that in the future an objection will be raised to new discoveries and findings. Furthermore, White asks, how is it possible that any opposition may be raised to a particular truth, out of things not yet investigated? From this standpoint the sceptical claim is completely untenable<sup>44</sup>.

More interesting for our purpose is White's defence of Aristotle from the charge of impiety. In the eighth plea, White maintains that Aristotle, alone among the ancients, has really demonstrated something in metaphysics and physics. In fact, all the ancient academics, when they were not Aristotelian, were orators and not philosophers, and even Socrates himself was merely a disputer and doubter, but nothing more. After Socrates, Plato and Aristotle divided his School. Plato was guilty, according to White, of having set out probability from science, reducing the search for truth to a mere, pure

<sup>43</sup> *Ibidem*, p. 90–91.

<sup>44</sup> *Ibidem*, p. 91–93.

contemplation. In opposition, Aristotle discovers truth by experiments and by a careful inspection of nature and of its phenomena. The Stagirite becomes therefore the model of an experimentalist philosopher, against the theoretical Platonic thinkers, who are not able to deduce effective consequences for establishing a real science, as Aristotle does in his *Physics* and *Metaphysics*<sup>45</sup>.

In defending Aristotle's philosophy and method, White argues directly against Gassendi, Descartes and Glanvill. Against Gassendi's charge of impiety that, in the *Metaphysics*, Aristotle would have supported that God is an animal, White replies that in his *Physics* the Stagirite expressly makes God an immaterial, indivisible, immoveable substance, which is not in contradiction with the Christian faith. In opposition to the charge that God is bound to the laws of fate and necessity, White says that this calumny is clearly an error, for there are two views of fate. One is Stoic, which asserts that whatever things are, exist in force of a contradiction, since, of necessity, every thing must either be or not be. The other fate is a chain of causes: everything which happens has a cause. Aristotle rejects the first kind of fate and does not attribute the second conception to God, being Himself the first cause, which is unbounded *a parte ante* from any other cause. In the same way God is not necessitated, for necessity is attributed to animals in opposition to freedom, when they cannot act other than they do. But attributing necessity to God means to take perfect knowledge away from Him, which no Peripatetic thinker has ever denied to God<sup>46</sup>. White is of course embarrassed when he has to explain that according to Aristotle the world is eternal. But, in his very error, he was the chief of heathen philosophers, because in stating that nothing is made of nothing, he means that the world also comes from something else, and since there cannot be an infinite regress of causes, there must be a first cause, which created the world, namely God<sup>47</sup>.

Another tenet that White wants to defend is the Aristotelian conception of the immortality of soul, which according to Gassendi and many other modern thinkers has been denied in many places by the Stagirite. White supports his claim with an appeal to authority. In fact, he expressly says that Aristotle's best interpreters attest that he acknowledged the immortality of the soul, and "Plutarch records him to have written concerning the soul, upon Eudemus's death, out of whom is cited that famous story of a dead man's soul begging revenge of his friend"<sup>48</sup>. White's argument is very weak, Plutarch is certainly not the best interpreter of Aristotle, he does not men-

<sup>45</sup> *Ibidem*, p. 95–96.

<sup>46</sup> *Ibidem*, p. 98–100.

<sup>47</sup> *Ibidem*, p. 100–101.

<sup>48</sup> *Ibidem*, p. 101–102.

tion any other interpreter, and he takes as true a mere fictional chronicle. But these constitute evidence, according to the English Aristotelian, that sceptical thinkers err when they endeavour to conclude that soul is not immortal, and that this was Aristotle's own view. About the resurrection of the body, White is equally embarrassed, and he simply says that Aristotle did not know this doctrine since it was first revealed by Christ. White's defence of Aristotle seems greatly exaggerated; he refuses any other philosophy than the Aristotelian, and attacks anyone who says that Aristotle dealt with many things wholly disagreeable to faith, adding ironically and with annoyance, using an argument *tu quoque*, "as if Plato and the rest of the philosophers had given the world no tenets but those agreeable to faith"<sup>49</sup>.

In the same tone, White defends Aristotelianism from the charge of being a quarrelsome mass of terms that signify nothing, as Glanvill asserts. White maintains that none of the ancient philosophers was so careful about clarity as Aristotle, distinguishing carefully the various meanings of his terms, as his *Metaphysics* exemplifies. Nor is Aristotelianism a litigious philosophy, a term better applied to scepticism – sceptics are "petty orators, or rather janglers" but certainly not philosophers<sup>50</sup>.

But what White wants really to defend and support is the validity of Aristotle's scientific method, to which he devotes the last plea.

White vehemently attacks Glanvill's claim that the Aristotelian doctrine of science is insufficient to save "phaenomena", namely to explain the physical events correctly. According to White, this claim is unfair to all of Aristotle's books on natural philosophy. This criticism is raised because sceptics and some other modern philosophers condemn Aristotle's system of heaven, which is not of course perfect but only due to the technical advancements in astronomy. For instance Aristotle had no optic tables or telescopes, but it is nonetheless surprising how careful and accurate were his observations and investigations, which deserve all admiration<sup>51</sup>. Once again, White praises Aristotle's attention to the natural world. White sarcastically says that if Aristotle erred in a very few things because he did not possess the most recent technical instruments, why "so much anger? Shall we not allow philosophy its period of growth?"<sup>52</sup>. And against sceptics he adds that if one were to say openly to err, instead of proposing ingeniously, he would merely conjecture a theory, instead of demonstrating, as Aristotle does in his natural philosophy. White strongly opposes the conjectures of sceptical

<sup>49</sup> *Ibidem*, p. 102.

<sup>50</sup> *Ibidem*, p. 104–105.

<sup>51</sup> *Ibidem*, p. 124–125.

<sup>52</sup> *Ibidem*, p. 125.

thinkers with the demonstrations of Aristotelian philosophers, the former assert nothing certain for knowledge, while the latter are the true grounds of science. Conjectural thinking does not provide scientific knowledge, but is a mere tattling on uncertain things<sup>53</sup>.

In defending Aristotle, White goes on to argue that it is completely false that Aristotle's scientific method is unfruitful and barren because he does not invent new instruments, which are rather made by craftsmen, as Glanvill supports. In fact, Aristotle's aim is not to make new tools, but rather to use them for making experiments for science, stressing once again his experimental methodology. Furthermore, Aristotle's scientific method is not useless because it deals specifically with common notions and principles and not with particulars; in fact, without common notions there is no understanding of particulars and nothing can be truly invented. Common notions and axioms can be expressed geometrically as in Euclid's *Elements*, whose rigour in the deduction of the demonstration makes possible the foundation of real science. In this framework White is against Glanvill's opposition between mathematics and Aristotelianism<sup>54</sup>, which is, however, supported by the Aristotelian texts themselves<sup>55</sup>. Nonetheless, White, being a part of a new strand of Aristotelianism, reconciles geometrical method with Aristotelian philosophy, and had earlier devoted two books to explaining Peripatetic doctrines in a geometrical way<sup>56</sup>. Geometrical method does not really differ from the philosophical one, and this is the reason why they are very similar. Geometers, White asserts, draw their consequences not from real things, like philosophers do, but from the notions in their mind. But on this very point, nature has been indulgent, in fact, mathematical disciplines are excused from any necessity to resolve the ambiguity of their concepts: having once established them, they may proceed without further difficulties, but if we asked them to explain their concepts, mathematicians would be in as great a difficulty as philosophers<sup>57</sup>. In this sense White is arguing implicitly against the Cartesian position. All sciences, White states, require clear and distinct notions not only in their terms, but also in meaning. But geometry is clear only in its terms, while its definitions

<sup>53</sup> *Ibidem*, p. 126.

<sup>54</sup> Cf. Glanvill, *The Vanity of Dogmatizing*, p. 160 "One reason [...] of the uncontroverted certainty of mathematical science is because 'tis built upon clear and settled significations of names, which admit of no ambiguity or insignificant obscurity. But in the Aristotelian Philosophy it is quite otherwise".

<sup>55</sup> Cf. Aristotle, *Metaphysics II.2*.

<sup>56</sup> Cf. T. White, *Euclides physicus, sive de principiis naturae stoecheidea* E, London 1657; *Idem, Euclides metaphysicus, sive de principiis sapientiae, stoecheidea* E, London 1658.

<sup>57</sup> White, *Sciri*, p. 41–44.

are often obscure and abstract, therefore those who advance mathematics above other sciences are incorrect; they are taken for granted in order to use, but they cannot be credited for a real scientific knowledge. Mathematics is not more certain or evident than philosophy, but it is easier and more adapted to the imagination, not to reason, for if in mathematics we were to use precise definitions, the discipline would lose its seductive clarity and be nothing else than a tedious work<sup>58</sup>. Only Aristotelian philosophy is as seductively clear as mathematics, for “Aristotle, very concisely hunting after truth by experiments, and marrying the inspection of nature to the power of deducing consequences, aimed to show to the world a science, in physics and metaphysics, worthy to compete with geometry”<sup>59</sup>. It is perhaps striking that White emphasizes, like his great opponent Thomas Hobbes<sup>60</sup>, the necessity of making philosophy a rigorous science like mathematics. The philosophical projects of the two opponents are not therefore so different; both rely on the conviction that Aristotelianism is the starting point for any advancements in science, but while Hobbes aims to reform it, White aims only to improve it.

White defends also the Aristotelian conception of knowledge as cognition of causes. Glanvill, as the “precursor of David Hume”, assumes that it cannot be known that one thing is the cause of another, except insofar as they are found together. White denies that the fact they are found together is not the occasion of suspecting and neither an argument of causality, because it is still unclear which is the cause and which is the effect. On the contrary, White asserts that the Aristotelians do not conclude A to be the cause of B until both are defined; they discover their very definitions, namely that B cannot be, if A is not or A is intrinsically included in B. For instance, a modern Aristotelian scientist gathers that fire is the cause of heat because heat is nothing else but particles flowing from fire and on the other side he knows that fire cannot exist, except by sending out such atoms<sup>61</sup>. White is evidently defending Aristotle but only at the level of the formal cause, where a thing is constituted of another thing, without which the former cannot be. But the same cannot be said for the efficient cause, against which Glanvill argues. If knowledge of the formal cause is not enough, White says that Aristotelians prefer to collect a few certainties, rather than acknowledging a multitude of uncertainties and to have nothing at the end<sup>62</sup>.

<sup>58</sup> *Ibidem*, p. 45.

<sup>59</sup> *Ibidem*, p. 95.

<sup>60</sup> Cf. T. Hobbes, *Elementorum philosophiae sectio prima de corpora*, London 1655, I.1.

<sup>61</sup> *Ibidem*, p. 127–128.

<sup>62</sup> *Ibidem*, p. 128–129.

In conclusion of our examination of the *Exclusio*, we can say that for White sceptics are only rhetoricians and orators, their thought is ultimately self-contradictory and useless, while Aristotelianism, even though it has some weaknesses and deficiencies, is grounded on the observation of natural events and slowly but carefully collects from experience the material of knowledge. Our investigation shows that White's objections are directed against all kinds of scepticism – since well before Glanvill's publication, he was acquainted with the works of Gassendi and Descartes – and towards a reinstatement of the Aristotelian solid *scientia*. Finally the present research shows that White's support for an Aristotelian philosophy is characterized by an empirical and geometrical scientific nature, which can agree with modern science, that is, an Aristotelianism professed by most of the intellectuals in the British universities of the time, and which had some supporters on the other side of the Channel as well, with authors such as Erhard Weigel and Gottfried Wilhelm Leibniz<sup>63</sup>. 

MARCO SGARBI – zajmuje się filozofią renesansu, filozofią Arystotelesa i Kanta. Opublikował *La Kritik der reinen Vernunft nel contesto della tradizione logica aristotelica* (2010); *Logica e metafisica nel Kant precritico* (2010); *Immanuel Kant, Critica del Juicio* (2011); *Kant on Spontaneity* (2012); *The Aristotelian Tradition and the Rise of British Empiricism* (2012), *Kant e l'irrazionale* (2013). Pracował naukowo w Warburg Institute (London), Università di Verona, Herzog August Bibliothek w Wolfenbüttel, Accademia dei Lincei-British Academy, Harvard University Center for Italian Renaissance Studies. Obecnie pracuje nad przygotowaniem czterotomowej encyklopedii filozofii renesansowej (Springer, 2017).

MARCO SGARBI – works on Renaissance philosophy, Aristotelianism and Kant. He published *La Kritik der reinen Vernunft nel contesto della tradizione logica aristotelica* (2010); *Logica e metafisica nel Kant precritico* (2010); *Immanuel Kant, Critica del Juicio* (2011); *Kant on Spontaneity* (2012); *The Aristotelian Tradition and the Rise of British Empiricism* (2012), *Kant e l'irrazionale* (2013). He has been Frances A. Yates Short-Term Research Fellow at Warburg Institute (London), assegnista di ricerca at Università di Verona, Fritz Thyssen-Stipendiat at the Herzog August Bibliothek di Wolfenbüttel, post-doc research fellow at the Accademia dei Lincei-British Academy and now is Jean-François Malle Fellow presso Villa I Tatti. The Harvard University Center for Italian Renaissance Studies. He is the editor of the *Encyclopedia of Renaissance Philosophy* in 4 vols. (Springer, 2017) and the Principal Investigator of the ERC Starting Grant 335949 on Aristotle in the Italian Vernacular: Rethinking Renaissance and Early-Modern Intellectual History (c. 1400–c. 1650).

<sup>63</sup> Cf. H.W. Jones, *Leibniz' "Cosmology" and Thomas White's "Euclides Physicus"*, "Archives Internationales d'Historie des Science", 1975, v. 25, p. 277–303. Leibniz himself testifies to the similarity of his project with White's standpoint in reconciling Aristotle with modern science; see G.W. Leibniz, *Die philosophische Schriften*, v. 4, Berlin 1890, p. 155, 168.