

## Philosophy in Dialogue with Other Sciences on the Example of Albert the Great and Thomas Aquinas

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1Albertus Magnus, sanctus

1Thomas Aquinas, sanctus

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*Separation of natural sciences from philosophy and the development of empirical sciences were long processes that led to mistrust and even opposition between philosophers and naturalists. This paper responds to the question how to re-establish dialogue between philosophy and other sciences. Authors propose a solution in the so-called model of the dialogically open philosophy of two famous philosophers and theologians Albert the Great and Thomas Aquinas. Albert and Aquinas lived in era of change and an era of meeting different cultures and opinions. In that time of diversity, they created a model of dialogue with all those who think differently. Moreover, as a solution to misunderstandings at any level of discussion, they offered a dialogically open philosophy that presupposes (1) faith in reason; (2) the primacy of truth; (3) acknowledgment of borders; (4) respect; (5) appreciation of history; (6) distinguishing reality from materiality and (7) distinguishing operational from essential. By insight into the characteristics of Albert's and Aquinas' model of dialogue we demonstrate that their approach to discussion may be adequate solution for the contemporary re-establishment of dialogue between philosophy and other sciences because it ensures the primacy of truth to all participants in the dialogue.*

**Key words:** *Albert the Great, dialogue, philosophy, science, Thomas Aquinas.*

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## *Introduction\*\*\**

For a long time, from antiquity, through the Middle Ages and the Renaissance until the Modern Age, philosophy and science have been inseparable. Moreover, philosophers have discussed abstract entities of the mind and changes in the natural world, metaphysical systems, and the study of nature. Many philosophers have made significant contributions to both philosophy and to the natural sciences. However, with the separation of natural sciences from philosophy and finally, in the 20th century, with the development of empirical sciences, it is noticeable that philosophy and other sciences were becoming more distant. Even more, there is often a climate of mistrust and even opposition between philosophers and naturalists. In the first part of this paper, we explore the fundamental characteristics of mentioned processes of separation and mistrust and pose the question of this paper: How can we re-establish dialogue between philosophy and other sciences? In the second part of this paper, we propose a solution in the so-called model of the dialogically open philosophy of two famous philosophers, theologians and even naturalists of Middle Ages, Albert the Great and Thomas Aquinas. They lived in a time of confrontations of different religions, cultures, and worldviews. Specifically, theirs was a time of confrontation between Greek rationality and Judeo-Christian and Islamic beliefs which reshaped philosophical questioning and revealed new horizons and new perspectives, and even reshaped Christian world itself. Therefore, we conclude that their way of philosophical dialogue can be useful to us today. In third part of this paper, we explore characteristics of Albert's and Aquinas' model of dialogue: (1) faith in reason; (2) the primacy of truth; (3) acknowledgment of borders; (4) respect; (5) appreciation of history; (6) distinguishing reality from materiality and (7) distinguishing operational from essential. Insight into the characteristics of Albert's and Aquinas' dialogically open philosophy help us to see this approach to discussion as an adequate solution for the contemporary re-establishment of dialogue between philosophy and other sciences.

### *1. The age of Changes and Challenges*

After philosophy and other sciences were inseparable for centuries, at the beginning of the 20<sup>th</sup> century the divorce between philosophy and empirical sciences seems complete. However, the processes of the so-called scientific revolution started many years before. Copernicus, Kepler, F. Bacon, Galileo, Newton are well-known names that participated in the process of birth of modern

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empirical science, characterized by the empirical method and the language of mathematics. Moreover, it was a period in which, because of the accelerated development of empirical science, instruments and research methods, separation of physics and then other empirical sciences, biology, chemistry, etc., from philosophy happened. At the same time, new scientific disciplines began to develop leading to a complete split between philosophy and empirical sciences<sup>1</sup> and to the separation of *being of nature* into various research areas.

In that sense, the French physicist and epistemologist Hervé Zwirn noticed:

»Science and philosophy were once inseparable. [...] But the links between these two fields of thought were largely distended during the 20<sup>th</sup> century. So much that we can say today that a certain distrust, if not hostility, has developed between scientists and philosophers. The former reproach the latter for not knowing their discipline; the latter consider that the former do not know how to step back from their calculations«.<sup>2</sup>

Or as Carlo Rovelli, a theoretical physicist, working on quantum gravity and on foundations of spacetime physics points out:

»It's sort of the fashion today to discard philosophy, to say now we have science, we don't need philosophy. I find this attitude very naïve [...] The divorce between this strict dialogue between philosophers and scientists is very recent, and somehow it's after the war, in the second half of the 20<sup>th</sup> century«.<sup>3</sup>

However, when we say that the links between science and philosophy are broken, we are not talking only about the empirical sciences, but also about humanities and social sciences. We also think of links between philosophy and theology and the links between theology and the empirical sciences. Moreover, it should be noted that the separation between the sciences is marked by the renunciation of the right to the name science. Philosophy and theology were sciences but today philosophy and theology are not considered sciences, or their very scientific character is called into question. Some very famous scientists have gone so far as to say that philosophy is dead and that scientists (or empirical sciences) have become bearers of the research torch in man's search for knowledge.<sup>4</sup>

<sup>1</sup> Cf. Jasmina LELAS, *Teorije razvoja znanosti* [Theories of the development of science], Zagreb, ArTresor, 2000, 14.

<sup>2</sup> Hervé ZWIRN, Réconcilions la science et la philosophie!, *CNRS Le Journal* (22.07.2014), <https://lejournel.cnrs.fr/billets/reconcilions-la-science-et-la-philosophie> (24.07.2024). Hervé Zwirn currently works at the French National Centre for Scientific (CNRS). His work focuses mainly on the interpretations of quantum physics and their philosophical consequences.

<sup>3</sup> Science is not about certainty: a philosophy of physics. A Conversation with Carlo Rovelli (30.05.2012), [https://www.edge.org/conversation/carlo\\_rovelli-science-is-not-about-certainty-a-philosophy-of-physics](https://www.edge.org/conversation/carlo_rovelli-science-is-not-about-certainty-a-philosophy-of-physics) (24.07.2024).

<sup>4</sup> Cf. Marina NOVINA, *Suvremena kozmologija i filozofija. Treba li suvremena kozmologija filozofiju?* [Modern cosmology and philosophy. Does modern cosmology need philosophy?], Zagreb, Naklada Breza, 2019, 141.

However, at the same time, empirical sciences face realities concerning (1) limits on small or quantum and large scales, (2) ambiguities around fundamental concepts such as space, time, and force, and (3) reality of man's longing for goodness and God. Such existential and experimental facts have prompted philosophers and theologians, as well as scientists themselves, to admit that we live in an era of rapid changes and many challenges. We need to admit limits of our methods and to face the ethical questions that hinder the development of technologies and empirical research. Also, we ought to find a model of communication between different worldviews, between philosophy, theology and empirical sciences.<sup>5</sup>

As Zwirn noticed, »the dialogue between scientists and philosophers must therefore be restored for the benefit of knowledge in the broadest sense of the term. [...] The dialogue between the two disciplines must therefore be re-established as soon as possible for mutual benefit«. <sup>6</sup> Therefore, the question how to re-establish dialogue among different disciplines and worldviews is a current question. However, we will see that the problem of establishment of dialogue among different ways of thinking already existed long ago and was well addressed in valuable ways by mediaeval philosophers.

## *2. The culture of dialogue as found in Albert the Great and Thomas Aquinas*

How to re-establish dialogue among sciences today? We need to learn to talk with people of different opinions. Perhaps the best way to do that is to learn from teachers of dialogue such as Albert the Great and Thomas Aquinas. Like ourselves today, they also lived at the crossroads of cultures, philosophies, and religions. Also, they participated in the founding of the first universities and set the stage of history for the development of empirical science. They were part of a dynamic, diverse, and exciting era, marked by spiritual enthusiasm, strict scientific systematicity, daring thought penetration and practical initiative. That was the era that is described as the age of unlimited universalism or all-round openness and the harmonization of all realities and strong unifying endeavours in almost all areas of human life with the general imperative:

»to permanently expand horizons, to discover the unknown, to witness the past, to anticipate the future, to collect the scattered, to harmonize the disordered, to spiritualize materially, to embody spiritually, to harmonize reason

<sup>5</sup> Dominique LAMBERT, *Sciences et théologie: les figures d'un dialogue*, Namur, Presses universitaires de Namur; Bruxelles, Editions Lessius, 1999; Simone MORANDINI, *Teologia e fisica*, Brescia, Morcelliana, 2007.

<sup>6</sup> Hervé ZWIRN, Réconcilions la science et la philosophie!, *CNRS Le Journal* (22.07.2014), <https://lejournel.cnrs.fr/billets/reconcilions-la-science-et-la-philosophie> (24.07.2024).

and faith with each other, and to connect nature and supernatural, world and superworld ever more closely«. <sup>7</sup>

There is no doubt that from people who lived in such an age we can learn how to re-establish dialogue between different ways of thinking. In this time of indifference and relativism, medieval authors can teach us, emphasizes Philipp W. Rosemann,

»how it is possible to live with difference, without falling into the relativism of “anything goes”. Above all, contemporary philosophy could benefit from a study of the scholastic method, which constitutes a technique which makes it possible to “totalize”, without creating monolithic and closed systems«. <sup>8</sup>

Moreover, we are obliged to develop a culture of dialogue as Pope John Paul II stressed in numerous occasions about Thomas Aquinas, and especially in the encyclical *Fides et Ratio*. Namely, dialogue cultivates and builds bridges, and can find answers to the challenges of the times in which we live. Albert the Great and Thomas Aquinas were aware of the importance of dialogue (FR, 45). For Pope John Paul II, Albert the Great, as »the initiator and promoter of science«, scientific research in the 13th century and the first scientist in the modern sense of the word, is a symbol of the reconciliation of science and faith. Here are the words of Pope John Paul II from that same encyclical, describing Thomas Aquinas, whose thought and writings were perhaps the greatest testimony to the work of his teacher, Albert the Great:

»Saint Thomas is an authentic model for all who seek the truth. In his thinking, the demands of reason and the power of faith found the most elevated synthesis ever attained by human thought, for he could defend the radical newness introduced by Revelation without ever demeaning the venture proper to reason« (FR, 78). <sup>9</sup>

Pope John Paul II thinks that this is the only way people can truly advance together in the knowledge of the truth. In this sense, we will take a closer look

<sup>7</sup> Tomo VEREŠ, Toma Akvinski i Dante Alighieri [Thomas Aquinas and Dante Alighieri], *Crkva u svijetu*, 17 (1982) 4, 327-343, 333-334.

<sup>8</sup> Philipp W. ROSEMAN, Pourquoi et comment étudier la philosophie médiévale aujourd'hui?, *Freiburger Zeitschrift für Philosophie und Theologie*, 43 (1996) 1-2, 28.

<sup>9</sup> The Magisterium of the Church insists on Thomas' actuality and emphasizes the incomparable value of his philosophy. Pope Francis, like his predecessors, often quotes St. Thomas. See also what he pointed out at the plenary assembly of the Congregation for Catholic Education in 2017: »Schools and universities are called to teach a method of intellectual dialogue aimed at the search for truth. St. Thomas was and still is a master in this method, which consists in taking the other, the interlocutor, seriously, trying to fully understand his reasons, his objections, in order to be able to respond in a way that is not superficial but adequate«. Pope FRANCIS, *Discorso del santo padre Francesco ai partecipanti alla plenaria della Congregazione per l'educazione cattolica (degli istituti di studi)* (09.02.2017), [https://www.vatican.va/content/francesco/it/speeches/2017/february/documents/papa-francesco\\_20170209\\_plenaria-educazione-cattolica.html](https://www.vatican.va/content/francesco/it/speeches/2017/february/documents/papa-francesco_20170209_plenaria-educazione-cattolica.html) (24.07.2024).

here at Thomas Aquinas and Albert the Great because they are two almost inseparable examples of dialogue teachers.

Albert the Great (1206 – 1280), Dominican scientist, philosopher and theologian, called *Magnus* (The Great), and *Doctor Universalis* (Doctor universal), in recognition of his extraordinary genius and extensive knowledge. He was skilled in every branch of learning cultivated in his days. Albert surpassed his contemporaries with his knowledge of nature. Ulrich (Engelbert) of Strasburg, his disciple, calls him the wonder and the miracle of his age: »doctor meus Dominus Albertus, episcopus quondam Ratisbonensis, vir in omni scientia adeo divinus, ut nostri temporis stupor et miraculum congrue vocari possit [...]«.<sup>10</sup> Indeed, Albert's books confirm that his research extended to all the natural sciences of the time: botany, zoology, medicine, physics, chemistry, mechanics, mineralogy, climatology, meteorology, cosmography, and astronomy. The fundamental principle of his research was careful observation and the knowledge of individual things or individual facts (*experimentum*). According to Albert, a naturalist cannot be satisfied with just describing, he must clarify and »[the task] of natural science not simply to accept what we are told but to inquire into the causes of natural things«.<sup>11</sup> Similarly in *On Vegetation*, he draws the following conclusion: »It is only experience that gives certainty in such investigations, since no syllogism can be made about such specific natures«.<sup>12</sup> In his commentary on Aristotle's *Metaphysics*, Albert the Great points out decisively that:

»Knowledge in natural science must be based on experience, and hence on the knowledge of the individual. Experience apprehends that which is individual and thereby communicates, in the course of the formation of concepts, that which is universal (conceptually general)«.<sup>13</sup>

Thomas Aquinas (1225 – 1274), dominican, theologian, philosopher, metaphysician, mystic, poet, commentator on Aristotle's works and is known as *Doctor communis*, *Doctor Angelicus*, *Doctor humanitatis*. Twelve of Thomas's commentaries on the works of Aristotle demonstrate a genuine interest in phi-

<sup>10</sup> ULRICH VON STRASSBURG, *De summo bono*, IV, tr. 3, c. 9, ed. Alessandro PALAZZO (Corpus Philosophorum Teutonicorum Medii Aevi I/4[4]), Hamburg, Felix Meiner, 2005, 142, lin. 178-180. See also Alessandro PALAZZO, Ulrich of Strasbourg's Philosophical Theology Textual and Doctrinal Remarks on 'De summo bono', In: Andreas SPEER, Thomas JESCHKE (ed.), *Schüler und Meister*, Berlin – Boston, Walter de Gruyter, 2016, 205-242.

<sup>11</sup> ALBERTUS MAGNUS, *Book of Minerals*, Book II, Tractate 2, Chapter 1, translated by Dorothy Wyckoff, Oxford, Clarendon Press, 1967, 69; *De mineralibus*, II, tr. 2 a. 1, *Opera omnia*, Ed. Borgnet, t. 5, Paris, 1890, 30: »Scientiae enim naturalis non est simpliciter narrata accipere, sed in rebus naturalibus inquirere causas«.

<sup>12</sup> ALBERTUS MAGNUS, *De vegetabilibus* VI, tr. II, cap. 1, ed. E. Meyer, C. Jessen, Berlin, 1867, 340: »Experimentum enim solum certificat in talibus, eo quod de tam particularibus naturis syllogismus haberi non potest«.

<sup>13</sup> ALBERTUS MAGNUS, *Metaphysica* I, tr. 1, cap. 8, Editio Coloniensis 16/1, ed. B. Geyer, Münster i.W., Aschendorff, 1960, 11-12. See also: Gilla WÖLLMER, Albert the Great and His Botany, In: Irven M. RESNICK, *A Companion to Albert the Great. Theology, Philosophy and the Sciences*, Leiden – Boston, Brill, 2013, 260.

losophy, including natural philosophy.<sup>14</sup> Aquinas's metaphysics, and the inexpressible richness of the notion of *actus essendi*, occupies a privileged place in the history of philosophy. Aquinas seeks to conceive being as such (*ens inquantum ens*) and that mysterious Primordial Source, from which and to which everything existent flows.

Albert the Great and Thomas Aquinas were two geniuses of human thought united by mission and work interested in both natural history and philosophical and theological issues. Their books and lives teach us how to talk to those who don't think like us and how to combine different research methods and different opinions for the purpose of truth. Let's take a closer look at how Albert the Great and Thomas Aquinas can help us re-establish dialogue with those who think differently.

### 3. *Philosophy Open to Dialogue*

In pursuit of the truth Albert the Great and Thomas Aquinas were always open to dialogue, that is, we might say their philosophy was *dialogically open*. Let's take a closer look at what openness means in the highlighted phrase. Primarily, it should be noted that openness is a complex concept that includes several features. These features, on the one hand, are the ensurance of strength and the preservation of identity of persons in dialogue and, on the other hand, the provision of the conditions for dialogue. The fundamental characteristics of the model of dialogically open philosophy of Albert the Great and Thomas Aquinas are: (1) faith in reason; (2) the primacy of truth; (3) acknowledgement of borders; (4) respect; (5) appreciation of history; (6) distinguishing reality from materiality; (7) distinguishing operational from essential.

Today, these features of dialogue have almost disappeared, and therefore the establishment of dialogue is impossible. Therefore, to advance together in the knowledge of the truth it is necessary to re-establish dialogue and for the re-establishment of dialogue between sciences and different views of the world, it is necessary to re-adopt the seven enumerated characteristics of the dialogically open philosophy of Albert the Great and Thomas Aquinas. Let's take a closer look at the features of the mentioned features.

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<sup>14</sup> Cf. Léon ELDERS, *Autour de Saint Thomas d'Aquin*. Recueil d'études sur sa pensée philosophique et théologique. Tome I: Les commentaires sur les œuvres d'Aristote. La métaphysique de l'être, Paris, FAC-éditions – Brugge, Uitgeverij Tabor, 1987; Léon ELDERS, The Aristotelian Commentaries of St. Thomas Aquinas, *The Review of Metaphysics*, 63 (2009) 1, 29-53.

### 3.1. Faith in Reason

Today's age is called the age of science and knowledge. And yet, today's scientists seem to have lost faith in the power of reason more than ever. Namely, today's scientists say that they believe in reason, but in fact they mainly believe in the empirical confirmation of scientific assertions. This is evident in the tendency of the social sciences to be experimental empirical sciences. But then what to do with all those phenomena such as those on astronomical scales (gravity, black matter, cosmological principle etc.) or man's inner experiences (pain, joy, anxiety etc.) or abstract entities (universals, numbers, principles etc.) that are not subject to empirical verification and need to be discussed? To base knowledge exclusively on empirical confirmation means to greatly limit the scope of reason and knowledge and narrow the subject of science on the field of natural science. But what to do with all that is not empirically provable or empirically verifiable? Can man really not know anything beyond what he can grasp with his own senses? We know from experience that reality is much more than empirical facts.

Unlike today's scientists, Albert the Great and Thomas Aquinas had enormous trust in reason. For them nature can be known through reason. They considered reason to be man's most excellent tool (and gift) which had the status and *praeambula fidei*. For Albert and Aquinas reason goes beyond limits of empirical method and in that sense nonempirical (theoretical) sciences and philosophy deserve the name of science.<sup>15</sup> In that sense, we should hear all arguments before making our judgment over nature of things in question. In that sense Aquinas says:

»For a judge must pass judgment on the things which he hears. But just as one can pass judgment in a lawsuit only if he hears the arguments on both sides, in a similar way one who has to pass judgment on a philosophy is necessarily in a better position to do so if he will hear all the arguments, as it were, of the disputants«.<sup>16</sup>

Albert and Aquinas strongly emphasized the importance, inventiveness, and creative power of reason. For them reason is »essentially the power of dialogue, understanding new possibilities and summing up all differences«.<sup>17</sup>

<sup>15</sup> Cf. ALBERTUS MAGNUS, *Metaphysica* I, tr. 1, cap. 1, Ed. Col. 16/1, 1.

<sup>16</sup> Thomas AQUINAS, *Commentary on the Metaphysics*, translated by John P. Rowan, Chicago, 1961, <https://isidore.co/aquinas/english/Metaphysics.htm> (24.07.2024); *In Metaph.* III, lect. 1, n° 342, ed. M.-R. Cathala, Turin-Rome, Marietti, 1950, 97: »Sicut autem in iudiciis nullus potest iudicare nisi audiat rationes utriusque partis, ita necesse est eum, qui debet audire philosophiam, melius se habere in iudicando si audierit omnes rationes quasi adversariorum dubitantium«.

<sup>17</sup> Tomo VEREŠ, *Pružene ruke. Prilozi za dijalog između marksista i kršćana* [Outstretched hands. Contributions to the dialogue between marxists and christians], Zagreb, FTI DI, 1989, 252.



Taking such a position can also help us today to re-establish a dialogue among sciences. Such an approach ensures that, on the one hand, each science learns the characteristics and scope of its own methods and contributes to the knowledge of those phenomena that are within the scope of its method. On the other hand, such an approach indicates the importance of all sciences, theoretical and empirical, for the knowledge of reality in its entirety, and thus indicates the necessity of re-establishing a dialogue among the sciences with the aim of knowing the truth.

In that sense in his address to scientists and students in the Cologne Cathedral during the commemoration of the VII centenary of the death of St. Albert the Great Pope John Paul II praised the efforts of Albert the Great:

»Albert recognizes the articulation of rational science in a system of different branches of knowledge in which it finds confirmation of its own peculiarity, and at the same time remains geared to the goals of faith. In this way Albert realizes the status of a Christian intellectuality, whose fundamental principles are still to be considered valid today«.<sup>18</sup>

At the end of his speech the Pope proposed that »the solution of the pressing questions about the meaning of human existence«, is possible »only in the renewed connection between scientific thought and the power of faith in man in search of truth«.<sup>19</sup>

### 3.2. *The Primacy of Truth*

The driving force of scientific research has always been the search for the truth. However, today the truth is called into question by anti-realist viewpoints and the fact that things and events can look completely different from various perspectives. Examining hypotheses, confirming theories, and explaining events are tasks of modern sciences. The truth seems to have disappeared. Not only can we not know the truth, but the truth is not even important, theories are important, my theories<sup>20</sup>. For Albert the Great and Thomas Aquinas that was not an option. The truth had primacy before everything, not the opinion of a famous scientist, not a model, not a theory but the truth. In his commentary on Aristotle's *Metaphysics*, Albert the Great points out the primacy of truth:

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<sup>18</sup> JOHN PAUL II, Address to Scientists and Students in the Cologne Cathedral: <https://inters.org/John-Paul-II-Cologne-Cathedral-1980> (24.07.2024).

<sup>19</sup> *Ibid.*

<sup>20</sup> Moreover, the problem of modern science is that it is not true theories that survive in science, but funded theories. In other words, the driving and governing power of science is no longer truth but economic profitability, which is the weakening of science. Lee SMOLIN talked about this problem in the book *The Trouble with Physics. The Rise of String Theory, the Fall of Science, and What Comes Next*, Boston, A Mariner Book, 2006.

»If some also consent to such sayings because of the authority and friendship of those who say them, their concern will be when they consider that the men of ancient authority were not gods, but men, and could err. No one should be loved to the point of abandoning the truth because of him; for though we love both the truth and our friends, yet we must honor the truth before all. For since the truth is to be honored before all, it is not inappropriate to put the truth before friends: and if a friend is persuasive, it is well done with him.«<sup>21</sup>

In the same way Thomas Aquinas is interested in an engaged search for the truth. In this sense, two famous sentences from his works are often quoted: »Every truth, regardless of who said it, comes from the Holy Spirit«.<sup>22</sup> »The study of philosophy is not to know what people have thought, but the truth in reality«.<sup>23</sup>

Instead of insisting on their own model or worldview, Albert the Great and Thomas Aquinas tried to see the truth, even in the opinions they rejected showing that their opponents were in some respects right after all. From Thomas's *Summa Theologiae*, *Summa contra Gentiles* and *Disputed Questions on the Soul* we can learn several things. First, that it is important to distinguish several aspects of the issues under discussion. Second, it is important to show that the arguments made in objections each correspond to a special aspect present in the matters themselves. Third, it is important to include in the synthesis the acceptable meaning of all arguments. Finally, the truth has primacy and helps to recognize the limits of one's own discipline and to express respect for the persons in dialogue. Therefore, we can conclude that the primacy of truth and respect are two necessary features for the re-establishment of dialogue between sciences, and today they are much needed.

### 3.3. Acknowledgement of Borders

In contemporary scientific and nonscientific discourse discussions about the beginning of life or the origin of the cosmos are common. Such discussions usually end in disagreements. Instead of a rational answer to posed questions the bitter taste of conflict between scientific disciplines remains. Namely, when frontier issues arise, scientists face the limits of their own disciplines. Then it

<sup>21</sup> ALBERTUS MAGNUS, *Metaphysica* IV, tr. 3, cap. 2, Ed. Borgnet, t. 6, Paris, 1890, 237: »Si autem forte etiam aliqui concedunt dictis talibus propter dicentium auctoritatem et amicitiam, erit cura eorum cum attenderint, quod priscae auctoritatis viri, non dii, sed homines fuerant et errare potuerunt; nec ita amandus est aliquis ut veritas deseratur propter eum: quia licet diligamus et veritatem et amicos, tamen omnibus oportet praeponere veritatem. Cum enim veritas omnibus praeponenda est, veritatem praeponere amicis non est inconveniens: et si persuadetur amicus, bene est actum cum eo.«

<sup>22</sup> Thomas AQUINAS, *Summa Theologiae* I-II, q. 109, a. 1 ad 1: »Omne verum a quocumque dicatur, a Spiritu Sancto est.«

<sup>23</sup> Thomas AQUINAS, *In De caelo* I, lect. 22, n° 8, *Opera omnia*, Ed. Leonina, t. 3, Rome, 1886, 91: »Studium philosophiae non est ad hoc quod sciatur quid homines senserint, sed qualiter se habeat veritas rerum.«

happens that scientists find confidence in philosophical assumptions, without even realizing it. Physicist George Ellis spoke about this problem as a problem of not recognizing or not knowing the limits of one's own discipline. This flight into philosophy can mislead natural scientists into thinking that they can offer answers to questions that cannot be answered by the empirical method, and that they do not distinguish philosophical foundation from empirical confirmation.<sup>24</sup> Simply put, empirical sciences must remain empirical, and the methods of each science must be clearly distinguished, and their importance and autonomy recognized. In the era of Albert the Great and Thomas Aquinas, similar debates were carried. However, Albert and Aquinas had a clear answer. In this sense Albert says:

»In matters of faith and morality, one should trust Augustine more than the philosophers if they differ in opinion. But, when it came to medicine, I would rather believe Galen or Hippocrates; when it comes to the nature of things, I believe more in Aristotle or some other experienced connoisseur of the nature of things«.<sup>25</sup>

Knowing that the truth can be known from many different perspectives Albert the Great and Thomas Aquinas in a special way tried to synthesize opinions and individual currents in philosophy and theology. They aspired to unity as a goal, but they knew that realization of that goal goes beyond the limits of human nature: »No man can attain a complete knowledge of the truth«.<sup>26</sup> To contemporary thinkers Albert the Great and Thomas Aquinas can be a role model in teaching known truth and in finding the truth even though it is scattered in many perspectives of different scientific disciplines.

### 3.4. Respect

Today public debates on scientific matters are frequent. However, in these debates the participants are often humiliated and mocked as non-experts or larks. Moreover, the right to a different research method is revoked as incorrect because only the empirical method is considered a scientific method. In the

<sup>24</sup> Cf. George Francis Rayner ELLIS, On the philosophy of cosmology, In: Henrik Zinkernagel (ed.), *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics: Philosophy of cosmology*, Vol. 46, Part A, New York, Elsevier, 2014, 19. <https://doi.org/10.1016/j.shpsb.2013.07.006>.

<sup>25</sup> ALBERTUS MAGNUS, *In Sent.* II., dist. 13, a. 2, *Opera omnia*, Ed. Borgnet, t. 27, Paris, 1894, 247: »Unde sciendum, quod Augustino in his quae sunt de fide et moribus plusquam Philosophis credendum est, si dissentiunt. Sed si de medicina loqueretur, plus ego crederem Galeno, vel Hipocrati: et si de naturis rerum loquatur, credo Aristoteli plus vel alii experto in rerum naturis.« See also William A. WALLACE, The Scientific Methodology of St. Albert the Great, In: Gerbert MEYER, Albert ZIMMERMANN (ed.), *Albertus Magnus, Doctor Universalis: 1280/1980*, Mainz, Matthias-Grünwald-Verlag, 1980, 385-407.

<sup>26</sup> Thomas AQUINAS, *In Metaph.* II, lect. 1, n° 275, ed. M.-R. Cathala, Turin-Rome, Marietti, 1950, 81: »Licet nullus homo veritatis perfectam cognitionem adipisci possit...«

same way, the right to a different approach to the subject of research is eradicated as unacceptable and philosopher, theologian, biologist, and doctor can hardly talk about human being or life. Albert the Great and Thomas Aquinas knew how to resolve this kind of situation. They respected the autonomy of each science and its methods and respected the other's opinion and his knowledge and efforts. Pope John Paul II in the encyclical *Fides et Ratio* praised the role of Albert the Great and Thomas Aquinas:

»With the rise of the first universities, theology came more directly into contact with other forms of learning and scientific research. Although they insisted upon the organic link between theology and philosophy, Saint Albert the Great and Saint Thomas were the first to recognize the autonomy which philosophy and the sciences needed if they were to perform well in their respective fields of research« (FR 45).<sup>27</sup>

And saint Thomas clearly specifies that in intellectual work we should aspire to be guided by the certainty of truth and follow Aristotle's opinion without prejudice – a commonplace among the best of scientists working today:

»And since in choosing or rejecting opinions of this kind a person should not be influenced either by a liking or dislike for the one introducing the opinion, but rather by the certainty of truth, he therefore says that we must respect both parties, namely, those whose opinion we follow, and those whose opinion we reject. For both have diligently sought the truth and have aided us in this matter. Yet we must "be persuaded by the more certain," i.e., we must follow the opinion of those who have attained the truth with greater certitude«.<sup>28</sup>

It is therefore not surprising that these two thinkers, in an age when philosophy was considered the handmaiden of theology, emphasized the necessity of the autonomy of philosophy. The autonomy of scientific disciplines and respect are two necessary prerequisites for the development of science and the knowledge of truth. Today we need those features for re-establishment of the dialogue among sciences.

<sup>27</sup> See also: ALBERTUS MAGNUS, *Metaphysica* XI, tr. 3, cap. 7, Ed. Col. 16/2, 542: »Theologica autem non conveniunt cum philosophicis in principiis, quia fundatur super revelationem et inspirationem et non super rationem, et ideo de illis in philosophia non possumus disputare«. Cf. Anto GAVRIĆ, *Doprinos Alberta Velikoga dijalogu filozofije i teologije* [Contribution of Albert the Great to Dialogue Between Philosophy and Theology], In: Frano PRCELA (ed.), *Dialog: auf dem Weg zur Wahrheit und zum Glauben. Festschrift für Augustin Pavlović / Na putu do istine i vjere: Zbornik u čast Augustina Pavlovića OP*, Zagreb – Mainz, Nakladni zavod Globus – Hrvatska dominikanska provincija – Matthias-Grünwald Verlag, 1996, 109-121.

<sup>28</sup> Thomas AQUINAS, *Commentary on the Metaphysics*, translated by John P. Rowan, Chicago, 1961. <https://isidore.co/aquinas/english/Metaphysics.htm> (24.07.2024); In *Metaph.* XII, lect. 9, n° 2566, ed. M.-R. Cathala, Turin – Rome, Marietti, 1950, 599: »Sed, quia in eligendis opinionibus vel repudiandis, non debet duci homo amore vel odio introductis opinionem, sed magis ex certitudine veritatis, ideo dicit quod oportet amare utrosque, scilicet eos quorum opinionem sequimur, et eos quorum opinionem repudiamus. Utrique enim studuerunt ad inquirendam veritatem, et nos in hoc adiuverunt. Sed tamen oportet nos persuaderi a certioribus, idest sequi opinionem eorum, qui certius ad veritatem pervenerunt«.

### 3.5. *Appreciation of History*

The development of modern science raised the question of the importance of history for the development of science. Scientists and philosophers of science are familiar with the question of whether science needs history for contemporary issues. Is history just a graveyard of dead theories? The answer to that question in discussions was both yes and no. However, today we know that neglect of importance of history for science is damaging to science on many levels. Namely, »knowledge of the history of the discipline sheds light on the course of transformations of philosophical questions into scientific problems and their solutions, and contributes to a better understanding of the content, problems and terms used in the discipline.«<sup>29</sup> As both Heisenberg and Rovelli pointed out, knowledge that we have transcended is always with us. Moreover, it is a fundamental ingredient of our understanding.<sup>30</sup>

Knowing the history of debates on a certain problem is a necessary part of an open dialogue that helps to: (a) preserve one's own identity; (b) know the limits of one's own discipline; (c) show respect and (d) focus on the search for truth. Example of such an approach against contemporary liquid modernity (Zygmunt Bauman) is provided by Albert the Great and Thomas Aquinas.

Albert and Aquinas did do not think in a narrow, closed, isolated space. They were in dialogue with thinkers from history and with contemporaries. They were open to everyone, to each and everyone's truth. Therefore, in their works, they discussed with Greek, Jewish and Arab thinkers, with philosophers and theologians in the East and in the West. Their thought was a conversation with the thought of others, with the thought of the whole world.<sup>31</sup> Albert the Great was very famous during his own lifetime for being as an excellent expositor of the history of philosophy.<sup>32</sup> For example, Albert proposes indicates his more scientific approach in his commentary, that his own experience and the experience of experts must guide an investigation of nature:

<sup>29</sup> Cf. Novina, *Suvremena kozmologija i filozofija...*, 19.

<sup>30</sup> Carlo ROVELLI, Science is not about certainty, *The New Republic* (11.07.2014), <https://newrepublic.com/article/118655/theoretical-physicist-explains-why-science-not-about-certainty> (24.07.2024).

<sup>31</sup> Cf. Anto GAVRIĆ, Poimanje Akvinčeve filozofije u djelu Tome Vereša O.P. [The understanding of Aquinas' philosophy in the work of Tomo Vereš, OP], In: Anto GAVRIĆ (ed.), *Ljubav prema istini. Zbornik u čast Tome Vereša* [Love of truth. A festschrift in honour of Tomo Vereš], Zagreb, Dominikanska naklada Istina, 2000, 67-81, 73-74.

<sup>32</sup> Cf. Irven M. RESNICK, Introduction, In: Irven M. RESNICK, Kenneth F. KITCHELL Jr (ed.), *Albert the Great: a Selectively Annotated Bibliography (1900-2000)*. Tempe, 2004, IX-X. See also Katja KRAUSE, Richard C. TAYLOR (ed.), *Albert the Great and his Arabic Sources. Medieval Science between Inheritance and Emergence*, Turnhout, Brepols, 2024.

»Of those things which we will propose some we have proven ourselves through experience; others we report according to the opinions of those we have ascertained do not readily say anything unless it has been proven by experience«.<sup>33</sup>

They were ready for dialogue and familiarity with numerous areas of human knowledge. Aquinas' »constant reference to other thinkers, in which he also openly states his own thought, is an expression of his fundamental belief that truth is scattered all over the world and that, therefore, the original task of human thought is to seek and gather that truth.«<sup>34</sup> Indeed, their works can be considered a collection of world thought, current knowledge, and historical opinions. They demonstrate that history should be valued because it helps us discover the truth. This is an important message for the re-establishment of dialogue between sciences today.

### 3.6. *Distinguishing Reality from Materiality*

Today's conflicts over the right to the name science, that is the fact that some scientists believe that only sciences with an empirical method have the right to the name science, reveal at least two things. First, that the phrase 'scientific method' is trying to be identified with the empirical method. Second, that the notion of reality has been reduced to matter and materiality. As we have seen already, Albert the Great and Thomas Aquinas would not agree, neither with the first nor with the second. According to Albert and Aquinas each science has its own subject and method, but also scope and authority, and all sciences have in common the search for truth and continuous attempts to get closer to the truth. However, the truth transcends human efforts, and no one can know the whole truth. At the same time, the limitations of the methods of one science point to the need for a different approach, that is, for another method. For Albert and Aquinas, (a) the limits of the empirical method are not the limits of reason; (b) philosopher should be aware that he is always and everywhere studying reality not materiality; (c) philosopher should not equate ontological possibility or impossibility with his possibilities and impossibilities, nor necessity with reality, nor reality with materiality.

The division of science that we find in Albert the Great addresses such an understanding of reality. According to this Aristotelian division, theoretical sciences (*philosophia realis*) include metaphysics (theology), mathematics and

<sup>33</sup> ALBERTUS MAGNUS, *De vegetabilibus* VI, tr. II, cap. 1, 339-340.

<sup>34</sup> Tomo VEREŠ, *Život i djelo Tome Akvinskog* [Life and work of Thomas Aquinas], In: Toma Akvinski, *Izabrano djelo* [Thomas Aquinas. Selected work], edited by Tomo VEREŠ and Anto GAVRIĆ, Zagreb, Nakladni zavod Globus, 2005, 19-62, 48; Dimitri GUTAS, *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement Baghdad and Early 'Abbasid Society* (2<sup>nd</sup>-4<sup>th</sup>/8<sup>th</sup>-10<sup>th</sup> c.), London, Routledge, 1988.

natural sciences or physics.<sup>35</sup> In this way, it becomes clear that Albert and Aquinas remind us that reality is more than materiality and that knowledge about the essence of things is necessary for knowledge about the studied subject. In that sense we can say that Albert and Aquinas remind us that the problems of re-establishing dialogue between sciences can be solved by returning to a broader understanding of nature that distinguishes the reality from materiality.

### 3.7. *Distinguishing Operational from Essential*

The question of distinguishing reality from materiality is related to the distinction between the operational and the essential. That is to say, in parallel with the reduction of reality to the material, there are problems of the lack of empirical evidence for scientific theories when they touch the limits of the empirical method. At the same time modern science increases the use of models. Moreover, today accepted models are almost identified with proposed theories. However, models in their nature are idealizations that include a limited number of selected variables and that, without empirical foundation, can make science unscientific and bad philosophy.

Albert and Aquinas were aware of this danger. Therefore, they insisted on the distinction between the operative and the essential, that is they insisted on epistemological caution. In that sense, in relation to the known models of cosmos, Aquinas says that

»Yet it is not necessary that the various suppositions which they hit upon be true – for although these suppositions save the appearances, we are nevertheless not obliged to say that these suppositions are true, because perhaps there is some other way men have not yet grasped by which the things which appear as to the stars are saved.«<sup>36</sup>

On that line of thought, that scientific theories and concepts are only operational and not essential, discussing the difference between the natural beginning and the theological beginning of the world, the Belgian physicist and philosopher of science Dominique Lambert, considering the remarks of Aquinas, pointed out that the research on the natural beginning

<sup>35</sup> ALBERTUS MAGNUS, *Metaphysica* II, cap. 4, Editio Coloniensis 16/1, ed. B. Geyer, Münster i.W., Aschendorff, 1960, 94: »Quod autem sola scientia veritatis philosophia vocetur, recte habet secundum rationem... theoricae sive contemplativae sive speculative scientiae veritatis est finis, practicae autem sive operativae scientiae secundum suum nome finis est opus«.

<sup>36</sup> Thomas AQUINAS, *The Heavens*, translated by Fabian R. Larcher and Pierre H. Conway, <https://isidore.co/aquinas/DeCoelo.htm#2-17> (24.07.2024); *In De caelo* II, lect. 17, n° 2, *Opera omnia*, Ed. Leonina, t. 3, Rome, 1886, 186-187: »Illorum tamen suppositiones quas adinverunt, non est necessarium esse veras: licet enim, talibus suppositionibus factis, apparentia salvarentur, non tamen oportet dicere has suppositiones esse veras; quia forte secundum aliquem alium modum, nondum ab hominibus comprehensum, apparentia circa stellas salvantur«.

»cannot, by itself, lead to theological notions. On the other hand, it is clear that any physical cosmology cannot do without an implicit metaphysical presupposition concerning the position of the World in being. The equations of general relativity describe the geometric and physical structure of space-time, but they do not explain to us at all why space-time as such maintains its being«. <sup>37</sup>

With its methods, physics simply cannot reach beyond the natural beginning, which also represents the beginning of the development process. On this topic Aquinas was clear in Question 32:

»Reason may be employed in two ways to establish a point: firstly, for the purpose of furnishing sufficient proof of some principle, as in natural science, where sufficient proof can be brought to show that the movement of the heavens is always of uniform velocity. Reason is employed in another way, not as furnishing a sufficient proof of a principle, but as confirming an already established principle, by showing the congruity of its results, as in astrology the theory of eccentrics and epicycles is considered as established, because thereby the sensible appearances of the heavenly movements can be explained; not, however, as if this proof were sufficient, forasmuch as some other theory might explain them«. <sup>38</sup>

For this passage Pierre Duhem, in his classic of the philosophy of science, pointed out that Aquinas perfectly observed the impossibility of the physical method to offer a completely secure explanation. <sup>39</sup> Based on all we said we can conclude that for re-establishing dialogue it is necessary to distinguish operational from essential and return value to essential. Otherwise, we fall into anti-realism and relativism which deny the possibility of meaningful discussion and scientific research.

### *Conclusion*

To try to understand the other; to try to see the truth in the opinions of other thinkers; to get rid of narrow-mindedness; to confirm that the truth of faith does not contradict reason; to show that truth is the most valuable thing in the world and that the discovery of truth is a joint endeavor of all nations is precisely the philosophical way of Albert the Great and Thomas Aquinas. Their model of dialogically open philosophy with its seven features (1) faith in reason; (2) the primacy of truth; (3) acknowledgement of borders; (4) respect; (5) appreciation of history; (6) distinguishing reality from materiality; (7) distinguishing operational from essential) teaches us the culture of dialogue. It can help us

<sup>37</sup> Lambert, *Sciences et théologie...*, 152.

<sup>38</sup> Thomas Aquinas, *Summa Theologiae* I, q. 32, a 1 ad 2.

<sup>39</sup> Cf. Pierre Duhem, *The Aim and Structure of Physical Theory*, New York, Princeton University Press, 1991, 41.



to re-establish dialogue among sciences and it can be an inspiration in times when the fear of the other and the different is increasingly noticeable. As in the 9th century the Arab philosopher Al-Kindi had written about Aristotle:

»How beautiful is that which he said in this matter! We ought not to be ashamed of appreciating the truth and of acquiring it wherever it comes from, even if it comes from races distant and nations different from us. For the seeker of truth nothing takes precedence over the truth, and there is no disparagement of the truth, nor belittling either of him who speaks it or of him who conveys it. (The status of) no one is diminished by the truth; rather does the truth ennoble all.«<sup>40</sup>

Those words of Al-Kindi speak of a man of the Middle Ages, a man who was open to other traditions that were his inspiration and enrichment. Albert the Great and Aquinas repeated his thought that we should be grateful to everyone who helps in the realization of the truth. Mediaeval thinkers knew how to find the truth in ancient Greek and Arabic philosophy without fearing that it would lose its identity and take on non-Christian elements. Discussions by Christian authors with the Jewish thinker Maimonides and the Arab thinker Avicenna show how to conduct a fruitful dialogue with other faiths and religions. Revelation or faith and natural reason or philosophy are not in contradiction. Getting closer to the thoughts of medieval authors can teach us how to be open to dialogue and search for solutions to many important questions of today's times.

Albert the Great and Thomas Aquinas are medieval philosophers who were ready and knew how to borrow from the Greco-Roman world and from the world of Arab culture or from the Byzantine world. They were great thinkers but aware of what they lack. They had humility and courage. As Rémi Brague says:

»Men of the Middle Ages were capable of going outside of their own confines and outside of their own tradition to seek cultural goods in the Arab world. They worked over these acquisitions, developed them, and prolonged them. But they never forgot that what they borrowing came from the outside, and that its source remained outside. This meant that they could always go back and find more to borrow. They could correct a received text thanks to more recently received original, thus permitting a new and more faithful reception of the sources. Thus, Europe became engaged in an endless dialectic... May we

<sup>40</sup> AL-KINDI, *On First Philosophy*, In: Al-Kindi's Metaphysics. A Translation of Ya'qub ibn Ishaq al-Kindi's Treatise *On First Philosophy* with Introduction and Commentary by Alfred L. Ivry, Albany, State University of New York Press, 1974, 55-114, 58. This text of al-Kindi is written to respond to Muslims who thought that Muslims do not need more than the Qur'an and the Arab traditions and that the foreign Greek sciences should not be practiced. (What more should one need than the very words of God in the Qur'an?) Al-Kindi is pleading for a place for philosophy as a second mode of accessing knowledge of God who is al-Haqq (the Truth). He is reasoning that God as the Truth should be pursued in all available ways and if one of those ways is through Greek philosophy, then Muslims should accept it, under the mandate to seek out the knowledge of God. Greek philosophy was controversial and a seen as a threat to religion. It did become and continued for centuries to be an intellectual pursuit that clashed now and then with Kalam (discourse and reason in defence of the faith).

never justify our sleep by our cultural wealth. That wealth is not ours. It comes from elsewhere. Moreover, it is not for us alone. This is what the thinkers of the Middle Ages understood. Studying them shows this more and more clearly. Men of the Middle Ages had the courage to act consequently. May we be capable of imitating them«. <sup>41</sup>

Those words are direct call for study of the rich medieval thought heritage to discover its relevance for our time and for the development of dialogue among those who think differently. Natural sciences, social sciences, but also theology and philosophy can be understood as sciences with different methods and subjects of research, but with the common goal of knowing the truth. If they want that, it is necessary to adopt dialogic openness on the seven mentioned levels. However, as Lambert states, philosophy should be a bridge on the ontological, logical and ethical level so that the dialogue of different sciences is meaningful and fruitful, and so that they remain what they are by nature and thus give their specific contributions to the true knowledge in its entirety. <sup>42</sup> In that sense, Yves Congar has written:

»St. Thomas is a master of thought, a model of loyalty and intellectual honesty, a man of dialogue, the symbol of open-mindedness, and the genius of reality. We should remain faithful to his spirit [...] St Thomas is proposed as a master [by Vatican II]. This does not mean simply repetition and the exclusion [...] Rather it means that we study under his guidance; we follow his spirit«. <sup>43</sup>

We would like to conclude this paper with the same appeal regarding Albert the Great and Aquinas. From them we can learn to have confidence in reason and turn to argumentative dialogue, between theology and philosophy and other sciences, between faith and reason. They can teach us how to, in currents and differences, search for the truth and remain faithful only to the truth, no matter whom truth came from. On the end, Albert and Aquinas can teach us how to talk with those that think differently and be dialogically open seekers of truth.

<sup>41</sup> Rémi BRAGUE, *The Legend of the Middle Ages: Philosophical Explorations of Medieval Christianity, Judaism, and Islam*, Chicago, The University of Chicago Press, 2009, 40.

<sup>42</sup> Cf. Lambert, *Sciences et théologie...*, 13-43.

<sup>43</sup> Interview with Fr. Congar, *America* (Jesuit Magazine, USA), May 6, 1967, 676-677; *From 1967: An interview with Yves Congar*, <https://www.americamagazine.org/faith/2023/12/05/vantage-point-yves-congar-246643> (24.07.2024); Fausto GÓMEZ BERLANA, *Is Saint Tomás Aquinas still relevant today?* (2019), [https://www.holyrosaryprovince.org/index.php?option=com\\_content&view=article&id=222:article-is-saint-tomas-aquinas-still-relevant-today&catid=12&lang=en&Itemid=101](https://www.holyrosaryprovince.org/index.php?option=com_content&view=article&id=222:article-is-saint-tomas-aquinas-still-relevant-today&catid=12&lang=en&Itemid=101) (24.07.2024).

Anto Gavrić\* – Marina Novina\*\*

*Filozofija u dijalogu s drugim znanostima na primjeru Alberta Velikog i Tome Akvinskog*

Sažetak

Odvajanje prirodnih znanosti od filozofije i razvoj empirijskih znanosti bio je dugotrajan proces koji doveo do nepovjerenja, pa čak i suprotnosti između filozofa i prirodoslovaca. Ovaj rad odgovara na pitanje kako ponovno uspostaviti dijalog između filozofije i drugih znanosti. Autori predlažu rješenje u tzv. modelu dijaloški otvorene filozofije dvojice slavni filozofa i teologa Alberta Velikog i Tome Akvinskog. Albert i Akvinski živjeli su u razdoblju promjena i razdoblju susreta različitih kultura i mišljenja. U tom vremenu različitosti stvorili su model dijaloga sa svima koji misle drugačije. Štoviše, kao rješenje za nesporazume na bilo kojoj razini rasprave ponudili su dijaloški otvorenu filozofiju koja pretpostavlja (1) vjeru u razum; (2) prvenstvo istine; (3) priznanje granica; (4) poštovanje; (5) uvažavanje povijesti; (6) razlikovanje stvarnosti od materijalnosti i (7) razlikovanje operativnog od bitnoga. Uvidom u karakteristike Albertova i Akvinčeva modela dijaloga pokazujemo da je njihov pristup raspravi prikladno rješenje za suvremenu ponovnu uspostavu dijaloga između filozofije i drugih znanosti jer osigurava primat istine svim sudionicima u dijalogu.

*Ključne riječi: Albert Veliki, dijalog, filozofija, Toma Akvinski, znanost.*

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