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STUDIA
UNIVERSITATIS BABEŞ-BOLYAI THEOLOGIA REFORMATA TRANSYLVANICA

70 / Supplement 1

Content

The Perception of Science by Calvinists, Lutherans, Unitarians in East-Central Europe

Guest Editor: Professor PhD Ábrahám KOVÁCS,

János Selye University, Department of Historical Theology, Slovakia;
Research Fellow, University of Pretoria, Department of Systematic and Historical Theology, Faculty of Theology and Religion, South Africa


MÚZEUM


Science and Religion
THE PERCEPTION OF SCIENCE BY CALVINISTS, LUTHERANS, UNITARIANS AND RELIGIOUS DISSENTERS IN CENTRAL EASTERN EUROPE
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Ábrahám KOVÁCS[1]:

Foreword:

The Perceptions of Science by Calvinists, Lutherans, Unitarians and Religious Dissents in East-Central Europe from Seventeenth Century Till Today

The outcome of *this special issue* which was made possible by a generous support by John Templeton Grant administered through Oxford University enabled the Principal Investigator, Prof. Dr. Ábrahám Kovács to launch a project in Science and Faith in East-Central Europe in 2023. The research focused on how the relationship between science and Christian faith of Calvinists, Lutherans, Unitarians and Religious Dissenters has been perceived and conceptualised in Hungary, Slovakia, Romania, Serbia, Croatia, and Slovenia. Therefore, the project sought to investigate how Protestants from various Christian standpoints, theological and philosophical convictions related to science in East-Central European region from the 17th century till today.

[1] Professor, János Selye University, Department of Historical Theology, Slovakia; Research Fellow, University of Pretoria, Department of Systematic and Historical Theology, Faculty of Theology and Religion, South Africa; e-mail: kovacsab@ujs.sk.

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During the course of research, that included several conferences, participants learned a lot from one another. Furthermore, Prof. Matthew D. Eddy from Durham University gave excellent critical pieces of advice to the researchers as to how to conduct their research to which I express my heartfelt gratitude. Special thanks to scholars from University of Edinburgh, Stockholm University and University of Glasgow who also gave useful guidance and suggestions how to lead the research project. In particular I am deeply indebted to the kind suggestions made by Professors Scott Spurlock and J. S. Brown. In Hungary, professor Botond Gaál kindly directed my attention to facts that were unknown about the famous Hungarian scholar István Hatvani. Finally, it is my pleasure to express my sincere thanks for Dr. Samuel Hughes and other scholars from Oxford who encouraged me and our research team to pursue this new road which was full of exciting discoveries. Most of the scholars were able to carry out their projects to the end, However, some of them had to decline their commitments to the project for unseen obstacles which I sincerely regret. All in all, the project was a great success and new discoveries were made which the readers may well find informative and thought-provoking. The current results show a wide array of contributions from scholars who pursue their academic careers in Hungary, Slovakia and Romania. The original research papers investigate Reformed (Pósaházy, Hatvani, Sárközy), Unitarian (Körmöczy) scientist and theologians from historical Transylvania (today Romania), Upper Hungary (today Slovakia), Transtibiscian Reformed Diocese of Hungary interior as well as Lutheran scholars from the Kingdom of Hungary from the Zipser German, Hungarian and Slovakian-speaking areas throwing light indirectly on the multicultural and multifaceted social-cultural and religious reality of the region. The issue consists of three subsections entitled as Cartesianism, Wolffianism and Personal Faith, Education, Enlightenment and Natural Sciences and Modern Reflections on Darwin, Creation and Evolution from East-Central Europe. The beautiful and exciting blend of original research findings either about the meeting points between faith and reason, or contemporary reflections on Darwinism and modern science show how Western scientific knowledge was transferred and reshaped by scholars residing and working in the region who were excellent natural philosophers, physicians, chemists, mathematicians and scientists from trying to fathom the mysteries of the encounter between science and faith.

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Levente HORVÁTH[1] – József KURTA[2]:

The "Syllabus Theological Pendulum"

Abstract.

The Transylvanian Reformed theologians of the late seventeenth century were constrained by Cartesian philosophy and may be said to represent the orthodox theology of contemporary Calvinism. In 1673, at the Synod of Radnót (Iernut),[3] János Pósaházi, a Hungarian minister and Principal of the Reformed Theological Seminary, allied himself with Reformed Bishop Mihály Tófeus and presented his *Syllabus* of 76[4] theses to refute the theology of Cocceius, a famous Cartesian theologian of the Netherlands. Cocceius became known for developing federal (or covenant) theology, based on the rationalistic principles of Descartes, which were questioned by the Dutch Gisbertus Voetius, the famous contemporary orthodox Calvinist thinker of the times. Both Cocceius and Voetius and their successive students were mentors of Pósaházi, and for a whole generation of Transylvanian

[1] Associate Professor, Protestant Theological University, Faculty of Reformed Theology, Department of Systematic and Practical Theology, Cluj-Napoca; e-mail: lhorvath@proteo.hu.

[2] Independent researcher, librarian, Protestant Theological University, Cluj-Napoca; e-mail: toboz@proteo.hu.

[3] Because Transylvania was long part of Hungary, both Romanian and Hungarian place names are in usage today. In this paper, Hungarian names are used, followed by the Romanian name in parenthesis.

[4] The book seems mistaken. There are only 74, not 76 altogether, as assertions nr. LXXIV and nr. LXXV and their refutals are missing.

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pilgrims who studied in the Low Countries during that century. Pósaházi's Syllabus gained significance amid a theologically relevant controversy, in a historically, as much as a philosophically, crucial moment, in the philosophical milieu of Transylvania specifically and Hungary in general. This historical moment coincides with the Cartesian theory of the conservation of momentum. We can see the discussion of both the Cartesian and the Pascalian ego being dealt with in the philosophical and theological discourse of the time. With Descartes, there developed both a brand-new rationalism and idealism on the one hand and, with Pascal, a metaphysical existentialism and personalism on the other. Both of those orientations – whether directly or indirectly – heavily influenced successive theological developments, especially in the realms of the Reformed churches of both the Netherlands and Hungary, and Transylvania in particular.

Keywords: Reformed orthodoxy, Transylvanian theology, Peregrinatio academica, 17th-century Calvinism, Synod of Radnót (1673), Gisbertus Voetius, Cartesian-Cocceian debates, existentialist theology, cogito argument, grace-centred hermeneutics, rationalism, the Netherlands (Low Countries), Blaise Pascal, János Pósaházi, Mihály Tófeus, Dutch–Hungarian intellectual relations, East–West intellectual transfer, theological pendulum, grace and existence, substance metaphysics

A step away from the idea of the *Cartesian theory* of the conservation of momentum is Newton's pendulum, which justified Descartes's problem. This pendulum also offers a semi-valid example for our research topic.[5] The principle of operation of the Newton pendulum is simple: it consists of an odd number of metal balls of equal mass, suspended between two rigid rods. These balls touch each other at rest and are located in the median plane of the two rods. If you lift the first ball at one end and release it, it will hit the row of balls. The last ball at the other end of the row of balls swings out, while the other balls in between seem to remain still. Our description ends here; the further play of forces is no longer relevant from our point of view. However, the part of the demonstration so far exemplifies a process that had begun in the late Middle Ages but culminated, primarily in Transylvania, in the 16th and 17th centuries:

[5] See: https://plato.stanford.edu/entries/descartes-physics/#LawsMotiCartConsPrin (last accessed: 30.05.2024).

the *flow of ideas and their effects was brought about by the practice of peregrinatio academica*, wandering students. Western ideas – consider them the first raised ball of Newton's pendulum – reached Transylvania, which should be regarded as the last ball of the pendulum – if it is true that the Renaissance, and Europe itself ends at the Black Church in Brassó (Braşov). While having relatively little impact in the intermediate region, these ideas found a serious response in Transylvania.[6]

In this study, first we try to offer an overall presentation and analysis of the historical background of the theological and philosophical debates of Transylvania in the given period, to some extent comparing it with those of the West.

Second, we turn our theological analysis to a relevant aspect of the argumentation of Pósaházi's *Syllabus*, proposing a differentiation between the orthodox Calvinist and Cartesian interpretation of theology, which already carries in nucleon the two major orientations of rationalistic idealism and of the existentialist understanding of the Self.

Third, as a conclusion, we ponder briefly on the fact that these Transylvanian arguments and debates unfortunately did not have a larger impact on the development of Western thinking. We consider what other directions those debates might have led to if the Transylvanian arguments had been recognized in the broader ongoing philosophical and theological dialogues of the time. Particularly, we will prove our point by demonstrating that Pósaházi traced a Cartesian "flaw" in Cocceius and refuted it theologically while not failing to make a philosophical argument along the way. The original Calvinist (and almost Pascalian) and, to some extent in its nucleon, the relational-existentialist treatment of the self is argued in a unique way, not arguing from a mere rationalistic and deistic approach (a trap which the Calvinism of the next centuries could not avoid in the West, although the Eastern/Transylvanian fathers of the Reformed Church could, to some extent). A grace-centred and Revelation-honouring hermeneutics of the self without a substance (or even *two*, as Descartes intended to split the self into two substances of mind and body) of its own cannot fall within the parameters of a rationalistic approach that ignores the *unio mystica cum Christo* principle of both the early Calvin and the Pascal of the seventeenth century. We plan to pursue that track in future articles, to which the present paper serves only as an introduction.

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[6] BEKESI, Imre et al. (ed.) (1993): *Régi és új peregrináció: Magyarok külföldön, külföldiek Magyarországon.* [Old and New Peregrination: Hungarians Abroad and Foreigners in Hungary]. Budapest – Szeged. I–III.

1. The Historical and Intellectual Setting of Transylvania

The Theological Milieu

The training of Transylvanian and Hungarian intellectuals in the early modern period took place almost entirely abroad. This is especially true for the Protestant intelligentsia, since for them there was no institution of higher education within the country due to the aggressiveness of the authorities inspired and influenced by the Habsburgian political and religious efforts of (the Roman Catholic) Counter-Reformation. Thanks to the research of the past decades, a clear picture of the most important tendencies has been compiled about the extent, targets, and numerical proportions of university peregrination, the *peregrinatio academica*, as well as its qualitative characteristics, content components, and the nature of the intellectual processes and concepts learned and acquired during the student years spent abroad.[7] Until the Reformation had gained ground, about 9,000-9,500 Hungarian students enrolled in foreign universities, of which approximately 2,500 are known to have been Transylvanian. Between 1520 and 1849, we know of the enrolment of nearly 7,500 Transylvanian students, but this number is relative because one student was usually enrolled in several universities. Protestants travelled mainly to Wittenberg, Heidelberg, and Basel, then to the universities of the Low Countries: Leiden, Utrecht, Franeker, Groningen, and Harderwijk. Many of them also went to universities in England, spending a semester at Oxford or Cambridge. In the matricula of a total of 70 European *studium generales* and universities, we can find Hungarian and Transylvanian names alike. The returning young people became the leading intellectuals of Transylvania, pastors, doctors, school rectors, etc.[8]

For a long time, the English university system consisted exclusively of Oxford and Cambridge. These two universities had a monopoly position in England, where no new universality was established until the 19th century. In addition to these two, Hungarian students visited another institution, Gresham College, a non-chartered but extremely prestigious and popular free university, founded in 1597 in accordance with the will of

[7] SZÖGI, László (2017): A magyar protestáns peregrináció a 16–18. században [Hungarian Protestant Peregrination in the 16th–18th Centuries]. In: *Gerundium*. VIII, 1. 71–78.

[8] SZABÓ, Miklós – TONK, Sándor (1992): *University Attendance of Transylvanians in the Early Modern Period. 1521–1700*. Fontes Rerum Scholasticarum IV. Szeged.

Thomas Gresham. In the case of research on the peregrination of Hungarian students in England, university enrolments are not the primary source since Hungarians did not have the money to enrol and could not swear an oath to the Anglican Church. However, the visitor books of the Bodley Library in Oxford prove that quite a few Hungarian students visited the famous university. After 1623, an increasing number of Hungarian students went to England, and this boom was unbroken in the two middle quarters of the 17th century. Most travelled to England only for short periods, spending a few months or weeks in Oxford, Cambridge or London between enrolments in the Netherlands. The number of Hungarian students did not decrease during the English Civil War, although it was dangerous to mention a visit to England at home because one could easily be accused of spreading revolutionary doctrines.[9]

It was on the routes of peregrination that ideas arrived in Transylvania, finding fertile ground here. In early modern Hungary, there was no institutional system dealing with the book trade, and the offerings of itinerant booksellers did not extend to scientific book materials. Bookbinders and printers who were also engaged in trade did not base their activities primarily on the needs of professional intellectuals (theologians, lawyers, doctors, etc.). Therefore, peregrination was an important opportunity to purchase books, something of which the students tried to take advantage, since it was difficult to get the necessary textbooks in Hungary. In addition, it was customary to donate to the library of one's *alma mater* a book brought from abroad. Entries in books indicate when and where they were purchased, but in many cases, they also indicate the price of the book. The museum book collections of Reformed colleges are mostly made up of such books brought home by students, read and, in many cases, annotated. In the more than two centuries following the Reformation, we know of nearly 2,000 Transylvanian students who attended foreign academies and went on to ecclesiastical careers. Of these, barely 1% have sources for their readings. With such proportions, each contemporary book list or possessor entry is a serious figure. Similarly, references and quotations in works originating in Transylvania provide insight not only into the culture of the author concerned but also into the intellectual network of the time.

[9] SZÖGI, László (2017): Peregrináció és reformáció. Milyen külföldi egyetemekre jártak tanulni a 16–18. századi magyar diákok? [Peregrination and Reformation. What Foreign Universities Did Hungarian Students Go to Study at in the 16th and 18th Centuries?]. In: *Rubicon*. 2017/12. 50–57.

János Pósaházi (1628–1686)

Our study highlights one of the main figures of the Cartesian versus orthodox Reformed debate at the Synod of Radnót in Transylvania. János Pósaházi was a teacher at the Reformed College (or Seminary) of Sárospatak and one of the representatives of the polemical literature.[10] Pósaházi studied at the Reformed College in Sárospatak, enrolled in 1650. He studied under teachers Johannes A. Comenius, János Tolnai, János H. Szőlősi, and Mihály Tófeus. With the support of Zsuzsanna Lorántffy, the widow of Prince György Rákóczi I, he set out for foreign universities in 1653. In August 1653, he enrolled at the University of Utrecht, studying with internationally renowned theologians such as Gisbertus Voetius,[11] among others. Here he defended his doctoral thesis on 19 June 1655 and became a Doctor of Philosophy. In August 1656, he resumed his studies in Franeker, returning home in 1657.[12] We know from György Gömöri's research that Pósaházi also visited England, probably after his studies in Utrecht and before enrolling in Franeker. There is no record of when he crossed to England or how long he spent there, so we can only speculate. We know when he left England: on 8 July 1656, he received a travel permit from the English authorities to sail to Amsterdam together with Mihály Szántai Molnár.[13] Evidence of Szántai's stay in Oxford is that he enrolled in the Bodley Library on 29 May 1656. Despite the fact that Pósaházi's name cannot be found on this list, it is likely that he was in Oxford with Szántai, who was an old acquaintance of his from Sárospatak, in Oxford, although his stay there was relatively short, probably a few weeks. Another possibility is that Pósaházi

[10] MAKKAI, Ernő (1942): *Pósaházi János élete és filozófiája* [The Life and Philosophy of János Pósaházi]. Cluj-Napoca [Minerva]; HELTAI, János (2007): Kis Imre és Pósaházi János hitvitája a kálvinista vallás régiségéről [Imre Kis and János Pósaházi's Faith Debate on the Antiquity of Calvinist Religion]. I–II, In: *Magyar Könyvszemle*. 2007/2–3. 177.

[11] For the record, Voetius was approached by Descartes, and they exchanged ideas and disputed the emerging Cartesian philosophy.

[12] SZABÓ – TONK 1999, 125 – item 1291 of the repository.

[13] GÖMÖRI, György (2005): *Magyarországi diákok angol és skót egyetemeken 1526–1789* [Hungarian Students at English and Scottish Universities 1526–1789]. Budapest, ELTE Archives. 22; GÖMÖRI, György (2015): Járt-e Pósaházi János Angliában? [Has János Pósaházi Been to England?]. In: *Korunk*. III, 8. 124.

may have travelled to England earlier, shortly after his *magisterium*, that is, the defending of his "magister" thesis, in Utrecht (19 June 1655), and only later joined Szántai in Oxford. However, there is not much evidence of this.

Pósaházi returned home in 1657 and got a post at the College in Sárospatak. Since the widow of György Rákóczi II, Zsófia Báthori, who had reconverted to Catholicism, made the operation of the College impossible, the College moved to Gyulafehérvár (Alba Iulia) after a short interruption. Pósaházi taught here until his death in 1686.

His polemical writings on philosophical and theological subjects were mostly dealt with in connection with the controversies in Upper Hungary (1663–1672). Church history literature also canonized him primarily as a debater of the faith. As a defender of Reformed Orthodoxy, he debated intellectuals of Cocceian and Cartesian convictions within his own denomination and, beyond that, Catholics, especially Jesuits.[14]

The Synod of Radnót and the *Syllabus* of Pósaházi

Between 1673 and 1685, there were serious debates in Transylvania concerning the relationship of the philosophy of René Descartes (1596–1650) and the theology of Johannes Cocceius (Hans Koch, 1603–1669) to Calvinist orthodoxy. In March 1673, Prince Mihály Apafi summoned the leading professors of philosophy and theology of the College of Nagyenyed (Aiud) and Kolozsvár (Cluj-Napoca) and entrusted the assessment of their heterodox doctrines to the Synod of Radnót, which was held in June

[14] HELTAI, János (2005): A 16–17. századi magyarországi hitviták adattárának tervezete [Draft Repository of Religious Debates in Hungary in the 16th and 17th Centuries]. In: Heltai, János – Tasi, Réka (eds.): *Tanulmányok XVI–XIX. századi hitvitáinkról* [Studies on Our Faith Debates of the Sixteenth to Nineteenth Centuries]. Miskolc, ME BTK Régi Magyar Irodalomtörténeti Tanszéke. 251–299; HELTAI 2005, I–II: 169–184, 310–343; GARADNAI, Erika Csilla (2012): Metatextualitás a felsőmagyarországi hitvitában [Metatextuality in the Upper Hungarian Faith Controversy]. In: Kecskeméti, Gábor – Tasi, Réka (eds.): *Filológia és textológia a régi magyar irodalomban* [Philology and Textology in Old Hungarian Literature]. Miskolc, ME BTK Magyar Nyelv- és Irodalomtudományi Intézet. 315–322; GARADNAI, Erika Csilla (2018)*: A felső-magyarországi hitvita (1663–1672). Sámbár Mátyás, Pósaházi János, Matkó István és Czeglédi István polémiája* [The Upper Hungarian Controversy (1663–1672). The Polemic of Mátyás Sámbár, János Pósaházi, István Matkó and István Czeglédi]. Budapest.

of the same year.[15] The representative for the prosecution at the Synod was János Pósaházi. Since the case of the accused professors was taken up by high-ranking politicians in Transylvania, the defendants were acquitted of the charges with an admonition. The decrees of the Synod of Radnót, which raised several questions, were confirmed by the Prince in 1680, but we do not know what continuation of the events of 1673 made this subsequent act necessary.[16] However, it seems that the developments of the Cartesian–Cocceian disputes in Transylvania did not end after the Synod of Radnót, and János Pósaházi played an important role here. In 1685, he published a Latin work in Debrecen entitled *Syllabus*, thus entering the ranks of anti-Cartesian figures in the history of Hungarian ideas.[17] The work contains a total of 76 (or 74 – see footnote 2 of this paper) assertions, discussing and condemning theological statements 1–39 and Cartesian philosophical statements 45–76.[18] Pósaházi refers to his 40th–44th sources as *M. D. p. E. in Apologico m. s.*[19] According to Jenő Zoványi, this refers to the manuscript *Apologia* submitted by Professor Márton Dézsi of Nagyenyed (Aiud) to the Synod of Radnót in 1673, of which a copy no longer exists.

[15] ZOVÁNYI, Jenő (1898): Dézsi Márton. In: *Protestáns Szemle*. 1898/2. 79–90; A Dési Márton, Csernátoni Pál és Pataki István elleni vádpontok [Charges against Márton Desi, Pál Csernátoni, and István Pataki]. In: Buzogány Dezső et al. (eds.): *Erdélyi református zsinatok iratai I: 1591–1714* [Documents of the Reformed Councils of Transylvania I: 1591–1714]. Erdélyi református egyháztörténeti adatok 1/1 (Kolozsvár Erdélyi Református Egyházkerület, 2016). 285–294.

[16] ZOVÁNYI, Jenő (1889): A radnóthi zsinat végzései [The Decrees of the Synod of Radnóth]. In: *Protestáns Közlöny*. 1889/19. 344–345, 362–364; SIMON, József (2023) *Vészmadarak: Pósaházi János és a németalföldi karteziánus viták a 17. század második felében [Alarmists: Pósaházi János and the Dutch debates around Cartesianism in the Second Half of the 17th Century]. In: Irodalomtörténeti Közlemények*. 127/3. 280–281.

[17] PÓSAHÁZI, János (1685): *Syllabus assertionum, thesium et hypothesium illarum (e multis), quibus neoterici quidam theologi et philosophi hoc tempore in Belgio, Hungaria et Tra(n)- sylvania scholas et ecclesias turbant, ex propriis ipsorum scriptis collectus succincta ad illas animadversione. Authore Johanne Posahazi a. l. m.* [Debrecen] MDCLXXXV [István Chargei]. A4 –E4 = fol [20]. – 4°; RMK II 1567. RMNy 4585.

[18] Syllabus A4 b–E4a.

[19] Syllabus C4a.

The main part of the discussion paper begins with the title *Assertio I*. Each *assertio* is headed by a brief Cocceian or Cartesian theological statement, followed by its orthodox Calvinist refutation, the *Animadversio*. The publication closes with a few lines of *Conclusio*. In his letter of recommendation, János Pósaházi addresses Hungarian and Transylvanian preachers and professors who adhere to Reformed orthodoxy and says that the army of Cocceians and Cartesians is growing day by day, and therefore he is publishing his theses against "scandals and divisions". He warns the reader that the contagion, which began a few years ago in the Low Countries, is already causing serious internal strife in Hungary and Transylvania. He wrote his work both to protect the Church with authority and to prove that he himself has always defended and will always defend the orthodox truth.[20]

An interesting feature of the publication history of *Syllabus* is that it was previously considered a Kolozsvár (Cluj-Napoca) publication, but, in fact, it was printed in Debrecen by István Töltési. The printer, Töltési, probably as a victim of a power struggle, lost his job, and one of the accusations against him in his trial was that he dared to publish the work of Pósaházi without approval.[21]

The Response

Of course, a response to Pósaházi's discussion paper came quickly, but it was not printed unfortunately. Márton Dézsi had obtained a manuscript copy of Pósaházi's work before it was printed in January 1685, and as early as the end of 1684 he replied to it in manuscript in Latin and Hungarian. The answer in Hungarian (*Summa of the Replica to the Syllabus of My Lord Pósaházi*) was presented by Jenő Zoványi in an extract from the original manuscript preserved in the library of Bethlen College in Nagyenyed

[20] ZOVÁNYI, Jenő (1890): *A coccejanismus története* [The History of Cocceianism]. Budapest. 138–150.

[21] ECSEDY, Judit V. (2016): A hatalmi harc áldozatául esett tipográfus. Töltési István tragikus véget ért debreceni működéséről és a meg nem valósult bibliakiadásról [A Typographer Who Fell Victim to the Power Struggle. About István Töltési's Tragic End and His Work in Debrecen and the Unrealized Bible Publishing]. In: Bíró, Csilla – Visy, Beatrix (eds.): *Hatalmi diskurzusok. A hatalom reprezentációi a tudományokban és a művészetekben* [Power Discourses. Representations of Power in the Sciences and Arts]. Budapest. 38–47; Cf. RMNy 4584.

(Aiud).[22] Another reply, written in Latin and also preserved in manuscript, is currently kept as a copy of the original, in the manuscript collection of the Hungarian Academy of Sciences, entitled *Vindiciae assertionum Cartesianarum adversus animadversiones clarissimi domini Iohannis Pósaházi rectoris scholae Albensiis*.[23]

According to József Simon, the text of *Vindiciae* is only part of the text written in response to Pósaházi's entire work. The manuscript we have at our disposal is obviously a copy and is erroneous in several places. The autograph manuscript, which may have been more complete, is either lost or has not yet been discovered, and its author was previously unknown in the literature. However, József Simon's research revealed the identity of the second author. The two parts of the manuscript are preceded by an introduction in Latin written by two authors indicated by their initials: *M. D. E. P. & S. P. C. R. C. P.* The first monogram indicates *Professor Martinus Desi Enjediensi*, Cocceius's most important follower in Transylvania: Márton Dézsi. Scientific research clearly considers him to be the formulator of the points against the Cocceian theses condemned by Pósaházi.[24] Márton Dézsi studied in Dézs (Dej), Nagybánya (Baia Mare), and then Sárospatak (located in modern northeast Hungary). Next, as an alumnus of György Kapy, he enrolled at the University of Leiden at the age of 26 in November 1665, where he studied theology and then defended his doctoral thesis in 1666. A student of Cocceius, he came home in 1669, and from 1671 he was a teacher at the Reformed College of Nagyenyed (Aiud). He died in 1691.[25]

József Simon posits that the other monogram most likely refers to István Pataki (cca 1640–1693), who was rector of the Reformed College in Kolozsvár (Cluj-Napoca)

[22] ZOVÁNYI 1890, 150–154.

[23] *Vindiciae assertionum Cartesianarum adversus animadversiones clarissimi domini Iohannis Pósaházi rectoris scholae Albensiis.* Library and Information Centre of the Hungarian Academy of Sciences, Manuscript Collection and Old Books Collection, Budapest, Church and Philosophy Warehouse, 8r 16.

[24] MAKKAI 1942, 90–95; NAGY, Géza (2008): *A református egyház története. 1608–1715* [History of the Reformed Church. 1608–1715]. II. Budapest – Gödöllő, Attraktor. 238–239; SZABÓ, Géza (1943): *A magyar református orthodoxia* [The Hungarian Reformed Orthodoxy]. Budapest. 111–112.

[25] SZABÓ – TONK 1999, 169 – item 1730.

in 1685.[26] The abbreviation is therefore thus resolved: *Stephanus Pataki Claudiopoli Reformatorum Collegii Professor*. István Pataki, together with Márton Dézsi, was one of the persons summoned before the Synod of Radnót of the Reformed Church in 1673 on the charge of preaching and teaching the ideas of Cocceius and Descartes.[27] In 1673, the accusations against Pataki were of a theological nature, and the target of philosophical accusations at that time was Pál Csernátoni. In the 1660s, Csernátoni studied in the Low Countries, then in Switzerland, and also in England: London and Oxford.[28] After returning home, Csernátoni, who taught philosophy at the College of Nagyenyed (Aiud), died in 1679, so he cannot be considered the author of *Vindiciae*. Based on this, József Simon considers it likely that the *Vindiciae* is the work of István Pataki,[29] who also had a serious history of peregrination. He matriculated in Franeker in 1663, debated there in 1664, then enrolled in Groningen and the following year in Leiden to study philosophy and theology, where he defended his doctoral thesis in March 1666.[30] After returning home, he became the court pastor of his patron, Countess Dénes Bánffy. From 1668, he taught philosophy for decades at the College in Kolozsvár (Cluj-Napoca), which he headed, and was the tutor of Prince Mihály Apafi II. He was acquitted from his trial at the Synod of Radnót because of his noble connections. He died in January 1693.

[26] SIMON, József (2021): Az elme teljessége: esettanulmány egy erdélyi kartezianizmus-vitáról (1685) [The Fullness of Mind: A Case Study of a Cartesianism Controversy in Transylvania (1685)]. In: *Kellék*. 2021/65. 89–105; DIENES, Dénes (2013): Pataki Tóth István. In: *Református Szemle*. 106, 1. 63–72.

[27] ZOVÁNYI 1889, 38–39, 344–345, 362–364.

[28] SZABÓ – TONK 1999, 219 – 2229 items.

[29] SIMON 2021, 93.

[30] SZABÓ – TONK 1999 – items 267, 2666.

2. Our Hypothesis Concerning the Theological Position of the *Syllabus*

Traces of Proto-Existentialist Calvinistic Ideas in Pósaházi's Thinking

János Erdélyi, an expert in Hungarian philosophy (and himself a remarkable and meticulous philosopher of the nineteenth century) stated, quoting Mátrai, that "the Calvinist philosophers of the period (such as János Apáczai Csere and Pósaházi) 'expressed' the social conditions of both the Low Countries and Transylvania".[31] We cannot be quite sure what he had in mind, but he seems to have been pointing to the historical and scientific-theological ties of those two regions since the Reformation. The reception of Descartes as an authority in philosophical discussions and the far-reaching effects of Cartesian philosophy upon the frequent theological debates were similarly sharply critical, progressive, and complicated while by and large open-minded in both places. What was similar in both mindsets and in the flourishing development of the overall philosophical thinking of the seventeenth century is the strong criticism, mostly Cartesian, of the previous Aristotelian and Scholastic way of thinking.[32] Calvinism provided a fertile ground for this, even in its more conservative "orthodox" versions.[33]

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[31] ERDÉLYI, János (1981): *Filozófiai és esztétikai írások* [Philosophical and Esthetical Writings], Ed. by T. Erdélyi Ilona. Budapest, Akadémiai Kiadó. 944.

[32] Ungvári observes, "As Michel Foucault has pointed out, the desire of people in this period to participate directly in spiritual life, to experience election to salvation, was a struggle for subjectivity in the interpretation of the doctrine set out in the book. This struggle spread over time, through the various currents of the Reformation, to the eastern regions of the continent. The crisis of individuality was above all a crisis of individual self-expression, of individual certainty, which claimed a place as a defining experience both in theology (Calvin's doctrine of 'election by grace') and in philosophy (Montaigne, Descartes, Pascal). This is also reflected in Pierre Chaunu's summary statement that the whole of the 17th century was in search of God." See in UNGVÁRI-ZRÍNYI, Imre (1997): Erdélyi magyar kartezianizmus a 17. században. Descartes eszméi Apáczai Csere János műveiben. [Transylvanian Hungarian Cartesianism in the 17th century. Descartes's Ideas in the Works of János Csere Apáczai]. *Kellék*. 1997/8–9. 157–176. [The above text was translated from the original into English by the authors of this study.].

[33] Ábrahám Kovács finds a different "landscape" of faith of Hungary/Transylvania; and totally different kind of ties between the Western Calvinists and the Hungarian Reformed churches two hundred years later, as he states: "Although liberal theology still held a grasp on some of the intellectual mind of the Reformed Church in Hungary after the mid-1870s, it was the Scottish

However, what we miss in both regions is the lack of a more "radical criticism" of Scholasticism: the forgotten insights on the *theologia crucis* of Luther (see his 40 *sub contradictio* statements in the Heidelberg Disputatio of 1518, the 1–28 theological theses –especially on the dichotomy between theses 19–20 and 28 – and his stand against Aristotle, in particular, theses 29–40) or the ignored theological and philosophically existentialist challenges that Pascal's *Pensées* could have provided. Asserting that a more integral theological criticism is missing, we wondered why theologians in both the Low Countries and Transylvania seemed unfamiliar with Pascal's ideas.[34] The introductory parts of the autobiography[35] of the Transylvanian chancellor, Miklós Bethlen, where he sets out some ideas and thoughts on the "double nothingness" of human existence

Reformed theological impact coupled with German intermediating theology (*Vermittungstheologie* in German) that began to fertilise the soil of Hungarian Reformed spirituality to a degree that was perhaps *last seen in the 1600s due to Puritanism* [emphasis added]. It could be stated that Reformed evangelicalism was conveyed through a Scottish Reformed tradition, which also integrated continental Pietism because the leaders of the Scottish mission station were Dutch or German Pietists for decades." See KOVÁCS, Ábrahám (2019): Is Christ Proclaimed to Christians? The Impact of Scottish Evangelicalism on Hungarian Theology, Piety, and Praxis (1841–1945). In: *Perichoresis*. 17, 4. 111–131. DOI: 10.2478/perc-2019-0031.

[34] Karl Lövith in his grand oeuvre, *Meaning in History*, tried to clarify why, beginning with the Cartesian turn into modernism, the Kingdom of God-oriented classical interpretation of history turned into a "neither Christian, nor pagan" new kind of view of human history. From the reception of Descartes's rationalist philosophy, to the detriment of the theological interpretation of history, modernity "sees it with one eye of faith and one eye of reason". As a result, the view of history is confused. Its interpretations of history are Christian in derivation and anti-Christian in result. To develop this theory, Karl Löwith, analysing the Cartesian and successive philosophies of history up to the nineteenth century, tried to trace it back again to the Bible. See especially his analysis of Vico's *Scienza Nouva* (Cf. Chapter VI: Vico) in LÖVITH, Karl (1949): *Meaning in History*. *The Theological Implications of the Philosophy of History*. Chicago, The University of Chicago Press. To follow in his footsteps, we are using the Hungarian translation [*Világtörténelem és üdvtörténet. A történelemfilozófia teológiai gyökerei*. Budapest, Atlantisz Könyvkiadó, 1996] based on both the German and the English versions; see pp. 161–186). The German edition's title: *Weltgeschicte und Heilsgeschehen*. Stuttgart – Berlin – Köln – Mainz, Verlag W. Kohlhammer, [7]1979 [1953].

[35] BETHLEN, Miklós (2004): *The Autobiography of Miklós Bethlen*. Transl. by Bernard Adams. London, Paul Kegan.

and its Calvinistic tune in the mirror of the careful analysis of József Simon, is a possible exception.[36]

Pascal made an apparent refusal of the *ego cogito ergo ego sum* by challenging, if not questioning altogether, the Aristotelian tradition (and even the Calvinist orthodoxy, on its Aristotelian-based foundations) of perceiving the self[37] as a similar substance conceivable and comparable to the substance of God. Descartes split the human mind

[36] See SIMON, József (2020): A semmi problémája Bethlennél a németalföldi tanulmányok tükrében (1662–1663): De Raey- és Gassendi-dilemmák [The Problem of Nothingness in Bethlen in the Light of the Studies of the Low Countries (1662–1663): The Dilemmas of De Raey and Gassendi]. In: Horn, Ildikó – Laczházi, Gyula (eds.): *Reformer vagy lázadó?: Bethlen Miklós és kora* [Reformer or Rebel? Miklós Bethlen and His Era]. Budapest, L'Harmattan. 257–274.

[37] See his fragments on the self, where he expresses his cautious scepticism in perceiving what the ego is, moreover what epistemic chances we have to get a proper understanding of it, in opposition to the rational self-confidence of a Cartesian; cf.: Fragment 175: "We know ourselves *so little*, that many think they are about to die when they are well, and many think they are well when they are near death, unconscious of approaching fever, or of the abscess ready to form itself." Then again, in Fragment 66, although he is sceptical in regard to the chances of discovering any truth or first principle of any rational philosophy, he is confident in the life-changing effect of a self-examined life almost in the modern sense of existentialism: "One must know oneself. If this *does not serve to discover truth*, it at least *serves as a rule of life*, and there is nothing better" [emphasis ours]. Cf. Frag.100: "S*elf-love*. – The nature of self-love and of this human Ego is to love self only and consider self only. But what will man do? He cannot prevent this object that he loves from being full of faults and wants. He wants to be great, and he sees himself small. He wants to be happy, and he sees himself miserable [p. 31]. He wants to be perfect, and he sees himself full of imperfections. He wants to be the object of love and esteem among men, and he sees that his faults merit only their hatred and contempt." – etc. The fragment proves the perverse will of men to see themselves better than they are and, as a result, unable to gain a proper and infallible knowledge of the self. This serves as a criticism against the epistemological optimism of the Cartesians. And if Kant in the footsteps of Descartes believed that self-deception cannot be maintained because of the possibility of a rational self-knowledge, the Pascalian existentialists and the radical Calvinists would believe the contrary, that self-knowledge cannot be guaranteed because of the possibility of self-deception. Miklós Bethlen, the protector of those Cartesian-Cocceian theologians who were prosecuted by Pósaházi, as Simon argued (see above), is very "Pascalian" in his thinking as he could in his Calvinist/Augustine scepticism double the "nothingness" lurking around the soul and creeping into the possible "meaninglessness" of one's life, produced by the fall and doubled by the combination of human imperfection – as a created entity – and of human sin as a result of the Fall / original sin.

and body into two substances, as separate entities. The Self, the ego of Descartes, is the idea equated with the human soul as the very mind, and different from the *res extensa*, the body. That criticism of the Aristotelian substance-concept in the spirit of the Cartesian reductionist form of rationalism and idealism served later as the foundations for the Enlightenment idealism of the next centuries. It seems to us that those thinkers in both the Low Countries and Transylvania lacked the existentialist insights of Pascal, or the roots of the existentialist and personalism-oriented impact of the Jansenist philosopher, despite the fact that Jansenists were regarded as "crypto-Calvinists" and later (after the death of Pascal) suffered papal anathema. Maybe for this reason we can assume that the orthodox Calvinists were not radical enough in their perhaps quasi-Cartesian rationalistic criticism of the Aristotelian Scholastics on the ego, creating an individualistic rather than dualistic view of the self within the parameters of Descartes's thought. On the other hand, because of the Calvinist persuasion, it is puzzling how they could not be aware of the subtle ego-logicalism of the Cartesians, over against the emphasis of *theologia crucis* of the Reformed view that could have been called a peculiar "Divine Ego-logic" of the "I am who I am", the God of the covenant.

The Unique Approach of the Transylvanian Thinkers

Were there any exceptions? In our hypothesis, here we can observe a movement of the pendulum from the West to the East. At least in that one area of thought, Transylvanian thinkers were unlike their counterparts in the Low Countries, despite the former not taking into relevant consideration both the thoughts of Pascal and of Calvin on the relational rather than substantial character of the human soul or self. However, the next generation of students of Pósaházi and the like, some of those illustrious theologians, such as István Hatvani, tried to take a more critical approach towards the entailing Cartesianism that followed. Hatvani's intuition and ability of thought in philosophy and theology can be compared with the ingenuity of Pascal, both in his scientific discoveries based on probabilism (previously researched also by Pascal) and in his apologetic "vision" to refute the new sceptics (like Pierre Bayle). Moreover, he could question and refute even the idea-theories of Descartes. As Béla Tóth observed in connection with Hatvani's foundational book:

István Hatvani "assumes that there are two kinds of truth: one is the *Evidentia simplex*, which, by means of the senses (*sensus*), testimony (*testimonium*), and analogy, arrives, if not at complete certainty (*certitudo*), then at complete conviction (*persuasio*), which can be as solid as if it had been obtained by mathematical means". In the preface:

> [he] confesses that he had a double purpose in the work he has presented. On the one hand, to refute (...) the contradiction (*contradictio*) and the principle of sufficient reason, which are so prevalent, and which are now (in his day) so much in vogue; and, on the other hand, to obviate the procedure that, following the principles and the method of their master, brings everything within the sphere of mathematical proof, that is, on the ground that what cannot be proved mathematically cannot be true and that man is not bound to believe it. But by this doctrine, they are throwing a spanner in the works of the "naturalists" (i.e. the pioneers of the Enlightenment, the atheists – TB). Therefore, the main aim of his work is to provide a remedy and antidote (*remedia et antidota*), first and foremost to his disciples, against the ever-increasing "plague" of irreligion and atheism, by revealing the true foundations of truth.[38]

Observing the argumentative fight against the predicted and rising "plague" of atheism in the footsteps of Descartes, carried out by the orthodox/Calvinist (and yet, to some extent still, "emerging" semi-Cartesian theologians of the period), based on these presuppositions presented above, let us now illustrate that fight with the *Syllabus* of Pósaházi. In the 68th assertion (Assertio LXVIII), he quotes Descartes:

This proposition, "I think, therefore I am" (that is, the thinking mind exists; for through "I", it understands only the mind, of which substance is truly distinct from the body),[39] is the first and most certain of all principles that occur to anyone engaged in the ordinary practice of philosophy. The same is stated in Part I of the Principles, §. 7.: "What we call the soul or our thinking, I have assumed the existence of this thinking as the first Principle."[40]

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[38] HATVANI, István (1990 [1757]): *Introductio ad principia philosophiae solidioris* [Introduction to the Principles of a More Solid Philosophy]. Transl. from Latin by Péter Tóth, ed. and preface by Béla Tóth. Bilingual edition. Budapest. 5. [The fragments quoted are the translations of the authors of this study from the original Latin and Hungarian text.].

[39] The Italics refers to Pósaházi's comments; he quotes Cartesius from the contemporary edition.

[40] Pósaházi: Syllabus, E2: Haec propositio, Ego cogito, ergo sum (id est, mens cogitans existit; nam per Ego intelligit solam mentem; estque substantia realiter a corpore distincta) est

Basically, in the refutation of this central argument of Descartes, Pósaházi in his second counter-argument used a peculiar statement, which is as ingenious as the counter-argument of Pascal. In other words, Pascal could have said the same. We plan to elaborate more on this comparison in a successive study into the further theological analysis of the *Syllabus*. Let us examine now the Transylvanian philosopher's second counter-argument presented in the *Animadversio* for the 68th assertion:

Because principles must be apodictic, that is, they must not be proven through prior ones: but this proposition, "I think, therefore I am", is not such. It is proven through the prior statement: "There are no properties [affections] of non-being." Or: "Given the effect, it is necessary to posit a cause."[41]

In his analysis of the above argument, Simon noticed:

Pósaházi's point is clear: thinking is a property that is perceived by the mind. In order to infer the existence of the mind as the subject of the perceived property of thinking, we must accept the principle "the non-existent has no properties". An inference to the existence of the mind can only be conclusive if we allow, and thereby presuppose, the validity of the principle introduced. If we do not allow and presuppose the validity of "the non-existent has no properties", then the perceived property of the mind need not exist on any underlying substrate, substance. The insight into the existence of the mind cannot provide the first principle because it is preceded by the principle "the non-existent has no properties".[42]

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omnium prima & certissima, quae cuilibet ordine philosophanti occurrit. Principiorum: Idem I. Part. Princip. §. 7. Item in Praefat. Quod animam seu cogitationem nostram vocamus, existentiam huius cogitationis assumpsi pro primo Principio. Cf. Descartes: AT VIII-1, 7, 7–9.

[41] Pósaházi: Syllabus, E2: Quia Principia debent esse Anapodictica, id est, non debent probari per priora: at haec propositio, Ego cogito, ergo sum, non est talis. Probatur enim per prius illud: Non entis nullae sunt affectiones. Aut: Posito effectu, necesse est poni causam.

[42] "Pósaházi álláspontja világos: a gondolkodás egy olyan sajátosság, amit észlel az elme. Ahhoz, hogy az elme mint a gondolkodás észlelt sajátossága szubjektumának létezésére következtethessünk, el kell fogadnunk »A nem-létezőnek nincsenek sajátosságai« elvet. Az elme létezésére vonatkozó következtetés csak akkor lehet konkluzív, ha megengedjük, és ezáltal előfeltételezzük a bevezetett elv érvényességét. Ha nem engedjük meg és nem előfeltételezzük annak érvényességét, hogy »A nem-létezőnek nincsenek sajátosságai«, akkor a gondolkodás észlelt sajátosságának nem kell fennállni semmiféle alapul szolgáló hordozón, szubsztancián. Az elme létezésére vonatkozó belátás nem szolgáltathatja az első alapelvet, mert azt megelőzi »A nem-létezőnek nincsenek

But Simon also analyses the counter-argument of the Anonymous (author) of the *Vindiciae.* The unknown enigmatic author tried to refute the charges of Pósaházi against Descartes when accusing the French thinker of syllogism. Simon remarks:

The answer clearly denies that the principle "I think, therefore I am" is a syllogism in the strict sense and then regards the inferential structure "therefore" as a simultaneous temporal relation: "As long as I think, I am nothing, or as long as, I think I exist."

But the way that Anonymous was able to exempt Descartes from this accusation makes the observation of Simon, which follows, more interesting:

By denying the syllogistic nature of the cogito-reason, the author stresses the immediacy of reflection, which precedes all mental acts. The theme of nothingness, of non-existence, which has arisen in the meantime, reappears a few lines later: Furthermore, with regard to that which we have already conceived to exist in the mind in this way, and then to shine forth in the case of other objects, as in the case of God, etc., should I rather conclude that it comes from nothingness rather than affirm that it has some truth in itself?[43]

The Latin text translated into English and used by Simon omitted "the grace of God"' from "ut exempli gratia de Deo etc.". That is probably just a typo, yet it is extremely important! When we think over its relevance from a particular theological point of view, namely that in existential relations we cannot speak of just a God, but of *the grace of God,* which is given as a gift, in a given time, in a personal-relational way, then it is impossible not to make an exception there. Anonymous, according to Simon, "regards the inferential structure ['therefore'] as a simultaneous temporal relation" (see above). Augustine (cf. his *Confessions* on the mystery of time, where he asks: What is time?) placed the "simultaneous temporal relation" in the nothingness. It is like in the thinking of the Scholastics, "a

sajátosságai« elve." See in SIMON, József (2023): A cogito-érv mint első alapelv. Karteziánus dilemmák a 17. századi Erdélyben [The Cogito Argument as a First Principle. Cartesian Dilemmas in 17th-Century Transylvania]. In: *Különbség*. 23, 1. 95.

[43] "Item quomodo id, quod in mente ita existere certo deprehensa, amplius etiam de aliis obiectis explendescit, ut exempli gratia de Deo etc., illud vel nihil esse, vel a nihilo procedere potius concludam quam affirmem aliquid habere in se veritatis?" In English, it reads: "And how is it that what, when clearly apprehended to exist in the mind, extends even further to other objects, such as, for example, the grace of God, that I would rather conclude it to be either nothing or to proceed from nothing, than affirm that it contains any truth within itself?" Ibid.

possibility can become a reality, but a reality cannot become anymore a possibility" type of paradox denial, yet would that be in correlation with the flow of time towards the future? What nullifies the forgiven past in order to make room for the future? Only grace (*gratia de Deo*) can be an exception here. Grace issues from nothingness, just as creation issued from nothingness. Nothingness is the picture of grace,[44] and as the present tense dissolves into the future, after it was dissolved into the past, thus its very presentness is also dissolved as if nothing happened. We do not see in the argumentation of Anonymous "I think, therefore I exist", but rather the opposite: I received a gift / I am "graced", and that dissolves time into nothingness. Once that simultaneous temporal structure has placed me by grace in a temporal relation with the atemporal and personal God, I can say, I am pardoned, my very selfish Self (egocentric self), therefore I do not exist! Paradoxically, I *have* existence. God's ("unselfish", yet justified and praised "egocentristic") "Ego" encompassed me in Himself and that crucified my "old self". This is how Pósaházi argues with the old Calvinists, and Simon found something similar in Bethlen's perception on the existential "nothingness", which is not just essential weakness out of the fact that humans are fragile creatures, but that weakness is being doubled by the effect of the original sin upon our humanness. That radical perception of total depravity and sinfulness was described in many ways and became an underlying doctrine for the theologians of the time in every debate concerning Descartes versus Calvinism, on both ends of the pendulum, whether in the Lowlands, or in Hungary and Transylvania.

[44] When we speak of grace, we mean reality. But nothingness is the picture of Reality itself. For a comparison, see the Puritanism-influenced Transylvanian philosopher KULTSÁR, András Diósadi (1922): *Új gondolatok régi titkokról, Tentamen* [New Thoughts on Old Mysteries, Tentamen]. Szamosújvár. 16: "Thus I have arrived to the thesis of *absolute contradiction*. I have realized that the notion of *nothing* is that from which every knowledge of the human mind on this earth *necessarily* proceeds, because to every reality and, as such, even to the *thinking* reality, i.e. man's, the most perfect contradiction to it, evidently, is – nothing. The thinking man cannot base his own knowledge on anything outside of himself because he does not know anything outside of himself, i.e. outside of *reality*. He knows nothing else other than *nothing*." Then he goes on to criticize Descartes on page 32: "Descartes was mistaken when he based human thinking on the "cogito ergo sum" as if he wanted to base it on *thinking* itself. Evidently, this is as if somebody wishes to build a house, and so he would say that *in order for it to be stronger*, he will lay down a foundation on the foundation itself, i.e. on *the new foundation*, he would lay down his foundation. So, on what does not exist *but never can exist either*."

We can summarize that in line with the "theologian of the cross" concept of Luther, as follows: I died to myself "inside" of Him, there is no other way for one to die to him or herself "outside" of Him. And yes, "there are no properties [affections] of non-being", except in the case of grace. We will argue and approach this point later, in a successive study, when we take a closer look at the Pósaházi (typically Pascalian-type) solution to the matter. It is enough here to state from the above that there is not any "substance" for the self; individualism is an illusion (no wonder that some, mainly naturalists, would argue similarly, both at that time and today, that even our consciousness is / could be an illusion); the ego can survive only in non-being, "choked" (or rather immersed) into God's being, meaning into a relation issued by grace; and Buber proves correct: In the beginning there was relationship. Even when I think, I do not exist, and even when I do not think, I exist – neither the new Cartesian Anonymous nor the old Aristotelian Scholasticus but the eternally grace-centred Pascalian Posahasius. But perhaps that argumentation could be the challenging topic of our next study on Pósaházi's *Syllabus*, following the move of the curious seventeenth-century "theological pendulum".

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József POSTA[1]:

István Hatvani – The Natural Philosopher
The Foundation and Application of Hatvani's Natural Science Knowledge in Higher Education

Abstract.

During his theological and medical studies and doctoral work in Basel, Hatvani's goal was to acquire deeper mathematical knowledge. Therefore, from the second half of 1747, he attended the lectures of the world-famous mathematician Johann Bernoulli (1667–1748) and then of his son, Daniel Bernoulli (1700–1782). Hatvani studied in detail the posthumous work of Jakob Bernoulli (1654–1705), entitled *The Art of Conjecture*, published in 1713. Learning about the Bernoulli's groundbreaking work helped him become the first in Hungary to teach probability and mathematical statistics and to perform real statistical calculations. In Leiden, Hatvani mostly attended lectures of physics and presentations of experiments by Pieter van Musschenbroek (1692–1761), who was a student of Newton. He listened to lectures delivered by the astronomer Johannes Lulofs (1711–1768) and the chemist Hieronymus David Gaubius (1705–1780). He gave his inaugural lecture at the Debrecen Reformed College in January 1749, bearing the title *De matheseos utilitate*

[1] Professor Emeritus, Department of Landscape Protection and Environmental Geography, University of Debrecen, 1 Egyetem Sq. H-4032 Hungary; e-mail address: posta.jozsef@science.unideb.hu.

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in theologia ac in physica necessitate [On the Usefulness of Mathematics in Theology and Its Necessity in Physics]. Hatvani sets out from the assumption that mathematics is the most exact science of all. He acquired the most modern electrical equipment available at the time and used it to present physical experiments to his students. Making use of his chemical studies, Hatvani taught chemistry for the first time in Hungary starting from 1750. In 1777, he published a book on the analysis of the medicinal waters near Nagyvárad (Romanian: Oradea) and the examination of the salts in the vicinity of Debrecen. According to Hatvani, science and religion are independent forms of consciousness. In his eyes, they are equivalent forms of consciousness that presuppose each other in terms of the prosperity of humanity. Hatvani's position is that he investigates first, then believes, and accepts as true only what he has carefully investigated. With this, he marked his own place on the road to theological rationalism.

Keywords: theology, medicine, probability and mathematical statistics, experimental physics, chemistry, astronomy, land surveying, dormitory hospital

1. The Sources of Hatvani's Knowledge[2,3,4]

István Hatvani (1718–1786) completed his studies at the Reformed College of Debrecen in 1745 and set off on a study trip abroad in 1746. He himself collected nearly 300 Rhine forints for the study trip through his previous work as a praeceptor. In addition, the Reformed College, the city of Debrecen, Nógrád and Szabolcs counties, and private individuals also contributed to his studies with donations.[5]

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[2] The most detailed and authentic book about the life and work of István Hatvani was published by Ede Lósy- Schmidt in 1931. The fact that Hatvani's descendants found the professor's 32-page-long handwritten autobiography in Latin, in which he followed his own life from birth to the age of 39, helped him a lot in writing the book.

[3] LÓSY-SCHMIDT, Ede (1931): *Hatvani István élete és művei (1718–1786). I. rész* [The Life and Works of István Hatvani (1718–1786). Part I]. Debrecen, Studium Könyvkiadó.

[4] HATVANI, István (1757a): *Autobiography (in Latin).* Budapest, Magyar Tudományos Akadémia, Manuscript Archive, Ms 10.378/a.

[5] Institutions and individuals supporting Hatvani's trip abroad: Debrecen city council – 30 Rhine forint + full equipment for his pack-horse, Debrecen parish – 50 Rhine forint, college school board – 25 Rhine forint + 30 Hungarian forint as aid, Losonc parish – 12 Körmöc gold,

He enrolled in the theological (13 May 1746) faculty of the University of Basel. A semester later (November 1746), he enrolled in the medical faculty, too. He was ordained a priest on 23 May 1747. A month later, he submitted his doctoral thesis in theology under the title *Theological-Critical Considerations*.[6] During the theological doctoral defence, the examining professors were surprised to announce that had they rarely met such a well-prepared debater. He continued his medical studies at the University of Basel. In 1748, he submitted his medical doctor's thesis entitled *De aistimatione morborum cum facie* [Determination of Diseases of the Face].[7] Based on his excellent preparation, he was awarded a Doctor of Medicine degree on 9 April 1748. Hatvani demonstrated his extraordinary abilities during his study trip to Switzerland. During the two years, he obtained two doctoral degrees: a doctorate in theology and a doctorate in medicine. He learned at an incredibly fast pace. His memorization skills were extremely good. Due to his rare abilities, he was able to complete his medical training in as little as 15 months.

After becoming a doctor, he spent a week in Zurich. He contacted Protestant theologians and natural scientists. Among others, he met Protestant professors Breitinger, Zimmerman, Gesner, and Hagenbeck. Then he travelled to the Netherlands. At the University of Utrecht, he consulted with professors Vogel, Milli, and Vesselnig. He then spent several months at the University of Leiden. Hatvani attended the lectures of Newton's student, Pieter van Musschenbroek, as well as of Johannes Lulofs and Hieronymus David Gaubius. Owing to the excellent masters, Hatvani also became a highly educated scientist.

Szabolcs County – 15 Rhine forint, Nógrád County – 30 Rhine forint, Rádai Gedeon – 4 Körmöc gold, Gyürki István – 2 Körmöc gold, József Darvas – 1 Körmöc gold, Gábor Kántor – 1 Körmöc gold, László Losonci – 1 Körmöc gold, László Vajda – 1 Körmöc gold, Baroness Krisztina Bossányi, widow – 1 Körmöc gold.

[6] HATHVANI, Stephanus (1748a): Animadversiones theologico-criticae. In: *Museum Helveticum. Particula VIII. Turici*. 575–625.

[7] HATHVANI, Stephanus (1748b): *Dissertatio inaug. physico-medica de aestimatione morborum ex facie*. Basiliae, Typis viduae Ioan, Christ.

Several universities tried to win him over as a teacher. The universities of Basel, Heidelberg, Marburg, and Leiden also offered him a professorship and a department. However, Hatvani refused these invitations, saying, "... I prefer my church in a sad situation and the low-income teaching position in my country to the flourishing freedom and a generous teacher's salary in the Netherlands."[8]

The careful and purposeful building of relations with western Protestant universities later proved to be very useful and fruitful. Starting from the year 1752, Maria Theresa forbade the dormitory teachers to be paid by the city of Debrecen. Consequently, it became a matter of particular concern for Hatvani to obtain financial support from foreign (English, Belgian, Dutch, Swiss) Protestant churches. His correspondence turned out to be very successful. Ever since, grants have been coming in continuously for the Reformed College of Debrecen.

István Hatvani's work brought fundamental intellectual and practical development to the Debrecen Reformed College in several areas. Hatvani played a timeless role not primarily in research work but in the efficient transmission of the most modern scientific results of the time. The most important scientific fields in which he took a pioneering role in our country are mathematics, probability calculation, statistics, engineering training, experimental physics, including electricity, astronomy, and especially the introduction of the subject of chemistry into Hungarian education. In the preface to his book *Introductio principia philosophiae solidioris*, he formulates the basic principle of his entire teaching system and pedagogical creed: "And at the very beginning of my career, I set myself the rule that I should not accept anything thoughtlessly and that I should not hastily impose anything on my students as true and certain, only things that have been proven to be true and certain by longer reflection and more serious investigation."[9]

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[8] RÉVÉSZ, Imre (1871): Hatvani István, 1718–1786. In: *Vasárnapi Újság* [Sunday Newspaper]. 6. 69–71. [The translations of all, originally non-English quotations belong to the author of the article.]

[9] HATVANI, István (1757b): *Bevezetés a szilárdabb filozófia alapelveibe* (Original title: *Introductio ad principia philosophiae solidioris*). Transl. Péter Tóth. Budapest, Debreceni Akadémiai Bizottság, 1990. 1.

2. Mathematics

Hatvani's mathematical activity can be well documented based on printed works. The inaugural for his appointment to professorship, held in January 1749, was published in the journal *Museum Helveticum*.[10] The title of the inaugural lecture was *De matheseos utilitate in theologia ac in physica necessitate* [On the Usefulness of Mathematics in Theology and Its Necessity in Physics].

In his inaugural, Hatvani emphasized that mathematics is one of those sciences whose results cannot be the subject of debate. Mathematics is never wrong in its conclusions. Therefore, according to Hatvani's view, we must first of all get to know the basic principles and methods of this science so that we can then find the truths more easily with their help. With certain conclusions, we should be able to filter out new truths without any mistakes. Theologians are also led by the application of the methods of mathematicians to form correct concepts about God and the divine religion. Although their sole vocation is to preach and teach the truths of the Christian religion, in order to convince their students and opponents of the truth of the dogmas, mathematics will always be of great help to them. Also, with the help of mathematics, we can effectively convince atheists, natural scientists, and deists of their errors and prove to them that there are certain things in nature that we cannot comprehend with finite reason, but whose existence and truth would be, nevertheless, nonsense to deny or cast doubt on.

With the help of several concepts belonging to the field of mathesis (e.g. the asymptote of the hyperbola, the approach of irrational numbers with fractions, the sum of an infinite series, or the interpretation of the differential ratio), he tries to create a connection between theology, philosophy, and mathematics. As the concept of infinitely large or infinitely small plays an important role in each of these sciences, he tries to explain the role of infinity.

Above all, Hatvani points out the backwardness of mathematical culture in Hungary. He then goes to great lengths to prove how important a role mathematics plays in the whole range of practical sciences. That is why sciences also using mathematical tools obtain solid results. However, in the course of expressing his ideas,

[10] HATHVANI, Stephanus (1751): Oratio inauguralis de matheseos utilitate, in qua ostenditur. In: *Museum Helveticum. Particula XX. Turici*. 531–557.

he emphasizes not so much mathematical knowledge but rather the importance of his methods and logical thinking. However, even more essential than this is that he goes on to prove the applicability of mathematics through numerous examples taken from practical sciences – namely, its use in agriculture, technology, the design of aqueducts, mills, buildings, the division of inheritance, the lifting of loads, as well as military technology, the construction of ramparts and trenches, the siege of castles, etc., in which mathematics cannot be ignored at all. In Hatvani's opinion, the economic life of our country suffers precisely because of the neglect of mathematics.

Within mathematics, Hatvani taught not only arithmetic and geometry but also plane and spherical trigonometry. In connection with this, he presented a practical solution to various land surveying tasks. Furthermore, differential and integral calculus, as well as civil and military architecture were also part of the subject.[11]

Hatvani's success in teaching applied mathematics is shown by the fact that from the 1760s, more and more "geometers" and "mathematicians" emerged from the students of the college (e.g. 1765 – Ferenc Szokoli; 1779 – György Kováts, who became Debrecen's city engineer and a good copper engraver; 1783 – István Szakáll; geometer Mihály Rétei; mathematician István Horváth). Their number started to increase especially from 1786. On 5 January that year, Joseph II ordered a survey of the country's territory, and eight of the Debrecen students joined the ranks of surveyors over the course of the year.[12] The best-known example is Ádám Pálóczi Horváth[13] (1760–1820), the poet who studied at the College between 1775 and 1780 as an "engineer". As a professional land surveyor, he acquired considerable fortune through this occupation. On the basis of the course material submitted by Hatvani, it could be concluded that the engineering education developed at the college in Debrecen at this time exceeded

[11] HORVÁTH, Róbert (1963): *Hatvani István professzor (1718–1786) és a magyar statisztikai tudomány kezdetei* [Professor István Hatvani and the Beginnings of Hungarian Statistical Science]. Budapest, Közgazdasági és Jogi Kiadó. 68.

[12] TÓTH, Béla (1988): A kollégium története a XVIII. században. In: Barcza Lajos (ed.): *A Debreceni Református Kollégium története* [The History of the Debrecen Reformed College]. Budapest, Magyarországi Református Egyház Zsinati Iroda Sajtóosztálya. 103.

[13] FEHÉR, Katalin (2002): *Hatvani István és tanítványai* [István Hatvani and His Students]. Budapest, Országos Pedagógiai Könyvtár és Múzeum. 56–60.

not only the standards of engineering education provided elsewhere in the country but also the standards of engineering education in a similar direction in Austria.

3. Probability Calculation, Statistics

Chapter 3 of Hatvani's book *Introductio...* written in Latin deals with probability calculation. To the best of our knowledge, this is the very first discussion of this topic in Hungarian-language literature that may be deemed almost complete compared to the knowledge of the time. Probability calculation problems have been raised since ancient times, especially in connection with games of chance, which were very fashionable in the Middle Ages. But until the beginning of the 18th century, we could not speak of a coherent theory of probability calculation. After such antecedents, the famous posthumous work of the Basel mathematician Jakob Bernoulli, *Ars conjectandi* [The Art of Conjecture] was published in 1713.[14] Jacob Bernoulli (1654–1705) interprets some concepts of probability calculation through examples related to gambling, explains the elements of combinatorics, and, finally, outlines the foundations of the law of large numbers – this is the most important part of the book, as it laid the foundation for mathematical statistics.

Hatvani was familiar with *Ars conjectandi*, which book provided him the guiding thread for writing the chapter on probability in his own book *Introductio*… It should be especially emphasized that this presentation of the probability calculus in our country only took four decades after the publication of the first such summary work in world literature. This is a big deal if we think about how much mathematics was neglected and despised as a science in our country at that time.

In Basel, Hatvani studied Bernoulli's work in depth, and after returning home, he applied the probability calculation to domestic conditions in several areas. His illustrative examples also relate to life insurance and mortality tables. *Introductio...* provides three death tables, but Hatvani – based on the matriculation records in Debrecen – collected authoritative statistical data himself. His comments regarding

[14] BERNOULLI, Jacob (1713): *Ars conjectandi, opus posthumum. Accedit Tractatus de seriebus infinitis, et epistola gallicé scripta de ludo pilae reticularis*. Basel, Thurneysen Brothers.

infant mortality in Debrecen, analysing its possible causes, are particularly significant.[15] At that time, 19.2% of infants died in western countries in the first year of their lives. Measured in the same period, this figure in Debrecen – taking into account the data for the years 1750–1754 – was almost twice the former, i.e. 34.2%. As a doctor, Hatvani made great efforts to find the underlying reason. He believed that the explanation could be found in the less favourable meteorological conditions, the unhealthy drinking water, the air infected by the swamps, and the low level of education of the midwives.

The merits of this study are the advocacy of statistical data collection and the introduction of insurance mathematics. His efforts were not fruitless. We can find a long list of statistical surveys initiated in our country in the wake of Hatvani's work. A further essential point of reference in this regard emerged when Dániel Ercsei (1781–1836), the later professor of the College, wrote the first Hungarian book on statistics, *Statistica* (Debrecen 1814),[16] influenced by Hatvani's work.

4. Experimental Physics

Relatively few sources are available for Hatvani's performances in physics. We can infer their modernity and quality from the physical apparatus and devices he used, as well as from the level of preparation of his many distinguished students. The name "Hungarian Faust" associated with Hatvani's personality was mainly due to his innovative electrical experiments. After Maróthi, Hatvani also had great merits in the expansion of the Collegium's physical laboratory. He made financial sacrifices to buy the equipment necessary for physical experiments, procuring it from abroad or from merchants in Buda. The acquisition of 20 such new devices is linked to Hatvani's name.

As an unconditional follower of Newton, in 1757, he was familiar with and taught the most modern physics. Not even in 1781 were his physics lectures outdated. He constantly developed and expanded them with new results. Among other things, this is indicated by the fact that in 1776, besides an electric machine, he also bought an

[15] HORVATH 1963.

[16] ERCSEI, Dániel (1814): *Statistica. Közönséges statistica és Magyarország statistikája*. Debrecen, Ny. Csáthy György. (Information in *Magyar Hírlap* 1891/195).

electrophorus[17] invented by Volta a year earlier, in 1775.[18] He also managed to get the young Mihály Kabai to be sent abroad by the college to learn the mechanics of building and repairing demonstration devices.[19]

The subjects of his experimental physics lectures are as follows: mechanics, hydrostatics, chemistry, medical physiology, botany, geography, and astronomy. The materials he presented in physics can also be inferred from the carefully prepared lecture notes of one of his enthusiastic students, Ferenc Újfalusi. The book, which also contains accurate drawings of the tools presented at the lectures, is currently housed in the library of the Reformed College.

Hatvani worked intensively on astronomy, too. Already during his stay in the Netherlands, he took part in astronomical observations. He was considered an equal colleague by his professors in Leiden and was included as a partner in their scientific observations. The study of the lunar eclipse of 25 July 1748 was carried out by Hatvani together with professors Musschenbroek, Lulofs, and Aleman (from Franeker).

At home, he later maintained a professional relationship with the Jesuit imperial astronomer Maximilian [Miksa] Hell (1720–1795), with whom he had a long discussion about his observations on Comet Halley. It is due to his interest in astronomy that Hatvani was the first to determine the geographical latitude of Debrecen, with surprising accuracy. (His measurement differed by just 8' from the value accepted today.)

It was on the basis of two astronomy articles that Hatvani was noticed by the wider international professional public. One of his articles explains the aurora borealis, and another one describes the trajectory of a comet that appeared in that period.[20]

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[17] FLEMING, John Ambrose (1911): Electrophorus. In: Chisholm, Hugh (ed.): *Encyclopædia Britannica*. Vol. 09. (11th ed.). Cambridge University Press. 237.

[18] NAGY, Mihály (1989): Fizika és a 450 éves Debreceni Református Kollégium [Physics and the 450-Year-Old Debrecen Reformed College]. In: *Fizikai Szemle* [Physical Review]. 1989, 3. 96–104.

[19] JAKUCS, István – ZEMPLÉNI, M. Jolán (1962): Debrecen és a magyar fizika kezdetei [Debrecen and the Beginnings of Hungarian Physics]. In: *Fizikai Szemle* [Physical Review]. 1962, 12. 361–368.

[20] JAKUCS, István – BARNA, Péter (1957): Hatvani István. In: *Fizikai Szemle* [Physical Review]. 1957, 1. 3–9.

5. Chemical Work

Hatvani is one of the pioneers of chemical education and research in Hungary. In 1777, he published a book in Latin in Vienna about the thermal waters around Nagyvárad:[21] *Thermae Varadienses examini physico et medico subjectae, item de illarum usu salutari: simul cum observationibus medicis, nec non de sale medio in iis contento. Cujus occasione dissertatio inseritur De natura salium. Nominatim vero de salibus qui circa Debrecinum colliguntur. Nitro nostri temporis, et veterum, seu natro id est, alcalino fossili, vel saponario Debrecinensi.*

Viennae. 1777. [The Thermal Waters of Várad, Subjected to Physical and Medical Examination, and Likewise on their Salutary Benefits: At the Same Time with Medical Observations, Not Least on the Common Salt Contained in Them. In Connection with Which the Treatise on the Nature of Salts Is Inserted. Namely on the Salts Which Are Collected in the Vicinity of Debrecen. On the Soda (Sziksó) of our Time and of the Ancients, or Natron, on the Vegetable Alkali, i.e. the Soap Salt of Debrecen].

His 208-page book entitled *Thermae Varadienses...* contains chemical treatises, the title indicating that he determined the chemical composition of the water of Félixfürdő [Romanian: Băile Felix] and Püspökfürdő [Romanian: Băile 1 Mai] near Nagyvárad. Being a doctor, he could also explain their medicinal effects. He investigated the salinization of soils and the medicinal use of native soda (*sziksó*) as a raw material. His investigations in this regard were extremely modern.

From the point of view of the history of science, some of the sentences of his mentioned book bear great significance: “Since the science of chemistry was almost unknown in Hungarian academies and schools, at least until the seventies of this century, I tried to contribute something. From 1750 on, my students are not inexperienced in this area of natural sciences either.”

[21] HATVANI, Stephano (1777): *Thermae Varadienses examini physico et medico subjectae, item de illarum usu salutari: simul cum observationibus medicis, nec non de sale medio in iis contento. Cujus occasione dissertatio inseritur De natura salium. Nominatim vero de salibus qui circa Debrecinum colliguntur. Nitro nostri temporis, et veterum, seu natro id est, alcalino fossili, vel saponario Debrecinensi.* Viennae, Rud. Graeffer.

The telling words above confirm that he was the initiator of higher chemistry education in Hungary in 1750, preceding Selmecbánya Mining Academy by more than a decade and Nagyszombati University by two decades.

Hatvani also presented chemical experiments in his physics lectures. This is evidenced by a surviving note on which he ordered hydrochloric acid, sulphuric acid, and nitric acid on behalf of the College, marking *pro experimentis physichis*. His experiments could still be qualitative analytical procedures.[22] We know from his autobiography that he carried out the experimental work "under the guidance" of Johann Heinrich Winckler (1703–1786), a teacher of philosophy and physics in Leipzig, and he probably used the book *Institutiones mathematico-physicae experimentis confirmantae,*[23] published in 1738, as a guiding thread. Although this book provided a description of salts in brief and general terms, Hatvani discussed the issue of salts very thoroughly, and in close connection with practice, as part of the chemistry he taught.

In his time, chemistry did not yet have solid foundations; so to speak, they were in the initial development stage of learning about the material. In that period (the second half of the 18th century), each small accomplishment could be a valuable contribution to the overall scientific achievements of chemistry. Dealing with salts partly helped the theoretical development of chemistry and partly benefited technical and economic life. The significance of István Hatvani's chemical work must be sought among the latter. If we think about it, the chemical industry knowledge of that time was already required and used by the craft industry – for example, in Debrecen the leather, soap, metal industry, ceramics, etc.

Certainly, Sámuel Tessedik, a student at the college, was greatly influenced by Hatvani's investigations and lectures on *szikső* in the Debrecen area. In 1780, this highly talented and strong-willed student founded the first Hungarian agricultural institute in the town of Szarvas. Following and drawing on Hatvani's chemical experiments with the *szikső* around Debrecen, Tessedik – far ahead of his time – achieved great successes in making useless, barren lands fertile. Through his careful experiments, he was able to

[22] SZABADVÁRY, Ferenc – SZŐKEFALVI NAGY, Zoltán (1972): *A kémia története Magyarországon* [History of Chemistry in Hungary]. Budapest, Akadémiai Kiadó.

[23] WINCKLER, Johann Heinrich (1738): *Institutiones mathematico-physicae experimentis confirmantae.* Leipzig.

improve his saline soils to such an extent that an acre of land yielded a profit worth 150 forints even in the driest year. He made significant contributions to the afforestation of the saline soils of the Great Plain: over three decades, he raised approximately 12,000 saplings of 300 species on the saline soils.[24]

Hatvani's chemical work was continued at the Reformed College by one of his students, Pál Sárvári (1765–1846), who established a department for mathematics and physics in 1798, where he taught chemistry as well as physics.

6. Teaching and Medical Work

Hatvani began his lectures at the Debrecen Reformed College on 20 January 1749. In his autobiography, which he began in March 1752, he presents the list of lectures in nine points, as can be seen below, indicating their scope as well.

1. Lectures Joh. according to Gottlieb Heineccius's history of philosophy, 20 sheets.

2. Explanation of the basic principles of philosophy, in 53 paragraphs, cc. 6 sheets.

3. Ontology Joh. according to H. Winckler, 14 sheets.

4. *Natural Theologia*, also based on Winckler but expanded to 16 sheets. Here he notes that he gave these lectures in the winter because in the summer, when the weather was good, he taught mathematics.

5. Lectures on cosmology and general physics (*Physica Generalis*): 16 sheets. He held this from January 1752 to March 1753.

6. Experimental physics, which, however, included the basic principles of chemistry, botany, medical physiology, geography, hydrostatics, as well as all areas of mechanics and the basics of astronomy. He notes that he was engaged in these fields for a period of three years, up until 2 December 1752.

7. Ethics – 46 sheets. He taught this throughout the year 1750.

8. Natural law (*Ius naturale*) according to J. G. Heineccius, in § 160. 40 sheets. He started this at the end of 1752 and finished it in a year.

[24] FEHÉR 2002, 53.

9. Explanation of William Derham's physico-theology. 3 and a half sheets. He translated this from French into Hungarian and delivered it every Sunday throughout the summer of 1752.[25,26]

He renewed education, introduced new subjects, presented spectacular experiments in his classes: there were times when he even managed to induce lightning. He fascinated the students with his experiments. Consequently, magical stories about his special abilities have sprung up. There were stories about him getting the black book from the throat of a snake, which made him master of the devils; that he conjured water on the floor of the dancing hall; he tapped the table leg, from which Tokaj wine was dripping; and a magic ring warned him of the dangers.[27]

In addition to improving the knowledge of his students, he was also concerned about their health. In 1775, Hatvani founded a dormitory hospital, adding a hospital fund and a patient fund. He became the first school doctor. He gained a reputation not only as a teacher but also as a medical doctor. Hatvani worked as a real school doctor: he treated sick students, gave health lectures, and managed the school hospital. During the discussion of the study schedule, he objected to mental strain and, for example, the teaching of mathematics lectures in the early hours of the winter morning. This time, he wanted to spare the eyes of the students.[28] He trained as a city doctor and then as an inspector of pharmacies in the city of Debrecen and the county of Bihar. The news of his medical successes spread far and wide. Patients even came to him from abroad.

7. Science and Religion

How did Hatvani relate to the prevailing ideas of his time, the Enlightenment?[29] Feudal and Catholic Europe had lost their unity as a result of bourgeoisification and in

[25] LÓSY-SCHMIDT 1931, 214.

[26] HATVANI 1757a.

[27] B.F.I. (1796): *Bódogh Gyula ajándéka. Hatvani életéből fennmaradt töredékek* [Surviving Fragments from Hatvani's Life). Debrecen, Déri Múzeum, Number: Szap. 1907. 377.

[28] ELEKES, György (1937–1938): Data for the Development of the School Medical Institution. In: *Iskola és Egészség* [School and Health]. 273–278.

[29] SZABÓ, Botond (1987): Hatvani európaisága [Hatvani's Europeanness]. In: *Confession*. 1987, 1. 35–41.

the wake of the Reformation; Hungarian culture split into two poles in legal terms as well. The Protestant party was tied to the Low Countries, Switzerland, and England, which were at the forefront of civil development. And while no Protestant student at Hungary's sole university, in Nagyszombat, obtained a doctorate in medicine in 1768, the Hungarian Reformed could train at 24 western universities.[30] Between 1700 and 1790, we know of more than 3,000 Protestant peregrines.[31]

What characterized Debrecen on the edge of Europe? The customs decree of 1754, which served the interests of the unified Habsburg Empire, eroded Debrecen's long-distance trade.[32] Its society was made up of peasants, farmers, industrialists, merchant nobility, and the noble-ecclesiastical-secular intelligentsia resulting from their amalgamation, which had to reckon with the mistrust and even hostility of the Habsburg power. Despite the deteriorating economic environment, with the College and the printing house, there was a relatively significant number of educated intellectuals in the background capable of scientific performance measurable by international standards. The intensive relations with the Protestant West prevented the provincialization of the intellectual sphere until the end of the century.

The literature on Hatvani also deals with the relationship between the professor and the Enlightenment. It was difficult to identify him with the materialist line of the Enlightenment, as Hatvani was deeply religious. Thus, against the trends of the Enlightenment that broke with religion, Hatvani is connected to his admirer, Newton, who was also a religious figure.

Based on his studies, his work as a teacher, his outlook on life, and his theological view, the question remains as to how Hatvani reconciled his faith and knowledge. His prestigious education acquired on home soil was defined by two periods. András Kármán, who visited Utrecht and Leiden, paved his way at the Losonc high school. He taught philosophy, logic, history, and mathematics based on the works of Wolff, Heineccinus,

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[30] KOSÁRY, Domokos (1980): *Művelődés a XVIII. századi Magyarországon* [Culture in Eighteenth-Century Hungary]. Budapest, Akadémiai Kiadó. 127.

[31] KOSÁRY, Domokos (1981): Értelmiség és kulturális elit a XVIII. században Magyarországon [Intellectual and Cultural Elite in 18th-Century Hungary). In: *Valóság*. 24, 2. 11–20.

[32] BAJKÓ, Mátyás – BALOGH, István – GYIMES, Sándor (1981): *Debrecen története 2. (1693–1948)* [The History of Debrecen]. Debrecen, Debrecen Megyei Városi Tanács V. B. 379.

and Weidler. Hatvani's other period of education, significant from the point of view of the Enlightenment, was defined by his encounter with the Newtonian approach as a student of Sámuel Szilágyi at the Debrecen College.

On his way to Western Europe, he studied in Switzerland and the Low Countries. The atmosphere of both countries was extremely tolerant in relation to contemporary Europe. Hundreds of thousands of French emigrants, persecuted Protestants, and free thinkers were living in these countries. A significant number of works were published here that could not be published elsewhere in Europe. However, it is true that Switzerland and the Netherlands tolerated rather than approved the radical religious criticism of the Enlightenment. The influence of Calvinism and the "reasonable orthodoxy" proclaimed by Samuel Werenfels in Basel was manifested in all areas.

Some characteristics of Professor Hatvani's operation point to enlightened pedagogical aspirations. Such is the illustrative method and the service to the practical needs of life. On the subject of freedom of conscience and religion, Hatvani wrote his work *De jure Summorum Imperantium*[33] already during his time in Basel. According to him, it is against the universal human value to force dissenters to change their opinion. He built his understanding of tolerance on the characteristics of human cognition. His conclusion: apart from our intellect, we have no means of recognizing the truth, and since religion is hidden in the intellect, opponents can only convince each other with rational arguments.

Hatvani discusses what kind of treatment atheists deserve. Accordingly, if an atheist publishes their thoughts about a supreme being, it is nothing more than their private opinion, which, right or wrong, is harmless in itself. It is not necessary to ban such a writing. However, if atheists bypass both sound reasoning and the truths of the Holy Scripture, and if they seek to recruit followers by the force of their arguments, it becomes dangerous to society and should be banned.

His inaugural presentation reveals the rational colour of his religiosity. Its main purpose is to prove that the cultivation of reason is beneficial to religion and that philosophy being the mother of heresy is an unfounded prejudice. In his didactic argument, he

[33] HATHUANIUS, Stephanus (1757): *De jure summorum imperantium in religionem et conscientiam civium commentatio* ... Apud Joh. Rudolphum Im Hof, Basileae.

sometimes resorts to unusually strong expressions. According to him, anyone who proclaims that arithmetic, botany, and medicine can be learned more efficiently from the Bible than from the works of Newton, Bernoulli, Linné, and Boerhaven is insane. However, he considers science to be a weapon that can harm and benefit man equally, so we must learn how to use it.

In addition to modern natural scientists, he refers to the ideas of Locke and Leibnitz, which also became his favourite thesis in his *Introductio*… – accordingly, certain places in the Scriptures do not contradict reason but are above it. He also presents his position on the changed relationship between faith and knowledge. Contrary to the old orthodox theology of "Do not investigate but believe", Hatvani's position is that he investigates first, then believes, and accepts as true only what he has carefully investigated. With this, he marked his own place on the road to theological rationalism.

In addition to philosophical truth, Hatvani also knows religious truth. According to him, science and religion are independent forms of consciousness. In his eyes, they are equivalent forms of consciousness that presuppose each other in the context of humanity's prosperity. It breaks with the doctrine of verbal inspiration, with the literal interpretation of the Bible. He derives true religion from the relationship between Reason and Scripture.

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(1748b): *Dissertatio inaug. physico-medica de aestimatione morborum ex facie*. Basiliae, Typis viduae Ioan, Christ.

(1751): Oratio inauguralis de matheseos utilitate, in qua ostenditur. In: *Museum Helveticum. Particula XX. Turici*. 531–557.

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(1757b): *Bevezetés a szilárdabb filozófia alapelveibe* (Original title: *Introductio ad principia philosophiae solidioris*). Transl. Péter Tóth. Budapest, Debreceni Akadémiai Bizottság, 1990.

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(1777): *Thermae Varadienses, examini physico et medico subjectae item de illorum usu salutari, simul cum observationibus medicis, nec non de sale medio in iis contento. Cuius occasione dissertatio inseritur, de natura salium nominatim vero de salibus qui circa Debrecinum collegiuntur nitro nostri temporis et veterum, seu nitro idest alcalino fossili vet saponario Debrecinensi.* Viennae, Rud. Graeffer.

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Ábrahám KOVÁCS[1]:

Personal Knowledge and Faith of a Scientist *Providence, Gratefulness, Sense of Vocation Sickness and Medicine, Education and the Belief in God and Mathematics*

Abstract.

This study intends to probe into the Christian faith of a well-known Hungarian scientist, István Hatvani (1718–1786). It does not claim to look at all of his writings by scrutinizing all of his statements about how science and Christian faith encountered in his life. However, it seeks to analyse his autobiography with a view to understanding how his personal life story, a *lived Christian faith*, had informed and influenced the perception of his own pursuit of science by the time he began to teach at one of the most prestigious Protestant centres of knowledge in Central Europe, at the Debrecen Reformed College in Hungary. The "confession" and reflection, as will be seen, is really informative about the basis of his faith and intention. This research paper focuses on three aspects typical of Calvinism such as providence, gratefulness, a call for vocation, a mandate and arrives at the beautiful confession of a scientist about God the Sustainer and Provider of all living creatures.

Keywords: providence, gratefulness, vocation, faith and science, Hungary

[1] Professor, János Selye University, Department of Historical Theology, Slovakia; Research Fellow, University of Pretoria, Department of Systematic and Historical Theology, Faculty of Theology and Religion, South Africa; e-mail: kovacsab@ujs.sk.

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István Hatvani (1718–1786) was a well-known Hungarian scientist and theologian. He taught at one of the most prestigious Protestant centres of knowledge in Central Europe, at the Debrecen Reformed College in Hungary.[2] His autobiography can be seen as a "confession" and reflection. It is really informative about the basis of his faith and intention which will be analysed. The current study focuses on three aspects typical of Calvinism such as providence, gratefulness, a call for vocation, a mandate and leading to a beautiful confession of a scientist about God the Sustainer and Provider of all living creatures. It is believed that these are tangible traits of Calvinist faith that are discernible in Hatvani's autobiography.[3] It will be pointed out that these three characteristics are based on a typical Calvinist realisation of the interrelatedness of knowing the Self and knowing God. At the end, the study depicts a scientist whose Calvinist faith rested on those faith tenets, and these were greatly influenced by his life story and personal encounter with Providence. It will be pointed out how he opted for Newtonian ideas instead of Wolffianism with a special concept of God that was in line with that of his contemporaries he preferred to learn from.[4] It is argued that this aspect requires further research in terms of understanding the faith of one of the most famous Hungarian scientists of the 18th century.[5] First, however, it is worth spelling out some of the special features of his autobiography. It is argued that it is unusual to have an autobiography written in the middle of a professor's career. Another exciting feature of the handwritten work is that, surprisingly, it is highly self-critical, which is a rare trait of such a piece of writing. Flowing from this, the third trait unfolds itself to the reader because the author exhibits a reflective, contemplative, and philosophical attitude that he aligns to the pro and contra of the story, an action or a motivation of his own self. Finally, the autobiography

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[2] VARGA, Zsigmond (1936): Hatvani István a természettudós, mint hívő keresztyén. In: *Vasárnap* 23, 30. 248–249; 23, 31. 257; 23, 32. 265–266.

[3] LÓSY-SCHMIDT, Ede (1931): *Hatvani István élete és művei (1718–1786). I. rész* [The Life and Works of István Hatvani (1718–1786). Part I]. Debrecen, Studium Könyvkiadó. The translation of all originally non-English quotations belongs to the author of the present article unless otherwise stated.

[4] GAÁL, Botond (2012): *Teaching and Cultivating Natural Sciences in the Reformed College of Debrecen*. Debrecen, DRHE-HITEK. See also: HORKAY, László (²2018): *A magyar nyelvű filozófia történet a XVII. század közepétől a XIX. század végéig*. Debrecen, TTREK.

[5] HATVANI, István (1750): Oratio inauguralis de matheseos utilitate. In: *Museum Helveticum*. XVII. Turici, Literris Conradi Orellii et Soc. 531–556.

is a treasure since Hungary experienced the devastating powers of the Ottoman Turks and the Catholic Habsburgs, which destroyed much of the archival materials; and this was unfortunately followed in the twentieth century by the German Nazi and then the Russian Soviet occupation of the Hungarian lands.

1. The Autobiography. Its Origin, Language, and Length

Professor Hatvani was only 34 years old in 1752 when he wrote his autobiography, finishing it by 1757. As for the latter date, one reference confirms that it was about that time that Hatvani finished writing his autobiography. Having an overview of his works written by the time of the autobiography, the 10th item lists a book entitled *A fiúi és leányi oskolákban tanuló gyermekek számára irattatott rövid könyörgések a tanítókhoz és szülékhez való intéssel*.[6] The small piece of work was bound together into one book with the Heidelberg Catechism in Hungarian. It aimed at educating young boys and girls in prayer. The booklet was eventually printed by a certain Mr Imhof in Basel. "Mr. Imhof printed 3,000 copies on my behalf, of which 2,900 were sent to me on October 10, 1757, all of which reached me with care. Glory to God."[7] Thus, this latest insertion of the date indicates for the reader the approximate time of publishing.

What is remarkable is that Hatvani was still a young professor when he deemed it vital to write an autobiography. He reached a relatively advanced age. He was about 68 years old when he died. This shows us that about halfway through his life, Hatvani, as a scientist and theologian, exhibited a contemplative character since the style in which he wrote his autobiography seems to have been that of a *paraenesis*.[8]

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[6] *Short Prayers for Pupils Studying in Boys' and Girls' Schools, with Exhortations to Teachers and Parents.*

[7] HATVANI, István (1757): *Autobiography (in Latin)*. Budapest, Magyar Tudományos Akadémia, Manuscript Archive, Ms 10.378/a. The Hungarian translation of István Hatvani's autobiography will be cited as Manuscript. 29.

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1.1. The Genre of His Autobiography – Paraenesis

We may be wondering whether the work sits in the tradition of the Early Church Fathers such as Clement of Alexandria who wrote his *Paedagogus*.[9] In this great work, he made a distinction between *protrepsis* and *paraenesis*. The latter is defined as moral exhortation in which a person is advised to pursue or abstain from something that is reckoned good or evil. Although Hatvani never mentioned the word *paraneisis* in his autobiography, the genre of his opus clearly points in this direction, as will be demonstrated.

Scholars argue that other ancient authors, such as Pseudo Justin in his work *Paraenetic Address to the Greeks*[10] as well as Magnus Felix Ennodius's writing entitled *Paraneisis didascalia*,[11] is written in the style of protrepsis rather than paraenesis. However, for our study, it is enough to state that Hatvani intended to warn, teach, and educate his future readers to cultivate a humble, God-fearing, grateful heart in which science and faith live in peace with one another in the life of a Christian scientist.

Havas László,[12] who studied a similar work attributed to the first king of Hungary, King Saint Stephen (975–1038), highlights that in the genre of paraenesis the emphasis is naturally on God the Father, whose divine order prescribes the strict separation of cardinal sins and good deeds. Havas remarks that this is tantamount to putting *pietas* and *iustitia* on a pedestal.[13] Thus, it is a virtue of a Christian to seek godly piety and search for justice and truth in his life and in any forms of inquiry.

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[9] PÁSZTORI-KUPÁN, István (2009): *Követvén a szent atyákat. Az óegyház dogmatörténete 381-ig*. Kolozsvár, Napoca Star – PTI. 65–66.

[10] THOMAS, B. (transl.) (1948): Pseudo-Justin, "Exhortation to the Greeks". In: Falls, Saint Justin Martyr: *The First Apology, The Second Apology, Dialogue with Trypho, Exhortation to the Greeks, Discourse to the Greeks, The Monarchy of the Rule of God*. Volume 6 of *The Fathers of the Church: A New Translation* (Patristic series) Catholics University of America.

[11] KENNEL, Stefanie A. H. (2000): *Magnus Felix Ennodius: A Gentleman of the Church.* Ann Arbor, University of Michigan Press; See also: "Ennodius, Magnus Felix". *Encyclopaedie Britannica*. Vol. 9 (11th ed.). Cambridge University Press. 649.

[12] HAVAS, László (2012): A szent istváni intelmek mint a teokratikus keresztény monarchia eszményének úttörő jelentőségű metaforikus műfaji megszólaltatása. In: *Irodalomtörténeti közlemények*. CXVI, 4. 363–379.

[13] Ibid.

In line with this "compass" set by Havas, it is clearly visible that Hatvani's chief aim was to persuade his readers to be self-reflective, critical about themselves and to learn from their mistakes. Therefore, self-knowledge was regarded as a vital, indispensable, and praised virtue of a Christian scholar. A task that he tried to exercise by revealing very personal issues from his life. His very first statements declare: "…I have laboured long and hard to know myself better. Some know many things: but they know not themselves. Most who know themselves, when they have resolved to record their life's journey and to preserve it for posterity, are not ashamed to confess their errors and faults, and praise only those things which please others."[14] His paraenesis, as a genre fits into the biblical tradition, rather than that of classical antiquity, the atmosphere of Greek and Roman, that is, of Hellenistic civilisation. This could be attested from the following: "…. But, as I see it, the Holy Spirit did not record without some intention even the seemingly minor stumbles of otherwise holy men. At least in my judgment, those who faithfully record everything, act more correctly, so as to write not only to those who seem to be born to perform heroic deeds and are called solely to the practice of virtue but also to those who, after having experienced long wanderings, follow the most holy examples of virtue."[15] Relying on the Bible as an inspired source of knowledge, Hatvani tried to underline the fallible nature of human beings indirectly. The young professor articulates four pieces of advice to adhere to: "There may be things that you will imitate, but there will be more things that you will rightly criticize in us and avoid. However, it is wiser to learn [imitation][16] from the misfortunes of others than from our own. Use our example [observation] in your own affairs, but learn the examples [learning] of virtues not from here, but from the Holy Gospel! By the way, think about it [contemplation], that life is a fairy tale that we live in different persons!"

Imitation, observation, learning, and contemplative thinking are the major virtues that may lead any human being to true self-knowledge bearing the fruits of humility and to open-mindedness regarding religion (tolerance) and science (the usefulness of mathematics for Christian religion). Hatvani strongly believed that such a perception

[14] HATVANI 1757, 1.
[15] Ibid.
[16] Own insertions.

enables a person to recognise God's providence in his or her life and urged them to be thankful to God by expressing gratitude for his salvific will revealed in their own life. This is in line with the core teaching of the Heidelberg Catechism, which laid a very important emphasis on the aspect of gratitude, the third large constituent part of the message of Opus.[17]

Clearly enough, Hatvani thinks it is essential not to paint a heroic picture – therefore, he is against hagiographies. However, he considers it important to speak plainly about the mistakes, wrongdoings, and of individuals who may become exemplary figures for the public in general. It is rather telling that the former statements are not *conclusions* per se but show a higher road to be learned from the Holy Scripture. Careful attention needs to be paid to the fact that he is not reciting the proverb from Janus Pannonius that "Happy is he who can learn wisdom at the expense of others." or a general Hungarian proverb that "Wise men learn from other persons' mistakes." as the core of his paraenesis.[18] His Christian belief tells him to place the wisdom of the Scriptures in a highly elevated place. God's revealed word contains the virtues that persons may learn from. Before dropping the first lines of details about himself in his autobiography, there are two other quite interesting, very mature statements made by Hatvani. The concluding thoughts are articulated as follows: "By the way, think about it: life is a story that we live in different persons! Therefore, just as it is your job to judge others and their actions, at the end of the fairy tale, it is the inalienable right of others to judge you: will they, won't they, they will."

The story – rather similar to the tale-like aspects of our lives which Hatvani experienced as an encounter with other often different persons in his life – throws light on the psychological aspect of one's life that all of us must be aware. Furthermore, he repeated one of the crucial problems of writing a narrative of the personal past, such as a memoir or diary, to avoid hagiographies of any people, especially great religious people, or professors, by exposing them to judgement requiring all aspects to be taken into account, including the ones that are not pleasant or beautifying. Hatvani strongly underlines a core

[17] BARNES, Craig (2017): *Életre szóló: A Heidelbergi Káté újrafelfedezése*. Transl. by Balázs Ódor. Budapest, Kálvin Kiadó.

[18] CSAPODI, Csaba (1981): *A Janus Pannonius-szöveghagyomány*. Budapest, Akadémiai Kiadó.

wisdom that our life story as a tale will be judged by the inalienable right of our fiercest critic. Therefore, the utmost scrutiny is exercised not by our followers but by our most harsh academic or personal "competitors", if not enemies.

2. Knowing God through Self-knowledge

All of these cautions, guidance, and admonitions may cultivate a virtue that leads to the true self-knowledge that was vital for Calvin too. It is rather interesting that Hatvani did not make any allusion to either Calvin or any author from antiquity. Nevertheless, it is a virtue that Calvin also underlined, as did Hatvani. To see a remarkable similarity in the argumentation, it is enough to cite Calvin's *Institutes*:

> Our wisdom, in so far as it ought to be deemed true and solid Wisdom, consists almost entirely of two parts: the knowledge of God and of ourselves. But as these are connected together by many ties, it is not easy to determine which of the two precedes and gives birth to the other. For, in the first place, no man can survey himself without forthwith turning his thoughts towards the God in whom he lives and moves; because it is perfectly obvious, that the endowments which we possess cannot possibly be from ourselves; nay, that our very being is nothing else than subsistence in God alone. In the second place, those blessings which unceasingly distil to us from heaven, are like streams conducting us to the fountain.[19]

Upon the further studying of the text of Hatvani's autobiography, it becomes possible to discern some of the main traits of Calvinism. These key aspects will show clearly the faith of a Christian scientist who uniquely combined his personal belief with the emerging modern scientific discoveries of maths, physics, medicine, chemistry, astronomy, and the like.

[19] CALVIN, John (1559): *Institutes*. Chapter 1. The Knowledge of God and of Ourselves Mutually Connected. – Nature of the Connection. 1. The sum of true wisdom—viz. the knowledge of God and of ourselves. Effects of the latter. Available at: https://www.ccel.org/ccel/calvin/institutes.iii.ii.html (last accessed: 18.10.2024).

3. Providence

Hatvani adhered to the faith tenet that first and foremost all knowledge comes from God. Therefore, all that we gain, the "endowments," that is, knowledge gained by learning, implanted in us by God, via parents, teachers, and experience, do not derive from themselves, but *all* point to God the Creator and Provider. "Although I was not given a weak spiritual talent by God, which my father had tested by showing me the basics of spelling before he sent me to school, yet the cruelty and excessive severity of the teachers, the frequent beatings, which most often took their toll on the head, meant that in a year and a half I barely learned to read both languages correctly."[20]

Here comes a very personal aspect of God for Hatvani, as it will be crystal clear that one of the main motives of this young man, who managed to get to the top of educated society, is to see God as *Providence. God is seen like a Father who takes special care* of his child, Hatvani. One of the most profound life experiences was when the young Hatvani fell into the well in his parents' courtyard and was miraculously saved. He began this really interesting and exciting story with the following line: "However, there is something that very clearly shows the miraculous Providence of the Supreme Divine will in preserving my life."[21]

3.1. God's Saving Providence – Falling into a Sweep-Well

It is really edifying to learn from his personal story.

> But behold, a wonderful thing and the most indubitable proof of divine providence! Right at the surface of the water, in a gap between two stones, was driven a hazelnut stake, which was part of the wooden ring from which buckets and barrels are usually made among us. Thus, when I fell headlong into the depths under my own weight, the very strong hand of God raised me back to the surface of the water and held out to me the stake from the wooden ring. I grabbed it with both hands, and my weak childish body and especially my life hung on it. Meanwhile, my feet were floundering in the water. Who would have thought that an eight-year-old boy in such a cruel situation, in such

[20] HATVANI 1757, 3.
[21] Op. cit. 4.

> great confusion and restlessness of soul, could look for something to hold on to! Who does not see that God himself, as it were, has pulled me out of the abyss with his hands and has placed the support of my life in my hands, and has lifted and strengthened my hands to grasp and hold it![22]

3.2. God's Gracious Providing Care. Escaping the Lure of a Malicious and Charming Woman

There is another story when the young Hatvani was exposed to the enchantment of a beautiful noble lady from Komárom. A trap was laid down for him, and he barely escaped the situation. Not spelling out the story which shows somewhat similar traits to that of the biblical story of Potiphar's wife, it suffices to say he concludes his personal story with the following sentence: "…But although that wicked woman seduced the young man into love, the Lord God delivered me from her net; and did not allow the matter to turn into the greatest trouble and sin. I rank this manifestation of His divine providence and grace as extraordinary among the graces."[23]

3.3. A Manifestation of Divine Providence. Pest and Poverty as an Obstacle to Study for a Number of Years

Hatvani also mentioned God's providential act in his life when he was not able to enter the most prestigious Debrecen Reformed College in 1738 for his studies. Poverty and plague impeded him from enrolling for some years. The city of Debrecen saw its last but extremely serious loss of population due to plague during 1739–1742.[24] More than one third of the people fell victim to the deadly disease.[25]

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[22] Ibid.

[23] Op. cit. 13.

[24] RÁNKI, György (ed.) (1981): *Debrecen története*. Vol. 2. Debrecen, Csokonai Kiadó. 34–36; SZ. KRISTÓF, Ildikó (1990): Pestis pestise: Járvány és lázadás Debrecenben 1739-40-ben. In: *Rubicon*. 6, 6. 20–23.

[25] KUN, Enikő (2003): „Mutogattya Isten haragját" – Adalékok az 1739-40-es debreceni pestis történetéhez ("God Is Showing His Rage" – Details of the History of the Plague of 1739/40 in Debrecen). In: *Hajdú-Bihar megyei Levéltár évkönyve*. XXIX. 69–84.

> Divine providence showed itself in many ways during this difficult time. For in 1738 I was so poor that I had barely more than six Rhineland forints when I entered the college in Debrecen, although I would have had the opportunity to stay there, I lacked so much that I should have known how to provide for myself and at least have clothes made according to custom: these would have prevented it. This was also contributed by the fact that I could hardly have contributed anything from my historical and geographical knowledge even if I had been able to start over because of the plague, the Reverend Mr Maróthi should have broken this ice first in his classes at the college.[26]

Hatvani saw God's special intervention as a proof of Providence in his life. He also highlighted that it was God's hand that kept him alive. Here Hatvani provides abundantly evidence of his Christian belief. Moreover, the young professor also finds it very important to express gratitude for those "saving acts" of God in his life. Therefore, he arrives at a very Calvinist attitude that is articulated in the Heidelberg Catechism, being grateful to God the Creator and Provider of all things. He finishes his story in this vein: "Of all whom the earth bears, I should be the most ungrateful if I were to forget this very great deliverance and divine protection, and not endeavour to render to my Redeemer the gratitude due to Him, while this weak little heart shall breathe, and this feeble hand shall move. That stake was scarcely half a foot long, perhaps an inch wide, and three lines thick."[27]

4. Gratefulness

Although he was accepted in 1738, he was not able to start his studies: "After arriving in Debrecen before the feast of St Gregory and passing the public examination, my name was listed among the top candidates, and I was admitted to the ranks of the students on 23 April 1738. However, since there were absolutely no free places in the college, each of us, more than seventy of us, were given the opportunity to continue our studies wherever we liked during the year."[28]

[26] HATVANI 1757, 5.
[27] Ibid.
[28] Op. cit. 13.

Debrecen saw a plague in 1739. A year later in Losonc, where he resided, another plague broke out. It was only in 1742 that Hatvani managed to return to Debrecen after 3 years. However, he was a diligent student and used the time for increasing his knowledge during these years. The disadvantage of not being able to commence his studies in Debrecen proved to be extremely fruitful. He attributed the good turnout of these events to God and thanked him for the opportunity to study at Losonc under Professor András Kármán. "I also learned universal history and geography well; in addition to moral philosophy, I studied logic, then ethics, and natural law, and I also studied theology diligently in the public lectures and private lessons of the Reverend András Kármán. However, it was my special good fortune that the venerable Mr Pál Rádai used to pay Reverend Mr Kármán 150 Rhineland forints to teach him moral philosophy and theology in private lessons. I also had access to these lessons."[29] Another providential act also helped his studies. He wrote about it as follows: "Another thing also contributed that helped me wonderfully. For when the vice-comes, Mr Gyürki, was in office, rarely a day passed without various court cases being discussed at the table; and my soul did not shrink from studying political law. When the respectable gentleman noticed this, he used to practise it with me whenever he had time."[30] Although he was not able to start his studies for a year, those years were used for his academic preparation very well. When contemplating that time period, he wrote in his autobiography, "Divine providence was manifested in many ways during this difficult time."[31]

5. Vocation – Sickness as a Motivation to Gain More Knowledge about Natural Sciences

Early in his autobiography, Hatvani lists several diseases that are typical childhood illnesses. However, at the time that he lived, these could have been fateful and, unlike today, even deadly. Therefore, it is no wonder that these life-threatening

[29] Op. cit. 14.
[30] Ibid.
[31] Op. cit. 15.

diseases are mentioned as a profound experience that stayed in his memory as deeply engraved traumas. It is amazing how many serious diseases he survived. At the beginning of the work, he articulated his thoughts in this vein:

> I had a severe attack of smallpox[32] when I was barely two years old, and measles[33] first attacked me when I was about six, and then again when I was ten. In the latter case, this disease was accompanied by inflammation of the diaphragm.[34] I had three bouts of the three-day fever[35], if my memory serves me right, the last of which lasted more than sixteen weeks after I was twelve. My nasal passages were frequently filled with thick discharge, and my head was often covered with ulcers until I was almost twenty. There is, however, something that very clearly shows the wonderful providence of the supreme divine will in preserving my life.[36]

Although he continued with the well story already mentioned, it is clear that his diseases made an indelible imprint on his soul.

> I was staying in Losonc, when, in the dark without lighting, my father and I hurried to our overnight accommodation from a relative, I hit the lower part of my right leg so badly on a stake that the ulcerated wound, which had covered the middle of my leg for almost a year, flowed so profusely that it flooded my boots, and it was difficult to stop its flow. This ulcer broke out by itself when I was in the poetry class, and although it finally healed, it burst open again. But it only healed after a year and a half with the help of a surgeon.[37]

His deep spirituality is revealed in an amusing manner when the young lad's natural physical desire is connected with sickness. It is quite interesting to see how he perceived as a Christian the nature of an event that happened while he was still in his "primary school" years in Losonc.

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[32] Variola.
[33] Morbilli.
[34] Phrenitis.
[35] Febris tertiana.
[36] Op. cit. 4.
[37] Op. cit. 7.

> Once during this time, I was infected with scabies, which, no matter how they were driven away, soon returned. An ulcer on my leg was also cured by a surgeon, in whose house I had to stay until the wound healed. However, in this place, the misfortune happened to me that, in addition to my studies, I began to love something else. The surgeon had a pretty, unmarried daughter who was in the sales line, who tried to incite me to love with various tricks, which, however, only reached the point of impure kisses. It was then that I first began to experience the temptations of the world and the wiles of Satan. Lord, my God, you have seen fit to grant me these transgressions of my youth, among other things; and you do not remember the sins and transgressions of my childhood; but you remember mine, in addition to your suffering, for your goodness's sake (Ps. 25:7).

It is revealing how sickness and temptation are portrayed as interrelated issues. The typical Old Testament way of thinking made its way into the life of Hatvani. Such a view presupposed that sickness and sin are strongly interrelated. This is to what Jesus alluded with his question of curing the blind (John 9:1–7). However, it is not the various theological and religious interpretations which are of interest to us here as to whether sin and sickness are interrelated or not, but *how Hatvani himself* saw it. To him, the two were strongly interconnected.

An expression of divine will, predestining, guiding him towards one of his main professions, becoming a doctor, Hatvani continued in this manner:

> But as soon as I returned to my studies after two months, the love of science and faith easily extinguished the false fire.[38] Thus, I was freed from the ulcer on my body, while my unfortunate soul, which had not yet experienced these foolish fires, was wounded. The treatment of my leg itself was so difficult that I was very afraid that my leg would have to be amputated. And when I was so tired of the torments, I came to the decision that unless the ulcer was healed, I would abandon my studies and finally work on a thorough study of wound healing. The goodness of God and His merciful spirit forgave the foolishness of my youth and covered the ulcer with a scar.[39]

[38] The Latin adjective *spurium* may be a play on words with the noun *spurium*, which can also mean the female genitalia, and thus refer to the fire of sexual desire. Special thanks for the translator of the document from Latin.

[39] HATVANI 1757, 8.

Again, his gratitude for the healing, as well as God's saving act can be easily identified here. Moreover, he reveals the cause of his interest and why he made the decision to become a doctor.

This was further strengthened by the experience of his repeated suffering from scabies when he took up his studies in Kecskemét: "Meanwhile, scabies flared up again in my body, unfortunately, or rather fortunately, when I met a pious old woman who used to cure those who had fallen ill with this disease, so she surrounded me with such love that she provided me with abundant food and accommodation for an entire month."[40]

These kinds of personal experience strongly urged him to move beyond obtaining the usual theological doctorate abroad. Having studied at the primary school level in Losonc, in Kecskemét at the secondary school level – if one could state that comparing it to today's schooling system –, and finally completing his basic ("university") training at the Debrecen Reformed College (1741–1745),[41] Hatvani travelled to Basel, Switzerland, to receive further education (1746–1747).

Having received his master's degree in theology on 1 July 1747, he submitted his theological doctoral dissertation on the topic of religious philosophy, entitled *Animadversiones theologico-criticae*.[42] This industrious, diligent, and talented young man did not satisfy himself with theology. Owing to the diseases mentioned, he devoted himself to the study of medicine.

> In November 1746, he also enrolled in the medical faculty of the university, where he had excellent teachers such as Emanuel König, who taught him medical botany, Daniel Bernoulli, who lectured on physiology and medical mechanics, and J. R. Zwinger, an expert in practical medicine. After 15 months of study, in March 1748, he presented his

[40] Op. cit. 10.

[41] ZOVÁNYI, Jenő (1977): *Magyar protestáns egyháztörténeti lexikon*. Ed. by Sándor Ladányi. Budapest, MRE Zsinati Iroda. 243.

[42] FEHÉR, Katalin (2002): *Hatvani István tanítványai*. Budapest: Országos Pedagógiai Könyvtár és Múzeum. 1.

> already printed medical thesis entitled *De aestimatione morborum cum facie*, that is, knowing diseases from the expression of the face.[43]

As a stern Calvinist, he felt the need to help his people as an act of gratefulness towards God and his immediate community, the city of Debrecen and the college. This also comes to the fore at the end of his inaugural speech:

> But I, the venerable and venerable leaders of the Church, greatly appreciate the favour you have shown me, and the fact that you have considered my less than average studies so well and have deemed me worthy and suitable for the management of this field of science, as is fitting, and I thank you with the most solemn words, and I am constantly afraid that I will not meet your expectations. Almost from my earliest childhood, many years of work are needed to accomplish something worthy and worthy of a man in philosophy and mathematics and physics. However, the time that I have been able to devote to these noble sciences is very small. For I have set a different goal for my work, and you have set a different goal. Moreover, I hope that just as I have not applied other sciences and knowledge against the will of Minerva, so she will not want to appear inaccessible to me in these either. If this is so, neither you will ever be dissatisfied with your resolution, nor will I regret my attempts and labours. It is no small proof of your good will and love for me, the venerable, learned, and wise professors of all the faculties, that you have judged me not unworthy to be included in your ranks.[44]

As a Christian, Hatvani felt it his obligation to set up medical care for students in various manners when he had the opportunity to do so as a professor at Debrecen Reformed College. Béla Tóth wrote that first "in the middle of the century, in 1752, at the initiative of István Hatvani, a separate fund (*cassa infirmorum*) was established for the

[43] G. SZABÓ, Botond (1996): Hatvani István levele az Egyházkerületi Bizottsághoz. 1781. december 6. Közli G. Szabó Botond: A Debreceni Református Kollégium a „pedagógia századában". Debrecen. 386. See also: TÓTH, Béla (1988): A kollégium története a XVIII században. In: Barcza, József (ed.): *A Debreceni Református Kollégium története* [The History of the Debrecen Reformed College]. Budapest, MRE Zsinati Iroda. 135.

[44] HATHVANI, Stephanus (1751): Oratio inauguralis de matheseos utilitate, in qua ostenditur. In: *Museum Helveticum. Particula*. XX. Turici. 531–557. The citations are from the Hungarian translation. Manuscript. 15.

medical care of sick students. From this, for example, Hatvani allocated 48 denarii for the medicines of Sámuel Diószegi, a servant student, on 18 April 1760, and 2 frt. 40 krajcárs every two weeks for the labour of his nurse."[45] Second, it is worth pointing out that "Hatvani also treated the students injured in the fire of 1769. Several prescriptions of the great professor have survived, which he issued to sick students."[46] Another researcher, György Elekes Diósadai analysed Hatvani's receipts and claimed that:

> Hathvani, like his contemporary: van Swieten, was mostly a follower of the eclectic Boerhaave, sober and free from extremes, although he also used certain medicines that were based on the superstitions and erroneous beliefs of his time, often taken over from the Middle Ages without criticism or investigation. The 198 recipes mentioned are currently in the archives of the Ref. College marked as A. 53.27[47] – according to the date, one from 1777, 118 from 1779, and 79 from 1780. They were written at the peak of Hathvani's activity. Some of the recipes were written by surgeon József Csokonai, the poet's father; some are from unknown sources.[48]

Third, "Hatvani also established a separate hospital fund in 1775 with 85 Rhineland forints, which, in addition to the former, which operated until 1778, existed until 1792. At that time, according to the new organization of the College (it became a parish institution), it merged into the common property of the school and passed into the hands of the treasurer, the official who took over the management of the senior's finances."[49]

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[45] BALOGH, Ferenc (1904)*: A Debreceni Református Kollégium története adattári rendszerben*. Debrecen, Hoffmann és Kronovitz. 158. The history of the hospital was written by Professor of Theology Ferenc Balogh.

[46] DIÓSADAI ELEKES, György (1941): *Professzor Hatvani receptjei a debreceni diákok részére*. Debrecen; DIÓSADAI ELEKES, György (1939)*:* Professzor Hatvani receptjei. In: *Theologiai Szemle*. XV. 239–242.

[47] Ibid.

[48] Ibid.

[49] TÓTH 1988, 135.

In sum, it could be stated that the sicknesses Hatvani experienced left a deep imprint on his spirituality and strongly motivated the young person to turn his attention not only to curing himself but also to training himself for treating diseases. Although the autobiography does not relate to any study of medicine until his time in Basel, it may have been possible that he had consciously gathered knowledge about methods of healing either through autodidactic methods or at Debrecen Reformed College before he entered his medical studies abroad.[50] From the texts, it is clear that Hatvani's personal experience led him to serve his community. Therefore, he was one of the first professors to initiate medical care, hospitalizing in an organized manner at Debrecen College, which was further developed by his student. Thus, Hatvani was an innovative and "responsible" Calvinist who lived his life before "God's holy presence." This exhibits a deeply religious spirituality.

6. A Sense of Strong Vocation to Serve God the Provider and Sustainer

Another notable trait of Calvinism next to the sense of responsibility was his strong sense of vocation. It is conspicuous that the two are profoundly intertwined. While he was forced to spend 3 years with further studies due to the plague in Debrecen between 1739 and 1742, Hatvani worked for an aristocrat, Ferenc Forgáts, the *comes* of Zemplén County. The aristocrat was so pleased with the young Hatvani that on one occasion he offered him an attractive public service position in his county. Nonetheless, he felt he was called by God to teach and cure people in the church. He spelled this out in this manner: "However, since the ultimate goal of my efforts was not the forum and the auditorium but the church, I decided to continue with firm steps wherever I set out."[51]

This call was changed since Hatvani received an invitation from the famous Debrecen Reformed College to teach mathematics, philosophy, and experimental physics in July 1747 while he was in Basel pursuing further studies. It was a decisive point in his life. The life-changing experience is thus noted in his autobiography:

[50] Further research is needed to see whether Hatvani had any medical training at the Debrecen Reformed College, or what kind of knowledge he was exposed to in Debrecen.

[51] HATVANI 1757, 14.

> For a long time, I hesitated in anguish, unwilling to accept this distinguished office, until I was persuaded to accept it by the great Sámuel Szilágyi and, above all, by Professor Beck, and others. In any case, I was especially reluctant to accept this obligation because I had greater desire to teach the church and to devote myself entirely to the service of the divine word. However, when I considered my weakened health more carefully, I finally allowed myself to be persuaded by the advice and opinions of others.[52]

The excellent opportunity to teach at Debrecen Reformed College provided Hatvani with a fine opportunity to initiate subjects and experiments that showed the progressive attitude of the Reformed city of Debrecen during the Enlightenment era. This is a fascinating fact, especially if one considers that the Counter-Reformation might have shaped the religious faith of the Debrecen Protestants into a conservative stance in many ways while struggling for survival as a religious community. On the contrary, Hatvani's employment indicates how open the leaders of the city and the professors at the College were to the most recent Western knowledge, which in Hatvani's case related to the emerging natural sciences. The knowledge that Hatvani conveyed to Hungary had a lot of practical use for the religious community, shaping its social, political, economic, and intellectual life.

6.1. Revelation and Science. A perception of God the Sustainer

In his inaugural speech, God is depicted as "the Most Perfect Being" and "the wisest Being". Notably, he refers to God using a philosophical theological language – rather than an ecclesiastical usage of speaking of God as Father, ruler, creator, and so on. While making a point of the knowledge about God, a Christian truth different from the truth of experiments, he referred to God in this manner: "If the most perfect Being were capable of the things that are most imperfect and were capable of doing to the wisest Being what is most unreasonable: that would be the supreme imperfection and a wisdom unworthy of the most perfect Being."[53] On another occasion, he used more church-like

[52] Op. cit. 22.
[53] Op. cit. 7.

language and referred to God as "our Keeper/Sustainer".[54] It is rather interesting that nowhere does Hatvani allude to any Christological statement of the Godhead.[55]

6.2. The Benefit of Mathematics for Theology

Hatvani strongly separated the two realms of knowing the truth. To do so, he attempted to distinguish between two different kinds of truth, so to say proper, correct, and reliable/trustworthy knowledge. In his inaugural lecture, first he talked about truth as it is evidenced and proved by mathematics. Second, he also spoke of truth as revealed in the Scripture, the Bible.

One of the main theses in his inaugural speech had three aspects. First, he underlined that the use of mathematics extends to all sciences, and therefore it is practical for the religious-social community. Second, the study of mathematics is "quite useful for the theologian". Third, he emphasized that it was "downright indispensable for the physicist".[56] This statement may well be perceived as a sort of "confession of faith" by an excellent scientist. Being a scholar of his era, Hatvani was enchanted by the discoveries of maths, physics, chemistry, astronomy, and the other sciences. Nonetheless, he insisted on the separation of the two realms of knowing the truth. Although the great scientific discoveries that the fast-developing knowledge of mathematics made possible placed maths on a "throne" of sciences, this did not replace God's primacy in his spiritual life.

Rather soberly, he warned the staunchly fundamentalist scientist, the sceptic of the Enlightenment in this manner: "And those who demand mathematical proofs for everything and refuse to accept things themselves until they are proven by the scientific method, never really understand clearly how moral proofs differ from mathematical proofs. Such people, believe me, cannot even last a very small number of days."[57]

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[54] Op. cit. 8

[55] This observation also calls for further research to delineate his theology from the comments and remarks of his works. By trying to grasp his theological conceptualization about God, his belief, it might be possible to paint a more detailed picture of his Christian belief.

[56] Inaugural speech, 9.

[57] Op. cit. 7.

Carving out a place for moral truth not only enabled him to relegate the truth claims of the Christian faith into a different realm of "knowledge" but also assisted him in harmonizing his deeply held faith in God and God's providence, which he experienced throughout his life. He consistently reiterated, "Now, from all that we have discussed so far, my dear listeners, unless I am mistaken, you will understand very clearly from the little that we have explained that we have destroyed the foundations of the entire philosophy, or rather of the foolish wisdom, of the sceptics. For we have not only mathematical but also moral certainty."[58] Then, Hatvani goes to great lengths to argue that they are not in the realm of science but in that of "religious" (my terminology) faith. He arrives at proclaiming, "Thus does mathematics bind the reasoning and inquisitive sophists, thus does it bring into the greatest confusion those who only want to believe the mysteries of faith when they clearly grasp them with their minds and understand everything about them most definitely, and thus, as it were, know it from their souls."[59]

To achieve different kinds of certainties, that is, those based on experimenting, use of emerging science, and those of accepting the tenets of the Bible based on witnesses' accounts that he accepted without questioning, was a special blend of how faith and science sought to be harmonized in his life. Needless to say, the kind of biblical truth that was accepted by Hatvani and that was not requires further research. In his inaugural speech, he does not refer to any Christological faith claims. He aptly avoids any references, and therefore one cannot infer much about these aspects of faith and truth claims. However, it could be said that he distanced himself from the deists, sceptics, and agnostics and presented himself as a devout traditional Christian who adhered to God the almighty whom he referred to as "the most perfect Being", "the wisest Being', (p. 7) and "the most perfect Mind" (p. 6).

These philosophical-theological categories enabled him to speak of God the Father as the Creator of all things on earth, a truth claim of the Christian faith. Moreover, Hatvani often spoke of God as the Provider and Sustainer of all things. This latter ecclesiastical-theological use of language also enabled him to anchor firmly in the accepted form of God talk that was acceptable for the Calvinist Church of Hungary. However,

[58] Op. cit. 9.
[59] Op. cit. 12.

as already noted, he, perhaps consciously, refrained from any Christological statement – although conspicuous, it is difficult to "decipher" the reason why from the two texts under scrutiny (autobiography and inaugural speech). What can be inferred is that no allusion is made to Christ except the vague reference "our Sustainer" (p. 8) that could be applied to God the father, as well as to Christ the Saviour who "keeps", preserves us for eternal life.

Although Hatvani maintained *without going into details* that the tenets of Christian faith, biblical truth, and the mysteries of faith cannot be comprehended by mathematics and natural science, one may surmise that Hatvani accepted Christian faith without reflection and did not appreciate mathematics. On the contrary, Hatvani maintains that mathematics may be used in *understanding other aspects of the Bible*. This is indicated clearly, as seen from the following remark:

> I will not mention now how ugly it is for a theologian not to know the places where sacred things happened. I will also be silent about how wrongly he claims the name of a theologian who does not take the trouble to know the fullness of times, the events that correspond to the things predicted (Eph. 10:1). But one of these can be understood from geography, the other from chronology, which are parts of mathematics. He will not understand the sacred and civil solar and lunar years of the Jews, nor will he who lacks the rudiments of astronomy compare the Jewish eras with ours. And I will not even mention here that chronology also relies on the rudiments of astronomy. And, finally, what else does God himself do but measure [geometry] forever?[60]

Therefore, it can be seen that Hatvani seeks to maintain a healthy balance between the emerging natural sciences and the basic tenets of Christian faith. This was an existential issue for him who repeatedly declared God's saving act in his life when he experienced fatal accidents (the sweep-well story, the temptation case of the rich man's wife), as well as cures from serious illnesses.

In sum, Hatvani believed that mathematics is very useful in three distinct ways: First, the proper use of mathematics is widely applicable to "all sciences".[61] This meant geology, hydrology, astronomy, chemistry, physics, and medicine alike. Secondly, it is

[60] Ibid.
[61] Op. cit. 1, 9.

useful for theologians to study mathematics. Here he referred to themes in the Bible that related to astronomy, customs, stories of the Old Testament, but not to the God concept or divine revelation embodied in Jesus Christ. In other words, he kept those issues on the table for research that modern biblical studies also investigated but left Christological and other divinely issues intact. (Either it was not of interest to him, or he was extremely careful!) Third, Hatvani repeatedly argued that the emerging and fascinating science of physics must use mathematics as they are entirely indispensable for scientific investigation.[62] To bolster his thesis, he concluded: "I have presented very clearly in which sciences, or in which parts of them, this strict form of proof can be applied, and, on the other hand, I have also explained which sciences, according to our teaching, are those in which mathematical proofs are only hypothetically true, namely, if those things exist, if the thing claimed is truly so, if these or those laws have been proven, and, finally, if the Supreme God has revealed this or that."63

Expressing his faith conviction, the young professor claimed in his opening speech that "theologians are also led by the application of the methods of mathematicians to *develop* a correct concept of God and religion".[64] In other words, theologians may also benefit greatly from the methods and science of mathematics should they become proficient in them. Referring to what today would be called biblical studies, he asserted, "the theologian must also be proficient in geography and the elements of astronomy. These disciplines also belong to mathematics, and the theologian who is inexperienced in them and does not know, for example, the location of the Holy Land, solar and lunar years, cannot even claim the title of theologian."[65]

This was a strong and very bold claim from Hatvani in Debrecen during the middle of the 18th century. He even dared to go further in his critique. According to the professor: "Both atheists and deists can be persuaded to see their mistakes with the help of mathematics, as it can be used to prove that there are things in nature that we cannot

[62] Ibid.

[63] Op. cit. 9.

[64] FEHÉR, Katalin (2002): *Hatvani István és tanítványai* [István Hatvani and His Students]. Budapest, Országos Pedagógiai Könyvtár és Múzeum. 56–60.

[65] FEHÉR 2002, 57.

understand with reason but whose existence and truth it would be a mistake to deny or doubt."[66]

It is enough to allude to his magnum opus, *Introductio*, where he repeated his ideas of maintaining the two realms of knowing. His scientific belief and Christian faith based on two different kinds of epistemology. Béla Tóth accurately observed: "The text of the book was most likely composed of the second group of his lectures (*Explanation of the Principles of Philosophy*), but his main ideas were already included in the content of his inaugural dissertation. As he writes in the introduction to the book, his aim is to 'expose the foundations and principles of human cognition', that is, to provide an epistemology. Right from the start, he strongly refutes the two cardinal tenets of Wolff's philosophy, the principle of contradiction (*principium contradictionis*) and the principle of sufficient reason (*princ. rationis sufficientis*)."[67]

> Here he also rejects the efforts of those who want to bring everything into the sphere of mathematical proof. This, he writes, is not possible, because the object of philosophy is the knowledge of the whole universe (*pan seu universum*), and there are two paths leading to this, the path of *Evidentia Mathematica (Certitudo*) and the path of *Evidentia Moralis*. The former, as we would say today, provides methods for knowing nature, the physical world, the latter – and here we come closer to his expression – the moral world, to which religion primarily belongs.[68]

In so doing, Hatvani argues in *Evidentia Mathematica* for the compelling irrefutable truth in the realm of emerging natural science. However, this is not the case in the field of *Evidentia Moralis*, where a different kind of faith and formation of truth prevails. There, in addition to perception, the truth evidence of faith governing moral action can be obtained through testimony and analogy in a world that is beyond our understanding such as things, the origin of the world, the functioning of the heart, and alike. Therefore, the explanation of these phenomena cannot be traced back to *Evidentia Simplex*.[69]

[66] Ibid.
[67] TÓTH 1988, 104.
[68] Ibid.
[69] Ibid.

Tóth grasped well the essence in his summary, stating: "Hatvani's work, by proclaiming two fundamental ways of approaching truth (*Ev. mathematica*, *Ev. moralis*), embodies one of the typical phenomena of the eighteenth century. On the one hand, natural sciences and the philosophy based on them shake the pillars of faith, and, on the other hand, there was the claim and expectation that the tenets of Christian religion need to be defended. Hatvani defended his convictions for himself and for his students and readers in the manner described in his inaugural lecture bolstered by the further evidence of his later work, *Introduction*. Hatvani as a Christian scientist exhibits a character that is of a rationalist natural scientist, who believes in experience and common sense (*sensus communis*) in science. Nonetheless, he has another side, that is, of a believing theologian. Béla Tóth was right to aptly observe that Hatvani may have confessed together with Hamlet, "There are more things in heaven and earth than wisdom can think of."[70] In so doing, Hatvani maintained a healthy balance of endeavouring for a scientific approach and acknowledging the limitations of scientific enquiry.

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[70] TÓTH 1988, 105.

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Péter KÓNYA[1]:

The Prešov Evangelical College, the Centre for Education and Science of the Hungarian Evangelical Church

Abstract.

The Evangelical A. V. College in Prešov has been one of the most important Protestant educational institutions in the Kingdom of Hungary since its inception. At the time of its establishment, in the second half of the 17th century, it was not only the first and for a long time the only evangelical a. v. university in the country but also an important political institution, shaping a whole generation of personalities of the social and cultural life of Upper and Lower Hungary. Also for this reason, the activity of the college was temporarily stopped by the state power after several decades, and its planned transformation into a university could not take place. Although in the following century, during the non-violent re-Catholicization, its status temporarily dropped to the level of a secondary school, during the period of tolerance, after 1781, it quickly achieved the status of one of the most important evangelical educational institutions and the title of district college. In the first half of the 19th century, it already had two high-quality university courses, thanks to which it joined a group of universities, academies,

[1] Prof. Péter Kónya, PhD – Prešovská univerzita v Prešove (University of Presov); e-mail address: peter.konya@unipo.sk.

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making up a special form of the lowest level of university education in Hungarian conditions and a kind of institutional transition to a university. Even though its implementation was again prevented by stormy regional events, the college continued to be an important stand of education and research.

Keywords: Evangelical a. v. college, Prešov, Kingdom of Hungary, Protestant educational institutions, university education in Hungary

The Prešov College was the first and for a long time the only higher evangelical school in Hungary and one of the most important educational institutions in the country.

As a result of the changes in the international situation and the deterioration of relations between the Habsburgs and the German Protestant states, the possibilities of studying at German universities had become increasingly limited in the second half of the century, and it became necessary to introduce theological studies in Hungary. Also, the growing activity of the two Jesuit universities necessitated the establishment of a college or a Protestant higher education institution that could be a worthy counterbalance to them.

The best conditions for the establishment of such a school were in the east of the country. While in the west the Counter-Reformation had achieved great success in the preceding years, the Upper Highlands had been only minimally affected. In 1665, the Upper Hungarian Protestant Estates decided to establish the Evangelical College as the only Protestant higher education institution in the country. For a number of reasons, the delegates of the estates chose the free royal town of Prešov as the site for the school and publicly proclaimed the foundation of the college at their meeting in Košice on 18 November 1665.[2] In view of the high costs of building and furnishing the school – when they could not rely on any state aid –, the Estates appealed for help to all Hungarian and European Protestants.[3]

[2] Štátny archív Prešov (ŠA Prešov) [State Archives in Presov]. EKP, 101: Zakladajúca listina Prešovského evanjelického kolégia z 18. novembra 1665 [Founding Document of the Prešov Evangelical College from 18 November 1665].

[3] Ibid.

Protestant townsmen, landowners, and magnates donated various sums of money, real estate, and the income from it for the construction. The town of Prešov allocated the revenues of the municipalities of Kojatice and Chmiňany[4] and two other noble estates for its university. In the following months, the collection continued throughout the country and abroad. In addition to the Estates of Transylvania, German towns, some Protestant German princes, Dutch towns, as well as the Danish and Swedish kings, who themselves donated 20,000 guilders,[5] contributed considerable sums to the college. Thanks to them, the total amount collected at the beginning of 1666 was more than 50,000 guilders.[6]

Shortly before the completion of the construction, on 16 April 1667, an agreement was concluded between the Upper Highland Estates and the Free Royal Town of Prešov on the joint use and management of the future college. Since the opening of the college meant the disappearance of the former Prešov grammar school, the new school also fulfilled its tasks. Among other important issues, the professors, inspectors, and curators of the college were finally appointed.[7]

All professors and teachers were to be devoted adherents of the Evangelical Church of the Augsburg Confession and equally highly educated. The school was initially headed by Dr Michael Pancratius, the last rector of the city school and prefect of the college. His place was taken over in October 1667 by the first rector, Dr Samuel Pomarius, an eminent theologian, a graduate of several German universities. Before accepting the invitation to Prešov,[8] he was an evangelical pastor in Magdeburg. Among other prominent personalities, the famous philosophers Isaac Caban and Elias Ladiver were especially active at the College. In addition to their many philosophical works, they

[4] They were the last vassal villages belonging to Prešov.

[5] KORABINSKY, Johann Matthias (1786): *Geographisch-historisches und Produkten Lexikon von Ungarn* [Geographical-Historical and Product Lexicon of Hungary]. Pressburg. 154.

[6] HÖRK, József (1896): *Az Eperjesi ev. ker. Collegium története* [History of the Evangelical College in Prešov]. Kassa. 9.

[7] ŠA Prešov, EKP, 101: Leges Illustris Gymnasii Epperiessiensis.

[8] ŠA Prešov, EKP, 101: Pomariov list z Wittenbergu, adresovaný inšpektorom a kurátorom kolégia z 15. augusta 1667 [Pomarius's letter from Wittenberg, addressed to the inspector and curator of the college, dated 15 August 1667].

became known for their successful faith disputes with the feared Jesuit theologian Matej Sámbár in Košice in 1665–1666.[9] Eliáš Ladiver was also the author of popular school plays presented by students in public performances during final examinations.

The College of the Upper Hungarian Evangelical Estates in Prešov was ceremoniously opened on 18 October 1667. According to the school regulations, it became a ten-grade gymnasium with the teaching of advanced subjects, philosophy, and theology in the highest grades. It was precisely these classes and the education they provided that attracted students from across the country and abroad to Prešov, setting the college apart from other evangelical secondary schools. The number of students in these classes alone soon exceeded two hundred (in the academic year 1668/69, there were 258),[10] and the overall number of school students must have been even higher. One of the first and most famous students of the college was Emeric Thököly. He studied in Prešov from January 1668[11] until his escape following the failed Wesselényi conspiracy in 1670.

During its short period of uninterrupted existence, the college gained an excellent reputation both nationally and internationally. Its professors achieved such remarkable results that several graduates from the highest grades were placed as school rectors or priests even without a university education. Thus, the College, though not formally, became in fact a university, an academy. In the light of these facts, Pomarius planned its early transformation into a university.[12] However, in the following months, due to an adverse change in socio-political circumstances, there was a violent disruption in the existence of the college and of evangelical education in Hungary.

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[9] FABINY, Tibor (1995): Egy hányatott életű eperjesi tudós Ladiver Illés [Illés Ladiver Is a Scientist from Eperjes with a Hectic Life]. In: Kónya, Peter – Káša, Peter (eds.): *Eliáš Ladiver a Michal Greguš, osobnosti a ich dielo v obraze doby* [Eliáš Ladiver and Michal Greguš, Personalities and Their Work in the Image of the Time]. Prešov. 22–23.

[10] HÖRK 1896, 28.

[11] [author missing] (1875): Felsőozoróczi és Kohanóczi Ottlyk György önéletírása [The Autobiography of György Ottlyk Felsőozoróczi and Kohanóczi]. In: Thaly, Kálmán (ed.): *Történelmi naplók 1663–1719*. Budapest. 5.

[12] HÖRK 1896, 31; GÖMÖRY, János (1933): *Az Eperjesi Ev. Kollégium* [The Eperjesi Ev. College]. Prešov. 17.

In the wake of Wesselényi's conspiracy, the College of Upper Hungarian Estates was included among the first to be liquidated, which was certainly not a coincidence. Despite the monarch's prohibition, the subversive plays of Ladiver – which were directly aimed against Leopold I –, Pomarius's efforts to expand the school, and the participation of professors Ladiver, Caban, Pomarius, and others in theological debates with the Jesuits complicated the school's position. Its existence was incompatible with the new absolutist policy in Hungary. The confiscation of the college was carried out by General Spankau on 23 May 1671.[13]

The revival of the college was only made possible by the change in the political circumstances after the outbreak of the uprising of the last Evangelical magnate, Emeric Thököly. When the Habsburg garrisons left all three free royal towns in mid-August 1682, the townspeople, with the support of the Kurutzes, seized the churches and schools. Emeric Thököly, a former student of the school and the son of one of its main benefactors, had a keen interest in its proper functioning and played a personal role in its further development as the leader of the uprising. As the rector, he invited his favourite professor, Eliáš Ladiver, back from exile. Professors Ján Schwartz and Juraj Henrich Sappuhn also worked in the higher grades alongside him.[14] In 1684, Ladiver invited his former student, Ján Rezik, who was teaching in Toruń, to join as a professor.[15] The means to ensure the proper functioning of the college were provided through donations from the leader of the uprising, the restoration of old and new foundations, and other contributions. Part of the expenses, especially salaries of employees, was covered by the city of Prešov. Additionally, with Thököly's assistance, the rector received material support from the Swedish king.[16]

After the defeat of the uprising, the possession of the churches and schools remained unchanged for some time. Thanks to the Sopron Articles, all of the town and most of the village parish schools in the capital continued to operate. The College was

[13] HÖRK 1896, 34.

[14] FABINY 1995, 27.

[15] Series Primariorum Professorum et Rectorum prout et eorundem collegarum schola, et Collegio Eperiessiensi Praepositorum. Archív ev. a. v. cirkevného zboru v Prešove [Archive evangelical a. v. church choir in Prešov].

[16] HÖRK 1896, 31.

confiscated together with the churches and parishes in the early days of 1687 by the commission of Upper Highland Chief Captain Count Stefan Csáky. In the following years, there was no Protestant school in the town.[17]

These conditions lasted until the beginning of the uprising of Francis II. Rákóczi, when in 1703–1705 Protestants' free exercise of religion was restored, together with the right to their own schools. Shortly after the occupation of the city and a few months before the Diet of Szécsény, Rákóczi sent a commissioner, František Bertóthy, to Prešov, who on 2 January 1705 ordered the Jesuits to leave the college that he then handed over to the Protestants.[18] At the beginning of 1705, after a long break, the Prešov Evangelical College was restored. The only suitable rector deemed as such by the school management was Ján Rezik, a former student and professor of the institute.[19]

In the summer of 1705, the inspectors of the College sent a message to King Charles XII of Sweden, who pledged to support four theology students from Hungary at the University of Greifswald among the royal scholars, covering their expenses from the Swedish royal treasury.[20]

The Ružomberok Synod in April 1707 paid significant attention to the Prešov College. It designated a special position for the college within the structure of evangelical schools in Hungary, instructing all four superintendents to give it particular consideration. Given the institution's challenging circumstances, the delegates recommended organizing nationwide collections to support it.[21]

Despite the ongoing war and financial difficulties, they managed to maintain the regular teaching in all grade levels. Prominent individuals who studied in Prešov in the early 18th century included the future Rector Samuel Matthaeides, the physician and natural scientist Ján Adam Rayman,[22] as well as the educator and writer Juraj Bárány.

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[17] Annales fata et vicissitudines Ecclesiae Evangelicae Epperiessiensis 1671–1721. Archív ev. a. v. cirkevného zboru v Prešove [Archives of the Evangelical a. v. Church Choir in Prešov].

[18] Op. cit.

[19] Series Primariorum Professorum...

[20] HÖRK 1896, 31.

[21] Evangélikus Országos Leveltár (EOL) Budapest [Evangelical National Archives in Budapest], I. a 9. 20: Originale Synodi Rosenbergensis Evangelicae in Memoria serenissime Posteritati conservatur.

[22] Later, he became the first to successfully vaccinate against smallpox on the European continent.

In the summer of 1710, Prešov was struck by a plague claiming the lives of more than 3,000 people, including the college rector, Ján Rezik. Samuel Matthaeides, a young graduate from the University of Greifswald, was elected to replace him. During the final siege by Habsburg forces in November 1711, an agreement between the Evangelical and Catholic townspeople preceded the surrender. According to the agreement, the Evangelicals relinquished the parish church and other buildings, while the Catholics committed to respecting their rights to the college and a small (Hungarian) church.

However, in February 1711, the monarch ordered the evacuation of the college and handed it over – along with the small church – to the Jesuits. As a compensation for the seized buildings, a special commission designated a location on the outskirts, where the Evangelicals were supposed to build a new church, rectory, and school, in accordance with Article 26 of the Sopron Synod.

In the following decades, the college ceased to exist once again and was replaced by a suburban wooden school, built in 1715. It stood in the western suburbs, next to the churches and rectories of both congregations (German and Slovak), which used it together. In 1750, they received permission to build a new school building and in the same year to teach the so-called higher, gymnasium subjects. In the second half of the century, mathematics, theology, and philosophy were also taught at the Prešov Evangelical School, which gave it the character of a lyceum. At the end of this period (in 1779), it had more than 210 pupils and was the largest educational institution in the city. In 1770, the future Emperor Joseph II visited the school.

Upon Emperor Joseph II's direct intervention in 1783, the Evangelicals purchased the college building, along with the adjacent Church of the Holy Trinity. They relocated the suburban school into its premises. In the new facilities, the transformation of the school into a gymnasium began. A pivotal decision for its future direction came from the Convent of the Potisk District of the Hungarian Evangelical Augsburg Confession Church in 1804. According to this decision, it became the district college, thereby serving as the central educational institution for the entire district.[23]

[23] HÖRK 1896, 31.

In the following four decades, the College underwent several changes, thanks to which it evolved from an ordinary town school into a complete grammar school with strong university elements, moving towards an incomplete university. Thanks to these changes, the College was established as a secondary school (gymnasium), providing incomplete legal and theological education in the highest grades. Theology, lectured at first in the highest gymnasium class, developed after its extension into a separate two-year course. A Department of Law was established as early as 1815, and from 1822 law was also taught as a two-year course. These two courses constituted a higher school, providing higher education. To the traditional subjects, natural sciences, Hungarian language and literature, drawing, gymnastics, etc. were added. Hungarian was the language of instruction from 1842. In the 1940s, the management of the College tried again to transform it into a university but failed due to political events.[24]

As the school continued to develop, the number of professors increased from five in the 1820s to twelve by 1847. Almost all of them were graduates of foreign, mainly German universities and were proficient in multiple languages.[25] In the 1840s, the office of rector was held by Theology Professor Anton Ľudovít Munyay, Philosophy Professor Andrej Vandrák, and then Fridrich Hazslinszky.

The number of students saw a sharp increase, exceeding 400 in the 1840s.[26] These students came from all over the eastern regions of the country, not just from Prešov or Šariš County.[27] While at the beginning of the century, the college mainly enrolled Evangelical Augsburg Confession students, in the 1840s, a significant portion of the student body comprised Reformed, Orthodox, Jewish, and even Roman Catholic students.[28]

[24] For the first time, the idea of transforming the College into an evangelical university was born in the 1760s, but it could not be realized due to the coming Catholicization. Another such plan from the period of the uprising of Francis II Rákóczi had a similar fate. During the Synod of Ružomberok, Rákóczi made the decision to build a university in Prešov in 1707.

[25] In addition to the traditional state languages, such as Hungarian, Slovak, and German, several of them knew other languages as well, e.g. French or Spanish. ŠA Prešov, EKP, č. 266: Informationes de professoribus 1821–1852.

[26] ŠA Prešov, EKP, č. 255: Consperctus examinis anniversarr 1800–1819, 256: Conspectus examinis anniversarii 1820–1847.

[27] ŠA Prešov, EKP, č. 246: Matricula Juventis studiosae in Collegio District. Evang. aug. Eperiensi 1831–1840.

[28] Ibid.

During the first half of the century, the college educated several future writers, scientists, and politicians. Among the notable individuals who studied there were Ľudovít Kossuth, generals Aristid Dessewffy and Artúr Görgey, Michal M. Hodža, politician and archaeologist František Pulszky, politician Daniel Irányi, playwright Jonáš Záborský, Slovak poets Jozef Srnka and Ján Hvezda, poets Gyula Sárossy, Frigyes Kerényi, Kálmán Lisznay, Imre and Sándor Vachottovci, historian Ludovit Haán, ethnographer Ján Hunfalvy, and aesthete Augustín Greguss.[29]

Accommodation and meals were provided by the college for some of the students. Since the 1940s, the school also had its own gymnasium. Collegiate collections were established at that time: a natural history collection and a coin collection. The so-called Szirmay Library, consisting of 15,000 volumes, was of great importance.[30]

The student societies, organized on the basis of nationality, played an important role in the life of the College. As elsewhere in Hungary, some of them outgrew the College and earned a distinguished status in cultural and social life. The oldest one was the Slovak society. The Hungarian Society was founded in 1828. Michal Gregus, its first president, a professor of philosophy and later rector, played a major role in its creation and in building the library.[31] In the following years, it experienced a dynamic development. In 1838, it published its own almanac, *Jácint*. In the 1940s, the society's leaders maintained contact with leading figures of the reform movement and the liberal opposition. The third such was the German Society, founded in 1842.[32]

In the second half of the 19th century, the College of the Potisk Diocese of the Hungarian Ev. A. C. Church was in its most – but at the same time the last – prosperous period. The revolution in Pest on 15 March 1848 and the significant democratization

[29] More on the College in this period: KÓNYA, Peter (1993): Prešovské evanjelické kolégium v prvej polovici 19. storočia [Prešov Evangelical College in the First Half of the 19th Century]. In: Švorc, Peter (ed.): *Mudr. Ľudovít Markušovský a jeho doba* [Doctor Ľudovít Markušovský and His Time]. Prešov. 209–218.

[30] ŠA EKP 1032.

[31] ŠA Prešov, EKP, č. 722: Az Eperjesi Magyar Társaság jegyzőkönyve 1840–1844 [Minutes of the Hungarian Society of Eperjes 1840–1844].

[32] ŠA Prešov, EKP, č. 129: Gesetztafel des im Jahre 1842 am Eperieser Collegio entstandenen Deutschen Vereins [Law Board of the German Association That Was Founded at the College in Prešov in 1842].

processes in the country were welcomed by the majority of the students and professors at the College. In the spring, a National Guard unit was formed at the College under the leadership of Professor Jozef Benczúr. In the summer of 1848, the building was occupied by the intervening Russian army and turned it into a hospital. After the defeat of the revolution in August 1849 and during Bach's absolutism, the existence of the college was threatened several times. Because of the institute's recent open support of the Hungarian government and the active participation of professors and students in the war, Vienna provided no help and took several steps in the following years to damage or abolish it.

The nearly two-year interruption in teaching, coupled with damage to the building caused by the Austrian and Russian forces, along with the harm inflicted during the era of neo-absolutism, had adverse effects on the college's financial situation. The situation was further exacerbated by Thun's *Entwurf der Organisation der österreichischen Gymnasien und Realschulen* (Draft of the Organization of Austrian Gymnasiums and Secondary Schools),[33] which significantly impacted the school. It necessitated a reorganization into an eight-grade gymnasium, with at least one teacher in each class. It was not until 1855 that the government officially recognized the institution as "public". Despite immense financial difficulties, the school managed to sustain its theology course, expanded it to three years, while the teaching of law temporarily ceased in 1852.[34] During these challenging times, foreign Evangelicals provided assistance to the institution. This foreign aid included an initiative by Lajos Kossuth, who leveraged his influence and, as a former student of the institution, appealed to British Protestants for financial support to rescue the College.[35]

Only the period of dualism brought about a significant improvement. In the 1970s, the College was taking shape as a scientific and educational institution with four institutes. The first and oldest one was the Higher Gymnasium, essentially unchanged since the reform of the 1950s. The three-year theological institute also continued to operate in the form in which it had been constituted in 1851. The law academy was changed to a 4-year school in 1878, thus taking on the character of a college. The

[33] HÖRK 1896, 189.
[34] Op. cit. 191.
[35] ŠA Prešov, EKP, č. 249.

structure of the College was complemented by the Evangelical Augsburg Confession boys' teaching institute (the only one in Hungary), transferred to Prešov from Nyíregyháza in the academic year 1873/74. A significant milestone came in 1884 when the gymnasium received state support, and the theological institute was expanded into a four-year academy. After a fire in 1887, the building was generously rebuilt.

In addition to the four educational institutes in the historic building, the convent and the refectory, the library and the collections belonged to the college. The library continued to grow and by the 1990s comprised approximately 35,000 volumes. The school museum, consisting of a collection of coins and natural history objects, was of great importance. The coin collection contained almost 6,000 pieces, and the natural history collection consisted of 11,470 animals, 10,500 plants, and 4,840 minerals.[36] The founder and administrator of the natural history collections was Professor (academician) Fridrich Hazslinszky.

At the beginning of the 20th century, the College underwent further development. Due to the growth in the number of students in all of the institutes, the school premises were no longer sufficient, and in 1911 a new modern building of the collegiate gymnasium was built. At that time, 43 professors were working in the college, 22 of whom in the academies. Among the most important personalities in the second half of the 19th and in the early 20th centuries were academics Andrej Vandrák (philosopher)[37] and Fridrich Hazslinszky (botanist),[38] church historians Jozef Hörk and Ján Gömöry, and the lawyer Šimon Horowitz. After the establishment of the new universities at the beginning of the century, the management of the institute made great efforts in the interest of transforming the collegiate faculties into an incomplete evangelical university; however, these plans could not be implemented after all due to the changes in state law after the First World War.

[36] HÖRK 1896, 418.

[37] DUPKALA, Rudolf – KÓNYA, Peter (1999): *Antológia z diel profesorov Prešovského evanjelického kolégia I*. [An Anthology of Works by Professors of the Prešov Evangelical College I]. Filozofia. Prešov. 167–169.

[38] KÓNYA, Peter (1996): Friedrich Hazslinszky (1818–1896). In: [author missing]: *Život a dielo Friedricha Hazslinszkého*. Prešov. 11–13.

Subsequent to the dissolution of Hungary, the collegium disintegrated, and the new Slovak Evangelical Church was not interested in maintaining it. The Theological College ceased to exist, and its professors left for Budapest, where they worked at the newly established Evangelical Theological Faculty of the Elizabeth University. The Law Academy moved to Miskolc. The Teachers' Institute lasted only until 1923 and only the collegiate grammar school operated in Prešov until its nationalization in 1946.[39]

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[39] Initially as a Slovak–Hungarian and from 1926 as a Slovak grammar school.

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Csaba TÓDOR[1]*:*

Körmöczi – Halfway between Radicalism and Enlightenment

Abstract.

This paper explores the relationship between theology and science in Körmöczi's work. First, it examines the role of experimental science in Unitarian education in the late 18th and early 19th centuries. Next, it looks at how experimental sciences influenced Körmöczi's academic work. Finally, it analyses how these scientific and philosophical thoughts affected Körmöczi's views on faith and the consequences for his later life as a bishop. The study is divided into six sections. The first section introduces Körmöczi, connecting his study trip to Göttingen with his teaching at the Unitarian College in Kolozsvár [Cluj-Napoca]. The second contains Körmöczi's concept of the soul, presenting his views on moral law as an internal force guiding human thought and actions. The third section analyses the impact of Kantianism on Körmöczi's thought. The fourth section investigates Körmöczi's threads to Schleiermacher, discussing the issue of deism and pantheism. The fifth section examines the accusation of atheism against Körmöczi, considering its context and significance within the church. And, finally, the study concludes with a summary.

Keywords: Körmöczi, Unitarian, neo-Kantianism, Fichte, Transylvania, philosophy, religion

[1] Associate Professor, Protestant Theological University, Faculty of Unitarian Theology, Department of Systematic Theology, Cluj-Napoca-Kolozsvár; e-mail: todorcsaba@proteo.ro.

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Introducing Körmöczi's Background

The first part of this section introduces a few bibliographical references of János Körmöczi, and then I will present his educational evolution and foreign influences, which will be followed by taking a look at his broader social and political context. The section will conclude with presenting Körmöczi's intellectual and scholarly developments.

He was born in 1763, the son of a schoolmaster in Kissáros. At 16, he attended the Unitarian College in Kolozsvár, where his teacher was Pákei József, an advocate of Enlightenment and Kantian philosophy. In 1794, he studied physics and mathematics in Vienna and enrolled at the University of Jena in 1796, attending lectures by Karl David Ilgen. He soon moved to Göttingen, where he studied under Spittler, Schölzer, and Eichorn. Körmöczi translated works by Fichte and Thomas Paine into Hungarian. He returned home in 1797 and became a teacher of mathematics and physics at the Unitarian high school in Kolozsvár in 1798. He acquired an experimental equipment from Göttingen and Vienna, starting the college's natural science collection in Kolozsvár. He becomes the college director here in 1802, translates Holbach's *System of Nature* in 1805, and becomes bishop in 1812. Before this, he was accused of irreligiosity and atheism by the previous bishop's son. The accusations included his views on Christ, religion, and sharing Holbach's *System* with students. He also taught that the Book of Moses contained ancient tales. Körmöczi played a key role in fostering Anglo–Hungarian relations, seeking connections with London Unitarians around 1797, which became regular from 1821 onwards. He worked on reforming education, liturgy, and church discipline and established the college's natural science collection and church archives.

Körmöczi's educational evolution and foreign influences can be analysed within the relationship between Hungarian education and foreign universities, which evolved through distinct historical periods, beginning with early connections in the Middle Ages and strengthening during the Reformation and Enlightenment. Despite losing its independence during the Turkish conquest, Hungary maintained the significance of education, with foreign ties symbolizing intellectual and social independence.[2] By the end of the seventeenth century, education in Hungary shifted away from theology and

[2] WERTHEIMER, Ede (1884): *Ausztria és Magyarország a XIX. Század első tizedében*. Budapest. 125.

law to incorporate secular subjects, influenced by England's industrial, economic, and commercial boom.[3] Education shifts away from its focus on theology and law, incorporating secular subjects.[4] These new paradigms attract students from Eastern Europe, who come from feudal backgrounds, offering a fresh emphasis on individual freedom and economic progress.[5] The University of Göttingen exemplified this new educational paradigm, focusing on natural sciences, law, and political sciences, attracting students from various social backgrounds and prioritizing economic development.[6] Göttingen now attracts not only those preparing for the Protestant clergy or teaching careers but also young nobles.[7] By the end of the 18th century, the university's character evolves, with more young nobles showing interest in political sciences. The university's free spirit is evident, as humanistic ideas are reinterpreted alongside political sciences.[8]

Körmöczi's social and political context is characterized by the lack of independence after the Rákóczi uprising, when Hungary became part of the Habsburg Monarchy, with political discourse centring on compromises between the ruler and the nobility. Protestant minorities, especially in Transylvania, faced cultural subjugation[9] and established colleges that enriched the Hungarian intelligentsia, such as those in Sárospatak, Debrecen, and Kolozsvár.[10] Kolozsvár, now Cluj-Napoca in Romania, became a significant centre of the Enlightenment thought,[11] contrasting with the more dogmatic and economically isolated intellectual hub of Debrecen. For instance, Martinovics's catechism, printed by Mihály Landerer, reached Hungary, with Ferenc

[3] HARRISON, Peter (2002): *Religion, and the Religions in the English Enlightenment*. Cambridge, Cambridge University Press. 20.

[4] DÜMMERTH, Dezső (1962): *Göttinga és a magyar szellemi élet*. Budapest. 5.

[5] HAJÓS, József (1969): *Köteles Sámuel*. Bukarest, Irodalmi Könyvkiadó. 127.

[6] PUKÁNSZKY, Béla (1936): Göttinga, Budenz József és a magyar nyelvhasonlítás. In: *Nyelvtudományi Közlemények*. 50: 364.

[7] BENKŐ, Samu (1977): Göttinga, Gauss és Erdély. In: *Korunk*. 4, 36. 257.

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[10] GÁL, Kelemen (1935): *A Kolozsvári Unitárius Kollégium története (1568–1900)*. Kolozsvár. 461.

[11] KAZINCZY, Ferenc (1903): *Kisebb költemények. Pályám emlékezete* (Magyar Remekírók 7). Budapest.196.

Versegh receiving German and Latin copies of the catechism.[12] Körmöczi translated the German version into Hungarian while teaching at the Unitarian school in Kolozsvár.

Körmöczi's intellectual and scholarly developments are related also to the scholarly pursuit of Greek and Latin knowledge, which was divided among his professors,[13] with some, like Heyne and his followers, focusing on Greek culture and classical philology, while others, such as Schölzer and his adherents, emphasizing Roman traditions. The University of Göttingen became a centre for modern political science, influenced by Voltaire's source-critical historiography, and attracted diverse students, including notable Hungarian scholars. Despite the slow urbanization and scattered scholarship in Hungary, distinguished figures among Göttingen students were József Cseh-Szombathi and András Conrad in medicine, Ferenc Benkő in botany,[14] Gábor Kováts-Martiny and Pál Tittel in geography and astronomy, and Mátyás Bucsányi in mathematics and physics, who later moved to Hamburg. In intellectual sciences and philosophy, Mihály Greguss taught in Pozsony, while Mihály Hissmann taught in Göttingen and declined a professorship in Pest to return home. Polymaths were active in botany and mineralogy.[15] Farkas Bolyai in mathematics[16] and Sámuel Gyarmathy in medicine made significant contributions, though often facing challenges upon returning home.[17]

Körmöczi's Interpretation of the Concept of Soul

The following section contains Körmöczi's concept of the soul. This theme will be discussed through the lens of his ideas on nature and natural religion, his philosophical and scientific developments, and, finally, drawing on his educational context and intellectual challenges.

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[12] PUKÁNSZKY, Béla (1924): Kant első magyar képviselői és ellenfelei. Cikkek és szépirodalmi közlemények. In. *Protestáns Szemle*. 33, 1. 302.

[13] BENKŐ 1977, 258.

[14] GORTVAY, György (1953): *Az újabbkori magyar orvosi művelődés és egészségügy története*. Budapest. 12.

[15] GÖMBÖC, Endre (1936): *A magyar botanika története*. Budapest. 370.

[16] BENKŐ 1977, 260.

[17] EGYED 1990, 104–106.

Nature and Natural Religion

In the seventeenth century, the concept of the soul was closely linked with nature and natural religion,[18] leading to explorations of how nature and transcendence connect, sparking both philosophical and later scientific interest. The deep ties of natural religion with nature defined research during this era,[19] with thinkers like Francis Bacon suggesting that nature could be understood through reason and the soul[20] and Kant building on this by discussing pure and practical reason. Renaissance and Stoic influences shaped the idea of an empirical or immanent nature reflecting divine action, viewing nature as part of the divine essence, not separate from it, but exhibiting a supernatural aspect.[21] Platonists in the seventeenth century embraced this, considering natural religion as a valid expression of faith, laying the groundwork for a universal religion and morality that bridged the divine and natural order.[22]

Philosophical and Scientific Developments

The seventeenth century saw a blending of various philosophical influences, including the Renaissance, the Reformation, and ancient times, contributing to discussions on the soul, nature, and religion.[23] The University of Göttingen, influenced by Voltaire's critical examination of historical connections, aligned with the scientific thinking of the time. Voltaire's writings, such as *Le Micromégas* (1752),[24] argued for an immaterial soul, countering Cartesian arguments and suggesting that the soul is a mirror of the universe.[25]

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[18] REILL, Peter Hans (2005): *Vitalizing Nature in the Enlightenment*. Berkeley, University of California Press. 7.

[19] Op. cit. 10, 20.

[20] HARRISON 2002, 6.

[21] Op. cit. 29.

[22] Op. cit. 6, 28, 31.

[23] Op. cit. 7.

[24] SUTTON, Geoffrey V. (1995): *Science for a Polite Society. Gender, Culture, and the Demonstration of Enlightenment*. Westview Press. 281.

[25] Op. cit. 282.

Locke's ideas counter Cartesian arguments, suggesting that God's will moves the body.[26] Voltaire likens the soul to a mirror of the universe, with the body as its frame, offering a refined definition of matter.[27] Malebranche emphasized the communal aspect of reason, describing a *société spirituelle* influenced by Augustine's theory, highlighting the importance of establishing a moral community guided by practical reason,[28] akin to Kant's metaphysics of morals. In his context, community is perceived as the connection between *ens morale* and moral community, highlighting the communal dimension of reason. Community, rational insight establishes a connection among the knowing mind and all other minds utilizing reason.[29] This community is not only formed among humans but also between humans and God, as the intellect only illuminates the perception of rational objects that exist in God.[30] Malebranche's philosophy underscores the importance of establishing moral community, echoing Augustine's belief in the role played by the rational soul in forming a moral-religious community through contemplation.[31] He describes self-awareness as self-relational, not directed towards any object, terming it feeling or internal perception, a *sentiment intérieur*.[32] This intellectual landscape was further enriched by figures like Rousseau, Schleiermacher, and Lessing, who advocated for the separation of religion from science and the church from the state, promoting individual religious faith and tolerance. Rousseau similarly values this internal experience, calling it *sentiment intérieur*, essential for truth, which prioritizes moral considerations over doubts without practical consequences. This leads to a moral community with religious undertones resembling Schleiermacher's definition of religion. Körmöczi also emphasizes the direct impact of moral concepts on the heart, giving birth to a religion of deeper clarity than conscious understanding. These ideas illustrate the intricate process of establishing moral

[26] HARRISON, Peter (2007): *The Fall of Man and the Foundations of Science*. Cambridge. University Press. 7.

[27] SCHMAL, Dániel (2014): Az ens morale és az erkölcsi közösség alapjai a korai és a kései felvilágosodásban. In: *Keresztény Magvető*. 120, 3–4. 456.

[28] Op. cit. 456–457.

[29] HARRISON 2002, 64.

[30] Malebranche, Nicolas (1997 [1674–75]): The Search after Truth. In: Lennon, Thomas N. (ed.): *Cambridge Texts in The History of Philosophy*. Cambridge, Cambridge University Press. xxxvii.

[31] HARRISON 2002, 7.

[32] REILL 2005, 12. See more in: SCHMAL 2014, 460.

community, intertwining philosophy with religion and morality.[33] Lessing advocated for separating religion from science, aligning with Enlightenment ideals. He opposed Protestant orthodoxy while advocating for religious and scientific independence.[34] Lessing's perspective promotes harmony between faith and reason, combating orthodoxy's intolerance and fostering tolerance– an idea embraced by liberal Protestants in later centuries.

Educational Context and Intellectual Challenges

The intellectual background of Körmöczi is embedded in this rich educational context. Accusations against him for sharing D'Holbach's materialistic work[35] at the Unitarian College in Cluj highlight the tension between emerging scientific ideas and traditional religious beliefs. Despite such controversies, institutions like the University of Göttingen continued to attract scholars, fostering discussions that blended romanticism with nature and history, as seen in the works of Schelling and his disciple Henrich Steffens. The early 1810s marked a philosophical shift towards understanding the soul's connection to nature and science in terms of relationships and complementarity. This period also saw the emergence of two main groups shaping scientific thought: one led by figures like Condorcet and Laplace, introducing mathematical probability to rethink truth, and the other, the vitalists, exploring nature, chemistry, and medicine to redefine matter in terms of forces and dynamic movement. The Pantheismusstreit and Novalis debate reveal the influence of philosophical ideas during Körmöczi's era.[36] Friedrich Heinrich Jacobi suggests that any consistent system leads to pantheism, while Novalis

[33] KÖRMÖCZI, János (n. d.): *A lélek halhatatlanságáról* [On the Immortality of the Soul]. Manuscript in the Archives of the Hungarian Unitarian Church in Kolozsvár. Manuscript reference: MsU, 1282. 31.

[34] Zoltán Gyenge draws attention to the intellectual threads connecting Körmöczi to Lessing. See: GYENGE, Zoltán (2014): Vallástalan volt-e Körmöczi János? Körmöczi felfogása Schleiermacher filozófiájának tükrében. In: *Keresztény Magvető*. 120, 3–4. 414–415.

[35] HAJÓS, József (1995): A magyar filozófia múltjából. Jegyzetek Hanák Tibor szintéziséhez. In: *Erdélyi Múzeum*. 57, 1–2. 107. See also GÁL,Kelemen (1935): Körmöczi János püspök a vallástalanság vádja alatt. In: *Keresztény Magvető*. 4–5. 206.

[36] GYENGE 2014, 416.

envisions a universal religion for Europe.[37] On the other hand, the significance of Schleiermacher's appearance lies also in his emphasis on the primacy of the heart and emotion in his concepts of religion, contrasting with Jacobi and Kant's rationalistic approach.[38] Schleiermacher justifies the importance of the separation of philosophy and religion by advocating for the separation of church and state, emphasizing that religious faith should be the result of a personal and individual decision. While Schleiermacher highlights the primacy of the heart and emotion in his concepts of religion, this is contrasting the rationalistic approach of Jacobi and Kant, as Schleiermacher argues for the separation of philosophy and religion, advocating for the autonomy of religious faith through personal and individual decisions, which includes the separation of church and state. This separation reflects the contemporary struggle between singularity and generalization, explored by Ludmilla Jordanova as a dynamic shift from self to other, akin to the movement between the poles of a magnet. This concept of balance resonates with Enlightenment Romantics' focus on nature and humanism, navigating extremes and boundaries to establish harmony.

Zoltán Gyenge highlights Körmöczi's philosophical depth, referencing Nietzsche's quote on the clash between Christian life and rejection.[39] This reflects the intricate relationship between religion and philosophy. Körmöczi defines true religion as the belief in God's presence within oneself, shaping moral values. He emphasizes that faith is deeply personal, transcending liturgy and mediation.[40] As Nietzsche suggests, true Christianity frees individuals from the life Jesus preached against. Religion's evolution parallels ethical growth, rooted not in abstract ideas but in human nature. Individuals feel morally bound to pursue goodness, seeing the world through a moral lens. Belief in God and the soul's immortality is intertwined with moral order and guided by wisdom. Genuine faith is a natural gift, nurtured by personal will and a universal consciousness.[41]

[37] Op. cit. 415.
[38] Op. cit. 417.
[39] Op. cit. 419.
[40] Op. cit. 420.
[41] NIETZSCHE, Friedrich (2002): *A hatalom akarása*. Transl. by Gábor Romhányi Török. Budapest, Cartaphilus. 103.

As religion evolves, so does human ethics, rooted not in abstract ideas but in personal experiences and actions. People feel a moral obligation towards goodness, recognizing that everything is bound by moral laws. Belief in God and the soul's immortality reflects moral order and wisdom. Genuine faith is a natural gift, driven by individual will and a universal consciousness.[42]

In the debates over the soul, Georges Cuvier strongly criticizes German *Naturphilosophie* in 1810, arguing it confuses moral and material aspects.[43] Despite opposition, works by figures like Madame Germaine de Stael, Schelling, Xaver von Baader, and Heinrich von Schubert receive praise for their scientific approach. Schelling, a key figure, offers a mystical perspective, contrasting with rational English and French views. His disciple, Henrich Steffens, focuses on mineralogical research, blending romanticism with nature and history, reflecting a post-French Revolution need for harmony amid political turmoil.[44]

In the early 1810s, there was a shift in how people were thinking about the soul's connection to nature and science. Instead of focusing solely on analysis and breaking things down, there was a growing emphasis on seeing things in terms of relationships and complementarity. This marks a transition in philosophical thinking, moving away from strict dualisms towards a more interconnected worldview. Around 1810, two main groups were shaping scientific thought. One group, led by figures like Condorcet and Laplace, challenged the idea that matter is neutral, introducing mathematical probability to rethink truth.[45] The other group, the vitalists, explored nature, chemistry, and medicine, redefining matter in terms of forces and dynamic movement.

These philosophical shifts led to new understandings of living matter and change, emphasizing teleology and internal properties. Instead of strict causality, there was a recognition of gradual evolution and complexity. Ambiguity and complementarity became important ideas, revealing nature's unity amid diversity. While these concepts were gaining prominence, their exact meaning remained unexplained in Körmöczi's ideas.

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[42] KÖRMÖCZI n. d., 32.

[43] JARDINE, Nicholas (ed.) (1996): *Naturalphilosophie and the Kingdoms of Nature*. Cambridge, Cambridge University Press. 230.

[44] Ibid.

[45] Reill 2005, 6.

The Impact of Kantianism on Körmöczi

This section presents Körmöczi as one of the receivers and interpreters of Kantianism. He as a Kantian is presented from the angle of Fichte's philosophical thoughts, from his broader intellectual context and philosophical influences. The section also discusses the impact of Körmöczi's translations on Hungarian intellectual discourse.

Körmöczi's Interpretation of Fichte's Philosophy

Körmöczi's significance lies in his role as the first Hungarian translator and interpreter of Fichte, although a deeper analysis is necessary to understand their relationship, as he was influenced also by Johann Salomo Semler, a theologian with Wolffian–Kantian views, although Semler's ideas do not entirely match Kantianism.[46] Körmöczi's connection to Fichte requires deeper exploration. Fichte's ideas, as translated by Körmöczi, emphasized the importance of free thought and action, forming the foundation of human personality as free moral beings. Themes of human fulfilment – explored by Fichte and echoed in Körmöczi's writings –focus on the progression of individuals towards self-realization and moral growth. Körmöczi's engagement with Fichte's philosophy is evident in his inaugural speech of 1798 and other published works. Fichte's ideas about human fulfilment, translated by Körmöczi, emphasize the importance of thinking freely and acting with freedom of will. This forms the basis of human personality, making individuals free moral beings, or egos.[47] His inaugural speech from 1798 shows Fichte's influence. Imre Gellérd, based on references to Rousseau and Kant found in Fichte's work, contextualized Körmöczi's inaugural speech in the history of philosophy.[48] A theory about the Kantian direction of Körmöczi's speech was adopted by Péter Egyed, referring to Elek Csetri.[49] Körmöczi's translation of Fichte's *Einige Vorlesungen über die Bestimmung*

[46] Gurka, Dezső (2022): Körmöczi János jénai és göttingeni peregrinációjának filozófia- és tudománytörténeti vonatkozásai. In. *Per Aspera Ad Astra*. 9, 2. 37.

[47] GURKA, Dezső (2014): *Körmöczi János filozófusi pályakezdése a jénai posztkantiánizmus hatásterében*. In: *Keresztény Magvető*. 120, 3–4. 439.

[48] GELLÉRD, Imre (1983): Körmöczi János, a felvilágosodás prédikátora. In: *Keresztény Magvető*. 89, 1. 51. More in Körmöczi's inaugural speech upon assuming the rector's office (Cluj, 1802. Reference No. MsU. 1610/B).

[49] EGYED, Péter (2010): *Szellem és környezet*. Cluj-Napoca. Polis. 339–361.

des Gelehrten from 1794, titled *The Destination of Scholars*, establishes him as a key mediator of post-Kantian philosophy in Hungary.[50] The title given by Körmöczi, *The Destination of Scholars*, not only indicates the topic but also serves as a Hungarian translation of Fichte's original speech. Based on all this, Körmöczi can now be considered as the translator of two of Fichte's works, becoming one of the most important mediators of post-Kantian philosophies in Hungary. In this way, Körmöczi translated into Hungarian Fichte's reflections on the purpose and destiny of humanity. The main aim of humanity is to control those without reason and rule over them according to one's own laws. However, this goal is impossible to achieve unless humans become gods, which is beyond human capability. The concept of humanity itself acknowledges that this infinite goal is unreachable, and there are countless paths towards it. Therefore, it is not humanity's purpose to reach this goal.[51]

Although Körmöczi studied Kant's philosophy under Karl David Ilgen and was influenced by scholars like Heinrich Eberhard and Gottlieb Paulus, who was a friend of Fichte, he personally never met or listened to Fichte. However, his interpretation of Fichte's ideas is significant.[52] Körmöczi's understanding of Fichte's philosophy can be connected to Thomas Paine's book, which he likely explored after the execution of Martinovics, but before the turn of the century.[53] Fichte's influence is evident in Körmöczi's Inaugural Speech in 1798, where he discusses concepts like nature versus necessity, science versus regularity, and freedom versus purposiveness, as well as the interplay between ego

[50] See in Körmöczi's inaugural speech: MsU 1610/B. Fichte's text is available at: https://www.digitale-sammlungen.de/en/view/bsb10447482?page=5.

[51] FICHTE, Johann Gottlieb (1981): Az ember rendeltetése. In: Endreffy, Zoltán – Kis, János (eds.): *Válogatott filozófiai írások*. Budapest, Gondolat. 158.

[52] HAJÓS, József (1994): Kellgren és Körmöczi. In: *Nyelv- és Irodalomtudományi Közlemények*. 37, 2. 124.

[53] See Martinovics's funeral speech written by Körmöczi in MsU 1176. Ignác Martinovics (Born in Pest on 22 July 1755 – died in Buda on 20 May 1795): abbot, leader of the Hungarian Jacobin movement. Influenced by French materialist philosophers, especially Holbach, he embraced philosophical materialism and consistent atheism. He articulated his philosophical views in a work published anonymously in French (*Mémoires philosophiques ou la nature dévoilée*, 1788; translated into Hungarian as *Filozófiai írások* [Philosophical Treaties] in 1956, published in Budapest). In the trial against the Jacobins, he was sentenced to death for lese-majesty and treason, and he was executed along with the other four directors.

and non-ego, and thesis, synthesis, and antithesis (will). Körmöczi prepared for Kantian philosophy with the assistance of his mentor, Pákei, by studying antiphlogistic chemistry, conducting physical experiments, and acquiring Kant's works.[54]

In József Pákei's funeral speech, the fulfilment programme arose in the context of the question what one was, what one is, and, finally, what one must become.[55] This line of thought is also present in another published eulogy by Körmöczi, where he addresses the issue of shaping humanity in the context of bidding farewell to Klára Ágh.

Intellectual Context and Philosophical Influences

Before delving into Körmöczi's Kantian interpretation, it is essential to acknowledge the broader intellectual context in which he operated.[56] His exposure to Kantian philosophy through mentors like Karl David Ilgen and his interactions with scholars like Heinrich Eberhard and Gottlieb Paulus, who was a friend of Fichte, shaped his understanding of Fichte's ideas. Körmöczi's understanding of Fichte's philosophy can be connected to Thomas Paine's book, which he likely explored after the execution of Martinovics, but before the turn of the century.[57] Fichte's influence is evident in Körmöczi's Inaugural Speech in 1798, where he discusses concepts like nature versus necessity, science versus regularity, and freedom versus purposiveness, as well as the interplay between ego and non-ego, and thesis, synthesis, and antithesis (will). Körmöczi prepared for Kantian philosophy with the assistance of his mentor, Pákei, by studying antiphlogistic chemistry, conducting physical experiments, and acquiring Kant's works.[58]

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[54] GURKA 2022, 44.

[55] HAJÓS, József (1972): Egy röpirat a gondolatszabadságról. In: *Korunk*. 12. 1808.

[56] HAJÓS 1994, 124.

[57] See Martinovics's funeral speech written by Körmöczi in MsU 1176. Ignác Martinovics (Born in Pest on 22 July 1755 – died in Buda on 20May 1795): abbot, leader of the Hungarian Jacobin movement. Influenced by French materialist philosophers, especially Holbach, he embraced philosophical materialism and consistent atheism. He articulated his philosophical views in a work published anonymously in French (*Mémoires philosophiques ou la nature dévoilée*, 1788; translated into Hungarian as *Filozófiai írások* [Philosophical Treaties] in 1956, published in Budapest). In the trial against the Jacobins, he was sentenced to death for lese-majesty and treason, and he was executed along with the other four directors.

[58] GURKA 2022, 44.

Before Körmöczi's Kantian interpretation, there was a notable interaction between experimental science and theology.[59] In the 17th century, rationalism played a crucial role in shaping European perspectives on this interaction. Descartes, a prominent figure among the Cartesians, focused on the fall of man and the nature of human reason, along with his followers like Malebranche and Pascal.[60] However, they did not delve into the fall of Adam or interpret biblical events in depth, sparking debates about the relationship between science and religion.[61] These debates explored how scientific paradigms, such as the idea of life emerging from basic matter, influenced religious views and how people tried to balance science with religion.[62] Descartes, Malebranche, and Pascal's dialogue examines the nature of human reason and the escape from errors. From Fichte's viewpoint, this is relevant because human reason and self-reflection are at the centre of philosophical thinking, and Fichte also dealt with the nature of reason and self-consciousness. Descartes omits the interpretation of biblical events, while his followers, such as Malebranche and Pascal, emphasize its importance in the sciences. Fichte's perspective finds relevance in these discussions because he also explores human reason and self-awareness. Unlike Descartes, Fichte emphasizes harmony between science and religion, making these debates insightful for shaping his philosophical ideas. Additionally, the prevailing scientific paradigm of the time, which connects life's development to matter, resonates with Fichte's exploration of the relationship between spirit and matter, and humanity's connection to nature.

The debate between William Whewell and Hugh James Rose revolved around the intertwining of experimental science and religion. Whewell argued that inductive science was in harmony with religion, but alternative analyses of the development of empirical approaches emerged during the debate.[63] Following this, we direct our attention to the

[59] EGYED 2014, 403.

[60] HARRISON 2007, 4–6.

[61] REID, David A. (2023 [2006]): A Science for Polite Society: British Dissent and the Teaching of Natural Philosophy in the Seventeenth and Eighteenth Centuries. In: *History of Universities*. XXI, 2. 121, 123. Oxford, Oxford Academic [online ed.]. Available at: https://doi.org/10.1093/oso/9780199206858.003.0003 (last accessed 18 January 2024).

[62] HARRISON 2002, 29.

[63] TOPHAM, Jonathan R. (2022): *Reading the Book of Nature. How Eight Best Sellers Reconnected Christianity and the Sciences on the Eve of the Victorian Age*. Chicago – London, The University of Chicago Press. 110–111.

ideas of the Royal Society and Francis Bacon and how they reinforced scientific endeavours in the realization of experimental science. The debate emphasizes the crucial role played by the fall and limitations of human nature during this period.[64] Examining Protestant perspectives from the 17th century, eschatological orientation and Calvinist concepts come to the forefront. In this context, the analysis of Newton's approach takes place, highlighting the deviation from the original justifications of experimental natural science.[65] The lack of agreement among Christian Protestants explores the debates about the nature and extent of the original sin and the tensions between the divine plan and the fallen state of the world.[66] The conception of experimental science in the 17th century examines in detail the new knowledge system of experimental philosophy. Here the question arises: Does science develop based on idealized mathematical quantities or facts generated by observations? The debate concludes by addressing the criticism of Josias Leslie Porter and others regarding the scientific paradigm of the 1870s. It emphasizes the role of theological academies during this period in limiting and responding to extreme scientific and philosophical theories.[67] All these topics provide a broad perspective on the complexity and development of the relationship between 17th-century science and philosophy. The interaction between experimental science and theology in the seventeenth century, as well as debates surrounding rationalism and the relationship between science and religion, provided a backdrop for Körmöczi's philosophical inquiries.

The impact of Körmöczi's translations on Hungarian intellectual discourse is worth noting. Despite censorship limitations, Körmöczy's translations of Fichte's works had a significant impact on Hungarian intellectual discourse, extending beyond the boundaries of science to influence literature in Transylvania. Observations by scholars like Barta János and S. Varga Pál suggest Fichtean themes in works such as Imre Madách's *The Tragedy of Man*,[68]

[64] HARRISON 2007, 198–200.

[65] Op. cit. 240–241.

[66] Op. cit. 250–251.

[67] LIVINGSTONE, David N. (2014): *Dealing with Darwin. Place, Politics, and Rhetoric in Religious Engagements with Evolution*. Baltimore, Johns Hopkins University Press. 58–59.

[68] *The Tragedy of Man* belongs to the dramatic genre of Hungarian literature and is Imre Madách's best-known work. It was published on 12 January 1862 and deals with events from the 1850s on the one hand and draws inspiration from Madách's own marriage on the other. The historical

indicating the enduring relevance of Fichte's ideas in Hungarian cultural and intellectual life.[69]

The Threads Leading to Schleiermacher

The section presents Körmöczi's connections with the philosophical ideas of Schleiermacher. This topic is interpreted through the lens of philosophical perspectives on religion and faith in the 18th century. It is worth mentioning Schleiermacher's response to Kantian rationalism when clarifying Körmöczi's approach, specifically when he distinguishes substance and form in religion. The section concludes with Körmöczi's own interpretation and critique on Schleiermacher in terms of his own methodological inquiries and epistemological frameworks.

Philosophical Perspectives on Religion and Faith in the 18th Century

In the 18th century, philosophical discourse centred on the exploration of pantheism and its implications for religious thought. Friedrich Heinrich Jacobi posited that logically coherent systems inevitably lead to pantheism, ultimately resulting in atheism.[70] In contrast, Friedrich Novalis envisioned an idealized synthesis of Christianity and European religious traditions, advocating for a harmonious coexistence of diverse faiths.[71] He suggested that religion involves contemplating the universe, even in the absence of God.[72] Kierkegaard, known for his passionate faith, agreed with this notion.[73] He distinguished between the church's role in representing faith (content) and the state's role in representing governance (form), emphasizing the importance of education

scenes of the *Tragedy* were strongly influenced by the triad proposed by German philosopher Georg Hegel. Accordingly, the dominant ideas of different historical periods (theses) later transform into their opposites (antitheses), eventually resolving into a comprehensive idea (synthesis).

69 GURKA 2002, 37.

70 GYENGE 2014, 416.

71 Op. cit. 417.

72 Op. cit. 418.

73 Ibid.

in countering clericalism and promoting moral duty. Schleiermacher stressed that religion encompasses both formal and substantive aspects, with faith originating from the heart rather than from reason. He argued that the foundation of one's character lies in being a free moral agent. According to Körmöczi's reasoning, the existence of moral laws shapes moral reality, leading to the establishment of a moral society. He interprets this as the acceptance of the moral lexicon gives rise to the concept of moral existence, with the coherence of the lexicon indicating that it should be regarded as paramount among moral entities and viewed as a moral framework; hence, the belief in the moral realm also stems from the moral lexicon.[74]

Schleiermacher's Response to Kantian Rationalism

Schleiermacher emerged as a response to perceived limitations within Kantian rationalism, advocating for contemplation as a means of transcendence. He proposed that religion involves the contemplation of the universe, emphasizing its unity even in the absence of a divine presence. This perspective resonated with Kierkegaard, who emphasized the role of passionate contemplation in faith. Schleiermacher stressed that religion encompasses both formal and substantive aspects, with faith originating from the heart rather than from reason. He argued that the foundation of one's character lies in being a free moral agent. According to Körmöczi's reasoning, the existence of moral laws shapes moral reality, leading to the establishment of a moral society. He interprets this as the acceptance of the moral lexicon gives rise to the concept of moral existence, with the coherence of the lexicon indicating that it should be regarded as paramount among moral entities and viewed as a moral framework; hence, the belief in the moral realm also stems from the moral lexicon.[75]

The Distinction between Substance and Form in Religion

According to Schleiermacher, religion never manifests in its pure form; its outward appearance is influenced by other factors. This implies that the external aspects

[74] Op. cit. 413.
[75] Ibid.

of religion, such as doctrines or rituals, do not encapsulate the essence of religion itself.[76] Körmöczi echoes this sentiment, referring to religion's "garment", which is distinct from religion itself. Both scholars assert that religion stems from the human heart, embodying an emotional aspect. Schleiermacher contends that religious emotions are independent of knowledge, while Körmöczi argues that concepts, doctrines, and belief systems are superficial elements derived from external learning, lacking true internal religious significance. Schleiermacher posits that religion pertains to the realm of emotion, devoid of knowledge, while Körmöczi asserts that the essence of religion lies in God's presence within individuals, primarily in emotion, rather than in its expression through concepts. Both thinkers draw a distinction between faith and doctrinal teachings, religion, and theology, as well as between life and dogma. Building upon Schleiermacher's teachings, Körmöczi differentiates between religious faith and creed. They both underscore that the authenticity and profundity of religion emanate from internal experiences and emotions, rather than external forms or intellectual constructs.[77]

In Friedrich Heinrich Jacobi's (1743–1819) perspective, any logically coherent system inevitably leads to pantheism, culminating ultimately in atheism. Friedrich Novalis (1799) presents an idealized vision of the interplay between Christianity and Europe, envisaging a synthesis of diverse religious traditions. Schleiermacher emerges as a response to the perceived impasse of Kantian rationalism, advocating contemplation as a means of transcendence. He posits religion as the contemplation of the universe, emphasizing its inherent unity even in the absence of a divine presence. In this aspect, his views align with those of Kierkegaard, who underscores the role of passionate contemplation in faith. Schleiermacher differentiates between the substance and the form of religion, identifying the church as an institutional embodiment of its substance. For Schleiermacher, faith resides within individuals or in the cosmic order, serving as the cohesive force akin to a *harmonia prestabilita*.[78] This faith is deeply personal, prioritized over superficial formalities, echoing Nietzsche's concept of the "Will to Power", wherein the essence of Christian life necessitates liberation from formalism.[79]

[76] SCHLEIERMACHER, Friedrich (2000): *A vallásról*. Transl. by Zoltán Gál. Budapest. 71–75.
[77] GYENGE 2014, 419.
[78] Ibid.
[79] Op. cit. 416.

In Schleiermacher's conception of the separation between state and church, the church embodies the content while the state represents the form. He warns against the pitfalls of clericalism, rooted in educational theory (neo-humanism), wherein the church, through education, imparts a communal sense of duty and moral awareness. The integration of state laws into religious teachings, facilitated by clericalism, blurs the distinction between the church's spiritual domain and the state's legal jurisdiction. Consequently, the church, ostensibly guided by religious commandments, conforms to the state's legislative framework, thereby justifying state actions to its citizens. For Körmöczi, faith resides intrinsically within the heart, serving as its native essence.[80] Faith precedes intellect in its operation, underscoring the primacy of the heart over the mind. He intertwines the notions of will, reason, and freedom, positing that freedom of thought equates to freedom of will. This forms the foundation of personality, wherein individuals are regarded as autonomous moral entities, or selves.

Körmöczi's Interpretation and Critique

The methodological inquiries previously mentioned can be framed within the realm of epistemology, specifically concerning how one can apprehend the existence of pure, a priori synthetic concepts and their application in natural philosophy. This inquiry prompts Körmöczi to scrutinize the notion of religiosity, identifying two distinct forms within his conception. He posits that the discerning individual harbours two forms of religious belief: one internalized and the other professed verbally. Körmöczi's exploration culminates in the critique of a prevalent notion within Unitarianism, known as nonadorantism.[81] He argues that within Unitarian doctrine, the confession of Jesus Christ is merely an external appendage, not intrinsic to the faith itself. This divergence challenges traditional beliefs upheld within Unitarianism, suggesting that prudent adherents do not genuinely subscribe to this particular doctrine despite its continued inclusion for political expediency.

[80] KÖRMÖCZI n. d., 34.

[81] SIMON, József (2014): Felvilágosodás és kritikai filozófia – Körmöczi János (1762–1836) lehetséges dilemmái Flügge, Herder és Kant nyomán. In: *Keresztény Magvető*. 120, 3–4. 438.

Körmöczi's Methodological Inquiries and Epistemological Frameworks

Körmöczi addresses methodological inquiries concerning the apprehension of pure, a priori synthetic concepts within the philosophy of nature. He expresses scepticism regarding dual religiosity, asserting that an astute individual harbours two religions: one held internally and the other professed verbally. He scrutinizes the religious proclamation concerning Jesus Christ in Unitarianism, deeming it merely an outward aspect of religion, not genuinely embraced as reality by a discerning Unitarian. Moreover, the text elucidates that clericalism, grounded in educational theory, poses a potential threat to the church, necessitating caution in clerical pedagogy. It underscores the segregation of state and church, wherein the church embodies substance and the state embodies form. The state validates the authority of religion and the church to citizens, with belief in the moral realm stemming from moral law. Kelemen Gál's investigation directs attention to the connection between Körmöczi and Schleiermacher, underscoring that the crux of religion lies not in knowledge but in emotion.[82] Both stress the significance of religious encounters and emotions, asserting that these internal experiences profoundly shape the depth and essence of religious encounters.[83]

Overall, these philosophical perspectives and critiques offer valuable insights into the nature of faith, religious experience, and the interplay between philosophy and theology in the 18th century, including the threads between Körmöczi and Schleiermacher.

The Charge of Atheism[84]

The intellectual identity of Transylvanian antitrinitarians transcended confessional institutionalism, situating itself within a broader European context characterized by historical criticism. Rather than a metaphysical system, it posed a challenge to the

[82] GÁL 1935, 208–210.

[83] Ibid.

[84] Gál Kelemen's previously mentioned study was published in the 1931 issue of *Keresztény Magvető*, which contains the accusations of atheism and Körmöczi's defence. Based on this study, and the manuscript that can be found in Bencédi Gergely's legacy at the Unitarian Church's Archives in Kolozsvár/Cluj, Transylvania, p. 242–246.

empirical grounding of historical theology. Körmöczi's 1799 address can be interpreted as an endeavour to contextualize the theology of his church within a historical-social framework akin to Kantianism. Through his historical-critical approach, Körmöczi sought to transcend nonadorantism although he only partially succeeded in this endeavour. His aim was to dismantle the long-standing tradition of antitrinitarianism, originating with figures such as Palaeologus and Francken, which, through Körmöczi's critique, led to accusations of atheism.[85]

Following the passing away of József Pákei, Körmöczi's mentor and later friend, in 1802, Körmöczi assumed the directorship of the Unitarian College in Kolozsvár. This appointment marked the beginning of conflicts with Bishop István Lázár, exacerbated in part by the establishment of a fifth teaching position in 1805. Lázár passed away in 1811, leading to a dispute between Körmöczi and the bishop's son, Lázár Samuel, regarding the settlement of the bishop's estate.

Körmöczi faced several accusations. Firstly, it was alleged that he provided students with a book promoting atheistic and enlightenment ideas. Secondly, he was accused of questioning the historical accuracy of Moses's writings, suggesting they were poetic rather than literal. Influenced by his studies in Göttingen, Körmöczi viewed the Bible as a product of literary history to be evaluated alongside ancient archaeological findings. Thirdly, he purportedly advocated for individuals to privately believe one religion while publicly professing another.[86]

Fourthly, Samuel Lázár accused Körmöczi of distributing a translated version of Holbach's *Système de la Nature* to students, causing religious confusion. This book, authored by Baron Holbach and published in 1770, promoted atheism and materialism, denying the existence of God, soul, and immortality. Körmöczi refuted this allegation, stating that he had neither authorized nor condoned the book's distribution. Instead, he discovered it, investigated the matter, and confiscated the copies himself.

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[85] Jacobus Palaeologus (?–1585) was a persecuted theologian of Greek origin who preached against the worship and invocation of Christ. Christian Francken (1550–1610) was a former Jesuit, later antitrinitarian, who worked with Francis David and Jacob Palaeologus in Transylvania as Lector at the Unitarian College in Kolozsvár/Cluj, Transylvania between 1585 and1589.

[86] KOVÁCS, Sándor (2021): *Lapozgató. Az unitáriusok rövid története*. Kolozsvár– Budapest, Magyar Unitárius Egyház. 144–145.

In his defence, Körmöczi argues that his views have been misconstrued and are actually grounded in the ideas of earlier philosophers and theologians. He highlights the dual nature of religion: the external one, officially taught by the church, and the internal one, personally felt and practised by individuals. Körmöczi asserts that his beliefs pertain to the internal aspect of religion and do not negate the external forms endorsed by the church. The controversy is further complicated by personal conflicts between the bishop and church leadership, as well as internal church politics. The case sheds light on how the church and its leaders became embroiled in debates over religious principles, reflecting broader power struggles within the institution.

Regarding the confiscated book, the students were reprimanded and issued a formal warning on 15 June 1805. They reported the incident to Rector Körmöczi János and decided against translating the book into Hungarian after its manuscripts had been seized. As a consequence, they forfeited their semester privileges and received a stern reprimand. They pledged to abstain from teaching or using the book and promised to adhere to the school's regulations. Furthermore, they acknowledged their error in using Holbach's book and pledged to uphold the basic Christian tenets of their faith, opposing anyone who opposed these principles. They also committed to guiding others away from harmful influences and, if necessary, taking action to eliminate them. This pledge was signed by twelve students on 5 June 1805.[87]

Initially, the students requested that the matter remain confidential, but it was eventually disclosed to the bishop and two other consistories a year and a half later. Additionally, Lázár accused Körmöczi of teaching that the angels mentioned in Isaiah are symbolic representations of stars and the sunrise, suggesting that angels and demons were to be understood as celestial bodies. Körmöczi clarified that he had presented established scientific interpretations in his lectures but had not necessarily endorsed these ideas personally. Moreover, Körmöczi was accused for the sixth time of teaching that the confession of faith regarding Jesus Christ in Unitarianism was merely an external addition, inserted into the articles of faith through *Complanatio Desiana*, and

[87] The text of the *Reversal* can be found at the Archives of the Unitarian Church in Cluj, in Bencédi Gergely's legacy.

did not genuinely belong there.[88] Therefore, while it may be taught for political reasons, an intelligent Unitarian does not believe it.

The crux of the final accusation was that Lázár charged Körmöczi with being irreligious. The accusation was rooted in Körmöczi's alleged teaching that every intelligent person should hold two religions: one they privately believed in and another they publicly professed. Lázár viewed this as irreligious behaviour. Körmöczi refuted this claim, explaining that distinguishing between external and internal religion does not imply a separation of faith and religion. Instead, he argued that external religion, consisting of the church's rituals and forms, differs from the religion of the heart, i.e. internal conviction. According to Körmöczi, this disparity does not denote irreligiosity but rather reflects a deeper, inner religious experience.

As for the bishop's life after his ecclesiastical tenure, no information is available. However, the case was not presented to the Gubernium for a final decision; instead, it was resolved at the Synodal Council in July 1815. Coincidentally, during the same synod, Lázár Sámuel, who had become a secretary for the Gubernium, was elected as the supervisor-guardian of the college. In 1818, Körmöczi sustained a head injury in an accident, necessitating careful nursing for the remainder of his life.

Conclusions

Körmöczi finds himself halfway between nonadorantism and enlightenment yet remains unable to fully commit to either. Why? Firstly, the radical intellectuals in Cluj lacked the influence to significantly impact the already divided Transylvanian nationalist landscape amidst the theological and political democratization process. Moreover, Habsburg interests opposed any interpretation of freedom. The application of Kant's epistemological radicalism to natural sciences, exemplified by Pál Augustinovics equipping the physics classroom in Cluj with Viennese support, positioned Körmöczi

[88] During the session held by the committee sent by the parliament in the city of Dés, the Transylvanian Unitarian Church was accused of heresy and was forced into the so-called Dés Agreement. This agreement obligated Unitarians to worship Jesus with divine reverence, baptize in the name of the Father, Son, and the Holy Spirit, and subject their religious books to princely censorship.

dangerously close to atheistic accusations within his church. Church-political factors, though relevant, are beyond the scope of this discussion.

As a translator of Fichte, Körmöczi significantly contributes to understanding humanism. He posits the will as pivotal to human self-fulfilment grounded in freedom. However, he hesitates in fully embracing humanism, uncertain about its ultimate goal.

Influenced by Schleiermacher, Körmöczi sees the church's role primarily as mutual education, blurring the line between church and state.

The concept of religious sentiment as an innate aspect of the heart presents no conflict in merging Kantian and Schleiermacherian ideologies. This blend offers a potential pathway to reconcile antitrinitarianism with Enlightenment ideals.

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Balázs Dávid MAGYAR[1]*:*

Pál Sárváry's Contribution to the Teaching of the Natural Sciences at the Reformed College of Debrecen, with Special Emphasis on His Book Entitled *Philosophical Ethics*

Abstract.

According to the Hungarian lexicons and handbooks, Pál (Paul) Sárváry was a famous Hungarian painter and graphic architect. The higher seminaries at the Reformed College of Debrecen were started by him in 1782. Sárváry put specific emphasis on the acquirement of the German language and of the rhetorical arts. After a short stay in the city of Késmárk, he returned to Debrecen in order to serve as a lecturer of poetry. As his personal diaries reveal, he was involved in the tradition of peregrination. His destination was the University of Gottingen, where he fulfilled the requirements of the doctoral examination. After his successful exam, Sárváry visited the educational centres of Jena, Halle, Leipzig, Wittenberg, Berlin, London, Oxford, Utrecht, Regensburg, and Vienna. We find him in Debrecen again in 1795, when he was accepted as teacher of mathematics, physics, and philosophy. Although Sárváry was a celebrated personality of poetry, painting,

[1] Independent Scholar, Religion Teacher, Hajdúböszörmény Bocskai István High School – Baltazár Dezső Reformed Elementary School, Hungary; e-mail: magyarmogyoro@gmail.com.

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geology, and architecture in Debrecen, it is worth focusing on a particular piece of his little-known philosophical heritage, namely *Philosophical Ethics* (1804), in order to illuminate his philosophical and theological thinking.

Keywords: natural sciences, Reformed College of Debrecen, Pál Sárváry, moral philosophy

It is worth beginning with the claim that the detailed history of the departments of the Reformed College of Debrecen (1538) and the scientific activity of its professors have not been a major part of the local curriculum at the University of Debrecen, or at the Debrecen Reformed Theological University, which are the two successors of the College. This is why generations of pastors and teachers, trained at Debrecen, have not been familiar with the history of their famous alma mater. At the same time, historiography concerning the Reformed College of Debrecen was still in its infancy, as only the four-hundred-year anniversary of the college (1938) led to a slight increase in the number of books and essays on the defining footsteps and events of the local higher education.[2] Unfortunately, these jubilee volumes did not intend to shed light on the detailed history of every department or to deal profoundly with the life and the scientific heritage of the former professors of the institution. However, Pál Sárváry (1765–1846) was certainly not a major theologian or jurist of the local college; his person became crucial not only for his strong sentiments towards the reconstruction (1803–1816) of Debrecen[3] (after her wild city fire in 1802) but mainly for his significant scientific contributions to the education of natural sciences. This is what makes so intriguing that the life and work of Sárváry did not attract the interest of the researchers. István Szűcs (1811–1891), for instance, one of the jurist-professors of the college, who must have

[2] NAGY, Sándor (1933): *A Debreceni Református Kollégium története két kötetben*. Debrecen, Nagy Sándor kiadása; ZSIGMOND, Ferenc (1937): *A debreceni református kollégium története 1538(?)–1938*. Debrecen, Debrecen sz. kir. város – Tiszántúli református egyházkerület könyvnyomda-vállalata; NAGY Sándor et al. (1943): *A Kollégium tagozatai a gimnázium, a polgári iskola, a tanítóképző-, a lelkészképző- és a tanárképzőintézet.* Debrecen, A Tiszántúli Református Egyházkerület kiadása.

[3] SZŰCS, István (1871): *Szabad kir. Debreczen város történelme*. Debrecen, Városi Könyvnyomda. Vol. 3. 936, 960.

personally met Sárváry in Debrecen, dedicated only a few lines to the service Sárváry did to the College.[4] Nevertheless, every single early Hungarian lexicon was taking pains to illuminate the life and work of Pál Sárváry. A brief entry on Sárváry can be found in the fourteenth volume of the first Hungarian encyclopaedia, entitled *Magyar lexikon: Az egyetemes ismeretek encyklopaediája* and edited by Ede Somogyi,[5] in the fourteenth volume of the second Hungarian encyclopaedia, entitled *A Pallas nagy lexikona: Az összes ismeretek encyklopédiája* and edited by József Bokor,[6] and, finally, in the sixteenth volume of the revised edition of *Pallas*, titled *Révai nagy lexikona: Az ismeretek encyklopédiája* and edited by Mór János Révai.[7] Although these materials grasp only the highlights of Sárváry's biography, it is quite relevant that he was a recognized professor of philosophy and of the natural sciences in Debrecen between 1795 and 1839. Investigating older sources[8], it is also important to cite the well-known author of the historical research of the College of Debrecen, Ferenc Balogh, who argued in his book entitled *A Debreceni Református Kollégium története adattári rendszerben* that Sárváry was a polymath professor and scholar of mathematics, physics, and philosophy.[9] Unfortunately, the latest monographies presented at the 450th (1988)[10] and the 475th (2013)[11] jubilee of the Reformed College of

[4] Op. cit. 960–961.

[5] SOMOGYI, Ede (1884): 'Sárváry Pál' [entry]. In: Somogyi, Ede (ed.): *Magyar lexikon: Az egyetemes ismeretek.* Budapest, Wilckens és Waidl Kiadóhivatala. XIV. 499–500.

[6] FARKAS, József (1897): 'Sárváry Pál' [entry]. In: Bokor, József (ed.): *Pallas Nagy Lexikona: Az összes ismeretek encyklopédiája.* Budapest, Pallas Irodalmi és Nyomdai Részvénytársaság. XIV. 904.

[7] RÉVAI, Mór János (1924): 'Sárváry Pál' [entry]. In: Révai, Mór János (szerk.): *Révai Nagy Lexikona: Az ismeretek encyklopédiája.* Budapest, Wilckens és Waidl Kiadóhivatala. Vol. 16. 587.

[8] Some new contributions repeat earlier materials: BÉNYEI, József (1999): *Debreceni Irodalmi Lexikon*. Debrecen, Tóth Könyvkereskedés és Kiadó Kft. 325; MARKÓ, László (2004): 'Sárváry Pál' [entry]. In: Markó, László (ed.): *Új Magyar Életrajzi Lexikon*. Budapest, Magyar Könyvklub. V. 963.

[9] BALOGH, Ferenc (1904): *A Debreceni Református Kollégium története adattári rendszerben*. Debrecen, Hoffmann és Kronovitz Könyvnyomdája. 43, 45, 55.

[10] GAÁL, Botond (1988): A természettudományok oktatása és művelése a Kollégiumban, In: Barcza, József (ed.): *A Debreceni Református Kollégium története*. Budapest, Magyarországi Református Egyház Zsinati Sajtóosztálya. 592–626.

[11] SZABADI, István (2013): *Intézménytörténeti források a Debreceni Református Kollégium Levéltárában*. Debrecen, Tiszántúli Református Egyházkerület. I–II; GYŐRI L., János (2013): *A Debreceni Református Kollégium Gimnáziuma (1850–2012): Iskolatörténeti tanulmányok*, Debrecen, Tiszántúli

Debrecen did not achieve a breakthrough in the discussion of Sárváry's contribution to science. Nevertheless, it is not without good reason to point out that until now the most detailed work on Sárváry was published almost one hundred years ago, when László Tőrös presented his valuable contribution under the title *Sárvári Pál, Arany János professzora*.[12] Taking a closer look at the volume, it is obvious that Tőrös successfully described Sárváy as a versatile scholar, an emblematic lecturer of the city of Debrecen, who produced a high variety of publications and lecture notes.

On the basis of the selected primary and secondary sources, the paper intends not merely to provide a general overview of his life and scientific legacy, as, although Sárváry was a celebrated personality of poetry, painting, geology, and architecture, it seems relevant to set off one particular work of his little-known philosophical heritage, namely *Filosofusi ethika, az az: erkölcsi tiszteinkről, vagy kötelességeinkről és gyakorlások módjáról a józan okosság szerént való tudomány*[13] (Philosophical Ethics) in order to reveal his methodology[14] and to outline a bridge between his philosophical and Reformed theological thinking.

Református Egyházkerület; BARÁTH, Béla Levente – FEKETE, Károly (2019): *Őrállóvá tettelek: Műhelytanulmányok a debreceni teológia oktatás és református lelkészképzés 1850–2000 közötti történetéhez*. Debrecen, Tiszántúli Református Egyházkerület. Cf. GÁNGÓ, Gábor (2024): A természetjog oktatása a Debreceni Református Kollégiumban, In: Bíró, Csilla – Klima, Gyula – Nagy, József (eds.): *Magyar keresztény gondolkodók az Árpád-háztól napjainkig*. Budapest, Magyarságkutató Intézet kiadása. 119–140.

[12] TŐRÖS, László (1938): *Sárváry Pál: Arany János professzora.* Nagykőrös, Dajka Lajos könyvnyomdája.

[13] SÁRVÁRY, Pál (1804): *Filosofusi ethika, az az: erkölcsi tiszteinkről, vagy kötelességeinkről és gyakorlások módjáról a józan okosság szerént való tudomány*. Nagy-Várad, [publisher missing].

[14] Sárváry's bibliography was colledted by: ZOVÁNYI, Jenő (1901): 'Sárváry Pál' [entry]. In: Zoványi, Jenő: *Theologiai ismeretek tára*. Mezőtúr, Gyikó K. Könyvnyomdája. III. 178; SZINNYEI, József (1908): 'Sárváry Pál' [entry]. In: Szinnyei, József: *Magyar írók élete és munkái*. Budapest, Hornyánszky Viktor kiadója. XII. 250–251.

1. The Life, Career, and Scientific Heritage of Pál Sárváry

According to the sources at hand, Sárváry[15] was born in Piskolt (nowadays in Romania: Pişcolt)[16] on 3 October 1765. His father, John, was serving as a Reformed priest, and his mother had noble roots in the Munkácsi family. Due to the numerous relatives of his mother living in the area of the city of Patak (Sárospatak), the young Pál did not leave for Debrecen, but he subscribed to the Reformed College of Patak. Because of the weakness of his body, Pál moved to Böszörmény (Hajdúböszörmény), where his brother, John, was an associate teacher at the local particular (i.e. regional denominational) school of the Reformed College of Debrecen. Later on, in 1777, he became a student of the College of Debrecen.[17] Regrettably, he lost his parents at the age of 14. In the city of the "Calvinist Rome" (i.e. Debrecen), he studied philosophy, theology, and law. Succeeding the "upper" module of the higher curriculum, consisting of three years, Pál went to Késmárk (nowadays in Slovakia: Kežmarok) for two years in order to improve his knowledge of the German language, mathematics, and physics.[18] By 1789, he had become a public lecturer at the College of Debrecen, then in 1792 the honourable title of "senior" was awarded to him by the general public of the college students, making him their leader and representative person.[19] In the same year, he was offered the chair of István Hatvani (1718–1786). Fortunately, a major decision was taken by the local church and the city magistrates as maintainers of the college, renewing the structure of the departments. Doing so, Hatvani's department was divided, founding the separate chairs of mathematics, physics, and philosophy.[20] In order to prepare himself for the professorship, Pál travelled to Gottingen, where his close friend, Ézsaiás Budai (1766–1841) had already been waiting for him. He arrived in November 1792, and his courses and administrative matters had been settled by his friends and supporters in advance. One of them was Lajos Domokos, who was serving as the city judge of Debrecen. Certainly,

[15] Most of the encyclopaedias use the name "Sárváry", but on the title page of his works reads "Sárvári". The author follows the way paved by the encyclopaedias.

[16] MARKÓ 2004, 963.

[17] SOMOGYI 1884, 499.

[18] BALOGH 1904, 163.

[19] TŐRÖS 1938, 29–30.

[20] FARKAS 1897, 904.

he was a very important person for Sárváry, because Lajos had numerous valuable contacts in his private diary. In Gottingen, Sárváry was focusing mainly on the courses of philosophy. Finally, almost three years after his arrival, on 9 May 1795, Sárváry successfully obtained the respectable title of doctor.[21] The epistemological content of his doctoral dissertation entitled *De summis cognitionis humanae principiis* testifies to the rich reception of Kant's views. Due to the complicated political and military situation in Western Europe, he postponed the travel – which promised to be fruitful – to Great Britain and the Netherlands. Also, he visited the scientific and cultural centres in Jena, Leipzig, Halle, Wittenberg, and Berlin. Fortunately, the international matters took a positive turn, and so Sárváry could arrange his travel to the academic centres of London, Oxford, and, upon his return, to Amsterdam, Utrecht, den Haag, Munster, and Vienna. After his successful international scholarship, on 25 November 1795, he took up his position as a professor at the Reformed College of Debrecen,[22] where he had to teach not only mathematics and physics, as it had been contracted before, but philosophy as well. This latter subject remained under his supervision until 1798/1799.[23]

Apparently, the early period of his academic career was full of troubles and pitfalls, since the church ordered on 25 April 1795 that the official language of the local education should be Hungarian. Unfortunately, due to the lack of Hungarian phrases and scientific terminology concerning the subjects of the natural sciences, Sárváry had to use a mixed Latin-Hungarian language, which was a constant source of anxiety for him. This is why he was so committed to be involved in the creation of a new modern Hungarian language for scientific purposes. According to his colleagues and students, his lessons were very interesting and modern, using a simple, easy-to-understand language, which made him popular among his audience.[24] He was addicted to the use of experimental instruments and devices. It is not surprising that he was very concerned to collect and

[21] TŐRÖS 1938, 54.

[22] ZOVÁNYI 1901, 178.

[23] Sárváry wrote in the first volume of his *Philosophy* that "three years ago […] the study of the courses (i.e. the departments) of Physics and Maths were divided…" SÁRVÁRY, Pál (1802): *Moralis philosophia, melyekben az erkölcsi cselekedeteknek a józan okosság szerént való főregulája vagy principiuma kikeresődik és annak az Isten lételével, a lélek halhatatlanságával, és a vallással való szoros egybeköttetése előadódik.* Pest, Trattner Mátyás, iii–iv.

[24] TŐRÖS 1938, 80.

use them, especially for the aid of his physics and astronomy[25] courses. He appreciated the collection of minerals as well.[26] At the same time, Sárváry's lectures on moral philosophy also made him very popular. Nevertheless, his negative critiques were due to the high number of his cancelled academic courses, and sometimes the unusual, artificial scientific language, which was by no means easy to follow for the general public.

Just before the equitable evaluation of Sárváry's educational and scientific legacy, it is very important to take into consideration that the central building of the College of Debrecen, together with the house of the professor, caught fire, and therefore a vast part of his personal notes, records, drafts, and manuscripts were destroyed.[27] Fortunately, a few copies of his printed books and the notes of his students remained, which allow a worthier presentation of his emblematic role in the teaching of natural sciences in Hungary. As a result of his extensive scientific legacy, he became member of the Hungarian Academy of Sciences in 1832.[28] Until his retirement in 1839, Sárváry committed himself to the teaching of painting, drawing, architecture, poetry, and astronomy. He died on 19 December 1846.[29]

On the basis of the secondary literature on Sárváry, we cannot argue that, in general, the sources introduce the work of Sárváry as a great contribution to aesthetic education. This was because of his ambition to be a pioneering person of the art of drawing and copper engraving.[30] In doing so, he published a book entitled *A rajzolás mesterségének kezdete*[31] in two volumes (1804 and 1807), in which Sárváry made it clear: drawing is used for the more thorough representation of the ways of human beauty in

[25] Cf. Students' notes (*Dictatum*) of Sárváry's lecture entitled *Astronomia* (1835). Manuscript number: TtREK R86.

[26] KOVÁCS, János (1895): A természetrajzi múzeum története. In: Öreg, János (ed.): *1894/95diki évkönyv a Debreczeni Ev. Ref. Főiskola akadémiai tanszakairól.* Debrecen, Városi Könyvnyomda. 357.

[27] SZŰCS 1871, 960–961.

[28] BÉNYEI 1999, 325.

[29] SZINNYEI 1908, 250.

[30] DÓCZI, Imre (1895): A rézmetsző diákok, In: Öreg, János (ed.): *1894/95diki évkönyv a Debreczeni Ev. Ref. Főiskola akadémiai tanszakairól.* Debrecen, Városi Könyvnyomda. 160.

[31] SÁRVÁRY, Pál (1804, 1807): *A rajzolás mesterségének kezdete*. Debrecen, Csáthy György kiadása. I–II.

the Neoclassicist style.[32] Focusing on the notes and the letters of his students, it can be seen that in spite of his strong tendency towards aesthetic education, the most unique elements of Sárváry's heritage were his captivating lectures on mathematics, physics, and chemistry. Unfortunately, his philosophical books are little known to the present day.

In one of his official reports to the local church, who was the maintainer of the college, on 3 October 1819, Sárváry revealed what elements of mathematics he used to teach in the college: "Concerning the course of the mathematics, in the first semester, I discuss briefly those most fundamental parts of the pure mathematics without which the students will not succeed correctly; so, I start with plane trigonometry and close with the optics, catoptrics, and dioptrics. In the second semester, I teach spherical trigonometry, spherical and theoretical astronomy. In the case of students with good abilities, I am willing to teach the conical sections as well."[33] The notes of his students show that Sárváry did not aim to merely impart knowledge but to prepare his audience in a thoroughly systematic way, teaching his students to think logically. According to the surviving manuscript, Sárváry practised analytical geometry, where the knowledge of goniometrics, epipedometrics, and stereometrics was presented one after the other in a well-structured order. Its striking example could be the course material of Pythagoras, when Sárváry backed up every claim with evidence.[34] In the case of the study of conic sections, he sought to explain and apply mathematical knowledge as practically as possible. It is striking that in the section on plane triangles, Sárváry discussed all the problems he could not solve with angle functions. He used the sine, cosine, tangent, cotangent, secant, and cosecant angle functions.[35] Moreover, Sárváry did not hesitate to calculate the sine

[32] Cf. NAGY, Sándor (1940): *A Debreceni Kollégium mint egységes intézmény az egyetem kiválásáig*. Debrecen, Tiszántúli Református Egyházkerület. 202.

[33] SÁRVÁRY, Pál (1819): *Report to the Superintendency of the Tiszántúli Reformed Diocese* (3 October). Manuscript number: TtREL I.1. p. 5. The translation of all originally non-English quotations belongs to the author of the present article unless otherwise stated.

[34] Cf. Students' notes (*Dictatum*) of Sárváry's lecture entitled *Figurae geometricae* (1813). Manuscript number: TtREK R298.

[35] Ibid.

theorem with logarithm.[36] For the students, he considered the conditions of congruence and similarity of triangles to be fundamental, and they became skilled in calculating the square root of numbers. Through studying the subject of geometrical optics, the students discovered the imaging phenomena of plane and spherical mirrors and illustrated them using excellently drafted diagrams. They knew the optics of the eye in detail.[37] The records, notes, and manuscripts produced by Sárváry's audience prove that he paid particular attention to illustration in supporting his claims.

Besides mathematics, Sárváry also studied "general and special chemistry", as he called it, in which he gave lectures on several elements of shapes, fire, light, evaporation, metal heating, air, water, soil, and on minerals.[38] The notes of his eight students in 1816 tell us much about his chemistry lectures.[39] On the basis of these, Sárváry discussed in detail the properties and state of matter, and then the question of union and disintegration. He dealt specifically with acids, bases, metals, and their oxidation. Sárváry also worked with compounds such as nitrates, phosphates, sulphates, carbonates, acetic acid, and lactic acid.[40] His lectures covered all levels of inorganic chemistry, touching the relevant parts of meteorology.[41] However, Sárváry's main scientific portfolio was not based on chemistry; he was taking great pains to teach chemistry that was up-to-date in his time. Due to his organizing work, one of his students, József Cseh-Szombati, donated in 1815 an impressive amount for the establishment of several departments specialized on natural sciences, namely: chemistry, mineralogy, technology, and botany.[42]

Together with maths and chemistry, Sárváry delivered lectures in the field of physics as well. He believed, chemistry and meteorology are part of physics.[43] His official

[36] Cf. Students' notes (*Dictatum*) of Sárváry's lecture entitled *Mathesis applicata* (1828). Manuscript number: TtREK R88.

[37] GAÁL 1988, 600.

[38] Sárváry's personal notes dated 27 March 1802. Manuscript number: TtREL I.1. p. 5.

[39] Students' notes (*Dictatum*) of Sárváry's lecture entitled *Chemia* (1816). Manuscript number: TtREK R286.

[40] Ibid.

[41] SÁRVÁRY 1819.

[42] GAÁL 1988, 611.

[43] Sárváry was using the term of *physica chemia*. Cf. Students' notes (*Dictatum*) of Sárváry's lecture entitled *Chemia* (1816). Manuscript number: TtREK R286.

report from 1819 also reveals that in the first semester he taught the ordinary properties of bodies and shapes, and also the science of stillness and silence (*scientiae staticae, mechanicae*). In the second half of the academic year, he delivered lectures on electricity, magnets, galvanism, the elements of chemistry and its close field, meteorology, and briefly also physical geography.[44] According to a surviving manuscript from 1836, Sárváry's lectures covered all areas of the higher physics courses of the time. You can find him discussing mechanics and statics. In the section of the differences between gravity and weight, Sárváry first sought to clarify the two concepts and then described the algebraic form.[45] In his physics lectures, he often dazzled his audience with demonstrations of his experimental apparatus and electrostatic phenomena.

As it has been stated earlier, Sárváry was striving for practical presentation, using the helpful aids of demonstrations, illustrations, and experiments. Doing so, it is by no means surprising that he was convinced to collect experimental devices, objects, and minerals. According to city registers, a repository for physics (*physicum museum*) was founded at the college around the year 1741, where experimental instruments for the teaching of physics were stored.[46] This collection was expanded by the professors from time to time. Unfortunately, due to the great city fire of Debrecen in 1802, the main building of the college and the official residence of Sárváry were burnt down. However, one of the most renowned local historians of the city of Debrecen, the former professor of law at the college, István Szűcs stated that the stock of the *physicum museum* was not affected by the fire;[47] still, as Béla Takács, citing the records of the account book of the college, convincingly argued that so many items of the museum had to be repaired.[48] There were bills concerning the reparation of electrical lamps, a cylinder glass, a Gregorian telescope, and other telescopes. These invoices were settled by the college, so the instruments

[44] SÁRVÁRY 1819.

[45] Students' notes (*Dictatum*) of Sárváry's lecture entitled *Fizika* (1836). Manuscript number: TtREK R283.

[46] KISS, József (1895): A physikai szertár története, In: Öreg, János (ed.): *1894/95diki évkönyv a Debreczeni Ev. Ref. Főiskola akadémiai tanszakairól.* Debrecen, Városi Könyvnyomda. 345–355.

[47] SZŰCS 1871, 936.

[48] TAKÁCS, Béla (1988): A Kollégium múzeumai, In: Barcza, József (ed.): *Debreceni Református Kollégium története*. Budapest, Magyarországi Református Egyház Zsinati Sajtóosztálya. 499–533.

certainly were in the possession of the college, not in Sárváry's. Just one year after the retirement of Sárváry (1840), the stock of the repository was inspected by delegates of the church and the city as the two supporting bodies, and the committee counted 219 items suitable for educational purposes – among other things: static, mechanical, optical, and astronomical instruments, devices for moving the air, basic mechanisms for producing electricity and magnetism.[49]

Although the *physicum museum* gave home to mineral fragments as well, the main location of minerals for demonstration was the museum of minerals at the college. It was in the year 1793 when the professors of the school recognized there was a strong demand for the creation of a natural history collection alongside the physics department.[50] Regrettably, there is no remaining inventory of its stock from the time of Sárváry. According to János Kovács, in the mid-nineteenth century, this included 502 items, among which a few collected by Sárváry himself back in 1798.[51]

Undeniably, most of the sources examining Sárváry's heritage did not discuss his huge and valuable contribution to the field of philosophy. They only describe his greatness in poetry, painting, geology, and architecture, but his fundamental work was *Philosophy*, consisting of two volumes. The first book was released in 1802 under the title *Moralis philosophia, melyekben az erkölcsi cselekedeteknek a józan okosság szerént való főregulája vagy principiuma kikereső dik és annak az Isten lételével, a lélek halhatatlanságával, és a vallással való szoros egybeköttetése előadódik* (Moral Philosophy), and the second volume came out in print only two years later, entitled: *Filozofusi ethika, az az: erkölcsi tiszteinkről, vagy kötelességeinkről és gyakorlások módjáról a józan okosság szerént való tudomány* (Philosophical Ethics). Therefore, the present study intends to fill this gap by the study of the book *Philosophical Ethics* (1804), aiming to illuminate the richness of his philosophical-theological thinking and methods.

[49] JAKUCS, István (1953): *A Debreceni Református Kollégium fizikaszertárának története*. Tiszántúli Református Egyházkerületi Levéltár, TtREK R3087.

[50] TAKÁCS 1988, 519–522.

[51] KOVÁCS 1895, 356–367.

2. Philosophical Ethics by Pál Sárváry

2.1. General Introduction to the Volume

It is striking that Sárváry published the work almost at the peak of his academic career, when he was around 40 years old. Apparently, the city fire and the reconstruction of the town centre, in which he played an important role, did not prevent Sárváry from continuing his scientific activity. *Philosophical Ethics*, as a second volume of the series called *Philosophy* appears to be a completely separate, independent work, as Sárváry makes only very limited reference (on seven occasions altogether)[52] to the first volume. Until now, an analysis of the volume failed to attract scholarly attention, restricted so far to the research of the natural sciences in Hungary. The volume contains 349 numbered pages. Sárváry added a brief supplement to his work, consisting of 113 pages, but in general the page numbering is continuous. The supplementary part entitled *Kötelességeink előadásához és azok grádusairól és egymással eshető összeütközéséről* deals with the questions of the collision of obligations in certain situations and conditions. The language of the volume is Hungarian. As in his academic lectures, Sárváry did not strive for using overwhelming scientific language; rather he preferred the literary simplicity by which he made his volume reader friendly. Unfortunately, it happens that sometimes he applied complicated and unreasonably long sentences. In his book, Sárváry took serious pains to use adequate, simplified Hungarian scientific definitions, but for every new term he would also provide an adequate Latin alternative as well. It is striking in the book how familiar Sárváry was with the techniques of taking (foot)notes, though sometimes his remarks are too detailed and lengthy, sometimes even taking up as much as two pages.[53] Nevertheless, Sárváry's annotation technique deserves praise, since he always quotes the original text, mostly in Latin, but in some cases in Hebrew or Greek as well. So, his knowledge of classical languages is evident from the text.

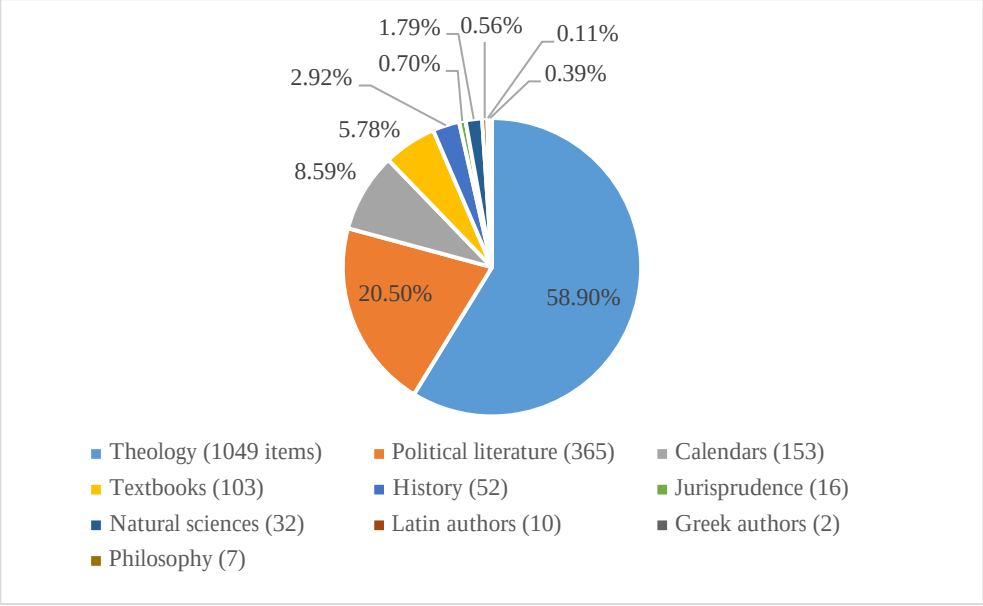
[52] SÁRVÁRY 1804, 69, 274, 284, 365, 387, 453.
[53] Cf. op. cit. 28–29, 147–149.

2.2. Special Introduction to the Volume: Sources and References

It is worthy to define the sources used by Pál Sárváry because his references illuminate not only the international character of the book but the wide scope of his general interest as a scholar, too. It can be extremely relevant for the readers that Sárváry used to refer primarily to foreign sources. He rarely resorts to quotations, including just a few Hungarian authors, namely Ézsaiás Budai,[54] Pál Fogarasi,[55] János Benedeky Enyedi,[56] Ádám Horváth,[57] János Földi,[58] István Weszprémi,[59] István Mátyus,[60] János Zsoldos,[61] and Sándor Kövi.[62] As a matter of fact, Sárváry would have been in a difficult position if he had wanted to quote mostly from Hungarian authors, since the study of natural sciences and philosophy was by no means popular at the time. According to Imre Csécsi Nagy, "in the whole of civilized Europe, perhaps no people is so far behind in the natural sciences [and philosophy] as we Hungarians".[63] Csécsi was not far from the truth, since on the basis of the register of the printed works in Hungary, it is evident that concerning the natural sciences and philosophy altogether 37 works were published in Hungary between 1571 and 1711, but the total number of printed materials is around 1,780 (see *Figure 1*). Unfortunately, circa 60% of the works on natural sciences and philosophy was not original contribution – these were translations. As a conclusion, prior to Sárváry's legacy, theological volumes clearly dominated the market. Due to the lack of books in Hungarian, the local church asked Professor Sárváry to compile a textbook on philosophy as early as 1795[64] – as pointed out by Tőrös.

[54] Op. cit. 249, 260.
[55] Op. cit. 304.
[56] Op. cit. 41.
[57] Op. cit. 65.
[58] Op. cit. 180.
[59] Op. cit. 31, 41.
[60] Op. cit. 41.
[61] Ibid.
[62] Op. cit. 189.
[63] Personal remarks of Imre Csécsi dated 15 December 1841. Cited in: GAÁL 1988, 609.
[64] TŐRÖS 1938, 89.

Figure 1. *Published works in Hungary: 1571–1711 (1,780 works)*



Source: FRAKNÓI Vilmos (1878): Szabó Károly és a Régi Magyar Könyvtár. In: Magyar Könyvszemle. *3. 304*

It is also clear that the work did not include an index of names at the end of the volume, so reading the book from cover to cover is inevitable for taking a credible research. According to our findings: in the whole work, including the supplement, the oldest sources were represented, of course, by ancient Greek writers (Aristoteles, Socrates, Diogenes). The reference to the latest Hungarian author is to János Zsoldos for his book entitled *Asszony Orvos* (The Woman Doctor) printed in 1802.[65] Another fresh material was János Földi's volume from 1801[66] and Sándor Kövi from 1800,[67] and the most actual foreign citation is related to Johann Heinrich Pestalozzi, written in German, concerning

[65] ZSOLDOS, János (1802): *Asszony doktor*. Győr, Streibig József kiadója. Cited: SÁRVÁRY 1804, 4.

[66] FÖLDI, János (1801): *Természeti história: Az állatok országa I.* Pozsony [publisher missing]. Cited: SÁRVÁRY 1804, 180.

[67] KÖVI, Sándor (1800): *Elementa Juris prudentiae Hungariae*. Cassoviae [publisher missing]. Cited: SÁRVÁRY 1804, 189.

the topic of children's education.[68] Sárváry mentioned the heritage of Cicero 180 times. This ancient Roman writer is followed by the Holy Scripture with 39 times, Horatius 29 times, Plato 23 times, and, finally, Seneca and Kant 22 times each (see *Figure 2*). However, in his book, Sárváry frequently touched on pure theological topics (free will, sin, mercy), his religious beliefs and denominational affiliation being almost inexistent in the text. The (uninformed) reader might even assume that the author may as well be a Catholic scholar because of the rich references to ancient literature. Nevertheless, the most striking finding of the research just further clouds the picture, since on one occasion the professor quoted the thoughts of Luther Martin,[69] but he did not cite the works of John Calvin[70] at all. This is all so curious and astonishing because – as it has been already pointed out – Sárváry had a very strong Reformed background, namely a Reformed pastor father, a Reformed alma mater, and a Reformed place of work in Debrecen. In this way, Sárváry's aim was perhaps to reach a larger readership and audience?!

Table 1. *Biblical references in Pál Sárváry's work*

Introduction	**Chapter 1**	**Chapter 2**	**Chapter 3**	**Chapter 4**
—	2Mos 15:20–22	1Mos 3:15	4Mos 5:16	—
	2Sam 6:14–22	3Mos 19:18	5Mos 23:21–23	
	Ps 149:3	Mt 5:44	Jud 11:30–35	
	Mt 10:28	Mt 22:39	1Kg 8:31	
	Lk 14:4	Lk 6:32–35	Ps 50	
	1Cor 7:25	Jn 18:14 x 2	Eccl 5:1–6	
			Is 1:10–17	
			Jer 6.	
			Mt 5:13–16	
			Mt 5:33–37	

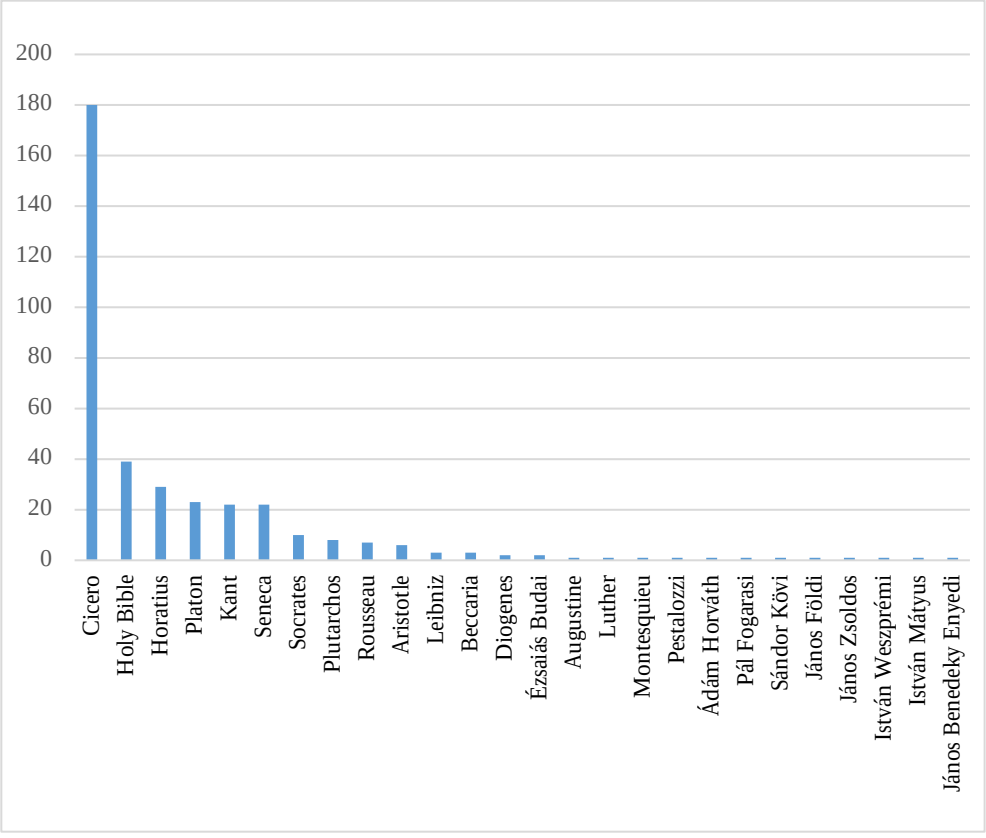
[68] PESTALOZZI, Johann Heinrich (1803): *Anleitung für Mütter ihre Kinder bemerken and reden zu lehren*. Zürich – Bern [publisher missing]. Cited: SÁRVÁRY 1804, 211.

[69] Sárváry did not name explicitly Luther's work; he referred to a compendium of writings. Cited: SÁRVÁRY 1804, 91.

[70] Sárváry could have used the Hungarian translation of Calvin's *Institutes*, which had already been done by Albert Szenczi Molnár in 1624. See: SZENCZI, Molnár Albert (1624): *Az keresztyeni religiora es igaz hitre valo tanitas….mellyet deakúl irt Calvinus Janos.* Hanovia [publisher missing].

Introduction	**Chapter 1**	**Chapter 2**	**Chapter 3**	**Chapter 4**
			Mt 15:4–6 Mt 23:16–22 Mt 26:33–64 Mk 7:9–13 Jn 2 Jn 4:20–24	

Figure 2. *Sárváry's references in the complete volume*



2.3. ***Examination of the Content of the Main Part***

Applying the principle of *in medias res*, it is important to point out that the volume bears the marks of interdisciplinarity. In spite of the rich repository of scientific works presented by the volume, Sárváry repeatedly based his thoughts on the Bible even though he did not always use accurate textual references. So, one of the most important findings of this paper is that Sárváry intended to compile a book dealing with philosophical ethics from a Christian point of view. According to him, there is no existing moral order without the providence of God. Although Sárváry did not use the terms 'Christ' or 'Holy Spirit' frequently, his references make it clear that he was thinking of God the Creator and the Trinity. He was frequently using the term 'our Lord Christ',[71] who is the perfect fountain of every holiness, goodness, and perfection.[72] He is the creator of every invisible thing; without Him, there can be no true sustainer, governor, legislator, and judge in this world.[73] God is the example of the perfect virtue; He is the final reason and cause of everything.[74] Although our relationship with God deserves first of all "faith",[75] it is not plausible to argue that He wants us to be partakers of His holiness[76] practising love, equity, and charity towards our brethren. Without Him, there can be no true point of alignment since God is the most revered realism.[77] He wants us to be like Him,[78] providing the "regulations of the holy life".[79] Thus, man's daily life should be a reflection of God's goodness, perfection, and wisdom.[80] Although Sárváry did not refer to John Calvin, the deep belief, the ethical wish, and the commitment to *soli Deo Gloria* shines through his book. Whilst Sárváry did not devote a separate part to the question of the relationship between philosophical and Reformed theological thinking, he made it clear that natural sciences are obliged to examine "nature" only under the aegis of soli *Deo*

[71] SÁRVÁRY 1804, 321, 334.
[72] Op. cit. 290.
[73] Op. cit. 274.
[74] Op. cit. 280.
[75] Op. cit. 274.
[76] Op. cit. 290.
[77] Op. cit. 9.
[78] Op. cit. 290.
[79] Op. cit. 299.
[80] Op. cit. 276.

Gloria. God is the true creator of the existing world; He is the final cause of its creation. Through this Christian point of view, Sárváry recognized several earthly things whose origins cannot be traced back to themselves or their history, nor deduced from causes or causality.[81] Sárváry named especially the invisible powers of the nature, the power of gravitation ("crowd pulling"; he uses *vis gravitates* or *vis attractive*) existing on Earth and on other planets,[82] and the constant laws of "motion" with special attention to "celestial objects".[83] Therefore, Professor Sárváry, using the different methods of scientific enquiry, so to say, did not want to penetrate into heaven because he admitted humbly that the whole structure of the laws of the world had been established and sustained by God. This is why natural sciences cannot be contradictory to the main recognitions of Christian theology.[84]

Seemingly, the main purpose of Sárváry was to illuminate what kind of written or unwritten regulations are worth following or which ones should be avoided.[85] Generally, the Hungarian term he consistently applied was not "rule" (in Hungarian: *szabály*) or "regulation" (*regula*) or "standard" (*előírás*) or "command" (*parancs*) or "instruction" (*utasítás*) but "obligation" (*kötelezettség*) that every human being has to take into consideration.[86] But how did Sárváry illuminate the special order of the obligations?

Taking a closer look at the introduction of the volume, he believed in a well-structured hierarchy where the supreme rules come from God. Philosophical ethics is the fountain of human prudence and right, while natural law is an external pressure ensuring only "external" justice that is binding for everyone. Thus, philosophical ethics requires a higher level of attitude towards others practising a supportive, protective, and responsible conduct.[87] According to Sárváry, natural law had been engraved in us (as Calvin pointed out),[88] while every human being ought to take pains to learn the regulations coming from God's law and from ethical prudence.

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[81] Op. cit. 281.

[82] Ibid.

[83] Op. cit. 287.

[84] Cf. op. cit. 281–287.

[85] Op. cit. 8.

[86] Op. cit. 3–5.

[87] Op. cit. 4–5.

[88] CALVIN, John (1960a): *Institutes of the Christian Religion*. Transl by Battles, Ford Lewis. Philadelphia, The Westminster Press, I. 367–368. = *Inst*. II. viii. 1.

Regarding the main chapters of the book, Sárváry divided the content into four different parts, namely: obligations concerning our right attitude towards (1) ourselves, (2) our brethren, (3) God, and (4) the animals.[89] The order of matters is more than unusual. For instance, John Calvin chose the way shown by the Ten Commandments.[90] So, Sárváry could have started with our obligation towards God, but, as he later clarified, he was willing to examine the order of importance under the final aegis of God. Unfortunately, his argument proved to be standing on weak grounds, because he ended the work discussing various aspects of animals.

A further value of the introduction is Sárváry's contribution, placing the topic of philosophical ethics into the whole system of the philosophy. Philosophical ethics together with the natural law is a fundamental part of the active philosophy, which reveals the fair and bad characters of human acts motivated by free will.[91] Nevertheless, free will should be ready to be governed and directed by ethical principles, which give theoretical assistance before exhibiting pragmatic conduct. At this point, we should emphasize that Sárváry expanded in the first volume (1802) on his thoughts concerning the concept of free will. According to him, man uses free will (*actiones voluntariae*) guided not by "natural" conduct but by ethical and moral principles.[92] Seemingly, Sárváry did not use the term 'free will' as a theological keyword.

2.3.1. Obligations Concerning the Right Attitude Towards Ourselves

Sárváry's starting point is that every human being is a living, sentient, and physical entity, reality who can use the various means of the moral prudence. Concerning the hierarchy of the obligations mentioned above, he discussed the prohibitive and the imperative rules. Prohibitions represent natural law, while the imperative principles illuminate the higher level of morality, paving the way for philosophical ethics.[93] Human life was created for the gradual recognition and processing of the ethical

[89] SÁRVÁRY 1804, 8.
[90] CALVIN 1960a, 377–423. = *Inst.* II. viii. 12–59.
[91] SÁRVÁRY 1804, 1–2.
[92] Op. cit. 20–21.
[93] Op. cit. 15–16.

principles, the right, and the prudence. People need moral guidance in the form of explicit prohibitions aimed at (1) suicide acts, (2) physical threatening, (3) self-mutilation, (4) negligence towards health, and (5) indulgence in false pleasures, delights.[94] At the same time, according to him, the imperative rules already represent a higher contribution to our well-being: (1) cultivation of the body, mind, and reason under the aegis of conscience and sound judgement, (2) expanding the knowledge of ethical principles, of what is right, and regarding prudence, which is the best way to reach perfect happiness. So, happiness in the eyes of Sárváry is a pure ethical category. According to him, fulfilling the requirements of philosophical ethics makes us happy. (3) Our happiness cannot be realized to the detriment of the rights of our brethren and of the law of God; (4) the proper human act is not only righteous but serves the principle of philosophical ethics as well; (5) some good examples of the "marriage" between internal and external happiness are: good health, credit, wealth (due to working and saving), good company (friends and marriage), exercise, moderate dancing, singing, and acting.[95] At this point, it is important to mention that albeit Sárváry did not refer to John Calvin's written legacy, still, concerning the imperative standards, he drew heavily on the Genevan reformer's social thoughts.[96]

2.3.2. Obligations Concerning the Right Attitude Towards Our Brethren

Although Sárváry referred to the Bible almost 40 times, at this point he failed to define precisely what the term 'brethren' means from a Christian point of view. He preferred to illuminate what the useful common ground can be among the people.[97] Seeking a distinctive character that cannot be found in animals, he found human prudence as a solid ground of the human society. Sárváry divided the right attitude towards the

[94] Op. cit. 17–46.

[95] Op. cit. 74–95.

[96] MAGYAR, Balázs Dávid (2019): Calvinus Theologus Legislator: Theological and Ethical Implications of the Genevan Moral Laws Related to Gambling, Dancing, and Dress Fashions in Calvin's Works. In: Boersma, Karla – Selderhuis, Herman J. (eds.): *More Than Luther: The Reformation and the Rise of Pluralism in Europe (Papers of Seventh Annual RefoRc Conference, 10–12 May 2017, Wittenberg).* Göttingen, Vanderhoeck & Ruprecht. 209–220.

[97] SÁRVÁRY 1804, 98.

brethren into three categories:[98] (1) to follow the way of righteousness. In doing so, he first touched upon obligations: (1a) concerning the basic, animal nature of humans, Sárváry discussed the prohibition of murder and committed large sections to questions around the death penalty. This section makes it clear that he was very familiar with the relevant classical (i.e. "Roman law") and contemporary ("Strafrecht") legal literature on crimes and punishments. For instance, he cited the well-known jurist, Beccaria,[99] whose opus magnum was entitled *Dei delitti e delle pene* (1764), cited by Sárváry in its German translation from 1788. Related to the (1b) requirements of natural law, he devoted long sentences to the topic of slavery and the several statuses of freedom in the society. Albeit Sárváry did not use the concrete term, it still appears from the text as if he had been familiar with the concept of the dignity of the human being derived from the common prudence among the people. (1c) Sárváry listed the prohibitions of lying, libelling, and the proper use of wealth and property as a higher level of morality. He did not refer to the Bible at this point, but he transcribed the message of Mt 7:12: "So whatever you wish that others would do to you, do also to them." In protecting and fostering the interests of our brethren, humans ought to (as Calvin believed as well)[100] practise (2) equity and (3) the way of love (the biblical term is used again here) in order to protect others' physical safety, to reveal others' human dignity, to practise sympathy, and to promote the happiness of others.[101]

Concerning the relationship to our neighbours, Sárváry drew up a long list including the "special concerns" between people, namely: the obligations (1) between friends involve the dimensions and characters of a good friendship;[102] (2) the rules concerning our benefactors include what we should and should not to in their favour;[103] (3–4) the fair relationship with our allies and our partners serves the common good of humanity.[104] Of course, the common aim cannot be contrary to the interests of our

[98] Op. cit. 110–148.

[99] Op. cit. 114.

[100] HAAS, Guenther H. (1997): *The Concept of Equity in Calvin's Ethics.* Waterloo, Wilfrid Laurier University Press.

[101] SÁRVÁRY 1804, 142.

[102] Op. cit. 153.

[103] Op. cit. 160–161.

[104] Op. cit. 165–168.

brethren or the law prescribed by God. (5) One of the most special relationships between humans is marriage, which was founded for the purposes of procreation, fidelity, respect, love, and confidence.[105] Nevertheless, it is very important to mention that in this section Sárváry did not state that marriage had been founded by God, he wrote only that the order of procreation was established by the Creator.[106] Moreover, he did not cite verses from the Bible related to the subject of marriage. As a person coming from a Protestant background, it is clear that divorce was possible in his views if the partners neglected their obligations arising out of the order of the Creator and the nature. But, as if quoting Calvin, Sárváry stressed that wantonness and fornication threaten not only the life of the married couple but the whole society as well.[107] Concerning (6) the parents' responsibility for their children, the professor pointed out teaching children to fear God, practising physical and moral teaching, showing them a good example, educating them on appropriate work ethics, and letting them taste the early fruits of science, profession, and occupation. Nevertheless, the ultimate goal is to train children to be productive members of the whole society.[108] (7–10) The obligation of children, tutors, pupils, and servants is based on respect and humbleness. As a final step, he named the key actors of civil administration (legislators, directors, judges, and laws) and the educated elite. They were elected to practise equity, which is the common ground of a well-functioning society.[109] At the same time, leaders are responsible for maintaining peace not only among members of the society but between nations as well.[110]

[105] Op. cit. 176.

[106] Op. cit. 171.

[107] Cf. MAGYAR, Balázs Dávid (2022): Punishment and Forgiveness of Sexual Crimes: A Special Reference to Sodomy in Calvin's Theology. In: *Verbum et Ecclesia*. 43. a2626. Available at: https://doi.org/10.4102/ ve.v43i1.2626; MAGYAR, Balázs Dávid (2023): Fornication and Adultery in the City of Debrecen (1547–1625) Compared with the Morality of Geneva. In: *Verbum et Ecclesia*. 44. a2791. Available at: https://doi. org/10.4102/ve.v44i1.2791.

[108] SÁRVÁRY 1804, 198–205.

[109] Op. cit. 212–241.

[110] Cf. CALVIN, John (1960b): *Institutes of the Christian Religion*. Transl. by Battles, Ford Lewis. Philadelphia, The Westminster Press. II. 1499–1501. = *Inst*. IV. xx. 11–12.

2.3.3. Obligations Concerning the Right Attitude Towards God

Sárváry undeniably held that God embodies the utmost Prudence, and He is the highest reality. God has reason by which He knows everything; by His will, He fulfils perfectly the requirements of every moral law. According to the four general statements of Sárváry, (1) God's power is infinite: he did not only create the world but also provides for it. (2) God did not take his existence from anyone else, but his existence is ceaseless and eternal. (3) His goodness, power, and wisdom are manifested in the world. This gives his Glory. (4) He is one God in three ways of presence. In his section on God and providence, the professor makes explicitly clear for the readers that he does not speak about a god or a creator, but he was thinking of God as the Trinity.[111] Following the description of God's entity, Sárváry took pains to find proof of God's existence: (1) God bears the power that keeps bodies and planets together; (2) a divine soul dwells in the people; (3) God is not just a builder, He makes the building material itself.[112]

It is evident that the question of providence cannot be separated from God. According to the professor, providence is the means of God's perfect revelation by which He wants us to be similar to him in terms of morality.[113] While Sárváry recommended the modest ways for his readers, showing them how they could experience delight and happiness on earth (for instance: friendship, singing, theatre, marriage, and the company of others), he still makes it explicitly clear that our life on earth is not the time for the distribution of God's rewards but an ideal occasion for practising good morals. For this providential goodness of God, man is called to honour and love God with gratitude, obedience, and confidence.[114] As a result, in the eyes of Sárváry, the best manner of the people is to overcome hate, pride, and ignorance.[115]

At the end of the third chapter dealing with people's right attitude towards God, Sárváry stresses the great responsibility of science and education, since there can arise two major problems with honouring God in the society: firstly, the denial of His existence,

[111] SÁRVÁRY 1804, 274–279.
[112] Op. cit. 280–284.
[113] Op. cit. 299.
[114] Op. cit. 315.
[115] Op. cit. 341.

which is an outright sin, and, secondly, the false knowledge of His existence. These are rooted deeply in our human existence, claims Sárváry, because humans think of God as human, which brings about several misinterpretations regarding Him.[116] Consequently, education is called to – assisted by human and natural sciences – pave the way for a better understanding of God.

2.3.4. Regulations Concerning the Right Attitude Towards the Animals

The creation of animals is an important moment in the process of creation, says Sárváry. There are sentient and non-sentient creatures, but most animals possess the gift of emotion and beauty. They are, like human beings, sensitive realities. Although animals are the instruments of God's providence, the created things must be used for what they were created for.[117] Sárváry realized the importance of protecting nature. He stressed over and over again people's duty to save and care for the animals and for a better society on earth.

2.3.5. A Brief Review of the Volume

Due to the lack of Hungarian scientific journals and periodicals in the time of Sárváry, only his personal letters and notes can provide some insight into the reception of his *Philosophical Ethics*. The rich correspondence of Sárváry – which was collected by his son, Jacob, in Debrecen already in 1869 – had been edited, completed, and published by 2023. According to one of his letters, a copy of the volume was sent by the professor to one of his friends, Gerzson Fodor (1763–1835). The Reformed pastor, author, and teacher wrote a letter of appreciation on 1 January 1805 to Sárváry, which reads as follows:

> As eagerly as he had awaited the publication of *Philosophical Ethics*, he was delighted to receive one copy of the volume that his revered professor had presented to him. There is a great lack of books on this subject in the country, especially in the Hungarian language. Surely, the whole country should be grateful to the professor for providing such a useful

[116] Op. cit. 307–310.
[117] Op. cit. 345.

> and enlightening book to improve the knowledge of the students. I myself started reading the book with the aim of learning from it, and I have achieved that goal. Thank you very much, Professor, for your useful effort.[118]

Sárváry's book reveals a wonderful philosophical order and a well-structured practical presentation of the principles.[119] At first sight, it might be intriguing for the posterity instead of his academic lectures on maths, physics, and chemistry, his philosophical came to be published. The main underlying cause could be the heavily interdisciplinary character of the volume, which testifies to the fact that Sárváry was preparing his book as a Reformed Christian scholar, who believed that practical obligations echoed in philosophical ethics are framed by the perfect law: God's regulations.

However, in this volume, Sárváry intended to bring practical norms of life to the surface, though leaving one specific theoretical problem open throughout the book. This weak point is the main thesis of Sárváry, who was convinced, claiming it several times, that human actions are the result of free will.[120] Unfortunately, at this point, Sárváry should have clarified what he thought of the theological heritage of the Reformation concerning the perception of free will. We cannot overlook this issue, as Luther Martin and John Calvin fully agreed that because of Adam and Eve's sin, human nature was corrupted, so our will was no longer free to choose the good but was influenced by sin.[121] So, to clarify Sárváry's ideas, moral rules are necessary to prevent making wrong choices due to our depraved nature.

Summary

Regrettably, we are living in a world out of joint. Most people strive for more and more pleasure and greater convenience in the context of what human life on earth can offer to us. In doing so, we upset not only our brethren but God as well. Pál Sárváry's

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[118] FODOR, Gerzson (2023): Letter to Sárvári Pál (1 January 1805). In: Brigovácz, László – Lakner, Lajos (eds.): *Sárvári Pál leveleskönyve*. Debrecen, Debrecen University Press. 111.

[119] TŐRÖS 1938, 92.

[120] SÁRVÁRY 1804, 46, 299.

[121] CALVIN 1960a, 195–196. = *Inst*. I. xv. 8; "Yet so depraved is his nature that he can be moved or impelled only evil." CALVIN 1960a, 296. = *Inst*. II. iii. 5; LANE, Anthony N. S. (1981): Did Calvin Believe in Freewill? In: *Vox Evangelica*. 12. 72–90.

Philosophical Ethics has never been as relevant as it is today, because, as the emblematic professor of the Reformed College of Debrecen made it explicitly clear, our life on earth is not the time for the distribution of rewards from God but an ideal occasion for practising good morals, namely gratitude, obedience, and confidence. Further, he warned his readers that our human actions could not be contrary to the interests of our brethren or the law prescribed by God. Therefore, all of the practical advices published by Sárváry in the volume testify to the following: albeit he had a good reputation because of his well-structured lectures on maths, physics, chemistry, geology, his work shows he was committed to shedding light on the main recognitions of (the Reformed) theological thinking as a solid base, a motivating power in taking good decisions. Thus, Sárváry's theological faith became the "alpha" and the "omega" of his philosophical ethics.

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Annamária KÓNYOVÁ[1]:

Natural Sciences in the Education of Protestant (Evangelical and Reformed) Higher Schools in the Hungarian Kingdom in Early Modern Age *A Comparison*[2]

Abstract.

The Reformation, being one of the most significant streams of thought in the early modern age, was closely associated with considerable changes exhibited in various facets of life, including education. Placing schools under Protestant management had a significant effect on the curriculum to some extent also in the use of innovative methods in education. The aim of this study is to highlight an important quality of Protestant education, which started in the early modern ages in the areas of Upper Hungary and manifested itself by strengthening the status of natural sciences in curriculum. The article focuses on a number of related problems. In the first place, I focus on a time horizon for implementing individual natural science courses in Protestant schools and their status in relation to other

[1] PhD, Institute of History, Faculty of Arts, University of Prešov, Slovakia; e-mail address: annamaria.konyova@unipo.sk.

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courses. In addition, I pay attention to discussing the teaching method adopted used at the time, the use of new methods and teaching aids, and then mention the distinguished personalities that were essential during the process of development and implementation of these courses in schools, as well as further related issues.

Keywords: Protestantism, education, natural sciences, curriculum, teaching methods, Hungarian Kingdom

The Reformation, being one of the most significant streams of thought in the early modern age, was closely associated with considerable changes exhibited in various facets of life, and its consequences are observable to this day. Apart from the many changes that occurred in the religious and spiritual life of the society, the far-reaching effect of the Reformation extended to education and its curriculum as well – overall, it impacted the question of knowledge in society. Protestant reformers realized that schools and their educational role were essential in gaining a more thorough understanding of faith with a view to deepening and strengthening faith in religious people. The changes that occurred in education at the time were reflected at two levels.

Firstly, Protestantism started to take a different view of the role of schools and the relationship between education and society. The majority of reformers were not averse to the idea that a good and religious Christian was not compatible with education. In fact, they realized the significance that both schools and learnedness played a crucial role in the strengthening and deepening of faith. In the Protestant theory and practice of education, schools were beginning to be perceived as "imaginary gates or church halls" the primary role of which was not merely instruction but also the education of deeply religious believers.

Secondly, Protestantism brought a new perspective on curriculum and the relationship between education and academic knowledge. In general, the medieval system of education that ranged from parish schools to universities put theology on top of educational priorities. Not only was theology the highest science but at the same time it defined the boundaries of academic research or other sciences. All the knowledge that was outside of the static understanding of the world, the knowledge that was transgressing the boundaries of medieval theology and its interpretation of universe was

understood as dangerous, often heretical, and deplorable. Such an environment was not open to natural sciences, the discoveries of which were understood as a disruption of the leadership assumed by theology and its interpretation of world order. Along with a frequently emphasized philosophy of humanism, there was also another philosophical stance – however, very often left forgotten or ignored – that had a considerable bearing on the change of perception of natural sciences and their status in the educational system.

Calvinism under the influence of its founder, John Calvin, brought new perspectives on natural sciences for Protestantism. Although it is generally assumed that John Calvin had a difficult personality and was inapproachable, he showed he was capable of innovative thinking in many respects. According to his biographer, Alister McGrath, Calvin expressed his attitude about questions regarding natural sciences in his work *Institutes of the Christian Religion* (1559). The reformer's opinions are based on his elementary theological theses, i.e. the teaching about predestination and his understanding of the absolute sovereignty of God. Just like the entire fate of a human being, as well as the whole of universe, the world is determined from the beginning by the omniscience of God. Laws of nature subdue to His power and will, and the universe has been created according to this, as well as individual human beings since they are part of nature. For this reason, the unearthing of these laws, the exploration of macrocosm and microcosm and its order is nothing else but a deeper exploration of God and His power. Therefore, what follows form this is the second fundamental statement, i.e. there is not and should not be any barriers no limits of human knowledge. "Calvin by virtue gave to knowledge a religious perspective, and with a religious reasoning he supported sciences to start researching and learn about nature."[3] Such opinions of Calvin's translated also into, for instance, the lowland confession of faith, *Confesio Belgica* (1561), in which nature is compared to the most remarkable book in the world where every living being from the smallest to the largest is a piece of writing through which the invisible hand of God can be read. Therefore, the exploration of all parts of nature is the exploration of God himself.

Calvin's second fundamental achievement with respect to natural sciences was his refusal of a verbatim interpretation of the Bible. According to him, when conducting

[3] MCGRATH, E. Alister (1996): *Calvin*. Budapest, Osiris. 271.

academic research, it is not possible to follow the Bible word by word or to understand it as a textbook of natural sciences. The Bible is the mediation of Jesus Christ's life, it is a work about him, and therefore it gives answers to questions about faith and religion and not about internal behaviour and laws of the world.[4] According to Calvin, God became man in all respects in order to have a better understanding of his mental and visual abilities. In this sense, the content of the Bible is simplified, including the interpretation of the creation of God and its functioning, and tailored exactly to the extent to which man is capable of understanding it. Due to this, the role of natural sciences is to discover such real natural laws and unearth a more difficult structure of the world. According to McGrath, Calvin's ideas were the ones that influenced the development of thought in the 17th century predominantly in the western countries.

The significance of Calvinism – or of Calvin himself – regarding its later development is overestimated; however, it is important to admit that his ideas were one of several other stimuli towards a more dynamic development of natural sciences. A large number of sociological research studies that investigate a religious affiliation and relation to natural sciences showed that the majority (in relation to the overall population) of natural scientists came from a Protestant background. For instance, Alphonse de Candolle conducted a research between 1666 and 1883 in which he was investigating an interest in natural sciences amongst members of the Académie des Sciences in Paris, and which confirmed a predominance of Protestants despite the fact that they were in minority in comparison to Catholics. A similar situation was encountered in London Royal Society, in which again Puritans dominated. Many important physicists or biologists in the 16th–17th centuries came from Calvinist background (e.g. a large ratio was recorded in the Netherlands).[5]

The Hungarian Kingdom belonged to the countries that were dramatically affected by the Reformation process with all of its consequences. Reformation ideas from abroad found appropriate internal political, religious, and societal conditions for a quick spread among and acceptation by large masses in the Hungarian Kingdom between the 1500s and the 1530s. After the initial spread of the Lutheran Reformation,

[4] Op. cit. 272.
[5] Op. cit. 270.

other reformation ideas were spreading across the country starting with the 1550s, of which Calvinism was the most prominent one. A wide acceptation of the Reformation ideas caused that the vast majority of people (90%) in the country had turned Protestant by the end of the 16th century. The new confessional situation in the country required changes in many areas of life, among others in education. As mentioned above, Protestantism strengthened the relationship between school and church. Schools did not serve only as advocates of strengthening a religious confession through the education of large masses of people, as an even more important role of – predominantly – higher education institutions was the training of ensuing generations of learned young priests or intelligentsia serving as a firm support for the Protestant churches found in their formation period. The Protestant schools were established either by the transformation of Catholic schools or by the support of secular patrons (town magistrates or secular landowners). In the majority of the church congregations – be it in villages or small towns –, according to a dominating Protestant faith (Lutheran or Calvin), elementary schools were founded with a view to promoting the adoption of elementary skills and literacy, i.e. reading, writing, counting, and catechism. In more prominent towns – either larger landowning towns or free royal towns –, schools of greater importance were established (grammar schools),[6] which provided higher education that served as a preparation for university studies abroad.[7]

Placing schools under Protestant management had a significant effect on the curriculum to some extent also in the use of innovative methods in education. The aim of this study is to highlight an important quality of Protestant education, which started in the early modern ages in the areas of Upper Hungary and manifested itself by strengthening the status of natural sciences in curriculum. The article focuses on a number of related problems. In the first place, I focus on a time horizon for

[6] For more information about the list of Protestant schools in the territory of today's Slovakia, see: REZIK, Ján – MATHEIDES, Samuel (1971): *Gymnaziológia Dejiny gymnázií na Slovensku* [Gymnaziologia. The History of Grammar Schools in Slovakia]. Bratislava, Slovenské pedagogické nakladateľstvo.

[7] HÖRCSIK, Richárd (2023): *A magyar protestáns iskolakultúra európaisága: a peregrináció* [The Europeanization of Hungarian Protestant School Culture: The Peregrination]. In: Hörcsik, Richárd: *Fejezetek a magyar és egyetemes egyháztörténetből.* Sárospatak, Hernád. 329–332.

implementing individual natural science courses in Protestant schools and their status amongst other courses. In addition, I pay attention to discussing the teaching method adopted at the time, the use of new methods, teaching aids, and mention the distinguished personalities that were essential during the process of development and implementation of these courses in schools, as well as further related issues.

The topic has already been tackled by earlier works of Hungarian historiography; however, it remained outside the focus of Slovakian researchers, be they historians, teachers, or church historians. The backdrop for this study draws on articles written by domestic and foreign researchers, which is completed by new archive materials such as school regulations, registers of collections of school artefacts, natural science textbooks, etc. As there was an extensive network of Protestant institutions of higher education with a rich history and a wide range of materials in the Hungarian Kingdom, I primarily concentrate on selected schools, i.e. the Reformed College in Sárospatak (HU), the Evangelical College in Prešov (SK), and – for its critical importance in natural sciences – the Reformed College in Debrecen (HU).

The Reformed College in Sárospatak

According to tradition, the Protestant school in Sárospatak was founded in 1531 and continued the work that a previous parish school had begun.[8] The school was founded during the Perényi dynasty. After the dynasty's rule had ended, the school came under the patronage of the Rákóczi dynasty. Owing primarily to their support, the school gained importance and became the bastion of Protestantism, more precisely, a Calvinist church on the territory of the Upper Hungarian Kingdom. During its existence, many distinguished reformers, scholars of those times worked at the school, and owing to their activities, the school quickly transformed into a higher education institution in which, besides the seven liberal arts, theology was taught in higher grades. Many of the students who graduated from the school went on to pursue their university studies abroad, and upon their return, they continued to work for the school as teachers.

[8] DIENES, Dénes – UGRAI, János (2013): *A Sárospataki református Kollégium története* [The History of the Reformed College in Sárospatak]. Sárospatak. 8–11.

Owing to such peregrination, new thought-provoking ideas reached Sárospatak, along with the latest knowledge and discoveries in various sciences.[9]

The Reformed school in Sárospatak was at its peak in the first half of the 17th century when Jan Amos Komensky, a renowned educator, elaborated and implemented his educational theory.[10] It is from this period, viz. 1621, that the first well-preserved school regulations document comes from. It stipulates the duties of the individual school officials, specifies the entire teaching process, covers all areas of student life, and determines punishments and penalties. Article 11 mentions that the courses offered were theology, philosophy, Latin language, Greek language, useful Latin features, poetics, rhetoric, and logic;[11] however, natural sciences were not mentioned. It is understood that in accordance with the custom of that period it was permissible to assume that the basics of natural sciences were taught as well although as part of philosophy courses. An important quality of Protestant schools was autonomy in school administration as well as in the teaching process, which included teaching methods and curricula. Hence, schools or individual teachers could decide what to study and how to study. Such academic freedom enabled a quicker implementation of new knowledge, particularly in natural sciences, in the teaching process in Protestant schools.

With regard to the curriculum, the Reformed College in Sárospatak provided classic education based on philosophy, theology, and languages. As mentioned above, as part of schooling, students were acquainted with the basics of natural sciences. The knowledge from mathematics, astronomy, and geometry were part of philosophy. Similarly, physics was not taught separately, yet it was notable for in the context of most innovations in the teaching process. During the entire 17th century, the College in

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[9] KÓNYOVÁ, Annamária – KÓNYA, Peter (2010): *Kalvínska reformácia a reformovaná cirkev na východnom Slovensku v 16.–18. Storočí* [Calvinist Reformation and the Reformed Church in Eastern Slovakia during the 16th–18th Centuries]. Prešov, Vydavateľstvo Prešovskej univerzity. 75–79.

[10] KOMLÓSI, Sándor (2000): Lórántffy Zsuzsanna iskolákat támogató tevékenysége [Activities Supporting Schools by Zsuzsanna Lórántffy]. In: Tamás, Edit (ed.): *Erdély és Patak fejedelemasszonya Lórántffy Zsuzsanna I* [The Princess of Transylvania and Patak Is Zsuzsanna Lórántffy I]. Sárospatak, Sárospataki Rákóczi Múzeum. 151.

[11] SZENTIMREI, Mihály (1996): *A Sárospataki református kollégium 1618-as rendszabályai és 1620-as törvényei* [The Orders of 1618 and School Laws of 1620 of the College in Sárospatak]. Sárospatak, Sárospataki Református Kollégium Tudományos Gyűjteményei. 25.

Sárospatak hosted professors who significantly contributed to the separation of physics and helped it become a subject of its own. The first important step to achieve this was taken when a first textbook on natural sciences was published at home (*Phisophiae Naturalis. Sive Introductio in theatrum naturae*, 1667) by János Pósaházi.[12] During his trips abroad, to England and Germany, he learned about new scientific theories that he would spread upon his return home. Pósaházi and his successors refused to teach physics using the traditional method, according to the Aristotelian physics, and tried to spread novel theories (particularly Galilei and Newton). They were also the proponents of the teaching method based on experience and examples rather than on philosophical and theoretical approaches.

The most important breakthrough in teaching physics not only in Sárospatak but generally in the entire Kingdom of Hungary was during the tenure of Professor István Simándi. When he returned from his foreign studies in 1707, he accepted the position of professor in Sárospatak, where he persuaded the principal of the school about the need to innovate teaching physics by using demonstrations, making observations, and experiments. He was the first professor to start teaching experimental physics (*Physica experimentalis*) using physical aids and performing various experiments. Unfortunately, the exact content of the course, or what was taught in experimental physics, remains unknown due to the insufficient number of preserved artefacts. The school's council was open minded with regard to Simándi's idea and approved the financial aid of 800 Rhenish gold coins to make a foreign purchase of teaching aids for a course in physics. Upon his return in 1708, Simándi brought 57 items (teaching aids) to support his courses in physics, which became the basis for a physical collection, and which is nowadays part of the school's museum in Sárospatak. Some of the most precious and most interesting items of the Simándi Collection are as follows: a vacuum cleaner manufactured in Leyden, with the help of which it was possible to make various experiments that required a vacuum; an optical device termed *laterna magica*; a machine that was able to set the exact time: *horodictum meridionale*.[13] It is interesting to note

[12] SZINNYEI, József (1908): *Magyar írók élete és munkái XII.* [Life and Works of Hungarian Writers XII]. Budapest, Hornyaszky Viktor könyvnyomdája. 1028–1029.

[13] BIGUS, Imre (2011): *300 éves a kísérleti fizika oktatása Sárospatakon* [300 Years of Teaching Experimental Physics in Sárospatak]. In: *Fizikai Szemle*. 61, 7–8. 272–277.

while Simándi's activities were welcomed by one group of people, they were viewed negatively by others, to the extent of even being accused of performing black magic through the physical experiments he was conducting with his machines. His prolific work in physics was discontinued because of his death from plague in 1710.[14]

The importance of István Simándi did not lie in his being the first professor who implemented a novel teaching method of physics or in his establishing the collection but especially in the fact that he inspired his successors to continue and develop his work of teaching natural sciences. In 1774, Professor Márton Szilágyi compiled a list of all aids and items that were used in the course of teaching physics to students at that time, a list that also reveals information about lesson plans and topics presented to students. During the past seventy years, the collection has been further expanded by another 132 items, which were divided in the list according to the various branches of physics: *Mechanica, Hydrostatica, Hydraulica, Aerometrica, Optica, Astronomica et Geographica, Magnetica et Electrica, Expansionis Corporum ab Igne et Calore*. This classification shows a very advanced level of teaching physics, as well as a vast knowledge offered drawing on the latest European scientific results. What is missing from the list is a separate section for acoustic courses, which are classified together with what is known as aerometric courses, since at the time the knowledge and phenomena related to sound were observable in air or gas. In addition, it is interesting to note that magnetic and electric items on the list were included in the category of items termed *instrumenta subtilium effluviorum*, as physics at the time recognized magnetic and electric phenomena to be immaterial liquids dissolved in matter.[15]

The 18th century saw an important progress in other natural sciences as well, especially in chemistry. This had an impact on the Reformed College in Sárospatak in the sense that the school included thirty types of chemicals and chemical machines in the collection. The number of items related to natural sciences in the school was growing. The school acquired telescopes, microscopes, and geographic globes, which served as proof that the school did not want to lag behind with in terms of astronomy,

[14] SZINNYEI, József (1909): *Magyar írók élete és munkái XIII*. [Life and Works of Hungarian Writers XIII]. Budapest, Hornyaszky Viktor könyvnyomdája, 1029.

[15] ELLEND, József (1899): A sárospataki főiskola kétszázados multja [The Two-Hundred-Year-Old Past of the College in Sárospatak]. In: *Magyar Pedagógia* [Hungarian Pedagogy]. 8. 456–468.

biology, and geography, and that, in fact, the school wanted to stay on par with the progress that European and world science was experiencing at the time. Professor Mózes Kézy (1781–1831), who had been professor of mathematics and physics since 1813, added further items to the collection. During the years he spent in the school, he enriched the collection by his own constructions of many machines, e.g. an electric machine, or he had local tradesmen who would manufacture items for him.[16]

Textbooks and academic articles written by professors who were teaching natural sciences document the high quality of natural science items, as well as the items used in teaching. A majority of the articles were written in Latin, but research articles and textbooks written in Hungarian were becoming more frequent starting the end of the 18th century. The first natural science textbook was written by János Pósaházi *Philosophia Naturalis* [Natural Philosophy] in 1667. In the following centuries, the number of natural science works was increasing, e.g. professor István Emődy's textbook (1770–1823) *Természeti história I*. [Natural History I] written in 1809 (2nd edition in 1818), in which he described various animals, offered a classification of the animals, and included at the end of the textbook their Latin, Hungarian, and German variants. The continuation of his work was the textbook written by József Vadnay, *Természeti História. II. A plánták országa* [The Natural History II. The World of Plants], published in 1811 and the textbook written by József Geleli, *Természeti história III. Az ásványok országa* [The Natural History III. The World of Minerals], published in Sárospatak in 1818. The above-mentioned Mózes Kézy wrote in 1818 *Elementa physicae. In usum praelectionum suarum* [The Basics of Physics – As Used in Lectures] for the purposes of teaching physics, and he later published the work titled *Short Outline of Physics* in Hungarian (1830), *Elementa algebrae* [Basic Algebra] in 1830, and *Elementa geometriae purea* [Basics of Pure Geometry] in 1831.

Mathematics was significantly developed in the Reformed College as well, although it cannot be fully considered as a natural science – rather it is "the language of natural sciences". In the period under scrutiny in this article, it belonged to the group of the so-called *reál* [science] courses. Mathematics was the first to start down the path towards independence from natural philosophy in the teaching context, and so it was

[16] Ibid.

becoming a separate course. From the beginning of the 19th century, mathematics was taught in each year and was completed with algebra and solid geometry. The most credit for the development of mathematics at the Reformed College in Sárospatak is attributed in fact to the first professor of mathematics, Pál Sipos (1759–1816).[17] As a recognition of his scholarly work, as well as his discovery of the so-called isometric curve in geometry, the Royal Scientific Academy in Berlin awarded him a gold medal in 1795.[18]

Geography took a similar path in terms of its development. It had been taught since the 17th century; however, it became a separate course only in 1786 when it started to be taught in the first 7 grades and from 1804 up to the ninth grade.[19]

The Reformed College in Debrecen

In science teaching, a very similar development took place in the equally significant Reformed College in Debrecen. The Protestant school was established in 1538 by transforming the original urban school. The school administration and its financing were administered by the city itself as well as by the Reformed Church, together with its generous donors, who were the princes of Transylvania. Thanks to erudite teachers, the Reformed College of Debrecen became another important centre of Calvinism and Calvinist education in the Hungarian Kingdom, which is evidenced by the number of students. At the beginning of the 17th century, there were about a thousand students enrolled in the College. From its early years of its existence, the College in Debrecen was open to new tendencies and always quickly reacting to the latest scientific outcomes.[20]

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[17] SZINNYEI 1908, 1165–1166.

[18] WESZELY, Tibor (1995): Sipos Pál, az első aranyérmes magyar matematikus [Pál Sipos, the First Hungarian Gold Medallist Teacher of Mathematics]. In: *Természettudományok Világa* [World of Natural Sciences]. CXXVI, 5. 207–209.

[19] UGRAI, János (2001): *Felvilágosodás kori változások a Sárospataki Református Kollégiumban* [Changes in the Reformed College in Sárospatak in the Period of Enlightenment]. In: *Egyháztörténeti Szemle* [Church History Review]. II, 1. 94–111.

[20] For more information on the history of the College, see: BARCZA, József (1988): *A Debreceni Református Kollégium története* [The History of the Reformed College in Debrecen]. Budapest, Református Zsinati Iroda.

Because of the missing sources of the exact content of education or the number of lessons taught in this school, the only possible way how to draw conclusions is the indirect approach – for example, by studying the scientific activities of the teachers, analysing the textbooks and scientific works used in the teaching process. Mathematics was the first subject to become independent from philosophy at the College in Debrecen. A work titled *Debreceni aritmetika* [Debrecen Arithmetic], probably written by a scholar named János Laskai, was published in 1577. The work was a summary of basic mathematical operations, and it was used as a textbook in the following one hundred years.

In 1674, a new textbook of arithmetic written by Ferenc Tolvaj Menyői (?–1710) was published multiple times (for example, in Levoča or Bratislava), and it became one of the most widely used textbooks of mathematics in the country for several decades. Topics of dissertations and other scientific works written by other scholars in the 17th century (György Tóth Martonfalvi, Márton Tonko Szilagyi, Pál Kovacs Lisznay) point out that quite a strong centre for the development of mathematics was created in Debrecen, including also logic or geometry based on the latest knowledge and discoveries from abroad. In 1743, the "third" *Aritmetika* [Arithmetic], written by the scholar György Maróthi (1715–1744) was published. It was based on the famous work of Johann Friedrich Weidler, the professor from Wittenberg. The major progress in the status of mathematics within other subjects was the establishment of the separate Department of Mathematics in 1798. A professor named Ferenc Kerekes (1784–1850) was the only one from the entire Hungarian Kingdom to participate actively in the European scientific debate on integrals and differentials in the 19th century.[21]

In addition to arithmetic, we come across geography as a relatively new subject in the educational curriculum, which concentrated the contemporary knowledge of the country, but also of the "heavenly bodies", namely astronomy. In the 17th century, the development of geography was associated with the names of three scholars. The first one was György Csipkés Komáromi (1626–1678),[22] who wrote *Judicaria Astrologia* (1665) in the topic of comets. Then there was Martin Tönkő Szilágyi, who described physical

[21] OLÁHNÉ ERDÉLYI, Mária (1976): A protestáns iskolák középszintű matematika-oktatása 1777–1848 között [The Education of Mathematics in Secondary Protestant Schools between 1777 and 1848]. In: *Magyar Pedagógia* [Hungarian Pedagogy]. 76, 3. 278–281.

[22] SZINNYEI, József (1893): *Magyar írók élete és munkái II.* [Life and Works of Hungarian Writers II]. Budapest, Hornyaszky Viktor könyvnyomdája. 380.

geography in his work *Physica specialis*, and Pál Lisznay Kovács (1630–1695), who – thanks to his studies in the Netherlands – began to use maps in his geography lessons. Moreover, he created those maps himself. Besides using maps in the teaching process, globes started to appear as well. In the first half of the 18th century, geography was integrated into the teaching process as a separate subject by György Maróthi, who was committed to both physical and human geography in his lectures. A high standard of geography was reached by Ezaiás Budai (1766–1841), the author of four school atlases. The students were required to have their own maps. In 1856, the separate Department of Natural Sciences and Geography was established.[23]

A significant development of physics in Debrecen can be seen in the second half of the 17th century. In 1678, the first work about Cartesian physics written by the above-mentioned Márton Tönkő Szilágyi (1642–1700)[24] was published. It described physical phenomena such as gravity, the structure of liquids, air, temperature, pressure, minerals, etc. His work showed the need for teaching physics based on demonstrations and experiments that was later developed by his successors György Maróthi (1715–1744), Samuel Szilágyi Piskárkosi (1718–1785), and mainly István Hatvani (1718–1786), the latter being considered a true pioneer of experimental physics in Debrecen. In his lectures, new knowledge was demonstrated in experiments using physical devices; the most valuable ones were as follows: an "electric device", an electrophorus, and an "odometer" (a device for measuring the distance). All these devices and equipment became part of the school museum similar to the one in Sárospatak. According to the register of 1839, the collection of physics equipment included 221 pieces; however, most of them were minerals and geometric models. At that time, in the context of physics, the lectures were dedicated to the following areas: statics, mechanics, electricity, magnetism, galvanism, chemical elements, meteorology, and physical geography, indicating that in those times, other scientific fields, such as chemistry, were also part of physics.[25]

[23] GAÁL, Botond (1988): A természettudományok oktatása és művelése a Kollégiumban [The Education of Natural Sciences in the College]. In: Barcza, József (ed.): *A Debreceni Református Kollégium története* [The History of the Debrecen Reformed College]. Budapest, Magyarországi Református Egyház Zsinati Irodája. 592–626.

[24] SZINNYEI 1909, 904.

[25] GAÁL 1988, 592–626.

Although chemistry was on its way to becoming an independent scientific discipline from the second half of the 18th century, it represented a completely separate subject in the teaching process much later. As mentioned earlier, István Hatvani, who performed chemistry experiments during his physics classes, is considered a pioneer of chemistry at the College in Debrecen. This is all evident from his orders of chemicals (mainly various acids) for experimental physics. Even his minor work (*Therme Varadienses examini physica et medico subjectae...De natura salium nominatim vero de salibus, qui circa Debrecinum colliguntur,* 1777) devoted to the analyses of mineral water and salt prove his research interest directed mainly to salt-related research, but also to its practical industrial use. Pál Sárvári (1765–1846),[26] a student and successor of his work, broadened the scope of the topics of his lectures (to sulphates, phosphates, nitrates, various compounds, elements of materials, evaporation, etc.), while new discoveries in that area were numerically increasing very quickly. In 1815, the establishment of the separate Department of Chemistry, Mineralogy, Botany, and Technology was the breakthrough – the subjects were taught in Hungarian. From the curriculum created in 1837, it is clear that the number of chemistry courses was 60 per year. A great promoter of experimental chemistry, Imre Nagy Csécsi (1804–1847) supported the idea of increasing this number. Even in his last will, he left a certain amount of money for the school so that a new chemistry laboratory could be established.[27]

The development of zoology and botany was similar to that of chemistry. They became independent from other school subjects in the 19th century; till then, those subjects were part of philosophy lectures and later physics in the Reformed College, as well. From the 16th to the 18th century, no significant works were published in the Reformed College in the field of science. In other words, there were no scholars who would support scientific research. A change occurred in the early 19th century when, thanks to Ferenc Kerekes, the Botanic Garden was established in 1841. In its inventory, there were 253 exotic plants, 390 medicinal plants, and 720 agricultural plants, in addition to which 150 trees and bushes were planted in the garden. In the field of zoology, János Kovács (1816–1906) expanded a collection of plant specimens to 1,654 animal specimens.[28]

[26] SZINNYEI 1908, 248–249.
[27] Gaál 1988, 592–626.
[28] Uo.

The Evangelical College in Prešov

The Prešov Evangelical College was found in Košice in 1665 by the act of the Upper Hungarian evangelical authorities and free royal towns. Thanks to a large number of donors, the sufficient amount of financial resources was collected, so it was possible to start constructing the school building, which was put into use only in 1667. Besides the main objective, which were the education and training of evangelical young people, there were made great efforts to turn the school institution into a counterbalance to the Catholic university in Trnava to become a stronghold against the increasingly stronger anti-Reformation movement.[29]

During the centuries of the school's existence, several important scholars and personalities of the social and cultural life worked in it. The evangelical college was constituted as a ten-class grammar school, where in lower classes students obtained fundamental knowledge in reading, grammar, rhetoric, poetic, classical languages, and in higher classes students were trained in the study of logic, metaphysics, and the highest level presented obtaining knowledge in theology. The ninth class was the class of physics and metaphysics (*Classis Physicorum et Metaphysicorum*). It is clearly evident from the school agenda in 1667 that physics was lectured by the important scholar of the period, the supporter of Renaissance atomism, Izák Cabán, and the textbook was titled *Physics by Sperling*.[30]

As a result of the unfavourable political situation, the Evangelical College underwent a complicated development in the next decades, its activity being violently disconnected for several times, for some time functioning merely as an elementary school. In the school agenda of 1707, there are some records about training in "classical, humanities subjects", physics having been missing from the previous periods. The school agenda in 1742 included geography in the second year. The training in mathematics, physics, and geography was integrated into the agenda of 1758 in the higher years.[31]

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[29] KÓNYA, Peter (2013): Eperjes mint a felső-magyarországi evangélikus művelődés központja [Presov as the Centre of Evangelical Education in Upper Hungary during the 16th-17th Centuries]. In: *Sárospataki Füzetek* [Sárospataki Notes]. XVII, 3. 79–91.

[30] HÖRK, József (1896): *Az Eperjesi Ev. Ker. Kollegium Története* [The History of Evangelical A. C. College in Prešov]. Kassa, Bernovics Gusztáv kő- és könyvnyomdája. 16–23.

[31] I. m. 393–401.

After 1805, the reorganization of study took place, and it resulted in the expansion of the natural science subjects taught, where the fundamentals of natural history were added up. Education in mathematics and physics lay within the philosophy professors' authority, whose work was exactly determined in the agenda, whereby the individual subjects were to be lectured. The professor of rhetoric lectured, among other things, geography and natural sciences in coincidence with specified literature. The content of the natural science subjects is known from the agenda dated as late as the second half of the 19th century. Geography was taught from the first year; in the third year, mathematics and geometry were added, and in the fourth year mineralogy, chemistry being taught as part of it; later, botany and zoology were added, and physics was taught in the last years within natural history. From the point of view of the contents, the subjects provided fundamental knowledge from the branches of individual natural sciences.[32]

The Evangelical College owned various collections, especially of botany, zoology, and mineralogy, and they were accumulated by the school starting from the first half of the 19th century. Fridrich Hazslinszký (1818–1896), the well-known natural scientist, first of all mycologist, and the author of many scientific papers in the field of botany, had the greatest interest in the expansion of the school.[33] Besides him, Professor Otto Ludmann[34] was also interested in natural sciences, especially geography.

The previous outline of natural sciences at the mentioned Protestant schools shows that there were considerable differences in teaching natural science subjects between the Calvinist and the Evangelical education system. Almost none of the agendas of the Reformed schools from the period of the 16th–18th centuries – which could provide us a better overview of the number of natural science subjects and their more exact determination – survived; however, there are some resources (textbooks, collections, teaching aids) clearly pointing to the fact that they played a rather important

[32] I. m. 393–401.

[33] REPČÁK, Miroslav – VOZÁROVÁ, Marta (1996): *Život a dielo Fridricha Hazslinského (1818–1896). Zborník referátov* [Life and Work of Friedrich Hazslinsky (1818–1896). Collection of Essays]. Prešov, Spoločnosť slovenských mykológov.

[34] SZINNYEI, József (1902): *Magyar írók élete és munkái VIII.* [Life and Works of Hungarian Writers VIII]. Budapest, Hornyaszky Viktor könyvnyomdája. 38.

role in the teaching process. In spite of the fact that natural science subjects made the smaller part of the total number of subjects taught in Calvinist schools up to 19th century, they were able to reach a very high (even European) level.

The situation in the evangelical school was different: the natural science subjects were included in the curriculum, the studied literature is known, but no prominent professor personalities developing any natural science branch are known (only from the 19th century onwards). Unlike in the Reformed colleges, there was no similar research and discovery work among the teachers at the Lutheran colleges in the 17th–18th centuries; this also applies to the use of innovative teaching methods and teaching aids. On the contrary, the activity of the professors in the Reformed colleges in Sárospatak and Debrecen shows that these schools were open to new scientific impulses in the field of natural sciences. They maintained not only intensive relations with the European scientific environment but also incorporated new inventions and theories in their lectures. Besides the innovations regarding the individual natural science subjects, teachers showed interest in new ways of teaching based on demonstration, experiment, and use of "modern teaching aids as early as the 17th century.

There are several reasons of the stronger position of natural sciences in Calvinist schools. One of the factors is the character of Calvinist theology itself and the ideas – mentioned in the introductory section – of its founder, John Calvin, regarding the relationship of religion and science (natural sciences). Since its beginning, Calvinism created a "freer" intellectual environment that was open to a more positive attitude towards new discoveries and scientific theories. Professors at Calvinist schools had a more autonomous position within the process of teaching, and therefore they could determine the contents of their lectures more independently. An important factor could be that, especially during the 17th century, the important scientific and pedagogical personalities worked in both schools. Their activity generated followers who continued with development of natural sciences.

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Árpád KULCSÁR[1]:

The Timely Character of Dialogue
The Problem of Creation in Theology and Natural Sciences. The Synthesis of László Ravasz

Abstract.

This paper discusses the necessity of dialogue about the topic of creation between theology, philosophy, and natural sciences. I argue that philosophy has a bridge-building role between theology and natural sciences. I aim to show why the mediation of philosophy cannot be neglected and why a holistic approach is such an important theme, as creation is necessary. I shall also invoke the ideas of László Ravasz (1882–1975) and point out that the synthesis he argued for in his scientific papers is still useful today.

Keywords: creation, theology, philosophy, natural sciences, myth, "theory of chaos", missiology, László Ravasz

[1] Assistant Lecturer, Partium Christian University, Faculty of Economics and Social Sciences, Oradea; e-mail: kulcsarpad@partium.ro.

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1. Loss of Theological and Philosophical Space

The scientific study of the universe and our place in it, the Earth, goes back a long time. With the essential development of the natural sciences and mainly thanks to the views formulated by Charles Darwin, it has gained strength in the last one hundred and fifty years. This caused fierce debates on the part of Christianity against natural science and its representatives when the Church wanted to defend its dogmas, the authority of the Bible, or its place in society.

László Ravasz was not interested in natural sciences. At least, this is clear from his extant, rich lifework, but I have not read anywhere about him what would prove the opposite. For him, scientific interest developed in the triple circle of philosophy–theology–literature. However, it is certain that he was not against natural science. He had a calm attitude towards those subjects that today, through certain representatives of the natural sciences and theology, often lead to very heated debates. He respected the achievements of science, observing with sincere admiration the scientific and technical discoveries and realizations that unfolded in the 20th century.

Considering the above, only a very small fraction of his complete published lifework provides some clue based on which I will be able to respond to what is formulated in the title of the paper. If we examine his volumes of sermons, we can notice that until 1941 no preaching was published that would discuss the topic of creation. In the last two books published by Franklin Publishing House appears the first sermons on the subject, but these can be divided into two distinct groups: Sunday sermons and wedding speeches.[2] His inauguration speech at the Hungarian Academy of Sciences can provide further clues to the topic,[3] as well as one or two chapters of his short dogmatic work, which were delivered in church Bible school and published a few decades after his death.[4]

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[2] RAVASZ, László (1941a): *Isten rostájában* [In the Sieve of God]. Budapest, Franklin-társulat; RAVASZ, László (1943): *Korbán*. Vol. I–II. Budapest, Franklin-társulat.

[3] RAVASZ, László (1928): *Pál Athénben* [Paul in Athens]. He read it at the ceremonial general assembly of the Hungarian Academy of Sciences on 20 May. Budapest, Magyar Tudományos Akadémia.

[4] RAVASZ, László (1990): *Kis dogmatika. Hitünk igazságai* [Concise Dogmatics. The Truths of Our Faith]. Budapest, Református Zsinati Iroda Sajtóosztálya.

Seeing these modest sources, such questions may rightly arise: what can be the purpose of this research if so few primary sources are available on the given topic? Are Ravasz's ideas are authentic? Can they be evaluated scientifically? Is it even possible to do something with Ravasz's thoughts on natural science? In the case of such an extensive lifework, with so few sources on the given topic, should this question not be closed simply by saying that Ravasz did not deal with creation in an appreciable way? Do his thoughts appearing here and there require further research?

Well, I must start answering these questions with two quotes. The first one is the idea of Stephen Hawking, theoretical physicist, who wrote the following in *The Grand Design*: "Traditionally, these [viz. questions about the genesis of the universe and the Earth] are questions for philosophy, but philosophy is dead. Philosophy has not kept up with modern developments in science, particularly physics. Scientists have become the bearers of the torch of discovery in our quest for knowledge."[5]

The second is from a sermon of László Ravasz delivered in 1941: "After forty years of learning, I can say with deep conviction that, from a literary point of view, not a single book can be compared with the beginning of the Holy Scripture, the epical telling of creation. After long reflections, I always conclude that these few chapters [from the book of Genesis] are on the highest level from a philosophical point of view. The human mind has never made so many decisive and summary statements about man and his world."[6]

In this paper, I will relate to these two seemingly only loosely related quotes. Although the authors of these quotes are separated by scientific eras – one quote comes from an internationally recognized and well-respected scientist, and the other is part of a sermon from a Hungarian Reformed pastor –, they still highlight how different their opinions are about which field of science has the authority to deal with the given question. The framework and the system of László Ravasz's theological thinking was provided by philosophy. In his remarkable work *Omnia sunt facta per ipsum. Darwin's*

[5] HAWKING, Stephen – MLODINOW, Leonard (2010): *The Grand Design*. Bantam Books. New York, The Random House Publishing. 13–14.

[6] RAVASZ, László (1941b): Az ember Isten képmása [Man Is the Image of God]. In: Ravasz, László: *Korbán*. Vol. I. Budapest, Franklin-társulat. 146. The translation of all originally non-English quotations belong to the author of the present article unless otherwise stated.

Influence upon the Faith in Creation. Theological and Human Questions, the author, Péter Szentpétery, devotes a separate chapter to László Ravasz's standpoint, basing on his short dogmatics from the mid-20th century.

Although Hawking admits that questions related to the origin of the universe used to belong to the scope of philosophy, he argues that today this is no longer the case. Since László Ravasz has no longer the opportunity to reflect on Hawking's statement, I ask the help of the contemporary mathematician John C. Lennox, who reflects in a short book entitled *God and Stephen Hawking* as follows: "The very first thing I notice is that Hawking's statement about philosophy is itself a philosophical statement. It is manifestly not a statement of science: it is a metaphysical statement about science. Therefore, his statement that philosophy is dead contradicts itself. It is a classic example of logical incoherence."[7]

Lennox quotes a little-known letter of Albert Einstein, written on 7 December 1944, in which Einstein argues:

> I fully agree with you about the significance and educational value of methodology as well as history and philosophy of science. So many people today, and even professional scientists, seem to me like someone who has seen thousands of trees but has never seen a forest. A knowledge of the historic and philosophical background gives that kind of independence from prejudices of his generation from which most scientists are suffering. This independence created by philosophical insight is, in my opinion, the mark of distinction between a mere artisan or specialist and a real seeker after truth.[8]

Alister E. McGrath shares the same opinion when he reflects on the given question: "Science simply cannot answer questions about the meaning of life and should not be expected – still less, forced – to do so. […] These questions are metaphysical, not empirical."[9]

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[7] LENNOX, John C. (2011): *God and Stephen Hawking. Whose Design Is It Anyway?* Oxford (England), Lion Hudson. 10.

[8] HOWARD, Don (2015): Albert Einstein as Philosopher of Science. In: *Physics Today*. 58, 12. Cited in Lennox 2021, 10.

[9] MCGRATH, Alister E. (2011): *Surprised by Meaning. Science, Faith, and How We Make Sense of Things.* Westminster John Knox Press. 15.

Einstein's letter aligns much more closely with Ravasz's position and is affirming in its insistence that philosophy must have a place within theological reflection, just as the two disciplines complemented one another for many centuries and remained in a relationship of mutual critique and engagement. A similar mutual reflection must develop natural sciences with philosophy and theology. If we dedicate ourselves to the actual search for truth within a specific scientific subfield, then the widely mentioned holistic vision would be greatly helpful. Previously, interdisciplinarity was only offered as an option, but today it has become an urgent requirement.[10]

We can observe a centuries-long deficit in theological thinking, when it tried with all its might to hinder the development of the natural sciences; and, instead of dispelling superstition, he often declared that they were up against the devil's machinations.[11] Thus, it is understandable that the aim of the natural sciences was, among other things, to distance themselves from Christian theology with the intention of self-protection and the search for their own scientific identity. Nowadays, this has reached such proportions that the gap seems almost unbridgeable. There will be no change in this matter until the intention of a mutual bridge building is formulated from both directions. A possible solution is for philosophy to provide the bridge between theology and the natural sciences. However, for this to happen, the theologian and the natural scientist must both recognize and accept this role of philosophy. By the end of this paper, I would like to have delivered arguments as to why I see philosophy as a possible bridge between various scientific fields – in this case, between natural sciences and theology.

[10] "By now, interdisciplinarity has been taken for granted, so it is no wonder that the tendency is towards a 'clearly comprehensive language' by each field of science, and, in the interest of a faster and more precise flow of information these terms should become the means of expressing ideas in a straightforward fashion." GAÁL, Botond (2002): *The Truth of Reason and the Reality of the World. Historic Development of the Exact Sciences from a Christian Viewpoint*. Debrecen, DRHE. 8.

[11] See: LUTHER, Martin (1872): *Table Talk*. Chapter*: Astronomy and Astrology*. Transl. and ed. by Hazlitt, William. Bell & Daldy. 341–343.

2. Theories, Attempts, and Reflections

In what follows, I will examine some approaches. I am aware that this will appear very sketchy and even incomplete, but the frame of this paper does not allow to go any deeper. I cannot even touch a few quite important questions. For further profound studies, there are two essential works in Hungarian by two remarkable researchers: Botond Gaál's *The Truth of Reason and the Reality of the World. Historic Development of Exact Sciences from a Christian Viewpoint* and Péter Szentpétery's *Omnia sunt facta per ipsum. Darwin's Influence on Creationism – Theological and Human Questions*. These two volumes cover almost all important and current issues related to our topic with sufficient thoroughness and detail.

János Molnár in his sermon (which could be read as a shorter scientific study) entitled *The Beginning of Creation*, thematizes well the scientific (and pseudo-scientific) views on the issue of creation. Molnár describes the complex issue in four well-formulated points:

a) The entire biblical story of creation is a Jewish cosmogony that expresses the worldview of a bygone era.

b) The biblical story of creation told by the first chapters of the book of Genesis is basically a myth, of which images and ideas are copies of the Egyptian and Babylonian similar myths.

c) The biblical story of creation belongs to the literature of a philosophical school whose teaching is the so-called *creatio ex nihilo* = creation from nothing. The story of creation emphasizes this thesis of religious philosophy.

d) The entire biblical story of creation is an unscientific narrative that cannot be integrated into today's scientific worldview, in which not only the unscientific nature and features contrary to materialistic thinking are evident but also the structural superficiality of the narrative, the illogicality and confusion of the events.[12]

[12] MOLNÁR, János (1995): A teremtés kezdete [The Beginning of Creation]. In: Molnár, János: *Csillagsors. Prédikációk* [Fate of the Stars. Sermons]. Oradea, Királyhágómelléki Református Egyházkerület. 6–12.

This categorization, formulated in an easy-to-understand way, may seem simplistic in some aspects, but in essence it summarizes the criticisms that are usually levelled at the accounts of the first chapters of the Bible about creation. At the same time, it also affects the question with which the interpreters of the Bible approach creation. The method of textual criticism, which emerged primarily from the German scientific soil, and which promoted, among other things, the approach to religious studies within Christian theology, does not intend to refuse the claim that the biblical sources regarding creation are questionable, but, as they concluded, they are practically myths, reimagined elements taken from the mythology of others.[13]

The contemporary Protestant theologians' methods of approach on the topic of creation, without attempting to provide an exhaustive list, comes from the biblical-theological (or religious) studies, the missiological and the pastoral-psychological point of view. Some of them are trends of fierce debate and resistance to natural science (e.g. creationism) and the attitude of unconditional surrender to science at the expense of theology. In addition to these, methods are also approached in an interdisciplinary form.

Péter Szentpétery describes the creationist, i.e. anti-evolutionist view in a very useful chapter,[14] and one of the basic works on this view is also available in Hungarian translation.[15] I will also refrain from detailing the pastoral-psychological approach. The work of Gábor Hézser, summarizing his pioneering research, is a good starting point for the topic.[16]

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[13] Without claiming to be exhaustive, here are some recent studies and volumes in Hungarian that discuss creation stories in a textual critical and/or mythical approach: ZSENGELLÉR, József (1999): A Genezis teremtéstörténete, avagy a teremtéstörténet genezise [The Story of Creation in Genesis, or the Genesis of the Story of Creation]. In: *Protestáns Szemle*. LXI, 4. 215–224; RÓZSA, Huba (2008): *Őstörténet. A világ keletkezése és az emberiség eredete a Biblia szerint* [Prehistory. The Creation of the World and the Origin of Humanity according to the Bible]. Budapest, Szent István Társulat; ESZENYEINÉ SZÉLES, Mária (2012): *Kezdetben. Az őstörténetek teológiája* [In the Beginning. The Theology of Prehistorical Biblical Texts]. Cluj-Napoca, Az Erdélyi Református Egyházkerület; CZÖVEK, Tamás (2007): *Teremtés és misszió. Isten győzelme a káosz felett* [Creation and Mission. God's Victory over Chaos]. Budapest, Kálvin Kiadó.

[14] SZENTPÉTERY, Péter (2008): *Omnia sunt facta per ipsum. Darwin's Influence on Creationism – Theological and Human Questions.* Budapest. 390–494.

[15] MORRIS, Henry M. ([2]1985): *Scientific Creationism.* Master Books.

[16] HÉZSER, Gábor (2007): *Pasztorálpszichológiai szempontok az istentisztelet útkereséséhez. Elméletek és gyakorlati lehetőségek* [Pastoral Psychology Aspects for Finding the Way to Worship. Theories and Practical Possibilities]. Budapest, Kálvin Kiadó.

Since it meets all four criteria cited earlier, I would like to deal in much more detail with the attempt born out of the connection of biblical theology and missiology and include some critical comments. In recent decades, we could observe a paradigm shift in the science of mission, as David J. Bosch points out in his unique work about the science of missiology.[17] I will highlight only one aspect of this, according to which theologians have recently recognized the missiological significance of the Old Testament. Previously, the biblical foundation of missiology was always provided directly by the New Testament, and the Old Testament only played an indirect, almost merely "here and there" role. The results can be observed in the missiological works published in recent decades.[18]

As an exciting chapter of this process, Tamás Czövek's work *Creation and Mission – God's Victory over Chaos* was written with the intention of making God's creational work in fact a tool of modern mission, and quite differently than it was done by "creationist evangelization", which appeared in recent decades and which the author calls an "American import".[19] According to the author, creation has disappeared from Christian thinking – and in the last one or two centuries, the majority of the scientific world has denied God's creational work – to such an extent that it is not surprising that some kind of effective response had to come from the Christian side. He emphasizes that the doctrine of creation is not specifically part of our missionary thinking. It seems so because the church itself has given up on ever using this teaching of the Bible in the mission, and the fact that until evolutionism completely broke into the public consciousness and took over everything, it had not even "occurred" to the Church that the doctrine of creation could or should be missionary.

A biblical-theological examination is essential regarding the biblical texts dealing with creation to be able to exploit the missionary possibilities inherent in them and to be able to follow the connection points and possibilities between creation and mission

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[17] BOSCH, David J. (1991): *Transforming Mission – Paradigm Shifts in Theology of Mission*. Maryknoll (New York), Orbis Books.

[18] For example: WRIGHT, Christopher J. H. (2006): *The Mission of God. Unlocking the Bible's Grand Narrative*. Downers Grove (Illinois), InterVarsity Press; FROST, Michael – HIRSCH, Alan ([2]2013): *The Shaping of Things to Come. Innovation and Mission for the 21st-Century Church*. Grand Rapids (Michigan), BakerBooks.

[19] CZÖVEK 2007, 14.

outlined by the author in the title of the book. However, this is done by him with the help of the classic tool of religious studies: religious-historical comparison, where the starting point is not even the Bible but religious texts from the time of the Bible and the ages before that, as well as the comparison with them. The author clarifies that there has been a misunderstanding of the term 'myth' in religious studies, which has for so long been erroneously said to have no connection with the Bible. There is no need to be wary of this expression, as it is not a negative qualification regarding the texts of the Holy Scriptures but rather just a term, as there are parts in the Bible that can be called historical, and there are also mythical ones.[20]

There would be no problem with all of this, if it were not often proven that some parts of the text are primarily – like the Sumerian-Akkadian texts – describing the creation of the world or are almost literally identical with them. This brings us to the simple question of how to view the Bible. Is it a human creation, the creation of which seems to have taken place independently of God, when his enthusiastic followers, inspired by the culture of the surrounding folks and based on the collective memory and oral traditions of their own people, formulated and edited these texts according to certain ideas? Or is it a divine statement in which some other explanation should be sought and found for the similarities that are there in the religious and cultural textual monuments of others?

The holistic view of John C. Lennox leads in this question to the opposite conclusions. According to him:

> The Genesis account, though not written as a polemic, is therefore diametrically opposed to all idolatrous interpretations of the universe, whether of the ancient pagan kind or the modern secular variety. Genesis clashes head-on with the Babylonian, Canaanite, and Egyptian polytheisms, just as much as the gospel of John contradicts their Greek and Roman equivalents. Ancient Near Eastern accounts typically contain theogonies, which describe how the gods are generated from primeval matter. These gods are, therefore, mere deifications of nature and its powers. This means that such ancient worldviews stand much closer to contemporary materialism than it might first appear.[21]

[20] Op. cit. 16–23.

[21] LENNOX, John C. (2021): *Seven Days That Divide the World. The Beginning according to Genesis and Science.* Zondervan Reflective. 36.

Here, Lennox relies on the views of K. A. Kitchen and Alan Millard, according to whom they show no real points of connection either in terms of content or purpose or from a theological or philological point of view.[22]

László Ravasz's starting point in this matter is that man wants to know God, but he can do so through revelation alone. By the statement, he does not mean the Scriptures but the Word; but the Bible must have authority because it is the only authentic account of the Word, and therefore it does not matter how we think about it.[23] "The Holy Scriptures are not a norm in natural science requests, only in the religious truth of creation; the Scriptures are not a norm in medicine, only that God is a healing God; the Scriptures are not a norm in social theories, only in the fact that man is the image of God, that we must love each other and carry each other's burdens."[24]

In other words, the Scripture is an authority, but not an absolute authority. Absolute authority belongs to God, who has revealed himself in the Word. The Scripture is the vessel that contains the revelation that carries it into this world. Based on this, László Ravasz can relate to textual criticism and religious history approaches in the spirit of the 16th century reformers.[25]

One of the key terms in Tamás Czövek's books is "chaos".[26] Although this word is usually uttered in the context that God has defeated chaos or primordial chaos, it also includes the fact that it is not completely defeated, because this victory is not the complete destruction but only the suppression of chaos, keeping it under control, and

[22] According to K. A. Kitchen, "The common assumption that the Hebrew account is simply a purged and simplified version of the Babylonian legend (applied also to the flood stories) is fallacious on methodological grounds. In the Ancient Near East, the rule is that simple accounts or traditions may give rise (by accretion and embellishment) to elaborate legends, but not vice versa. In the Ancient Orient, legends were not simplified or turned into pseudo-history (historicized) as has been assumed for early Genesis." – quotes Lennox.

[23] RAVASZ 1990, 8.

[24] Op. cit. 11.

[25] "The existence of God's statement is not affected by any question of literary history. [...] Contemporary history, literary history, philology, spiritual science in general, even with the most radical criticism, can only help with the conditions under which the individual books were created and how correct their text is; but what the Word speaking in them, that is, God's personal conversation with us, says to the believing souls: he cannot interfere in that." Op. cit. 12.

[26] CZÖVEK 2007, 13.

it means an exercised rule over it. Chaos is still here with us, but hence we can conclude that not all evil can be traced back to original sin, so, ultimately, we are not to blame for everything in this world, but there is something that chaos can do to this day.

However, emphasizing the importance of chaos to such an extent leads to the creation of a kind of "chaos theory" in the book, according to which chaos was and is something unknown in terms of origin. God has sovereign authority over it, and therefore we have nothing to worry about. Even if this chaos is unleashed onto the world and can rule it, it is by no means equal to or above the power of God. I call this approach "chaos theory" because it introduces a complete and novel way of looking at God and creates a picture of God that is different from traditional conceptions. The experimental nature of the author's work is already evident in this expression.

We do not learn much about the act of creation in the third chapter, which forms the backbone of the book, because the author is interested in how God has conquered and is conquering chaos (or keeping it under control), and shows less interest on whether the universe is really God's creation or not? Because if not, then ultimately what is the answer to how the universe came into being? The biblical passages listed in this chapter are interpreted according to God as the Power that eliminates chaotic conditions on Earth. But we do not know at all why there is chaos on Earth, and why and how it came about. In this "chaos theory" it is also not clear that, according to the author's interpretation, the ancient religious texts speak of the same God as the Bible. Or did the people who drafted the books of the Bible know about it as little as other peoples had written before them, and so they mostly borrowed their ideas from them?

In the case of Genesis 1, the author also notes that this is one of the completely demythologized passages, and since it is almost impossible to find any point of connection between the mythological and biblical texts, this text is the least relevant. It is of later origin, such as Psalm 74 or Job 38 or even the relevant parts of the books of Isaiah and Jeremiah.[27]

Taking the above into account, we can conclude that the people of Israel did not know anything about God since they took all the concepts and expressions related to God, even the name of God, from some neighbours. Would it be just such a simple takeover?

[27] Op. cit. 40–48.

When the Israelites interacted with other peoples, everything they heard from them was related to the God they had known. There was no doubt for them that the things which survived in the collective memory of other peoples were the deeds of the one God who had revealed himself to them, and not the idols they worshiped and believed to be gods. Regarding the similarity between various ancient texts, it is not an untenable point of view that all similarities arise only from the recognition of this: we also know what you know, and we only know for sure who really is behind all of this. On the part of a small, nomadic people who were politically and militarily undeveloped and had no influence at that time, this statement could not particularly shake those peoples who were strong and large. Israel's missionary task was rooted in this very fact: it was necessary to introduce Him, who had made himself known to them.

At this point, in the unfolding of the theory, we can already perceive that the subtitle is the main title of this work. The author sees that the narrators and poets who wrote down the relevant parts of the Bible were not interested in creation and how the world had come into being: they talked about God's victory over chaos.[28]

According to the punctuation technique of the medieval Masoretes, Genesis 1:1 can be translated not only as it has been known in Hungarian for nearly 500 years, but there is another option. These suggest that the word "beginning" does not refer to the beginning of the creation of the world (universe) but *to the beginning of (something) that was created by God* or *to the beginning of God's creation*.[29]

Based on this, it is even more unclear whether it is about God creating something out of nothing or whether God appeared during the already existing chaos (the origin of which is unknown) and brought order, i.e. suppressed the chaos. This does not mean "creation out of nothing" (*creatio ex nihilo*), which, according to the author, has become an overemphasized doctrine in Christian theology thanks to Augustine, but rather "creation without resistance". God's main attribute is not so much that he is "Omnipotent" but rather that he is "Irresistible". He knows something that nothing and no one in this world can resist, no matter where its irresistibility comes from.

[28] Op. cit. 140.
[29] Op. cit. 43.

In other words, Genesis 1 does not talk about creation but only about how God repressed the chaotic forces against life, and how he then ensured that the Earth became a liveable environment for man and the living creatures around him. However, the sea is not God's creation either (just as, following this line of reasoning, neither the Earth nor the universe), and God's relationship to the sea is "overcoming", "reining", "limiting", "dominating", because he has power, he is "Irresistible".

Even if the author does not question by any chance the fact that God has sovereign power over anything that was known to the people of that time, or even known to the present, we can still easily come to the point of asking the question: if it was not God who created everything (since the Bible does not even mention it), then where does his power over everything come from? Until now we could have thought: God's sovereign power over the universe stems from the fact that he created everything (for example, he endowed the primal elements with free will in the same way as man, but everything that is not in accordance with his plans and abuses his free will can be curbed at any time, including the sea), but if this is not the case, then where does his power come from? Who is God in the first place? Just a heroic warrior who fights and always triumphs over the forces of nature? What is his origin?

László Ravasz approaches the question from the perspective of faith. The Scriptures are a collection of fundamental statements "that only faith can grasp and embrace".[30] In this sense, we can speak of a metaphysical position if we translate the previous statement into the language of philosophy. I am free to believe that God created the world, but I am also free to reject it. László Ravasz's position coincides with the position of some contemporary scientists whom I have already referred to, and whose positions I will cover in the rest of the paper.

"It is the greatest folly to believe that the Bible conveys scientific truths. But it is foolish to imagine that any history of development could replace, make redundant, refute these religious truths of the creation story […]".[31]

However, from his point of view, a holistic vision is missing. A more superficial knowledge of the natural sciences and an understanding based solely on the symbiosis

[30] RAVASZ 1990, 27.
[31] Op. cit. 31.

of theology and philosophy lead him in the direction of the reduction principle, which is easier to handle according to the degree of intellectual seriousness. The American palaeontologist Stephen Jay Gould also states based on this principle that religion and science belong to two separate fields or magisterium. According to this, science and the Bible have nothing to do with each other; the topic does not require further discussion.[32] Here we perceive the lack of interest in the philosophy of science, which also blocks the way to a holistic vision; and his metaphysical position is only limited to rejection.

In the beginning, God created the sky (heaven) and the Earth (Genesis 1:1). Since the King James and the first Hungarian Bible translations also provide this version – setting aside the scientific hypotheses and speculations related to the verse – why should this not remain the starting point to the thesis: God is the Creator. Verse 2 is not in contrast with Genesis 1:1 where, according to the description, God is the only living being at the dawn of creation; apart from Him, there is no other living being, since what he created does not yet have life in it. The expressions "barren", "desolate", and "darkness" support just that. There is already water, but that alone is not worth anything. If there are no light and no land, then water does not contain the possibility of life.

Based on Genesis 1, the Creator could be described with the terms "Owner" rather than "Irresistible". The proprietor puts order on His property: on the one hand, He precisely defines the purpose of everything in the world; on the other hand, He establishes rules, eternal laws, which from then on nothing and no one can break.[33] Land is not water, darkness is not light, plants are not animals, and animals are not humans. Which natural scientist would dispute these basic laws? We get a simple, clear picture of why everything in this world is what it is. If we accept the Bible's answer, then everything is what it is because God created it that way.[34]

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[32] LENNOX 2021, 36.

[33] On the significance of the term 'order', see: KREINER, Armin (2006): *Order – God's Fingerprint or the Work of Chance?* It was delivered in the form of a lecture at the conference of the Regensburg District Catholic Adult Education Institute on the topic *Natural Science and Faith: Einstein and the Universe* on 26.10.2005 and published in Hungarian: KREINER, Armin: The Order – God's Fingerprint or Coincidence? In: *Mérleg*. 42, 1. 39–48.

[34] Natural science "has not yet found the creature that connects man with apes. They have not yet been able to observe a process in which the lower class evolves into the higher. They have not yet been able to catch an ape that has become a man or a fish that has entered the order

László Ravasz in Chapter 6 of his *Kis dogmatika* (Concise Dogmatics) touches again on the issue of creation. The truths of the Holy Scriptures, as closed, final statements, conflict with science because the latter is under constant revision: new hypotheses lead to new experiments, and new experiments lead to new scientific insights. In the process of scientific labour, many contradictions must be eliminated until one point of view is crystallized through proofs. Opposing scientific points of view compete, all of which are proven to be wrong, except for one. And this is dominantly valid until a new, once again far-reaching realization pushes science further along its path of discovery.[35]

Seen from this point of view, compared to the dynamism of science, the Holy Scriptures are on a static course, with little room for manoeuvre. However, if we see this question from the point of view of revelation, we can observe the most definite dynamism: this is the dynamism of the Holy Spirit, which is manifested through the written Word. According to Ravasz, "[…] natural science has the right to say that man evolved from the animal world, through the highest class. However, this is not yet a fact but only a conclusion."[36]

Since God created everything, it can be studied, we can talk about the diversification within species, even evolution in this sense, which can at least be reasonably proven, but there are still no more arguments, just a theory that not everything comes from God.[37]

As I mentioned earlier, the dogma of *creatio ex nihilo* does not fit into this theory either, although Tamás Czövek does not reject it completely. According to his view, instead of "creation from nothing", it is better to use the definition "creation without resistance" for what took place in creation,[38] since the Old Testament texts do not deal with the dogma of creation from nothing.[39]

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of mammals. If this happens, the truth of the statement does not change because it claims that the human is completely different from the animal; for one is precisely what the other is not." RAVASZ 1990, 48–49.

35 Ibid.

36 Op. cit. 48.

37 Therefore, we cannot agree, "[…] the essence of the biblical creation accounts is the taming of chaos, not the production of matter. And the survival of ordered reality depends on God's vigilance, with which he watches over the bars and gates that hold chaos in place". CZÖVEK 2007, 101.

38 Op. cit. 136.

39 Op. cit. 103.

Gaál Botond's study provides guidance on this issue. Considering the research results of Thomas Torrance, he clarifies that the term does not originate from Greek philosophical thought. The philosophers did not question the validity of this teaching for a long time.[40] *Creatio ex nihilo* appears for the first time in the intertestamental age (2 Macca 7:28).

The expression, which appears again in the works of Augustine and other early church fathers, was rethought by the reformers and made part of scientific thinking to this day.[41] The holistic view based on the natural sciences, the philosophy of science and Christian theology, which is manifested in the clarification of this dogma, further strengthens the extremely useful statement that scientists are not distinguished from each other by the standpoint of their own field of science but by their different worldviews.[42]

This brings us to the trivial question that we tried to answer earlier, and which reads as follows: are the natural sciences and theology enemies of each other? Alister E. McGrath states, "Science, when at its best and most authentic, has no creed, whether religious or anti-religious."[43]

In other words, no single field of science can establish about the other that it is completely unnecessary and unappreciable from a scientific point of view. Nevertheless, the so-called "new atheism" movement and its emblematic representative, Richard Dawkins, do exactly that.[44] Based on a more in-depth study of his views, we can once again conclude that philosophy is highly necessary, but it does matter how it is cultivated. Theology did not always find the necessary proportions in its own formula for coherent cooperation with philosophy. Gaál Botond highlights the fact that dysfunctionality and inefficiency occurred in such cases.[45]

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[40] GAÁL, Botond (1989): Creatio ex nihilo. In: Gaál, Botond (ed.): *A választott nép szolgálatában. Ünnepi kötet Czeglédi Sándor 80. születésnapja alkalmából.* Debrecen, *Debreceni* Református Kollégium *Sokszorosító Iroda*. 62–79.

[41] Op. cit. 78–79.

[42] LENNOX 2011, 8.

[43] MCGRATH 2011, 38.

[44] Even the titles of his books speak for themselves: *The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design.* Norton & Company. 1986; *River Out of Eden. A Darwinian View of Life.* Basic Books. 1995; *A Devil's Chaplain.* Weidenfeld & Nicolson. 2003; *The God Delusion.* Transworld Publishers. 2006.

[45] GAÁL, Botond (2012a): Rejtett paraméterek a teremtésben? [Hidden Parameters in Creation]. In: *Vigília*. LXXVII, 3. 177–178.

There is no doubt that Dawkins's statements are philosophical in science – at least science does not suffer from this –, and it can also be clearly demonstrated what "faithful" position he rests on. However, natural science cannot have the task of subjugating, destroying, or deliberately making other disciplines obsolete, because this would violate the basic criterion of the cultivation of science. This is how László Ravasz thought about this in his address to the Hungarian Academy of Sciences in 1928:

"A new great spiritual power has appeared, which wants to replace all statements and oracles, and this is science. The basic condition of science is that it is free from bias and that it processes all human knowledge in a unified system."[46]

Dawkins crosses the boundaries of the philosophy of science without further ado, and he does not care that science should always know its limits, even if it strives to constantly push them. A critique of Dawkins's awareness of religion can be found in Alister E. McGrath's *Surprised by Meaning*. McGrath shows that Dawkins bases his claims primarily on Sir James Frazer's work *The Golden Branch*, which was first published in 1890. According to Frazer's theory, religion can be reduced to a few simple universal aspects, that is, religion can be described with certain general characteristics. This voluminous work, which is primarily based on anthropological research, appeared with a powerful influence at the turn of the 19th century; it was seen as a reference, but by today, the results of Frazer's research have been surpassed in every respect.[47]

The trend referred to as "new atheism" is a kind of religion, and it belongs to those natural scientists who wage a desperate and implacable struggle against all forms of religiosity while being religious themselves. However, the real trouble begins when they present their own metaphysical dogmas to the world as science. László Ravasz thinks as follows: "Science with a serious and honest epistemology that shows where the limits of knowledge are, how far we can go, and where we must stop. It teaches us to defend ourselves mainly against pagan dogmatism sold under the label of science, and not to accept nonsense that does not arise from the blessed soil of a universal religious statement because of natural science nomenclature."[48]

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[46] RAVASZ 1941, 452.

[47] "Most anthropologists now cite Frazer as an example of how not to study religion." MCGRATH 2011, 35.

[48] RAVASZ 1941, 468.

In connection with his thoughts, the recognition that they have relevance and place in today's modern, 21st-century theological thinking arises increasingly often. Here is another thought from Lennox to support this statement, which repeats almost verbatim what we quoted a few lines earlier from László Ravasz: "In particular, we have a duty to point out that not all statements by scientists are statements of science and so do not carry the authority of authentic science even though such authority is often erroneously ascribed to them."[49]

3. Philosophical (and Theological) Question – Philosophical (and Theological) Answer

In the previous chapters, I tried to point out that without philosophy and theology certain questions belonging to the scope of morality remain unanswered, since ethical values are outside the boundaries of natural science. We either avoid answering these questions completely, or we must inevitably must take a metaphysical position. Perhaps it is no coincidence that some excellent minds have tried to ensure the unquestionability of their scientific position precisely by completely ignoring philosophy and theology. The simple attitude of utilitarianism is reflected in the fact that science does not need philosophy, nor theology.[50]

Based on all this, we could conclude that there will remain an irreconcilable conflict between natural science, philosophy, and theology. But this assumption is refuted by the highly recognized and excellent experts in natural science who see no source of danger or shame in the fact that their scientific work is in full symbiosis with their faith in the God the Bible speaks of.

[49] LENNOX 2011, 7.

[50] In contrast, László Ravasz talks about mutual interdependence: "First, we must see that one cannot replace the other. No matter how accurate and complete the worldview based purely on experience, accompanied by strict criticism, and systematic knowledge, by its very nature, it cannot provide answers to the innermost, eternal questions of the soul. […] The soul becomes sick without religion, and the more it stuffs itself with knowledge, the emptier, bleaker, sadder, and darker it becomes. […] On the other hand, the religious worldview that does not want to hear about science, shuts itself off from it, and despises knowledge as Satan's tricks, becomes miserable and a distorted image of the glory to which God called it". RAVASZ 1941, 467–468.

Alister E. McGrath points out that "We need transcendent narratives to provide us with moral guidance, social purpose, and a sense of personal identity. Though science may provide us with knowledge and information, it is powerless to confer wisdom and meaning."[51]

He points out that many scientists dealing with natural science are divided into two distinct groups. One includes those who are not disturbed in their scientific work by the belief in the transcendent, and do not fight against this belief, because they do not fear the respectability of their science. The other, presumably larger group includes those scientists who reject it in a moderate or radical way or who openly fight against having their scientific findings and the conclusions drawn from them be evaluated by any moral norm. Once again, we are faced with the fact that McGrath is somehow familiar with the thoughts of László Ravasz.

> Science cannot answer the questions that interest us the most. It cannot strengthen itself against an unpredictable fact of the world, fate. Can you not give a satisfactory answer to where we come from and where we are going? And without this, it is impossible to find out about the most practical questions: what is the value, meaning, and purpose of life? Science cannot give an answer to the biggest and most exciting question, to the unbroken fact of the world that we encounter everywhere: the fact of creation. Will his explanations of existence remain half-baked until he can say what life is and what being is? Man will never get answers to all these questions anywhere else than from religion. Faith, therefore, has the importance of explaining the world, which does not change the objective picture of the world much in terms of content, but it brings them into a new context and thereby, on the one hand, calms and reconciles the soul and, on the other hand, gives a motive that cannot be obtained from anywhere, except from religion. There is no doubt that if there are people on earth, there will always be religion.[52]

The indispensability of philosophy is confirmed by Paul Davies when he writes, "All cosmological models are constructed by augmenting the results of observations by some sort of philosophical principle."[53] It is no coincidence that he feels that way since

[51] MCGRATH 2011, 6.

[52] RAVASZ 1941, 460.

[53] DAVIES, Paul (2007): Universes Galore: Where Will It All End? In: Carr, Bernard (ed.): *Universe or Multiverse?* Cambridge, University Press. 487.

"However, one of the main tasks of philosophy is to train people in the art of definition, logical analysis, and argument."[54]

In the subtitle above, it is not a mistake that the term philosophy appears before theology. Just as natural sciences, theology also needs philosophy to present its ideas about God in a logically coherent, structurally clear, generally systematic way. Without this consistency, chaos can indeed develop in any field of science.

It is also a question for Stephen Hawking: how do we know what we know, and what proves the correctness of our knowledge? In doing so, he actually poses an epistemological question, that is: (as he practices philosophy again, whereas, according to his claim), philosophy is dead.[55] John C. Lennox correctly summarizes the fundamental difference between the theological position and Hawking's approach: "The crucial difference between the Christian view and Hawking's view is that Christians do not believe that this universe is a closed system of cause and effect. They believe that it is open to the casual activity of its Creator God."[56]

The useful insight echoed in several of Gaál Botond's studies rhymes with this: theology is an "upwardly open" science, just like the world.[57] A question related to this is: are other sciences also able to remain open?

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[54] LENNOX 2011, 16.

[55] Op. cit. 29.

[56] Op cit. 42.

[57] GAÁL, Botond (2002): The World open Upwards. Truth Approaching Reality in the Scientific Thinking of the 20th Century. In: Gaál, Botond: *The Truth of Reason and the Reality of the World. Historic Development of Exact Sciences from a Christian Viewpoint.* Debrecen, DRHE. 121–148; GAÁL, Botond (2006a): Mennyire nyitott a teológia? [How Open Is Theology?]. In: Kustár, Zoltán (ed.): *Orando et Laborando. A Debreceni Református Hittudományi Egyetem 2005/2006. évi értesítője a 468. tanévről.* Debrecen, Debreceni Református Hittudományi Egyetem. 131–141; GAÁL, Botond (2006b): Az ember "fölfelé nyitott" világa [Man's "Upwardly Open" World]. In: *Theologiai Szemle*. XLIX, 2. 70–74; GAÁL, Botond (2007a): A zárt világ fölnyitása [Opening the Closed World]. In: L. Erdélyi, Margit – Peres, Imre (eds.): *Gaudium et corona. Tanulmánykötet Takács Zoltán tiszteletére 80. születésnapja alkalmából*. Komarno, Selye János Egyetem. 287–292; GAÁL, Botond (2007b): The World is Open. In: Gaál, Botond – Végh, László (eds.): *A tudományos gondolkodás nyitottsága* [Openness of the Scientific Thinking]. Debrecen, Hatvani István Teológiai Kutatóközpont – DRHE. 46–60;

John Gray points out what is, for some practitioners of natural science, the "unforgivable sin" that philosophy must be rejected and ignored. According to Gray, in the past two centuries, philosophy has not rejected the main error of Christianity, the idea that humans are radically different from animals.[58] From this approach, it is understandable why philosophy is lumped in with theology – because he did not confront theology and thus betrayed natural science. However, this confrontation still faces serious obstacles, as philosophy would probably have to reckon with itself as well – concludes László Ravasz. "Science without religion and religion without science is the eternal negation of life, the path to distortion and death."[59]

Along with the development of the natural sciences and all their positive results, we can observe the development of a dualistic view. This approach resulted in "nature" and "culture" becoming completely different fields. Michael Welker points out that this approach is incorrect: "The so-called natural and the so-called cultural factors are connected to each other by very finely interwoven, indissoluble mutual relations."[60]

This is also important from the point of view of our topic, as Ravasz formulated it in one of his sermons as follows: "[…] culture is a divine command from creation, its essence is the rule of spirit over matter, the victory of quality over quantity, its purpose is to realize and ensure God's rule. Culture: the way to God's kingdom". At the end of the sermon, he asks, "What is the image of God? The face of Christ in me. What is culture? Christ's victory over the world. What is reign? Obedience to Christ. What is the creation of the world for? To reach his goal in Christ and be glorified. What will be the end of all things? Christ is all in all."[61]

Ravasz does not defend cultural Protestantism here but practically formulates the same thing a few decades earlier that Welker also refers to. Much closer to him in time, the title of the book published in 1951 by H. Richard Niebuhr speaks for itself:

GAÁL, Botond (2012b): A keresztyén gondolkodás mint „fölfelé nyitott" rendszer [Christian Thinking as an "Upwardly Open" System]. In: *Gazdaság és Társadalom* (Special Issue. Conference Proceedings). IV. 5–15. Nyugat-Magyarországi Egyetem Kiadó.

58 LENNOX 2021, 77–78.

59 RAVASZ 1941, 460.

60 WELKER, Michael (1995): *Schöpfung und Wirklichkeit.* Neukirchen-Vluyn, Neukirchener. 88.

61 RAVASZ 1941b, 149.

Christ and Culture.[62] In this work, everything that Ravasz conveys in his sermon with his usual aphorism-like conciseness is discussed in detail.

4. Summary

In the recent decades, primarily constructive advances have been made in the field of theological sciences regarding the creation stories in Genesis. However, these have received different interpretations due to various metaphysical positions. The internal debates within the theological sciences and between various scientific fields did not bring the result that could have led to the formation of a unified vision. Some practitioners of the natural sciences took advantage of this when they made a renewed attack on theology with their movement called "new atheism" and questioned the scientific nature of theology, the correctness of its position, and even its existence. So far, the intention has not borne any fruit, but it has caused partial damage and – primarily in the secularized society – has made the good intention of getting closer to the church even more impossible. This imposes serious missionary tasks on the Church for the fulfilment of which a unified theological vision is now more urgent than ever.

Some practitioners of the natural sciences launched an assault siege not only against theology but also against philosophy. The withdrawal from philosophy led to the relativization of system theories, and this facilitated the treatment of various hypotheses as facts, the omission of proofs, and the failure of various experiments to be ignored. For some, this has come with the comfort of gaining great recognition in their science and widespread social influence, which they understandably hold dear. Most scientists dealing with the natural sciences do their research according to the principle of completely ignoring the viewpoints of philosophy and theology in the spirit of a dualistic approach, thus making their social responsibility irrelevant in terms of the use of the results discovered during their research.

The exclusion of philosophy and theology from the scientific cycle also leads to the halving of moral issues. Human culture cannot stand on the foundations of the natural sciences alone, as it also needs a solid metaphysical position, for which the Christian religion can provide a clue. This requires some kind of scientific openness in which philosophy

[62] NIEBUHR, H. Richard (1951): *Christ and Culture.* San Francisco, Harper and Row.

plays an intermediary role between theology and the natural sciences. Mutual dialogue and rapprochement are needed. This is facilitated by natural scientists who are not afraid of theology in their scientific results. Quite a few positive examples prove that it is no problem for some people to express themselves at the highest level of science and be at the same time religious, Christian, and have a thorough knowledge of theology.

László Ravasz's views on creation are very relevant. Although he did not aspire towards a holistic vision due to the philosophical background of his thinking, he used the terms of Christian theology to prophetically deal with the issue of creation in his sermons, various shorter writings, and lectures. Despite its shortcomings, the timeliness of his position is indisputable, which was manifested in the coordination of natural sciences and faith and his striving for synthesis.

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Gábor LÁNYI[1]*:*

"The Harmony of Faith and Knowledge"
Science as an Instrument of Religious Emancipation in Hungary in the 19th-20th Centuries

Abstract.

The experience of Hungarian Protestants during the Counter-Reformation was that their influential aristocratic supporters played a key role in their survival. Therefore, especially after the Austro-Hungarian Compromise of 1867, which ensured their equality of rights with Catholics, their churches instinctively sought to place their lay leaders to higher political and public offices, or vice versa, to recruit their lay and even church leaders from the ruling political elite, which created a close interdependence between the Reformed Church and the political establishment of the national liberal dualist era. Gaining positions in the political arena was also linked to gains in other areas of social life such as education, culture, and science. And vice versa: gaining influence in the fields of education, culture, and science also carried political weight and recognition and unconsciously reinforced the sense of social and legal security of the Hungarian Reformed. In our study, we present three mosaic pieces of the Hungarian Reformed connections to the academic world. The first one is an analysis of the growth of Reformed university professors between 1848 and 1945. The second is a presentation of the

[1] Associate Professor, Károli Gáspár University of the Reformed Church in Hungary, Faculty of Theology, Department of Church History, Budapest; e-mail: lanyi.gabor@kre.hu.

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thought of a Reformed scholar, church leader, and public figure, István Bernát, on the relationship between religion and science. Lastly, the third one is a discourse of confessionalist church reformers following the First World War, on the founding of their own Reformed academy of sciences.

Keywords: history of the Reformed Church in Hungary, István Bernát, Jenő Sebestyén, Hungarian Academy of Sciences, religious minorities

I.

Until 1871, the only Hungarian university was the one founded by the Jesuit Péter Pázmány in Nagyszombat in the year 1635. Consequently, this institute was run by the Jesuit order and, by definition, had a Catholic ethos and could employ only Catholic teachers.[2] After the dissolution of the Jesuit order in 1773, Maria Theresa moved the University of Nagyszombat to Buda in 1777 and transformed it into a Royal University of Science in 1780, thus officially ending its Catholic character.

Joseph II's Decree of Toleration (1781) exempted non-Catholics from reciting parts of the doctoral oath that were incompatible with their creed, thus allowing non-Catholics to obtain doctorates at the Royal Hungarian University. In 1782, Joseph II also decreed that departments could employ teachers regardless of denomination (and nationality).[3] Moreover, the enlightened absolutist monarch appointed two Lutherans and a Reformed, József Pap Fogarasi (1744–1784), as professors to the Philosophy Department of the University, which had by then been moved to Pest. Even if Fogarasi died before taking up his post, he was the first Reformed to be appointed professor at the country's state university.

[2] From 1769, it was known as the Royal Hungarian University, after its move to Pest as the Royal University of Pest, from 1873 to 1921 as the University of Budapest, from 1921 as the Royal Hungarian Pázmány Péter University, and from 1950 as Eötvös Loránd University (abbreviation: ELTE). To this day, it is one of the largest and most renowned universities in Hungary.

[3] GYŐRY, Tibor (1936): *A Királyi Magyar Pázmány Péter Tudományegyetem Története 3*. Budapest. 126–127.

After Joseph II's death (1790), Lipót II continued his brother's tolerant religious policy. Article 26 of the 1791 Law granted Protestants established denominational status, guaranteed their freedom of worship and the right to found schools, and stated that no distinction should be made in public employment on the basis of denominational affiliation.

However, the Catholic restoration that dominated the reign of the conservative Francis I prevented the appointment of new Protestants to the university for the next 50 years, arguing that the endowments established for the maintenance of the university when Maria Theresa transformed the university in 1780 came from Catholic church funds, and therefore Catholic endowments still defines the denominational character of the university.

In 1796, it was also rumoured that the royal university would be moved to Esztergom, the seat of the prince-primate, therefore the political capital of Hungarian Catholicism, where Protestant worship was not welcome. Since Joseph II had already made the appointment to public office conditional on a degree in philosophy or law, there was concern among Protestants that, although the Decree of Toleration had opened the door to Protestants to higher public office, it might now close again if Protestants refused to study in the prince-primate's seat to obtain the qualifications required by the decree, or if they were converted in the course of their studies.[4]

Therefore, the Protestants found a solution in the establishment of their own university in Pest; the Greek Orthodox Church also supported the idea. The "Projectum" of the university was developed by József Vay, Councillor of the Habsburg Governorate and Chief Elder of the Cis-Tibiscan Reformed Church District in 1796.[5] Interestingly, the project was connected with Freemasonry's intentions to found a 'Hungarian Academic Society", and it clearly fitted into the optimistic mood of those enlightened Protestants who aimed for an organizational union between their denominations, a union that would have been symbolically preceded by a jointly founded and maintained

[4] CSEKEY, Sándor (2005): Az alapítás kora (1855–1870). In: LADÁNYI, Sándor (ed.): *A Károli Gáspár Református Egyetem Hittudományi Karának története 1855–2005*. Budapest, Károli Gáspár Református Egyetem. 21.

[5] VAY, József (1796): *Primae Linae Projecta*. Ráday Archives of the Danubian Reformed Church District (RL), A/1a, vol. 6, 1796–1914. 48–56.

university. Mostly, the Reformed were those who embraced the cause, but the financial burdens of the escalating war with revolutionary France, the dithering of the Greek Orthodox Church, and, finally, the fact that the relocation of the Royal University of Pest to Esztergom was eventually dropped from the agenda made the establishment of a Protestant university in Pest at the end of the 18th century pointless, though it did not render its desire obsolete.

In the Hungarian Reform Era of the 1830s, the plan for a joint Reformed–Lutheran theological seminary in Pest was again brought up along the lines of the unionist ideas between the two Protestant churches. Through Lajos Kossuth's (1802–1894) media campaign, it became an issue of national importance, crossing denominational boundaries from 1839 to the Hungarian Revolution of 1848. The challenging period after the suppression of the 1849 War of Independence did not deter the Reformed Congregation of Pest and its pastor, Pál Török (1808–1883), from realizing the opening of the Theological Academy of Pest – the predecessor of today's Károli Gáspár University – on 10 October 1855. It is also worth mentioning that the establishment of a university had been a long-standing desire of the Hungarian Reformed for many centuries and was first formulated in the 17th century in the Principality of Transylvania. In 1622, at the initiative of Prince Gábor Bethlen, the Transylvanian Diet decreed that the Gyulafehérvár College, founded two years earlier, should be developed into an *academicum collegium*, i.e. a university. However, this ambitious plan could not be realized, as several of Bethlen's successors, especially Prince George Rákóczi I, decided to found several colleges in parallel (Gyulafehérvár, Sárospatak, Nagyvárad), rather than supporting a central university.[6]

The idea of founding a university in Transylvania was raised again by János Apáczai Csere (1625–1659) in 1658 in his proposal to Prince Ákos Barcsai. The proposal outlines for us a picture of a modern university that combines the example of contemporary Western universities with the realities of the domestic situation. It was intended to be a true university in the European sense, with four faculties (theology, liberal arts, medicine, law), the right to award academic degrees, headed by a senate of professors, with a rector elected annually, and the requirement that students of serf origin

[6] SZÖGI, László (n. d.): *A magyar felsőoktatás kezdetei 2*. Available at: https://www.kfki.hu/~cheminfo/hun/olvaso/histchem/legenda/egyetem/felso2.html (last accessed: 05.06.2024).

should receive a noble status in addition to their university diploma. A year after the submission of his petition, Apáczai died of lung disease, and the plan to found a Hungarian Reformed university was lost in the political turmoil of Transylvania of that time.[7]

In the matter of allowing non-Catholics to be appointed professors at the Royal University of Pest, only the law of the Hungarian Revolution of 1848 (Article 20 of Law 1848) – which declared equality of rights between the religions – returned to the principles of Joseph II, but due to the suppression of the Revolution, it was short-lived. It was not until after the Compromise of 1867 that József Eötvös, Minister of Religion and Public Education, relying on the liberal majority in Parliament, was able to declare the university a non-denominational state institution.

For 25 years – between 1843 and the Compromise (1867) –, only five Protestant teachers were appointed, while in the harsh authoritarian period (1849–1867) following the defeat of the War of Independence, Catholics were able to prevent even the habilitation of teachers of other denominations.[8] In fact, the Catholic Church leadership, referring to the Catholic origin of the university's endowments, tried to exert political pressure on Hungarian governments even after the Compromise in order to prevent Protestant appointments.

Even if in their case they only achieved limited success, they were able to block the Israelites completely until the early 20th century. This is why several Israelite scholars chose to convert to Protestantism (e.g. Mór Ballagi,[9] Ármin

[7] SZÖGI, László (1995): *A magyar felsőoktatás a középkori kezdetektől a nagyszombati egyetem Budára költözéséig*. Available at: https://www.mek.oszk.hu/01800/01882/01882.htm#3 (last accessed: 05.06.2024).

[8] SASHEGYI, Oszkár (1974): *Iratok a felsőoktatás történetéből 1849–1867*. Budapest, Felsőoktatási Pedagógiai Kutatóközpont. 351–352.

[9] KOVÁCS, I. Gábor (2022): Ballagi Aladár (1853–1928). Egy zsidó származású református történészprofesszor és lelkes hazafi életrajzi adattára és életútleírása. In: Kiss, Réka – Lányi, Gábor (eds.): *Hagyomány, Identitás, Történelem 2021*. Budapest, KRE. 153–154; KOVÁCS, Ábrahám (2007): Ballagi Mór és a Skót Misszió: megtérés, áttérés vagy kitérés. Egy liberális protestáns zsidó életútjának kezdete. In: *Confessio*. 31, 3. 109–125; KOVÁCS Ábrahám (2016): Egy református unitárius? Dogmatikai reflexió Ballagi Mór teológiai gondolkodásáról. In: *Credo*. 22, 1. 7–14; WAKTOR, Andrea (2006): A Ballagi család három nemzedéke. In: Kósa, László (ed.): *Reformátusok Budapesten 1*. Budapest, Argumentum – ELTE BTK. 709–720.

Vámbéry[10]) because they still had more chances of getting a university degree as a Protestant than as an Israelite.[11]

Attempts to assert denominational interests were not limited to the Budapest University but were also extended to other newly founded state universities (Kolozsvár 1871, Debrecen 1912, Bratislava 1914). In response, the Reformed Synod – referring to the fact that the Debrecen Royal University was founded on the basis of the almost 400-year-old Reformed college – was highly critical of the Catholic appointments to the Debrecen Royal University and tried to keep their numbers in check by means of political lobbying.[12]

The period was also the era of the establishment of the unified Hungarian Reformed Church. In 1881, the five traditional Hungarian Reformed church districts were formed into a unified, national church in Debrecen, not least in order to represent their interests in secular politics by an even greater, united effort. Article 20 of the 1848 Law, which became a reference point again after the Compromise, aimed not only to promote equality between the denominations but also to obtain state financial support on a par with that of the Catholics. The Reformed entered into a natural alliance with the political liberals, who wanted to weaken the conservative Catholic positions, as demonstrated by Bishop Károly Szász (1829–1905; acted as bishop from 1884 to 1903), who was State Secretary at the Ministry of Religion and Education and considered to be a potential successor of the ministerial title before his election to be a bishop:

[10] KOVÁCS, I. Gábor (2014): *Hit – Tudomány – Közélet*. Budapest, ELTE Eötvös Kiadó. 13; VÁMBÉRY, Ármin (1905): *Küzdelmeim*. Budapest, Franklin-társulat.

[11] KONRÁD, Miklós (2014): *Zsidóságon innen és túl. Zsidók vallásváltása Magyarországon a reformkortól az első világháborúig*. Budapest, MTA BTK; KOVÁCS, I. Gábor – TAKÁCS, Árpád (2021): Az akkulturációtól az asszimilációig – az összeilleszkedés változatai. Zsidó származású református egyetemi tanárok családfái a polgári korszakban és a református felekezeti-művelődési alakzat. Dunamellék és Dunántúl. In: Kiss, Réka – Lányi, Gábor (eds.): *Hagyomány, Identitás, Történelem 2020*. Budapest, KRE. 69–110.

[12] LADÁNYI, Andor (2004): Az egyházak és a felsőoktatás a dualizmus korában. In: *Századok*. 138, 1. 3–38; BOLYKI, János – LADÁNYI, Sándor (1987): A református egyház. In: Lendvai, L. Ferenc (ed.): A *magyar protestantizmus 1918–1948*. Budapest, Kossuth. 88.

> During my 18 years of service to the State, I have always sought to bring our Protestant Church and its interests into harmony with those of the State in order to protect the church's interest by this alliance. This is what I will continue to strive for because I am firmly convinced that the interests of the constitutional Hungarian state and the Hungarian nation are identical with those of the Protestant churches. The Protestant Church would misrecognize its own interest if it sought to protect its rights in anything other than an alliance with the constitutional Hungarian state. This is my conviction, and, if you like, this is my church-political creed.[13]

This "church-political creed" of Bishop Szász was the product of that three-hundred-year-old survival mode, which became an unconscious element of the Hungarian Reformed identity in response to the destructive efforts of Catholic Habsburg Counter-Reformation, and which coincides with the basic ideas of liberalism, namely that the extension of political freedoms, the creation of a free market, the solidification of public education, and the cultivation of high standards of science will lead to a better and more just life, nation, and society.

The emancipation of the Reformed in academic life took place step by step, appointment by appointment. According to the data of Gábor I. Kovács,[14] while the number of Catholics among the professors appointed before 1867 was fifteen times higher than the number of Protestants, by 1894 this multiplier had fallen to 1.89, and by 1919 (the fall of the monarchy) it had fallen to 1.83.

Between the two world wars, the Catholic surplus fell to 1.73 by 1931; between 1932 and 1944, it was only 1.43.

Of course, the new appointments are interesting indicators, as they show the continuing emancipation of Reformed people in academia, but since a professor can remain in a position for several decades, the proportion of Reformed people in the total number of professors has increased only slowly, even with the many new appointments. In 1918, for example, the proportion of all active Reformed professors was 20%.[15] This also means that in the period of 1867–1944 Catholics were slightly under-represented

[13] [author missing] (1884): Szász Károly püspöki beiktatása. In*: Protestáns Egyházi és Iskolai Lap*. 27, 44. 1415–1416.

[14] KOVÁCS, I. Gábor (2016): *Sárospatak erőterében. Magyarországi egyetemi tanárok életrajzi adattára 3*. Budapest, ELTE. 15. Chart no. 1.

[15] Op. cit. 14.

in professorial appointments, while the Reformed were slightly over-represented in relation to the denominational distribution of Hungary's population.[16]

In terms of the different universities in Hungary[17] between 1848 and 1944, despite the Protestant liberal emancipation efforts, the University of Budapest was the one that retained the most Catholic character: between 1848 and 1944, only 7.5 percent of its professors were Reformed, meanwhile in Hungary the ratio of Catholics to Reformed was 45–50 / 12–15 percent of the population between 1850 and 1910, and 65 / 21 percent from 1920 to 1944 (due to the territorial loss of the 1920 Trianon Peace Treaty).[18]

The predecessors of the Budapest University of Technology and Economics (*Műegyetem*) was more open to the Reformed, with a Reformed proportion of almost 10% (9.8), which is, of course, below the national average. The royal university of Kolozsvár, founded in 1872 in Transylvania, which became part of the Kingdom of Hungary after the 1867 Compromise again, is the most representative example of the success of liberal efforts to emancipate non-Catholics in university life: until 1920 (Trianon), 54% of the professors there were Roman Catholics, 24% Reformed, and the highest proportion of Israelites (around 6%) as well as the vast majority of Unitarian and Greek Catholic professors were also appointed here.

The Reformed orientation of the University of Debrecen (founded in 1912) has already been mentioned. This, however, only meant that the proportion of Roman Catholic professors was 35%, with 47% Reformed and 16% Lutherans. (In 1914, a university was also founded in Pozsony. Here the denominational distribution of professors was as

[16] It is interesting to note that the representation of Lutherans in professorial appointments is twice as high as their national representation (while the representation of Unitarians is three times higher). The Israelites are strongly (0.5%), the Greek Catholics and the Greek Orthodox are extremely under-represented (0.14% and 0.02%). While the under-representation of Israelites was the result of political discrimination, the Greek Orthodox and Greek Catholic denominations were associated with such ethnic groups who, unfortunately, were still poorly educated in this era. See: KOVÁCS, I. Gábor (2012): *Diszkrimináció – emancipáció – asszimiláció – diszkrimináció. Magyarországi egyetemi tanárok életrajzi adattára 1848–1944. I. Zsidó és zsidó származású egyetemi tanárok*. Budapest, ELTE.

[17] KOVÁCS 2016, 19. Chart no. 3.

[18] Magyarország vallási megoszlása [Religious Distribution in Hungary]. Available at: https://lexikon.katolikus.hu/M/Magyarorsz%C3%A1g%20vall%C3%A1si%20megoszl%C3%A1sa.html (last accessed: 05.06.2024).

follows: Catholics 54.3%; Reformed 14.3%; Lutherans 28.6% – since the university had a Lutheran faculty of theology).[19]

Finally, it may also be of interest to ask whether the denominational distribution can be related to the different scientific disciplines. Is the higher proportion of Reformed in the universities of applied sciences due to the popular belief that Calvinism was a stimulus for those working in the natural sciences? Does the Hungarian example support Max Weber's paradigm that Protestants, and especially Calvinists, are over-represented in economic fields?

The Hungarian figures[20] confirm these two statements, but not to a very convincing extent. What makes it difficult to judge is that during the period in question there was no sharp distinction between veterinary and agricultural training in Hungary. In any case, the faculty affiliations of professors show that in the period of 1848–1944, when the national average percentage of Reformed professors was around 15-17%, the percentage of professors in the faculties of natural sciences was 19.2 (Catholics: 59.6%; Lutherans: 12.3%), 18.6% in the faculties of medicine (Catholics: 61.5%; Lutherans: 15.5%), 10% in the faculties of engineering (Catholics: 69.3%; Lutherans: 16.7%), and 16.8% in the faculties of economics (and veterinary/agriculture). This is either equal to or slightly higher than their denominational share in the population.

Therefore, the Reformed were over-represented in natural sciences and economics, though not by a large margin. However, they were clearly over-represented in the humanities (20.4%) and law (19.2%). This highlights Hungarian Reformed academics' receptivity to the study of literature and law. As regards jurisprudence, we can recall what was already mentioned in the introduction, namely that since the Counter-Reformation the pursuit of higher political office had become an unconscious survival strategy of the Hungarian Reformed, and the cultivation of jurisprudence was a useful tool in this regard. On the other hand, in the context of literary studies, we can refer back to the formative humanistic traditions of the Hungarian Reformation, its

[19] The proportion of Lutherans is high due to their traditional availability to high-level education. While they accounted for only 6-7% of the population, their share of professors was 14.8% between 1844 and 1944.

[20] KOVÁCS 2016, 22–23, Chart no. 4.

mission to preserve the Hungarian language and culture alongside the struggle for national self-government and independence.

Although the figures support the Weberian paradigm or the affinity of Calvinists for natural sciences experienced in other European countries only to a slight extent, they clearly show the interest of Hungarian Reformed people in law, politics, public life,[21] and, in parallel and complementarily, in the cultivation of Hungarian language, literature, and culture.

II.

The subtle interactions between academic life, religious emancipation, and political engagement in late Dualist Hungary are well illustrated by the life and personality of István Bernát (1854–1942) and by an examination of one of his speeches more closely related to our topic.

Bernát as a Reformed Professor of Economics at the State University of Budapest, the founder of the neo-Calvinist core organization Hungarian Calvin Alliance (1908), and full member of the Hungarian Academy of Sciences (1929) was a well-known, prominent, and influential person of the Hungarian academic, secular, and church public life.

He was born in Rimaszombat in 1854,[22] studied in Vienna and Budapest, and obtained a doctorate in law in 1877. He worked for ten years in the Ministry of Agriculture, Industry, and Trade, ultimately as a ministerial secretary. He made extended study trips to Western Europe and to the United States. In the 1890s, he deepened his connections with the so-called agricultural cooperative movement, playing a role in the establishment

[21] This was also confirmed by the law academies maintained by the Reformed denomination. See: FINKEY, Ferenc (2019): *A sárospataki református jogakadémia története 1793–1923*. Sárospatak, Sárospataki Református Kollégium; HOMICSKÓ, Árpád – NÁNÁSI, László – STIPTA, István – TÖRŐ, Csaba (2019): *A Kecskeméti Református Jogakadémia Története 1875–1949*. Budapest, KRE.

[22] For Bernát's life, see: BÉRES, László Attila (2018): Korláti Bernát István. In: *Protestáns hősök. Félszáz portré az elmúlt fél évezred magyar történelméből.* Budapest, Press-Pannonica-Media – Euro Press Media. 181–184; KOVÁCS 2016, 111–126; SZÁSZ, Lajos (2023): Konzervatív kálvinizmus a 20. század első harmadában. Bernát István pályája. In: Kiss, Réka – Lányi, Gábor (eds.): *Hagyomány, Identitás, Történelem 2022*. Budapest, KRE. 185–196.

of the important Hangya ("Ant") Cooperative and the Hungarian Farmers' Association, of which he became director and president for several decades. Between 1906 and 1910, he was also Member of Parliament for his hometown.

From 1919, he was the first Professor of Agricultural Policy at the University of Budapest and the first Dean of the newly founded Faculty of Economics. Between 1925 and 1927, he was Vice-President of the Hungarian National Bank, and between 1927 and 1932 he acted as a member of the Upper House of Parliament.

He also created press publicity for the cooperative movement, founded and edited newspapers, and published extensively. In his writings and public articles, he analysed various aspects of the cooperative movement, agricultural policy, and the agricultural economy. He published shorter studies on the history and characteristics of the American, French, British, Austrian, and Russian economies and societies, universal suffrage, economic imperialism, the need for the eight-hour workday, various demographic issues (divorce and suicide rates, wealth distribution), and the general crisis of democracy in the 1930s. He translated several works on economics from English into Hungarian. He was elected a corresponding member of the Hungarian Academy of Sciences in 1906 and a full member in 1927.

He was actively involved in Reformed public life. He was a frequent speaker at the events of the Danubian Reformed Church District, a founding member, and from 1908 until his death President of the Hungarian Calvin Alliance and member of the Hungarian Protestant Literary Society.[23]

Bernát, both as a leading academic and a faithful member of his Reformed Church, tried to build a bridge between representatives of faith and science. While he commended the finite and fragmentary nature of the scientific method idealizers of science, he also commended the recognition of science and its faithful Christian cultivation to the Church. A fine example of his thinking is his speech entitled *The Harmony of Faith and Knowledge*, delivered at a meeting of the Danubian Reformed Church District on 18 October 1913, which was later published in print.[24]

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[23] Bernát put his memoirs on paper in the 1930s: BERNÁT, István (1936): Életem és törekvéseim. In: Bernát, István (ed.): *Küzdelmek és eredmények. Életrajz és emlékbeszédek*. Budapest, Bethlen. 5–150.

[24] BERNÁT, István (1914): *Hit és tudás harmóniája*. Budapest, Hornyánszky Viktor.

At the beginning of his speech, Bernát refers to the French writer Ferdinand Brunetière (1849–1906), who was a major influence in the last two decades of the 19th century and who coined the phrase "the bankruptcy of science". Following Brunetière, Bernát says that science has failed to live up to its hopes: "It has failed to enlighten us either as to the origin or as to the ultimate goal or as to the questions of 'whence' or the 'whither'." He then goes on to say that "Combe's reform",[25] that is to say, secularism in France, has not created a more cultured, a spiritually healthier, more moral, and, above all, happier France. Science is fragmented, and secularism has not made people's lives better.

According to Bernát, in Hungary and within the Reformed Church, the "weakening of religious feelings" was growing stronger, stemming from the conviction that the time of religions was over and that the future belonged to free thinking, which, "by putting ourselves in the seat of the legislature, encourages its followers with the hope of a peaceful and happy life, free of obligations".[26] For those who cherished the ideal of the omnipotence of science, he recalled the speech given by Oliver Lodge (1851–1940), President of the University of Birmingham, to a meeting of the British Association for the Advancement of Science a month before Bernát's speech.[27]

Lodge was a British physicist and writer involved in the development of, and holder of key patents for, radio. Lodge cautions those who dogmatically believe in the infallibility of science. With 30 years of distinguished and fruitful research behind him, he believes that followers of science and faith must "meet and unite at some distant stage of development".[28]

The laws of science cannot be dogma because they are subject to evolution and change. There are certain limits to reason and knowledge that cannot be ignored without repercussions. Scientists see the manifestations of life, but not life itself. The natural sciences cannot give direction on moral and aesthetic questions and cannot reveal the original causes and ultimate purposes of phenomena.

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[25] Referring to Émile Combes (1835–1921), Prime Minister of France (1902–1905), whose secularist ideologies and movement led to the 1905 law of separation of church and state in France.

[26] BERNÁT 1914, 6.

[27] LODGE, Oliver J. (1913): *Presidential Address*. Birmingham, British Association for the Advancement of Science.

[28] BERNÁT 1914, 8.

After Lodge, Bernát includes the French doctor Jean-Martin Charcot (1825–1893), known as the father of modern neurology, in his argument. Charcot was a major influence on the young Freud and also came up with the term Tourette's syndrome – named after one of his students who suffered from it –, among many other insights that have shaped modern psychology. Charcot argued that a life of faith had an impact not only on mental health but also on the body – *la foi qui guérit* 'the faith that heals'.[29]

Following the example of Lodge and Charcot, Bernát argues that the universe is greater than can be known by any single method or approach. Therefore, philosophy, aesthetics, poetry, and religious studies are necessary in addition to science for a more complete knowledge of the world. In the conclusion of this section, Bernát reaches the heights of a sermon: "True religiosity is deeply rooted in the heart of humanity and in the reality of things."[30]

Concluding his speech, Bernát returns to the ground of reality. His conclusion nicely exemplifies our earlier findings about how the Reformed Church, in alliance with the liberal state, worked for emancipation from the Catholics in both politics and science. He refers back to Article 20 of the 1848 Law, which made Reformed Christians legally equal to Catholics and entitled them to receive proportional state support from the dualist state. Because of this support, we owe it to the nation to strengthen religious feeling, faith and morals:

> The millions are given to us so that our Church can more freely and more fully fulfil its duty to strengthen religious feeling, faith, and public morals. The purpose of my presentation was to put material and entirely modern tools in the hands of those who are willing and able to fight. I sought to establish a closer link between us and the spiritual movements of a nation [Britain] that, at the forefront of economic civilization, has not for a moment forgotten that matter, economy, is not a sufficient or even a precious part of the fullness of life.[31]

Bernát's lecture also exemplifies that the intellectual elite of the Reformed Church of the era closely followed Western trends, took their inspiration from and

[29] Op. cit. 12.
[30] Op. cit. 13.
[31] Op. cit. 14.

tried to apply them to the ecclesiastical and social situation in Hungary. Noteworthy is that Bernát uses Lodge's speech only a month after it had been delivered in Birmingham.[32]

III.

Less than a decade after Bernát's speech, the Hungarian nation, society, and politics went through one of the most rapid and radical periods of change in its one-thousand-year-long history, which placed the Reformed in a completely different political, social, denominational, and academic context. The loss of the First World War, the political changes that followed, the disintegration of the 900-year-old kingdom, the chaos of the radical liberal revolution, and the communist coup d'état that overthrew it also changed the Reformed Church's view of itself and the world, and the role of the Church in the world. The shock of the Treaty of Trianon, which ended the lost Great War, likewise contributed to this.

On 4 June 1920, Hungary lost 72% of its territory, while three and a half million ethnic Hungarians found themselves separated from their motherland. The loss of the Reformed Church was also extensive. She lost around 1,100 congregations, almost one million (916,906) members,[33] half of her pastors, and hundreds of schools and teachers. The entire Transylvanian Church District and the Seminary of Kolozsvár was lost to Romania, and all the other church districts were torn up by the new state borders, and they had to form new church bodies in their new countries.

Illustrating the "Trianon-shock", let us refer to the remarks of Pál Hatos: "While during the celebrations of the 1909 Calvin Anniversary the Hungarian Reformed Church represented the largest, unified Calvinist Church in Europe, ten years after this church became the largest Protestant diaspora on the Continent."[34]

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[32] Bernát's speech is also interesting because, contrary to the Germanic cultural orientation common in the Hungarian milieu of the era, he favours French and English examples instead.

[33] RÉVÉSZ, Imre (1956): *History of the Hungarian Reformed Church*. Washington, Hungarian Reformed Federation in America. 151.

[34] HATOS, Pál (2006): Az 1909-es Kálvin-jubileum. In: Kósa, László (ed.): *Református Budapesten 1*. Budapest, Argumentum – ELTE BTK. 1163–1178.

The time of Bishop Szász's "political confession" – the alliance between the liberal constitutional state and the Hungarian Reformed – was over. The Reformed Church's loyalty to the dualist establishment and their initial insensitivity and belated response pushed the emerging working class towards the influence of the atheist ideologies of socialism and communism. The Hungarian Reformed Church found itself in an increasingly secularized society. The decline of traditional patterns of religious practice, the empty formalities of church life, and the decay in church attendance made it clear that the church needs urgent changes. In the observations of István Bogárdi Szabó: "By the time the centuries-long sought freedom of religion had been completed, the practice of religion itself had become uninteresting."[35]

Finally, an often underestimated but important factor was the sudden change in the proportion of Hungary's religious population. After Trianon, the percentage of the Reformed within Hungary rose from 14 to 21, whereas the percentage of Roman Catholics rose from 49 to 67. It means that while the number of the Reformed rose by 6, the number of Catholics rose by three-fold, i.e. 18 percent. In the new neo-baroque Christian course of the Horthy Era, a renewed and surprisingly innovative political Catholicism emerged and thrived. Their extensive estate system put the Roman Catholic Church in an advantageous position, while they used the press and the radio and involved lay people in their service in a strikingly modern way.[36] Catholicism clearly desired an exclusive state-church status, which could have diminished the Reformed Church's political, economic, and cultural impact on the society or even led to her disintegration – at least the fear of this possibility defined the mindset of Reformed leaders of this era. The Jesuits returned.

Two main trends emerged in the 1920s in the Reformed Church's responses to problems and its search for a way forward. One was the revivalist Christianity, which

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[35] BOGÁRDI SZABÓ, István (2009): Kálvin hagyománya Dunamelléken. In: Farbaky, Péter – Kiss, Réka (eds.): *Kálvin hagyománya – Református kulturális örökség a Duna mentén. A Budapesti Történeti Múzeum kiállítási katalógusa.* Budapest, Budapesti Történeti Múzeum. 20.

[36] GICZI, Zsolt (2010): Felekezeti viták a katolikusok és a protestánsok érvényesülési lehetőségeiről a Horthy-korszakban. In: *Aetas*. 15, 1. 24–42; RÉBAY, Magdolna (2003): A felekezeti kérdés az 1920-as, 1930-as évek fordulóján a *Református Figyelő* és a *Magyar Kultúra* írásaiban. In: *Kút*. 2, 3–4. 165–175.

had already arrived in Hungary at the end of the 19th century. They put emphasis on individual conversion, and they intended the renewal of traditional churches by the impact of their converted members.[37] The Movement, due to the coldness and occasional countermeasures of the official church, spread in the form of civic associations, societies, or student organizations. Home Mission was inter-confessional, placing more importance on personal faith in Jesus Christ as the Son of God than on denominational affiliation. They were the first who called themselves "general Christians", a term that was then used as a term of derision by their critics.

Therefore, as early as 1908, a more confessional church renewal group was formed, the Calvin Alliance (Kálvin Szövetség) of which István Bernát was one of the founders.[38] The Alliance and the concurrently unfolding Calvin-renaissance around the 500th anniversary of the great reformer's birth was the starting point of a new confessional Reformed identity politics,[39] which later was named by its advocates "Historic Calvinism".

After the lost world war, this confessional movement centred on the Budapest Seminary's Head of the Department of Systematic Theology, Professor Jenő Sebestyén (1884–1950).[40] Although they defined themselves as "Historic" Calvinists, their

[37] BOLYKI, János – LADÁNYI, Sándor (1999): A Magyarországi Református Egyház története 1918–1948 között. In: Barcza, József – Dienes, Dénes (eds.): *A Magyarországi Református Egyház története 1918–1990*. Sárospatak. 36–37; SIPOS, Álmos Ete (2008): *„Kérjétek az aratásnak Urát!"*. Budapest, KRE-KMTI – Harmat. 35–41; KISS, Réka (2006): Református ébredés Budapesten. In: Kósa, László (ed.): *Református Budapesten* 2. Budapest, Argumentum – ELTE BTK. 1343–1368.

[38] For more information about the Hungarian Calvin Society, see: KÓSA, László (2006): Az egyesületek a budapesti reformátusság életében. In: Kósa, László (ed.): *Református Budapesten* 1. Budapest, Argumentum – ELTE BTK. 1089; KÁDÁR, Péter (1994): Adalékok a Kálvin Szövetség történetéhez 1–2. In: *Református Egyház*. 46, 7–8. 168–169; 11. 256–258; TÓTH, Krisztina (1994): A történelmi kálvinizmus és a Kálvin Szövetség első évei. In: *Református Egyház*. 46, 7–8. 165–167; RÁCZ, Lajos (1995): 75 éve indult a Kálvinista Szemle. In: *Theológiai Szemle*. 6. 331.

[39] HATOS, Pál (2016): *Szabadkőművesből református püspök. Ravasz László élete*. Budapest, Jaffa. 80.

[40] For his life and work, see: LÁNYI, Gábor (2021): Sebestyén Jenő (1884–1950) és a történelmi kálvinizmus. In: Petrás, Éva (ed.): *A 20. századi magyar protestáns közéletiség arcképcsarnoka*. Budapest, Barankovics István Alapítvány – Gondolat Kiadó. 13–32; LÁNYI, Gábor (2022): Sebestyén Jenő, a történelmi kálvinizmus és a Soli Deo Gloria Református Diákszövetség. In: *Studia Universitatis Babeş–Bolyai, Theologia Reformata Transylvanica*. 67, 1. 226–240.

programme aimed not at the past but at the future. Sebestyén tried to introduce the political theology, methods, and practices of Abraham Kuyper's neo-Calvinism to Hungary. Following the Kuyperian thought, Sebestyén considered Calvinism not as a mere confession but as a worldview, or even a way of life. Accordingly, Calvin's scriptural understandings can be applied to all areas – "every square inch" (Kuyper) – of human individual and common life: not only to the church but to politics, society, economy, culture, art, and science.

Sebestyén was convinced that in the current situation only the "spirit of the Christian Reformed" tradition can preserve the church and the country itself, as it once saved it during the Ottoman occupation of the 16th century. Sebestyén did not want to start a new movement and did not wish to create a new theology neither. In his understanding, he just aimed to rediscover that "pure Reformed theology" that was not defiled by the spirit of rationalist and liberal theology.

In order to spread his thoughts, on 4 April 1920, Sebestyén founded a weekly newspaper named *Kálvinista Szemle* (The Calvinist Review). In his first editorial, he stated, "Our programme is nothing else than pure Calvinism itself, what we need to translate into the language of the 20th century. Our goal cannot be else than to proclaim Calvinism as a worldview and adopt its theological, ethical, church-organizational, church-political principles to every field of the Hungarian Reformed Church and Hungarian national and social life."[41]

Many ideas and movements of church reform were initiated by Sebestyén's *Kálvinista Szemle*. At one of the Review's conferences (26–27 May 1920), Gyula Forgács, the pastor of a small town (Pécel) near Budapest, delivered his lecture titled *The New Responsibilities of the Hungarian Reformed Pastors*. This was the symbolic starting point of Péceli Kör (Pécel Circle), a think tank of pastors and relevant lay people. Péceli Kör held a conference in the small village of Kunhegyes in August 1921 and declared their programme under the name *Kunhegyesi Memorandum* (The Memorandum of Kunhegyes). The social and church-political considerations of this Memorandum proved to be

[41] SEBESTYÉN, Jenő: *Magyar kálvinizmus* – cited in: NAGY, Barna (2005): A történelmi kálvinizmus korszaka (1918–1944). In: Ladányi, Sándor (ed.): *A Károli Gáspár Református Egyetem Hittudományi Karának története*. Budapest, KRE. 130.

inspirational after the end of the next world war, and it still serves as a point of reference today.

The conference at Kunhegyes is important for us because Andor Kováts (1884–1942), Professor of Law at and then Director of the Kecskemét Reformed Law Academy, proposed the formation of a Calvinist Academy of Sciences. Kováts submitted his suggestion was, but it did not receive much attention. The conference itself was more concerned with the church's empty spiritual life, church membership, and self-sustainability. There were many other proposals for reform, the establishment of a Calvinist academy of sciences being just one of them. However, Kováts's proposal is the starting point of a discussion on this kind of institution in the pages of *Kálvinista Szemle*. The idea was further embraced by Gyula Muraközy (1892–1861), who wrote several articles about it in the newspaper. Muraközy's interest in the subject is noteworthy. He was only 29 years old at the time and had been a pastor in Kecskemét for only 3 years. A decade later, he was already the assistant pastor of Bishop László Ravasz on Budapest-Kálvin Square and would become one of the most important pastors of the interwar period.[42]

The idea's original author, Kováts, also reflected on Muraközy. In his article of 14 January 1922, he wrote, "The concentration of our Calvinist scientists, their finding one another, the creation of a Reformed scientific centre is now the order of the times. (...) It is not a question of denominational aspects but of ideological aspects, which have also been pulsating in scientific works up to now."[43]

These exchanges of thoughts were followed by three years of silence. It was only in 1925 that the topic resurfaced in a report of *Kálvinista Szemle*,[44] which presented an interview of a secular political newspaper (*A mai nap*) with Pál Hegymegi Kiss (1885–1950), member of the National Assembly. Pál Hegymegi Kiss, son of a former bishop of the Tibiscan Church District (Kiss Áron), advocated the establishment of a Calvinist academy.

The report also refers to founder of the Bethlen Printing and Publishing Company, Béla Gonda (1851–1933), who two years before developed a detailed plan for the establishment of the academy and also negotiated with Reformed leaders, but so

[42] MURAKÖZY, Gyula (1921): Kálvinista tudós társaság. In: *Kálvinista Szemle*. 2, 48. 393–394.
[43] KOVÁTS, Andor (1922): Református tudós társaság. In: *Kálvinista Szemle.* 3. 18–19.
[44] [missing author] (1923): A Kálvinista Tudományos Akadémia kérdése. In: *Kálvinista Szemle*. 6. 3.

far has not been able to gather enough supporters. All this shows that the matter of founding the academy was not forgotten but was raised again and again by various circles.

Finally, Jenő Sebestyén himself also spoke out in the matter on 7 November 1925.[45] Sebestyén did not reflect on the dialogue between Kováts and Muraközy or on the plan of Hegymegi Kiss and Gonda, but wrote on the occasion of the centenary of founding the Hungarian Academy of Sciences, under the title *The Academy and the Reformed*. His article may be of interest to us in the sense that it echoes Kuyperian, neo-Calvinist ideas about the cultivation of science.

He starts by pointing out that the Academy has always had a large proportion of Reformed members. "This love of science in Calvinism is not a Hungarian specialty and is no accident" – says Sebestyén and alludes to the idea that the scientist who investigates the laws of the created world should gain a deeper and wider knowledge of the greatness of God. But the article no longer mentions the founding of a Calvinist academy of sciences. Nor is there any mention of the idea or plan of such an academy. Rather, Sebestyén urges, "our academics with a Reformed baptismal certificate should concern themselves more with the spirit and worldview of Calvinism and strive to serve the special Calvinist culture in all disciplines..."

Thus, Sebestyén's conclusion and programme was that instead of founding his own Academy, it was necessary to strengthen the denominational identity of the Reformed, who had been already part of Hungarian academic life and the Hungarian Academy of Sciences, by which denominational identity he certainly meant his own Historic Calvinist thought. "Because the situation today is that we still have, thank God, many academics with a Reformed baptismal certificate but very few academics who are specifically serving and even building on Calvinist culture."

Kálvinista Szemle went bankrupt in 1932 as a result of the Great Depression. After Sebestyén's article in 1925, there is no other substantive discussion of the foundation of the Calvinist academy or the relationship between Hungarian Calvinism and science. This is not surprising. The main topics of *Kálvinista Szemle* were spiritual, theological, and public church life topics aimed at the renewal of the Reformed Church. In addition to internal church affairs, Sebestyén offered even more space to Calvinist reflections on secular political and social issues in his newspaper. This is not surprising either since this

[45] SEBESTYÉN, Jenő (1925): Az Akadémia és a reformátusok. In: *Kálvinista Szemle*. 6. 1.

was rather dominant in Kuyper's example as well: Kuyper did not reach the top as a hobby scientist but as prime minister. Although, as we have seen, Kuyper invested significant effort into the development of his theological thinking about the scientific world, this had almost no reflection in Hungarian neo-Calvinism. We can also assume that the plan of the Calvinist academy was not aimed at cultivating science but at political validation.

Summary

The aim of our study was to present certain details about the nature of the relationship between the Hungarian Reformed denomination and science in the first half of the twentieth century. In the first third of our study, through analysing the data at hand, we gave an illustrative example of the progress how the Hungarian Reformed professors became represented at Hungarian state universities in proportion to their numbers in the population.[46]

The second relevant detail presented the life of a Hungarian Reformed scholar who was both outstanding and modern in his academic achievements, active in secular and ecclesiastical public life and in social and economic reform movements, and who did all this while promoting the interests of his nation and his Reformed denomination.

Lastly, the third element of insight highlighted the attitude of a distinct Hungarian neo-Calvinist group towards science, in the form of founding a Calvinist academy of science aimed to replace the "Catholic- and secularist-dominated" Hungarian Academy of Sciences.

The historical determination of the Hungarian Reformed to achieve emancipation in close cooperation with the national liberal state[47] is a common thread running through all these examples and eras. Another common element was the opposition to the Catholics who constituted the conservative power elite. The Hungarian Reformed fought the same battle in the field of science as they did in the fields of public education, culture, and politics, seeking emancipation and equality with the prevalent Catholics.

[46] And, as we have seen, even slightly above it.

[47] Like the Israelites, it is no coincidence that the two religious groups became natural allies during this era.

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Péter SZENTPÉTERY[1]*:*

Some Indispensable Theological Questions about Darwin's Work and Testimony

Abstract.

The author gives a summary based on his habilitation thesis and other works on the origin of Darwin's theory of evolution and the theological questions raised by it. Even if the assumed mechanism of the origin of living beings (and of life) has changed much since the publishing of the *Origin* (1859), the basic theological questions must always be asked anew. Darwin himself was not an atheist but an agnostic, more or less deist according to his own confession. He could not fully explain away the Creator but tried to minimize his role because of the evil in nature, i.e. the problem of theodicy. Ironically, even if certain questions raised by the theory/doctrine of evolution seem quite logical and obvious, they are often neglected or omitted in theological works on creation. It is not enough to say that creation and evolution are compatible because the fact of creation and the method of creation should be discerned: one is a religious belief/testimony and the other a scientific theory. The real question is whether and how the supernatural can be detected. To believe in the resurrection of Christ and humans has any meaning only on condition

[1] Emeritus Associate Professor, Lutheran Theological University, Department of Science of Religion and Society, Budapest; e-mail: peter.szentpetery@lutheran.hu

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that this present life subject to death is of supernatural origin without any alternative. The whole Scripture teaches this definitely: "Through him God made all things; not one thing in all creation was made without him" (John 1:3). Christian creation faith must be qualitatively different from "attaching" the Creator to the contemporary majority hypothesis of origin or "fitting" him into its framework. Ultimately, either one likes it or not, in questions of origin, humans are dependent on revelation.

Keywords: creation, Darwin, evolution, humanity, information, origin, purpose, science, theodicy, theology

The following paper, its main statements are based on the habilitation book,[2] and they have by far not lost their legitimacy since then. In addition, it takes ideas and claims of J. H. Brooke and R. Numbers[3] (mostly those of Brooke) and of others into

[2] SZENTPÉTERY, Péter (2008): *Omnia sunt facta per ipsum. Darwin hatása a teremtéshitre – teológiai és emberi kérdések* [Omnia sunt facta per ipsum. Darwin's Impact on the Faith in Creation – Theological and Human Questions]. Budapest, private edition (supported by Evangélikus Hittudományi Egyetem [Lutheran Theological University]). The subtitle is intended to express that the main problem with Darwin's theory is primarily not with (repeatable) scientific observations but with the role of the supernatural in the (living) world and especially with man's place in (and over) it. I am infinitely thankful to Prof. Ferenc Szűcs (1942–2020), professor of systematic theology at the Theological Faculty of Károli Gáspár Reformed University, Budapest, who encouraged me saying there should not be any taboo issues either in theology or in sciences.

[3] BROOKE, John Hedley (1991): *Science and Religion. Some Historical Perspectives*. Cambridge University Press. In short: BROOKE, John Hedley (2011): Modern Christianity. In: Brooke, John Hedley – Numbers, Ronald L. (eds.): *Science and Religion around the World*. Oxford University Press. 92–119; NUMBERS, Ronald L. (2006): *The Creationists. From Scientific Creationism to Intelligent Design*. Harvard University Press. They – reasonably – refrain from any firm theological statement or conviction. They try to be objective, what practically means the acceptance of the evolutionary view of things, more or less respecting different approaches. Brooke does not give a personal statement on his faith, but it is clear from his basic comprehensive work and the later study that the Scripture does not and cannot give concrete impulses or ideas to the research on questions of origin. Although contemporary theories have priority, he agrees that it is not appropriate to make (Christian) faith dependent on certain theories, e.g. the Big Bang. BROOKE 2011, 92, 113. In the introduction of his monumental work, Numbers briefly describes his change coming from "a fundamentalist

consideration. As for the history of Darwin's theory, his/its forerunners, the controversy surrounding it, and the consequences, Brooke and Numbers give a thorough, extensive, and colourful picture inspiring for further research and reflection.[4] They are, however, not explicitly theological works, although not without theological reflections from a certain position. Therefore, they offer one more reason for theological questions – sometimes in a sharpened formulation. Theological (and, as a corollary, human) questions are asked in four steps, which can only be discerned but not clearly separated:

First: Darwin's (and his forerunners' and contemporaries') controversial relationship to Christian faith that marked and has been marking the whole history of the theory.[5]

Second: the most delicate part of the theory is the relationship/connection between humanity and the animal kingdom.

Third: the main question of the theory has been around since the beginning and long before it – if there is any purpose in the history of life or the whole process of evolution is merely owing to the caprice of blind natural forces.

Fourth: can the supernatural be detected in the living world by signs of intelligent design and by applying the rules of IT to the living beings?

Finally, the – more or less rhetorical – questions shall be summarized and some conclusions drawn. Since Darwin's work was not the result of objective, unbiased research

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Seventh-Day Adventist family of ministers" labelled by a creationist lawyer as an "agnostic" in 1982. "The tag still feels foreign and uncomfortable, but it accurately reflects my theological uncertainty." 13. (Numbers's book had already been used to a small extent in the habilitation.)

[4] Brooke warns that much depends on the definition(s) of "science" and "religion", which play(s) an important or decisive role in trying to take a stand on their relationship. First: they were fully integrated in Newton's natural philosophy. Second: as the border between them has been shifted during the centuries, timeless validity cannot be attributed to modern definitions. Third: both are rooted in human concerns and human endeavour – they should not be treated as if they were entities in themselves. BROOKE 1991, 7–10.

[5] There is not a linear succession between Darwin and his precursors, and it is often not clear who are to count among them: "Although the idea of organic transformation was by then [1859] familiar, the particular mechanism that Darwin proposed, with its vivid portrait of nature red in tooth and claw, was not only unpalatable to many but also questionable in its pretensions and adequacy. The public debate was particularly animated because it was set within a larger controversy concerning the authority of Scripture." BROOKE 1991, 227–231.

– it is simply impossible in questions of origin –, theological questions shall always remain appropriate. The proper theological problem behind them is the real process of the history of salvation.

1. Darwin and God

Changes in living organisms have their (observably strict) limits, so they cannot and should not be extrapolated at one's pleasure. It remains true, even if one cannot forget that Darwin attacked the doctrine of the separate creation of every species and not the idea that the existence of the universe is to be thanked to God.[6] The question that Brooke poses has not lost and will never lose its validity: "What confidence could one place in a hypothesis that was not directly verifiable?"[7]

Neal C. Gillespie's *Darwin and the Problem of Creation* was revealing for me. In Chapter 7, *Special Creation in the* Origin*: the Theological Attack*, it reads: "The *Origin* was the work of Darwin the theist as well as Darwin the positivist, and the intermingling of positivism and theology in that great work is one of its most fascinating features."[8] And later: "The moral problem [of cruelty in nature] was greatly lessened if blind secondary forces were the direct causes of such horrors."[9] He goes on in explaining Darwin's actual problem: "In spite of his clear attempt to exonerate God from responsibility for the details of creation or to involve the creationists in a moral if His creative will and intention were insisted on, Darwin tried to look beyond the cruel world of natural selection to

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[6] Op. cit. 263.

[7] Op. cit. 286. Brooke calls attention to the success of the "hypothetico-deductive" method/ structure in physics, the wave theory of light, and the kinetic theory of gases. Still, for the living world, the question of the extent of extrapolation endures. 287.

[8] GILLESPIE, Neal C. (1979): *Charles Darwin and the Problem of Creation*. Chicago and London, The University of Chicago Press, 124. "The association of design arguments with creationist presuppositions is inflated into a historiographic principle in Gillespie's *Charles Darwin*…" BROOKE 1991, 384. So, creationist presuppositions have by definition a bad, here "inflating", affect in general. Later it turns out that they are not necessarily in the way of the truth: "The relevance of a residual theism to Darwin's own outlook is explored, against a background of encroaching positivism, by Neal C. Gillespie, *Charles Darwin* (…) 135–145." 394.

[9] GILLESPIE 1979, 126.

an end promoting the general good":[10] This general good, or at least positive balance, should be seen beyond all the cruelties of nature: "When we reflect on the struggle [for existence], we may console ourselves with the full belief that the war of nature is not incessant, that no fear is felt, that death is generally prompt, and that the vigorous, the healthy, and the happy survive and multiply."[11]

It is because of such and similar statements in *Origin* and in *Descent* that one can take them rather for theological than scientific works even if the number of observations and their systemization are amazing today as well and theological inferences only sporadic. Looking back, it does not make much difference if Darwin was mainly motivated by the problem of theodicy when writing the former or if he was confronted with it only during the work of writing.[12] Why is that "we may console ourselves with the full belief" if not because of theological considerations? Darwin wanted to exempt God from the responsibility for evil in the living world by minimizing His role in calling life or, more

[10] Op. cit. 127.

[11] Ibid. DARWIN, Charles (1859): *On the Origin of Species by Means of Natural Selection*. London, John Murray. 79. Available at: https://darwin-online.org.uk/converted/pdf/1859_Origin_F373.pdf (last accessed 17.03.2024). See his famous statement on Ichneumonidæ: "I cannot persuade myself that a beneficent & omnipotent God would have designedly created the Ichneumonidæ with the express intention of their feeding within the living bodies of caterpillars…" DARWIN, Charles (1860): Letter to Asa Gray 22 May 1860. Available at: https://www.darwinproject.ac.uk/letter/DCP-LETT-2814.xml (last accessed 17.03.2024); cf. BROOKE 1991, 278. But Darwin made a virtue of necessity for his theory: "The presence of so much pain and suffering in the world Darwin considered to be one of the strongest arguments against belief in a beneficent God. But, he added, it accorded well with his theory of natural selection." BROOKE 1991, 316.

[12] See e.g. HUNTER, Cornelius (2004): *Darwin's God. Evolution and the Problem of Evil*. Grand Rapids, Michigan, Brazos Press. The author argues that Darwin had mainly theological motivations. This is doubted e.g.: "Darwin certainly recognized that his work involved the problem of theodicy, but that is completely different from Hunter's claim that it was consideration of theodicy that led Darwin to advance his theory of evolution." NIELD, Donald (2008): Darwin's God. Review. In: *Reports of the National Center for Science Education*. 22, 1–2(Oct. 21). Available at: https://ncse.ngo/review-darwins-god (last accessed 17.03.2024). Hunter firmly insists on his conviction concerning Darwin's theological motivation: HUNTER, Cornelius (2021): Evolution as a Theological Research Program. In: *Religions*. 12, 9. 694. Available at: https://doi.org/10.3390/rel12090694 (last accessed 17.03.2024).

exactly, real living creatures to existence. It is in this way that the origin of *Origin* could be properly understood and interpreted today – i.e. as an attempt for an always up-to-date, enduring solution (or rather suppression) of the problem of theodicy. Following this view to the descent of *Descent*, its main issue, i.e. purpose, is the rejection of man's (special, separate) creation in the image of God.

Divine providence could be set aside and should be forgotten – but, in reality, the idea, the desire for it cannot be ignored. Still, "we may console ourselves with the full belief" that the Creator is "also" "clear" about the problem of theodicy – clear, not only about the problem but about the solution, too.

2. Animal Origin and a Basic Human Right

Even today, it is not so simple to escape from the main point of Samuel Wilberforce's criticism or just to ignore it: "Man's derived supremacy over the earth; man's power of articulate speech; man's gift of reason; man's free will and responsibility; man's fall and man's redemption; the incarnation of the Eternal Son; the indwelling of the Eternal Spirit, all are equally and utterly irreconcilable with the degrading notion of the brute origin of him who was created in the image of God and redeemed by the Eternal Son assuming to himself his nature."[13]

As Brooke points out, contrary to possible expectations, Darwin did not argue for the relativity of moral values: that assumption was drawn – let us say, inevitably – by others from his works.[14] The Golden Rule was for him "the highest but *natural*

[13] WILBERFORCE, Samuel (1860): ART. VII. On the Origin of Species, by means of Natural Selection; Or the Preservation of Favoured Races in the Struggle for Life. By Charles Darwin, M. A., F. R. S. London, 1860. In: *Quarterly Review*. 1860. 258. Available at: www.victorianweb.org/science/science_texts/wilberforce.htm (last accessed 22.05.2024).

[14] This is very well illustrated at the end of the last chapter (XXI) of *Descent*. "For my own part I would as soon be descended from that heroic little monkey, who braved his dreaded enemy in order to save the life of his keeper; or from that old baboon, who, descending from the mountains, carried away in triumph his young comrade from a crowd of astonished dogs – as from a savage who delights to torture his enemies, offers up bloody sacrifices, practises infanticide without remorse, treats his wives like slaves, knows no decency, and is haunted

outcome of the development of social instinct" making the foundation of moral value independent of theology.[15]

It always remains a question of conviction or bias as to which one is to be considered of greater importance: our common features with the animal kingdom or the differences from it. In the words of Karl Barth:

> The 19th century was one of unparalleled obscurity because it was a time when in the very act of leaping forward to a realization of his possibilities man became unknown to himself. At no time was it more possible or necessary to see what distinguishes him from the animal than in this age of progress (…). It was this very century which had to become that of the anthropoid ape and the ape-like man. Darwin did not make it this. But because it could not see real man for all his possibilities, it had to have its Darwin, and the scientific and theological anti-Darwinians were necessarily powerless against him. (…) If man does not know himself already, long before his attention is directed to these phenomena, he will be blind even though he sees. (…) He will always think he should convince himself that his own reality consists in what he has in common with the animal and the rest of creation generally.[16]

So, for the followers of Darwin's idea, human capability has been proven more important than human identity. God created man, but – once again – is the way in which man *really* got to this planet only the competence of science? Why do we care so much about how we got here? If we knew exactly how we were put here, it would decisively guide us as to who we are and why we are here! If (someday) our being here could be explained

by the grossest superstitions." DARWIN, Charles (1871): *The Descent of Man or Selection in Relation to Sex*. Volume II. London, John Murray. 404–405. Available at: https://darwin-online.org.uk/converted/pdf/1871_Descent_PC-Virginia-Descent-F937.2.pdf (last accessed 17.03.2024). See also: KOVÁCS, Ábrahám (2009): Intellectual Treasures of Humankind: Religion, Society and László Dapsy's Translation of *On the Origin of Species*. In: Kovács, Ábrahám – Baráth, Béla Levente (eds.): *Calvinism on the Peripheries: Religion and Civil Society on the Peripheries of Europe*. Budapest, L'Harmattan. 78–88.

[15] BROOKE 1991, 281. So, making a virtue out of necessity once more…

[16] BARTH, Karl (2001): *Church Dogmatics. Volume III. The Doctrine of Creation. Part 2* (Original title: *Die Kirchliche Dogmatik III: Die Lehre von der Schöpfung 2*. 1948). Transl. by H. Kringt – G. W. Bromiley – J. K. S. Reid – R. H. Fuller. Edinburgh, T&T Clark. 89–90.

"completely" without "being there" (i.e. the supernatural), would it matter at all what steps, what number of steps we took from the animal world?

It always remains an assumption that all the differences between animals and humans can be explained on the basis of the similarities; so, as according to Darwin and his followers, the differences developed gradually. Or, more exactly, the essential can be derived from the gradual.[17] In consistent evolutionary thinking, it makes no sense to search for an exact boundary between animals and humans (father and mother were still animals).[18]

Why has no transitional "creature" between animal and human survived? Were all of them not "fit" enough? No convincing evidence has been presented since the publication of *Origin* and *Descent*. The human family tree always has to be modified or rewritten with every new find, but the "missing link" is still the dream of the future. Is only the "fact" of evolution from molecule to man "sure"? Why? After more than one and a half century of intensive research, it does not seem that there will be any convincing evidence in the future.

Once again in the wake of Barth: the basic question of the relationship between man and the animal world is the following: What do we consider more important? Are these the anatomical, biological, behavioural similarities or the qualitative difference of thinking and creativity, far beyond those of the animals, ultimately the openness to transcendence and infinity? Is it possible that the differences can be more or properly appreciated against the background of similarities? Living with other creatures in the same ecosystem would be impossible without similar features, structures, and mechanisms.

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[17] See chapters 2–4 of *Descent*.

[18] Cf. JUNKER, Reinhard ([2]1994): *Leben durch sterben? Schöpfung, Heilsgeschichte und Evolution*. Neuhausen/Stuttgart, Hänssler. 96. Junker's year of birth is erroneously given as 1942 in NUMBERS 409. The correct date is 1956. As, e.g., for Albrecht Ritschl and his school, religious experience was "the cornerstone of theology. Human feeling and relationships were its subject matter. How humans had come to be humans was neither here nor there. Similarly, those who felt that the essence of the religious life was a sense of contact with a reality beyond the senses were unlikely to be impressed by the claims that Darwin had undermined religion. Because apes and humans had ancestors in common, it did not follow that humans were nothing but apes." BROOKE 1991, 310. The question is "only" the beginning of being "rather" human than ape-like, the beginning of created (evolved?) in the image of God…

Why not to approach the problem from the perspective of the freedom of conscience and religion? Is it not simply a basic human right to say that all of one's ancestors were human?[19] The opposite cannot be proved, only believed based on certain assumptions/axioms.[20] If someone is unable to accept his/her animal descent, let that be kept in respect. The infinitely serious question of Phillip Johnson, spiritual founder of the Intelligent Design Movement, should not be overlooked: "'For now we see in a mirror dimly' (1Cor 13:12), but in what mirror do we want to see anything at all?"[21] At the end of the last chapter of his very thought-provoking book, Brooke – arguing with Edward O. Wilson's *Sociobiology* – cautiously points to this direction. He refers to the possible foundation of the concept of universal human rights: In spite of all misuse of religion, "There has (…) never been a simpler way of getting from the brotherhood of brothers to the brotherhood of man than via an affirmation of the fatherhood of God. (…) But whether belief in the supreme worth of every human life, and the action such an ideal requires, can be sustained without reference to the transcendent, is a question unlikely to be laid to rest."[22]

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[19] In his poem *'Bunk' and the 'Monk'*, Arthur I. Brown (1875–1947), a surgeon, one of the most prominent representatives of the creationist movement in North America, concluded:
"So, we're cousins to moles, to fish and tadpoles,
Don't smile friends, beware, – that's called 'science' today.
We've a 'common ancestor' – You've heard of the quest, sir, –
His old bones they do hunt night and day.
But though hot on the trail of this mystical rail
There's no trace, of poor lost chimpanzee.
And this 'brain-stormy' theory can't answer my query, –
No one ape roosts in my family tree!" NUMBERS 2006, 75.

[20] Numbers explains that in the beginning of the last century "conservative Christians who soon marched under the banner of fundamentalism perceived a greater threat to orthodox faith than evolution: higher criticism, which treated the Bible more as a historical document than as God's inspired word." (…) A. C. Dixon, founder and first editor of *The Fundamentals*, "confessed to feeling 'a repugnance to the idea that an ape or an orang-utan was my ancestor' but expressed the willingness 'to accept the humiliating fact if proved.'" NUMBERS 2006, 52–53.

[21] Cf. JOHNSON, Phillip E. (1997): *Defeating Darwinism by Opening Minds*. Downers Grove (Ill.), InterVarsity Press. 56.

[22] BROOKE 1991, 347.

3. Evolution and Purpose

The key question of the whole debate over Darwin's and his followers' work is if there is any purpose in the history of the world, life, and humanity and, consequently, if it can be traced back to the will, the intention of a supernatural intelligence / God. So, for the elementary logic and moral sense, it is a legitimate question on Darwinism and on the present (or any future) standard cosmological model including the origin of life, living beings, and humans: Does the Creator allow men, even those denying his existence or hating him, to make a survey of his creative work to a relatively great exactness? Does it matter that the one takes him for necessary for bringing the world, life, and humanity into existence and the other does not? Even if the Book of Genesis can be interpreted more or less symbolically, it should not automatically mean that any cosmological-biological model of origin not counting on the Creator is preferable. Even if the Earth were 4.5 billion years old without doubt (although doubts are indispensable for any progress in science), should it automatically mean that the origin and the variety of life can be explained simply by blind, purposeless natural causes?

Creation and evolution are (too) often contrasted with each other as (obscure, dark) religious faith/belief versus (reliable, proven) scientific fact. The concept of evolution includes the following:

– Originally unrolling a file-roll, making the scripture visible on it;
– Formation of the living world, "development", anagenesis;
– Genetic change in a population;
– Abiogenesis is originally not included in it (today, chemical evolution is, too);
– Microevolution: at the level of species, i.e. variety;
– Macroevolution: new structures beyond species.

The key question is a – reasonable, credible – mechanism by immanent causality.[23]

[23] Cf. JUNKER 1994, Chapter 2. Strukturen evolutionärer Konzepte. 26–46.

Karl Popper explains in a very simple but ingenious way why we must be careful with observing and explaining unique, not repeatable events:

> "…we cannot hope to test a universal hypothesis nor to find a natural law acceptable to science if we are for ever confined to the observation of a unique process. The most careful observation of a caterpillar will not help us to predict its transformation into a butterfly."[24]

The same is true vice versa: the observation of a butterfly would never tell us that it was once a caterpillar. Still, we insist on imagining something similar about the universe.

The history of the world, life, and humanity can be reconstructed only in a limited way by empirical sciences. We try to infer from the present to the past by extrapolating contemporary observations and experiments. The question is "only": what observations, experiments and how far back in time.

The different levels of explanation do not necessarily exclude each other. Let it be enlightened with the help of a famous Hungarian poem:

> "Or take the wee blade of grass and consider: why does it grow if it is doomed to wither? Why does it wither if it grows again?"[25]

The physical and biological causes of the growing and withering of the grass do not exclude at all that grass came into existence with a certain purpose by an infinitely greater intelligence. And as for the poem itself: the laws of physics and chemistry do not tell us either what is written on a sheet of paper, i.e. the origin of the scripture (information; see the next part). A valid explanation can be given only with the concepts of language and authorship. The different levels of explanation are built on one another. Statements like "nothing else but", "not more than", or "merely" are in reality "nothing else but" expressions of epistemological and ontological reductionism, conscious

[24] POPPER, Karl (2002): *The Poverty of Historicism*. London – New York, Routledge. 100.

[25] BABITS, Mihály, *Esti kérdés / An Evening Question*. Transl. by István Tótfalusi. Available at: https://www.magyarulbabelben.net/works/hu/Babits_Mih%c3%a1ly-1883/Esti_k%c3%a9rd%c3%a9s/en/28992-An_Evening_Question?tr_id=545 (last accessed 17.03.2024).

restrictions.[26] There is a self-contradiction in claims like that: to take one step back, one has to transgress, exceed themselves first. László Boda illustrates the indefensibility of reductionism with a very spectacular example: The Mona Lisa was painted by a brush – but let us not stop at the level of material/instrumental cause.[27]

Alfred North Whitehead points to the contradiction given by the ability of declaring something purposeless:

> Many a scientist has patiently designed experiments for the purpose of substantiating his belief that animal operations are motivated by no purposes. He has perhaps spent his spare time in writing articles to prove that human beings are as other animals so that "purpose" is a category irrelevant for the explanation of their bodily activities, his own activities included. *Scientists animated by the purpose of proving that they are purposeless constitute an interesting subject of study*.[28]

The Hungarian Stanley L. Jáki, Templeton-Prize winner (1987) was one of the most ardent and sharpest critics of Darwin, Darwinism, and Darwinists alluding to the last sentence above from Whitehead. The main problem is their denial of purposefulness leading to naturalism, materialism, atheism.[29] – So, the explanation (away) of purpose by purposelessness serves a certain purpose, too. Or purposelessness can only be purposefully explained.[30] – But creation science is a "strategic error" because it excessively engrosses the question of *how* to the detriment of uniqueness of the doctrine of creation out of nothing.[31]

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[26] Cf. LENNOX, John (2009): *God's Undertaker. Has Science Buried God?* Oxford, Lion. 53–56.

[27] BODA, László (2008): *A programozott evolúció 1. Az ember megjelenéséig* [The Programmed Evolution 1. Until the Appearance of Man]. Budapest, L'Harmattan. 173. (László Boda (1929–2014) was professor of moral theology at the Theological Faculty of Péter Pázmány Catholic University, Budapest.).

[28] WHITEHEAD, Alfred North (1929): *The Function of Reason*. [emphasis added]. Princeton University Press. 12.

[29] JAKI, Stanley (1988): *The Savior of Science*. Washington, D. C., Regnery Gateway. 128. He says that the sharpness of the last phrase is "aimed more at Darwin and the Darwinists than at Darwinism itself".

[30] Cf. JÁKI, Szaniszló (Stanley) (2000): *Miért él a kérdés: Van-e Isten?* [Why Is the Question Alive If There Is a God?]. Budapest, Az Igazságért Alapítvány. 34–35.

[31] JAKI 1988, 198–199.

If "…with thee is the fountain of life; in thy light do we see light" (Ps 36:9) – does not it mean at first hearing that seeing light begins with regarding the Lord as the fountain of life? Can seeing light involve minimizing the role of the Lord in bringing life and living creatures into existence as Darwin meant – not being able to push him totally away from the world? Let us assume that the present (cosmological-) biological model of mainstream science is very close to reality. However, Christians must regard the Lord logically as the most important factor of evolution including the origin of life.

As a result, most theologians agree today on the following points:

- God used the method of evolution in creating the world, life, and humanity.
- There is no opposition between the testimony of the Scripture and the scientific theory of evolution because they are two separate areas or levels.
- The Holy Scripture does not want to give a scientific description, only says that God is the Creator.
- The questions of "how" belong to the natural sciences.
- It is much more beautiful or more elegant if God made/makes his creatures make themselves than if he had made a complete world in the beginning.[32]

But consequent thinking points to problems with these views:

- God always created/has always been creating along the most popular current theory…
- There are points of contacts, friction surfaces, especially relating to the human being as seen above.
- The authors of the Holy Scripture did not separate the fact and the method of creation.

Either one likes it or not, the way of creation is "also" or "partly" a theological question with regard to the simple fact that it is only the Creator who is fully aware of it!

[32] With reference to Charles Kingsley, one of the first followers of Darwin from the clergy: "Instead of a God who created as if by magic, Kingsley embraced a God so wise that He could make all things make themselves." BROOKE 1991, 293–294. "Such a God was more deserving of admiration..." BROOKE 2011, 108.

Since we cannot (re)create a world, life, and man (the latter two only from "brought material", i.e. with an already existing programme), the actual process of creation is "ex officio" the "most beautiful", "most elegant", regardless of one's taste and ideas.

The question is at what point(s) God's role, i.e. divine purpose, can be detected – providing it can be detected at all. There is no escape from the basic dilemma concerning the relationship (if there is any) between God and evolution: If evolution can be explained without God, is there any necessity for God? If evolution cannot be explained without God, is there any necessity for evolution?[33]

Two extreme forms of border crossing are possible between scientists and theologians. By scientists: proclaiming naturalistic, atheistic philosophy – or at least practical atheism under the guise of science (too often). By theologians: rejecting the truly measurable, observable under the guise of theological considerations (today very seldom).

In the traces of Darwin, Jürgen Moltmann takes into consideration that evolution, development, and amendment assumes the death of the less fit. He expresses his refusal to Teilhard de Chardin's idea that the invention of the A-bomb meant an important step in human evolution. But evolution has no redeeming force:

> Not even the best of all possible stages of evolution justifies acquiescence in evolution's victims, as the unavoidable fertilizers of that future – not even the Omega Point, with its divine fullness. There is therefore no meaningful hope for the future creation unless "the tears are wiped from every eye". But they can only be wiped away when the dead are raised and when the victims of evolution experience justice through the resurrection of nature. Evolution in its ambiguity has no such redemptive efficacy and therefore no salvific significance either. If Christ is to be thought of in conjunction with evolution, he must become evolution's redeemer.[34]

As for the criticism on Teilhard, one can only agree with Moltmann. But mostly the last sentence is very problematic. The Holy Scripture does not claim anywhere that man and the world with him are already in need of redemption just because of the

[33] Cf. JUNKER 1994, 67–68.

[34] MOLTMANN, Jürgen (1990): *The Way of Jesus Christ. Christology in Messianic Dimensions* (Original title: *Der Weg Jesu Christi. Christologie in messianischen Dimensionen*. 1989). Transl. by Margaret Kohl. London, SCMP Press. 296–297. This view is in sharp contrast to that of David Strauss's claim in the wake of Darwin that man had risen, not fallen. BROOKE 1991, 271.

method of creation, and, as a corollary, sin is "only" an additional evil![35] In other words, evolution seems purposeless because of the huge number of its victims. Thus, we can regard it as imperfect even if it is *the* divine method of the creation of a "very good" world. This is a border crossing by a theologian – but in what direction?

4. Design and Information

Purposefulness involves a clear intention, i.e. to be clear about possibly all the information to the realization of that purpose, including the design of the necessary means. Therefore, the idea of "God of the gaps" has never had to be taken seriously, simply because it contradicts to the Jewish-Christian concept of God: God is the origin, the basis, and the structure of being, so He cannot be the "god of the gaps" by definition because, as stated above, He is the only one who knows the whole world process.[36]

Only God can know all the "gaps" – they exist exclusively for us. Consequently, all that is was and will be necessary to bring everything into existence. As long as we do not know everything that "was" necessary for the "production" of the world, life, and the human being, the world, life, and the human being are the "gaps". We can come upon much between the centre and the edge of the Milky Way, but the pieces of the puzzle will never all fall into their right place. One can entertain the rhetorical question: when will just one piece be left? God cannot be only an appendix, a decoration, or a wrapper of the current theory(ies) of origin. The history of Darwinism / the theory of evolution – even if always updated – has testified that the Creator cannot be explained away.

[35] Brooke formulates the problem in full depth: "If man had risen, not fallen, what would be left of the scheme of redemption? How could Christ be the second Adam if there had never been a first? If human beings had been created by natural evolutionary processes, would this not place upon the divine author of those processes (rather than humankind) the responsibility for their sinful state?" BROOKE 1991, 313.

[36] Cf. BROOKE 2011, 95. A god of the gaps is "not the God of Christian theology on whom the whole universe, or indeed all universes, are deemed to depend for their being and continuing existence".

The Creator cannot be explained away because as the fountain of life He is the fountain of all the necessary information for life. Darwin wanted to refute William Paley all his life by trying to attribute the features of design in living beings and their organs to unguided natural processes – but he did not succeed. The same has been true since then, too, for the followers of Darwin. As we have seen and shall see, they simply neglect(ed) the question of the origin of information. A stone on the ground got there by chance, but this cannot be true for the watch.[37]

The problem of naturalism in the well-known words of C. S. Lewis: "It is by inferences that we build up the idea of Nature at all. Reason is given before Nature and on reason our concept of Nature depends. Our acts of inference are prior to our picture of Nature…"[38] So, Nature is not all, and it can only be an assumption or rather an attempt to escape claiming that (our) reason should also be part of Nature.

Let us continue this argumentation with Balázs Mezei: The fact that we think something regarding Nature says that we think something and we think of Nature only inside of that [framework]. So: "Everything is natural" (Nature is everything) – except stating that: "everything is natural" (Nature is everything).[39] Once again: Nature is not everything because our thinking – simply by its mere existence – does not fall under its (her) "jurisdiction".

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[37] PALEY, William ([6]1803): *Natural Theology. Evidence of the Existence and Attributes of the Deity Collected from the Appearances of Nature.* London, R. Paulder. 1–2. Available at: https://appearedtoblogly.files.wordpress.com/2011/05/paley-william-natural-theology.pdf (last accessed 18.02.2024). Brooke underlines the contrast between Aquinas's *via negativa* and Paley's claim of God's caring nature. The former "was a far cry from that position to Paley's claim that God's caring nature could be discerned in the hinges on the wings of an earwig". Aquinas rejected the practice of inferring to God's attributes from nature independently of revelation. BROOKE 1991, 195. But one can say that Paley did his work with regard to revelation – the design (and caring) inference does not contradict it at all.

[38] LEWIS, C. S. (2009): *Miracles.* Harper Collins, Adobe Digital Edition. 24. Available at: http://www.basicincome.com/bp/files/Miracles-C_S_Lewis.pdf (last accessed 18.02.2024).

[39] Cf. MEZEI, Balázs (2010): *Mai vallásfilozófia.* [Contemporary Philosophy of Religion]. Budapest, Kairosz. 107–110, 117–124. (Balázs Mezei, b. 1960, is professor of philosophy at the Pázmány Péter Catholic University and professor of Corvinus University, both in Budapest.)

But let us go back further – as far as possible – in the distinction/opposition of Nature and (our) reason, i.e. to the basic question of philosophy with Leibniz: "…the first question we can fairly ask is: Why is there something rather than nothing? After all, nothing is simpler and easier than something. Also, given that things have to exist, we must be able to give a reason why they have to exist as they are and not otherwise."[40] What is "nothing" at all? The empty space? It is something already. So, "nothing" must be "somewhere" "outside" of it… Can the idea of the possibility of non-existence be explained by immanent causes?

The design (or purpose) argument as said above cannot be refuted convincingly. The features of design are the following:

– Contingency: it did not come about automatically; it cannot be reduced to physical necessity – such as writing on a paper, chess figures on the board, or the sequence of bases in DNA.

– Complexity: not so simple that it could be explained by chance. It is inversely proportional to probability, to be compared with a sample.

– Specification: wears a pattern characteristic of intelligence.

Based on these, Complex Specified Information (CSI) can be established. Its method is reverse engineering: inference from a product to its master.[41]

As for the controversy on ID, if it is legitimate to teach it as science, Numbers gives a very well compiled survey of its main proponents, their work, and the main events until the publication of his book. In all his thorough investigation, it is only the basic question he refrains from thinking it over in depth. What if life is the result of design, regardless of ACLU's or Judge Jones's concept of science, religion, and the separation of state and church? If the world, life, and the human being are designed by a Supreme Intelligence, does it matter in what part(s) of the curriculum this option is

[40] LEIBNIZ, Gottfried Wilhelm (1989 [1714]): *Principles of Nature and Grace Based on Reason.* Transl. by Roger Ariew – David Garber. Indianapolis – Cambridge, Hackett. 210.

[41] Cf. DEMBSKI, William (1999): *Intelligent Design. The Bridge between Science & Theology.* Downers Grove (Ill.), InterVarsity Press. 105–115. Henry Newman stated in a sermon in 1839 that design arguments would convince only those who had believed in them before. BROOKE 1991, 224. Even if this is true in most cases, it does not say anything about their truth content.

recommended? Of course, no one can or should be forced to accept it, yet teaching it should not be ruled out at all.[42]

In his Theory of Universal Information (TUI), Werner Gitt has done a pioneering work in trying to formulate the laws of information at the level of natural laws:

In the theory, as for the definition of information, there is a code system based on agreement.

It cannot resemble the thing/subject to be communicated (such as a photo or painting) – to exclude doubtfulness with contingency and specification as to CSI.

Information is not a material quantity. Matter is necessary only to store it.

Information always assumes a sender and a receiver, so it comes from an intelligent source and the sender has some purpose with it.

According to our general experience, a material quantity cannot create a non-material quantity – thus life as such including man (as an information-processing system) either.[43]

In summary: No programming is known without a programmer. A programmer is not obliged to introduce himself to every user of his programme. This must be logically true for the living beings instead of claiming – from the perspective of any naturalistic, atheistic philosophy – that they make an exception.[44]

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[42] NUMBERS 2006, 373–398. Chapter 17. ACLU: American Civil Liberties Union. 13, 319, 387, 392. The first major legal test was the Kitzmiller–Dover trial in Pennsylvania in 2005. The Dover Area School District Board called the attention of biology teachers on the problems and gaps in Darwin's and other theories of evolution and recommended ID as an alternative. One of the parents asked the ACLU to intervene on their behalf against the Board. The six-week trial ended on 20 December 2005. Judge Jones III described the school board's action as a "breathtaking inanity". "Although a conservative Republican (…) and a practising Lutheran, Jones ruled that ID was 'not science' because it invoked 'supernatural causation' and failed 'to meet the essential ground rules that limit science to testable, natural explanations'. The board's promotion of it thus violated the establishment clause of the First Amendment to the U.S. Constitution, requiring the separation of church and state." 391–394.

[43] Cf. GITT, Werner (2023): *Information – The Key to Life*. (Transl. unknown). Green Forest (AR 726), Master Books. Chapter 3: 73–110, 154–158, 166–168, 208–212; Chapter 8: 221–249. Not mentioned in the English translation, but see: GITT, Werner (^{4}2016): *Information, der Schlüssel zum Leben*. Bielefeld, Christliche Literatur-Verbreitung.

[44] "Where is the sender of the information in the DNA molecules? A sender cannot be identified at all. So, is this information somehow created by molecular biology? The answer is the same as in

Again, with Balázs Mezei: "Is the ability to think about infinity just a correspondence to a brain event? But every set of physical events is finite by definition. However, the idea of absolute infinity is infinite. Therefore, this thought cannot correspond one-to-one to any set of physical events in the brain."[45] Let us add: Even the finite can only be thought of in relation to the infinite. So, this ability of thinking is an extreme, perhaps the most extreme example of the fact that information is a non-material quantity and matter is only needed to store it.

5. Summary and Conclusions – Questions Are Often More Important Than Answers

Ever since God created the world, his invisible qualities, both his eternal power and his divine nature have been clearly seen; they are perceived in the things that God has made. So, those people have no excuse at all (Rom 1:20). Keeping that in view, let us go through the more or less rhetorical questions asked in the respective parts of the present study. First of all: Is the apostle's warning just an (outdated) opinion among many others?

As for *Darwin and God*: "What confidence could one place in a hypothesis that was not directly verifiable?"[46] This is not a direct theological question, but theological considerations played an inevitable, decisive role in the birth of that not directly verifiable hypothesis; its emblematic figure originally wanted to become a priest. Why is, e.g., that "we may console ourselves with the full belief" if not because of theological considerations?[47]

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the following cases: • If we look at the wealth of information recorded in Egyptian hieroglyphics, there is nothing of the sender on any stone. We only find his traces carved in stone. But no one would claim that this information was created without a sender and without a mental/intellectual concept. • If two computers are connected to each other and exchange information and initiate certain processes, then nothing of the sender can be recognized. All the information, however, has nonetheless been thought up at some point by one (or more) intelligent programmer(s)." Op. cit. 244–245.

[45] MEZEI 2010, 144–145, note 83.

[46] BROOKE 1991, 286.

[47] GILLESPIE 1979, 127.

Since Darwin, there has been a shifting of accent in the relationship of science and faith/religion claiming that science can (fully) explain the questions of origin, too. So, is science omnipotent or "only" almost omnipotent? How much is left for God in case of "almost"? Did he really create us in the way we assume by hypotheses that are not directly verifiable? Is the way in which man got to this planet exclusively the competence of science? Why do we care so much about how we got here? The answer is very simple: If we knew exactly how we were put here, it would decisively guide us as to who we are and why we are here! If (someday) our being here could be explained "completely" without "being there" (i.e. the supernatural), would it matter at all what steps, what number of steps we took from the animal world?

As for *Animal Origin and a Basic Human Right*: one does not need to believe firmly in the doctrine of the *imago Dei* by asking with common sense: Why has no transitional "creature" between animal and human survived? Were all of them not "fit" to survive? Did they have anything to do with being created in the image of God? There has not been presented any convincing evidence for the transition between animals and humans since the publication of *Origin* and *Descent*. The human family tree always has to be modified or rewritten with every new find, but the "missing link" is still the dream of the future. Only the "fact" of evolution from molecule to man is described as unshakably "sure". Why?

One cannot emphasize enough in the wake of Barth:[48] What do we consider more important? Are these the anatomical, biological, behavioural similarities or the qualitative difference of thinking and creativity, far beyond those of the animals, ultimately the openness to transcendence and infinity? Is it possible that the differences can be more or properly appreciated against the background of similarities? Living with other creatures in the same ecosystem would be impossible without similar features, structures, and mechanisms.

Why would it not be quite legitimate to approach the problem from the perspective of the freedom of conscience and religion? Is it not simply a basic human right to say that all of one's ancestors were human? The opposite is – also – a hypothesis not directly verifiable.

[48] BARTH 2009, 89–90.

As for *Evolution and Purpose*: Taking seriously that "Through him God made all things; not one thing in all creation was made without him" (John 1:3) makes it a bit strange that the following questions can hardly be found in theological works, although they are raised by elementary logic and moral sense. Does the Creator allow men, even those denying his existence or hating him, to make a survey of his creative work to a relatively great exactness? Does it matter – and if does, how much if not all – that the one takes him for necessary for bringing the world, life and humanity into existence and the other does not? Is the question of *how* not at least a somewhat theological one just because of the simple fact that only the Creator can be fully aware of it?

If "… with thee is the fountain of life; in thy light do we see light" (Ps 36:9) – does not it mean at first hearing that seeing light begins with regarding the Lord as the fountain of life? How much light was necessary to minimize the role of the Lord in bringing life and living creatures into existence as Darwin meant – not being able to push him totally away from the world?

On the basis of Rom 1:18 ff., it is a legitimate question on what point(s) God's work, i.e. divine purpose, can be detected – providing it can be detected at all and not only assumed by those who would like to assume it. The basic dilemma concerning the relationship (if there is any) between God and evolution: If evolution can be explained without God, is there any necessity for God? If evolution cannot be explained without God, is there any necessity for evolution?[49] Today's science searches for natural causes in questions of origin, too – but when and where are they exhausted?

Why is humanity, together with the world, in need of redemption? The Holy Scripture does not claim anywhere that man and the world with him are already in need of redemption just because of the – apparently or obviously imperfect – method of creation and, as a corollary, sin is "only" an additional evil! Should Christ really be besides *redemptor hominis*, *redemptor evolutionis*, too?[50]

Last but not least, *Design and Information* continuing the previous point: As for design arguments, one can take them for either apparent or obvious. Those who take them for apparent try to explain away the imperfections of their argumentation by

[49] Cf. JUNKER 1994, 67–68.
[50] MOLTMANN 1989, 296–297.

gaps that shall be filled with the progress of science. But it follows simply from the concept of God that "gaps" in knowledge exist exclusively for us. As long as we do not know everything that "was" necessary for the "production" of the world, life, and the human being, the world, life, and the human being are the "gaps". We can come upon much here between the centre and the edge of the Milky Way, but the pieces of the puzzle will never all fall into their place. One can entertain a rhetorical question: when will just one piece be left?

What if life is the result of design, a design using the necessary information for it, regardless of any concept of science, religion, and the separation of state and church? If the world, life, and the human being are really designed by a Supreme Intelligence as the source of all the necessary information, does it matter in what part(s) of the curriculum, science, or religion this option is recommended?[51] What can prevent anyone from applying informatics, IT asking something self-evident: Where is the sender of the information in the DNA molecules? Nowhere, because he cannot be identified at all?[52] Why is the denial of the sender of information for life favoured so much by mainstream science?

Finally, all the above (and who knows how many other) questions point to one direction. Darwin's work was not the result of objective, unbiased research – it is simply impossible in questions of origin. Christianity is about the history of salvation: from the very creation of the world, life, and human being with the incarnation, life, death, and resurrection of Christ in the centre. The Holy Spirit testifies him until his second coming, which shall be followed by the creation of a new world. It is only the *real* history of the world, life, and us that matters, not any "not directly verifiable hypothesis" of us. These may contain more or less elements of truth, even if not counting on the Creator, Redeemer, and Sanctifier. However, just "only" the history of salvation cannot be redrawn or rearranged.

[51] Cf. NUMBERS 2006, 391–394.
[52] Cf. GITT 2023, 244–245.

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Péter HOLLÓ[1]*:*

Creation or Evolution? – Seventh-day Adventists and Natural Science in Hungary

Abstract.

In my study, I examine the Seventh-day Adventist theological thought from the point of view of its response to the challenges of Darwinism and how this topic is reflected in Hungary. The subject is also interesting because the founding of the Seventh-day Adventist Church (1863) and the publication of Charles Darwin's *The Origin of Species* (1859) coincide, so the church had to deal with a topic that was – and still is – a major challenge for Christianity as a whole. As we shall see from the study, unlike many Christian denominations, the Church's position has remained consistent throughout in rejecting Darwin's theory from the outset and in trying to point out its potential pitfalls on an ideological basis. Hungarian Adventist theologians have also addressed this issue in a number of works. In the first part of my study, I will describe the ideological basis for the adherence to creationism in Seventh-day Adventist theological thought. I will then explore the ways in which this conviction was expressed in the writings of Hungarian Adventist theological thinkers in the 20th and 21st centuries (e.g. Jenő

[1] Associate Professor, Rector, Sola Scriptura Theological College, Department of Church History, Biatorbágy; e-mail: hollo.peter@sola.hu.

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Szigeti, Attila Szabó). I will discuss the particular supra-denominational organization that brought together in Hungary all those researchers and scholars who argued against the theory of evolution. Finally, I will present the work of Zsuzsa Vankó, the most prominent Hungarian Seventh-day Adventist theologian on the subject.

Keywords: Adventist, Darwinism, Creationism, Hungarian, theory

The Seventh-day Adventist Church and Creationism

The Seventh-day Adventist Church was founded in the United States in 1863, following the Advent movement in Europe and North America in the first half of the 19th century. The denomination, which professes the ideological heritage of the Reformation, was established in Hungary in 1898. In 1975 and in the following years, the Hungarian Adventist community experienced a secession as a result of a faith protest movement, which led to the formation of the Christian Advent Community in 1990.

Since both denominations in Hungary define themselves as Seventh-day Adventist, for the sake of simplicity I will refer to all those mentioned in the two denominations as Adventist theologians in my study. The name of the denomination carries a dual message: the adjective 'seventh-day' refers to the fact that church members do not observe Sunday as the weekly day of rest but as the seventh day of the biblical order, the Sabbath. The term Adventist refers to the imminent return of Jesus Christ, the Second Advent.

The creation narrative of the Bible (Genesis 1–2) is emphasized in the Adventist theology. As the credo of the denomination reads, "To emphasize its importance, the Creator placed the injunction to remember this sacred memorial of His creative power in the center of the moral law as an everlasting sign and symbol of Creation."[2] The Sabbath as a weekly day of rest is emphasized in the Ten Commandments (Exodus 20:8–11 – the longest of all the commandments). However, the New Testament did not abolish it either, since Jesus spoke of it several times (Matt 24:20, Mark 2:27), and He and the early Christians celebrated the Sabbath.

[2] *Seventh-day Adventists Believe… A Biblical Exposition of 27 Fundamental Doctrines* (1988) 74. Hagerstown, Review and Herald.

Adventist theology, professing the exegetical principle of sola Scriptura (the Scripture alone), argues from the text of the Bible that the text itself allows only one interpretation. The Hebrew term *yom*, which the English text translates as 'day' when accompanied by a definite number, always means a real 24-hour day (see e.g. Gen 7:11, Exod 16:1). According to a statement in the creeds of the Church "each day (*yom*) was filled with creative activity, and then the Sabbath climaxed the Creation week. The 24-hour Sabbath day, therefore, commemorates a literal week of Creation. The fourth commandment would be meaningless were each day stretched into aeons."[3]

The Challenge of Evolutionary Theory – The Arguments of Hungarian Adventist Theologians

The Seventh-day Adventist Church first set out its own beliefs in 1931, which included an adherence to creation theory (however, Adventist exegetes had already declared their commitment to creationism before this), and this has not changed since.[4] Interestingly, Adventist theological thinking on evolutionism has also influenced American evangelicals. For a few decades, evangelicals saw the two ideas as compatible, but in the 1920s and 1930s they gradually turned away from this idea. George McCready Price, a researcher with Adventist ancestry, published an article in *Princeton Theological Review* in 1926, which led to a marked change in the theological outlook of evangelicals (in which Price argued for the rejection of evolutionism).[5]

Turning to the Hungarian aspects of the topic: the Hungarian denomination has evidently identified with this idea from the very beginning and shares the same belief in the biblical account of the creation of the Earth and the world. For example, one of the first Adventist theological works to be published in Hungarian argues in this way, citing

[3] Op. cit. 71.

[4] SZILVÁSI, József (ed.) (1997): *A hetedik napot ünneplő adventisták hitelvei. A 27 alapvető hitelv bibliai magyarázata* (Original title: *Seventh-day Adventists Believe… A Biblical Exposition of 27 Fundamental Doctrines*). Transl. by Magda Bánfiné Roóz – Krisztina Zarkáné Teremy. Budapest, Advent Kiadó. 3. József Szilvási points out here that the need to record the doctrines of faith was expressed in the church as early as 1872, and a short summary of them was prepared at the time, but no vote was taken at the level of the board.

[5] LIVINGSTONE 1997, 158–167.

several biblical verses: "The loving nature of the divine will is perfectly expressed in the fact that man is created by Christ (...) The image of God is reflected in man, because he created man in his own image."[6]

However, the theory of evolution, which appeared in the 19th century, was a significant challenge for Adventist theology, and within a short period of time it conquered the scientific world and was adopted by the vast majority of Christian denominations. Béla Gyarmati, the leading Hungarian Adventist theologian and publisher of the first half of the 20th century, refers to this theory in his work published in the 1940s: "The cherished child of unbelief: the theory of evolution, the doctrine that everything came into being by itself, through millions of years of evolution. This fallacy is widely believed. It has become the pioneer of materialism, which has a very harmful influence on the general moral level."[7] The author thus severely criticized this view, which very quickly became widely known and popular.

Adventist theologians have always tried to point out the questionable or weak points of the theory of evolution, so there are also several publications in Hungary that collect arguments and thoughts on this issue. Their basic concept is that the origin of the world cannot be investigated by scientific means because we cannot repeat the processes that took place at that time. In both cases, the theory of evolution and the theory of creation are – by definition – theories. This is the reason they essentially do not examine the questions of the origin of the world on a scientific basis but on an ideological one. In my study, I would like to present these publications.

First among the publications dealing with the question of creation or evolution should be mentioned a volume by Pastor Márta Árvai,[8] which collects the ideas of 20th-century natural scientists, including Nobel Prize-winning physicist Alfred Kastler, Nobel

[6] CONRADI, Ludwig Richard (1914): *A titok felfedezve vagy a hét pecsét feltörve* (Original title: *Das Geheimnis enthüllt oder die sieben Siegel gebrochen*. 1911). Translator unknown. Budapest, Vallásos Iratok Nemzetközi Kiadóhivatala. 15–16.

[7] GYARMATI, Béla (n. d.): *A világdráma utolsó felvonása. Az apokalipszis megrázó jelenetei* [The Final Act of the Global Drama. Shocking Scenes of the Apocalypse]. Budapest, Élet és Egészség. 177–178.

[8] ÁRVAI, Márta (2001): *Kezdetben… Új kérdésfelvetések és régi válaszok világunk eredetéről* [In the Beginning... New Questions and Old Answers about the Origins of Our World]. Budapest, BIK Könyvkiadó.

Prize-winning biochemist Albert Szent-Györgyi, biologist Jacob Segal, mathematician Hans Rohrbach, etc., and uses them to explore the idea that our current knowledge is not sufficient to answer the ultimate questions with certainty. Even the greatest representatives of natural science express their uncertainty about the origin of life, and it is therefore necessary to approach these questions with a certain caution.

Dr Imre Tokics, theologian, university professor, and lecturer at the Adventist Theological College, presents the differences between the two ideas in his book *Creation or Darwin?* in a dialogue. The dialogue between a Protestant pastor and a young university student raises questions that make the student think about the subject. One of the key ideas in the book is that in natural science "there is no single explanation that can explain how the living came from the inanimate".[9] The book also argues that to believe that life spontaneously arose on Earth on its own "requires even more than belief in a miracle".[10]

In his short paper entitled *Problems around Evolution*, the theologian and church historian Jenő Szigeti makes a similar argument. He explains that even scientists who accept the theory of evolution express the view that their opinions are "based on some kind of 'faith'", and he also points out that scientists who accept the theory of evolution are not unanimous on a number of issues.[11] Both Adventist scholars therefore try to look at this debate from a broader perspective, pointing out that it is rather difficult to take a "scientific" position on this issue, since it is not possible to repeat either the process of creation or that of the evolution.

Jenő Szigeti also argues in his work written in 2015 *(Why Saturday?*) that Sabbath is a celebration and birthday of creation. He refers to Jürgen Moltmann, who wrote about the Sabbath: "It is remarkable that in the Christian tradition, especially in the Western churches, creation is mostly presented as the work of the six days. Creation, completed on the seventh day, is heavily overshadowed or overlooked. (…) The God who

[9] TOKICS, Imre (2006): *Teremtés vagy Darwin?* [Creation or Darwin?]. Budapest, Élet és Egészség. 51–52.

[10] Ibid.

[11] SZIGETI, Jenő (1987): Problémák az evolúció körül [Problems around Evolution]. In: *Lelkésztájékoztató.* 1987/1. 29.

rests on the Sabbath, the God who blesses and celebrates, who rejoices in his own creation, and who is by that very fact the sanctifying God, is completely overshadowed."[12] This quote underlines that the question of the day of rest cannot be separated from the question of creation since the two are closely related. In his book *Creator God or Big Bang?* (2012), Peter Zarka compares the question of creation or evolution on an ideological basis and shows in detail that on this basis the two ideas cannot be brought together.

Although Adventist theological thought is not creationist in its foundations, it is worth mentioning that because of their ideological connections, Adventist book distribution also includes publications related to creationism that have been published in translation – for example, Walt Brown's *In the Beginning – The Convincing Evidence of Creation and the Flood*, a lengthy work arguing for creationism on scientific grounds. (It is available in Hungarian from 2010.)[13]

In addition, works by other foreign authors are usually also available in translation, for example works of Werner Gitt (1937–), an engineer by profession, but whose work is very important within the creationist movement. Also worth mentioning Willem J. Ouweneel (1944–) and Reinhard Junker (1956–) (both biologists and theologians), who have several works on this topic available in Hungarian. Although there are no written works related to his activities, it should be noted that the Adventist preacher József Végh has several videos available on the Internet on the subject. He has also appeared on PAX television many times.

One of the universities of the Seventh-day Adventist Church, Loma Linda University in California, has a separate institute called the Geoscience Institute, which publishes regularly (Ariel Roth, former director of the Institute, has a book entitled *Origins, Linking Science and Scripture*, available in Hungarian).[14]

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[12] MOLTMANN, Jürgen (1989): *A reménység fényei*. (Original title: *Theologie der Hoffnung*. 1964). Transl. by Sándor Szathmáry. Budapest, Református Zsinati Iroda. 321. Cited in: SZIGETI, JENŐ (2015): *Miért éppen a szombat?* [Why Saturday?]. Budapest, „Boldog Élet" Alapítvány. 6.

[13] BROWN, Walt ([8]2010): *Kezdetben – A teremtés és az özönvíz meggyőző bizonyítékai* (Original title: *In the Beginning – The Convincing Evidence of Creation and the Flood*. 2008). Transl. by Károly Sonnleitner. Budapest, BIK Könyvkiadó.

[14] NUMBERS 1993, 283.

It can be said, therefore, that Adventist book distribution is constantly striving to present literature by non-Adventist authors that may be of scientific interest to those interested in the subject of creation or evolution.

A Supra-denominational Organization: The Role of the Intelligent Design Movement

A breakthrough for Seventh-day Adventist theologians in Hungary was the formation of a national organization at the beginning of the third millennium whose members rejected the theory of evolution. This brought them together with researchers and scientists who thought along similar lines.

In 2001, a working group called the Intelligent Design Working Group (ÉRTEM) – later called the Intelligent Design Movement Association – was founded in Hungary, which is open to all scientists and theologians, regardless of denomination, who believe in creationism. According to the description on the association's website:

> Intelligent design is a scientific approach according to which the physical and biological systems observed in the universe have come into being by intelligent, purposeful design, rather than by chance, through uncontrolled natural processes. The Intelligent Design Movement (ÉRTEM) Association, which has been active since 2001, aims to bring the argument of intelligent design and the shortcomings of theory of evolution to the attention of the general public and the scientific world. To this end, the Association publishes books and films, and its members organize conferences, scientific debates, and lectures.[15]

[15] https://ertem.hu/az-ertelmes-tervezettseg-mozgalomrol/ (last accessed: 27 May 2024). „Az intelligens tervezettség az a tudományos megközelítés, amely szerint az univerzumban megfigyelhető fizikai és biológiai rendszerek intelligens, céltudatos tervezés nyomán jöttek létre, nem pedig véletlenül, irányítatlan természeti folyamatok révén. A 2001 óta működő Értelmes Tervezettség Mozgalom (Értem) Egyesület arra törekszik, hogy az intelligens tervezettség érvrendszerét, valamint az evolúcióelmélet hiányosságait megismertesse a nagyközönséggel és a tudományos világgal. Ennek érdekében az Egyesület könyveket és filmeket jelentet meg, tagjai konferenciákat és tudományos vitákat szerveznek, valamint előadásokat tartanak."

The association therefore aims to bring together all those scientists and theologians who can identify with the ideals of purposeful design and are prepared to point out the shortcomings and questionable points of evolutionary theory. Internationally, the association is not without precedent, as similar associations had already been set up in the United States and Europe.[16] The president of the association was Dr Ferenc Jeszenszky, physicist and former university lecturer, until his death in 2011, followed in his position by chemical engineer Dr Ferenc Farkas.

Several Adventist theologians and pastors participated in this association and actively contributed to the organization of conferences and the writing of studies. In 2003, the association sent a public letter to the Hungarian Minister of Education, Bálint Magyar, asking that "Textbooks in primary, secondary, and higher education institutions should mention the shortcomings of evolutionary theory and present the alternative of a superior, intelligent creator as an alternative on a par with evolution."[17] It was also argued that education would thus fulfil the requirement of ideological neutrality and that – in case this did not happen – "education would remain trapped in the trap of ideological bias".[18]

They also stated that it was not their aim to achieve the teaching of the tenets of any religion in schools (hence the letter does not contain any theological arguments). The letter also refers to the growing criticism worldwide of biology education that exclusively presents the theory of evolution. The reason given is that since Darwin's work scientists have made a number of discoveries that call into question the possibility of spontaneous, gradual evolution. Among the signatories to the public letter were Calvinist pastor Ete Zoltán Sipos, Szeged-Csanád County Bishop Endre Gyulay, and historian László Tőkéczki. In 2004, the association published a volume entitled *Science Discovers God*, which includes several studies by members of the working group and a literature review in Hungarian and English.

[16] For example, the Deluge Geology Society and the Creation Research Society. For details, see: NUMBERS 1993, 213–215.

[17] TASI, István (ed.) (2004): *A tudomány felfedezi Istent. Intelligens tervezés – az evolúcióelmélet új riválisa* [Science is Discovering God. Intelligent Design – A New Rival to Evolutionary Theory]. Felsőörs, Aeternitas Kiadó. 21–22.

[18] Ibid.

Attila Szabó (1956–), Adventist pastor and biology teacher, member of ÉRTEM, wrote three articles in this book. In his first paper, the author examines evolution from an ontological perspective, quoting Nobel Prize-winning microbiologist Salvador E. Luria, who summed up the essence of evolutionary theory as follows: "The essence of biology is evolution, and the essence of evolution is that it has neither a cause nor a goal." He then goes on to write of his own struggles in this regard:

> It was not easy to accept Darwin's recognition that all that exists, the whole, ever-changing panorama of the living world, is determined by a purely statistical force that blindly governs: natural selection... When Darwin placed man within the overall framework of biological evolution, he dashed any hope that history had any immanent purpose. However unique a man's consciousness may make him, his past and his future represent no more than the earthly career of a species. Existence therefore has no reason, no purpose, and no meaning.[19]

This quote points out that the theory of evolution raises important questions from an ideological point of view. If one accepts this theory, one becomes part of a purposeless and ultimately meaningless process – and this confronts us with the most serious questions.

Attila Szabó then uses quotes from several prominent Hungarian natural scientists (Albert Szent-Györgyi, Jenő Ernst, Tibor Gánti) to argue that there is a lot of randomness in the theory of evolution and to assume it requires a "faith" that is necessarily almost greater than the faith required to accept the biblical creation story.

In his second paper published in the volume *Science Is Discovering God*, Attila Szabó explores the question of ontogenesis and points out that we know very little about how it proceeds. According to the author's definition, quoted from a university textbook, individual development refers to the irreversible changes in form, structure, and function that living individuals undergo from the beginning of their independent

[19] LURIA, Salvador E. (1976): *Az élet befejezetlen kísérlet* (Original title: Life: The Unfinished Experiment). Transl. by Tibor Szilágyi. Budapest, Natura Kiadó. 1976. 25. Cited by: SZABÓ, Attila (2004a): *A fejlődéselmélet a véletlenről* [How Evolutionary Theory Views Coincidence]. In: TASI 2004, 135.

existence until death, and this has several periods.[20] He quotes, among others, Nobel Prize-winning geneticist Francois Jacob, who describes the speciality of the subject as follows:

> What is particularly outrageous is the demonstration of how easy it is to tamper with the very material that is the basis of all life on this planet. The idea that we should regard as the result of some cosmic tinkering what remains our most perplexing problem and our most exciting tale seems particularly inexcusable: the formation of a human being, the process by which a sperm cell and an egg cell fuse, initiating the division of the egg cell, which becomes first two cells, then four, then a little ball, then a little bag. And somewhere in this growing body, a small group of cells will individualize and multiply until they form a mass of billions of nerve cells.[21]

The author's view, based on the insights of scientists, is that individual evolution itself is a mystery and that phylogeny (the natural process of evolution of living things) is itself a conjecture. As to why and how this process works, we know little more than nothing. This, in turn, means that we are leaving the realm of exact science, which means that it would be fairer to admit that scientists are guided not by facts but by probabilities and assumptions. The author argues in his paper that the relationship between conjectures should not be turned into a law.

In his third paper, Attila Szabó points out the pitfalls of the theory of evolution in the sense that as we study this theory and the related literature more and more deeply, on a scientific level, its uncertainties become more and more visible. In the case of popular science books and textbooks at the primary or secondary school levels, we find statements that seem to be absolutely certain, but when we read literature that is written in a scientific manner, we see the uncertainties that are not hidden by the scientists who work on the subject.

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[20] MEGYERI, János – TÖRÖK, László – WÉBER, Mihály (1978): *Általános állattan*. Vol. 2. [*General Zoology*]. Budapest, Tankönyvkiadó. 336. Cited by: SZABÓ, Attila (2004b): *Az egyedfejlődés* [Ontogenesis]. In: TASI 2004, 153.

[21] JACOB, François (1986): *A lehetséges és a tényleges valóság* (Original title: *The Possible and the Actual*. 1982). Transl. by Tibor Szilágyi. Budapest, Európa Kiadó. 91–92. Cited by: SZABÓ, Attila (2004b): Az egyedfejlődés [The Ontogenesis]. In: TASI 2004, 165.

Based on the ideas of Francois Jacob, quoted above, the author calls evolution a "modern myth" in the title of his paper, because some of its theorems are difficult to verify directly, and the theory provides a comprehensive explanation of the origin and history of the world. The Nobel Prize-winning geneticist argues that "…it seems that every culture, every society needs myths, including cosmological myths. It is easy to see how these myths can contribute to the cohesion of a group of people by providing a bond of shared belief in common origins and ancestry".[22] So, again, we are in the realm of belief: the main question is what man believes about the origin of the world – because we cannot reconstruct it.

In Attila Szabó's writings, it can be observed that he does not want to address and make the reader think primarily as a theologian or an Adventist pastor but as a researcher in the field of natural science. In his arguments, he, therefore, always relies on the reasoning of natural scientists and on quotations from scientific literature.

The Work of the Theologian Zsuzsa Vankó

Zsuzsa Vankó (1945–), a college professor of theology, has explored the question of evolution and biblical creationism and their relationship to each other in several of her writings. As she was the Seventh-day Adventist theologian most concerned with this topic, we will discuss her work in more detail. In a study published in 2010, she seeks, inter alia, the answer to the question of whether "Darwin's theory and the various evolutionary theories that have been developed further can be considered a scientific explanation of the natural world based on indisputable facts or merely a kind of world model." In this regard, she quotes Barnabás Géczy, a palaeontologist and university professor, who states the following in his work *Lamarck and Darwin*:

> Darwin's theory is not only the summary and extension of observations made on his world travels but the result of very broad, bold, and independent reflections, in which philosophy and ethics played as much a part as psychology and anthropology... It is amazing how he was able to develop such a convincing theory from observations of such

[22] Op. cit. 47–48. Cited by: SZABÓ, ATTILA (2004c): *Egy modern mítosz: az evolúció* [A Modern Myth: Evolution]. In: TASI 2004, 202.

> different value and grounding... Darwin's work was published in a society fraught with tensions. The ruling class was in favour of free competition, the legitimacy of which it could see justified on a biological level… It is hardly a coincidence that the idea of selection originated in England, the most advanced capitalist country.[23]

This quotation shows that Darwin had a much broader view of the reality around us than simply seeking a scientific explanation for the origin of life. Darwin's vision is therefore inseparable from the age in which he was born. That is why we can only understand it if we look at the theory of evolution in a broader context.

Zsuzsa Vankó (who holds a degree in theology from the Lutheran University of Theology) refers in this article, as well as in her study published in 2021, to the debate that took place in the Lutheran journal *Credo* in 2009. In this study, Edit Kézdy, a biology and chemistry teacher, and Péter Szentpétery (1956–), a Lutheran theologian, clashed over the question of whether evolutionary theory and biblical creationism can be harmonized. Zsuzsa Vankó considered it essential to follow the debate and take a position on this issue. This dialogue is instructive as to whether the two views can coexist. What made the debate particularly interesting was that the two debaters belonged to the same denomination, and Adventist theology tends to follow the changes in the theology of the larger Protestant denominations and the issues at stake.

Edit Kézdy argues that evolution and biblical creationism can be reconciled because "both [theories] investigate the same reality with different purposes and different means. (...) In the same way, a Christian believer can have in his/her mind the knowledge of evolutionary biology and the belief that the order of our world, with its wonderful natural laws and the human being in it belong to God the Creator."[24] In his reply, Péter Szentpétery points out, among other things, that there is a difference between

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[23] GÉCZY, Barnabás (1982): *Lamarck és Darwin* [Lamarck and Darwin]. Budapest, Magvető Kiadó. 97, 124–134. Cited by: VANKÓ, Zsuzsa (2010): Evolúciótan és bibliai teremtéstan – alternatívát jelentenek, vagy harmóniába hozhatók? [Evolutionary Theory and Biblical Creationism – Are They Alternatives or Can They Be Brought into Harmony?]. In: *Sola Scriptura*. 2010/4. 6.

[24] KÉZDY, Edit (2009): Miért félünk Darwintól? 200 éve született Charles Darwin (1809–1882) [Why Are We Afraid of Darwin? Charles Darwin Was Born 200 Years Ago (1809–1882)]. In: *Credo*. 2009/1–2. 14.

the image of God presented to us in the Bible and the image of God "'reconciled' in one way or another with the world model developed in the wake of Darwin", and that the two cannot be reconciled.[25]

Zsuzsa Vankó argues in her cited studies that it is worthwhile to interview Darwin himself, to see how he thought about the question of God and whether he saw his own theory as compatible with the Scripture. The answer to the latter question is clearly *no*. Although Charles Darwin also studied theology and was himself much concerned with the question of God, his writings suggest that he had fundamentally abandoned faith by the end of his life (this is despite the fact that he was influenced by natural theology in his early years through William Paley).

Indeed, Zsuzsa Vankó refers to several writings by Péter Szentpétery, which give clear details from the originator of the theory of evolution. Darwin, in response to a question in a letter to him in 1879, said: "Science has nothing to do with Jesus Christ... As for myself, I do not believe that any revelation has ever been made. As far as the future life is concerned, everyone must choose for himself between conflicting, uncertain probabilities."[26]

Two years before his death, in 1880, Darwin made the following statement: "I regret to tell you that I do not believe in the Bible as divine revelation, and therefore do not believe in Jesus Christ as the Son of God."[27] On the concept of creation, he wrote: "I have long regretted having humbled myself before the public and used the term creation from the Pentateuch, by which I meant in fact that it appeared by a process wholly unknown to me."[28]

In this context, it is worth mentioning a quote from a recent volume, where an author also quotes Darwin himself. His own views were expressed by this scientist as follows: "It is difficult, almost impossible, to imagine that the vast and wonderful universe, human being and his ability to look into the past and see into the future, were created

[25] SZENTPÉTERY, Péter (2009b): Nem félek Darwintól, de fájdalmasan érint – Miért nem fogadják el sokan Darwin munkásságát és az arra épülő világmodellt? [I Am Not Afraid of Darwin, But It Hurts Me – Why Do So Many People Refuse to Accept Darwin's Work and the World Model Based on It?]. In: *Credo*. 2009/3–4. 36.

[26] SZENTPÉTERY, Péter (2009a): Bocsánat, Mr. Darwin! A Darwin-évhez [Forgive Me, Mr Darwin! For the Darwin Year]. In: *Theológiai Szemle*. 2009/2. 92–93.

[27] SZENTPÉTERY 2009b, 32–33.

[28] SZENTPÉTERY 2009a, 93.

by blind chance, by necessity. So, I am compelled to believe that the 'ultimate reason' had an intelligent brain, similar in certain features to human being's; I deserve the name of deist... For my part, I am content to call myself agnostic."[29]

On this background, taking into account Darwin's self-definition quoted above, Zsuzsa Vankó argues that the ideas of creationism and evolutionism cannot be reconciled from the perspective of either evolutionary theory or the Bible (see below the justification of the latter). Adventist theology has been consistent in this regard and has rejected theistic evolution from the beginning.

In his habilitation thesis, Péter Szentpétery points out that the so-called theistic theory of evolution was born very soon after the publication of Charles Darwin's famous work, *The Origin of Species* (1859). As early as the 1860s, Asa Gray, one of Darwin's most important early American followers (and a correspondent), expressed the conviction that belief in God and evolution could be reconciled.[30] Gray's explicit aim was to persuade scientists who accepted evolution not to follow atheism but to reckon with the existence of God as creator.[31]

Over time, the vast majority of Christian denominations accepted the theistic theory of evolution,[32] but this has led to a number of problems. Péter Szentpétery defines

[29] Darwin, Charles (1973): A fajok eredete természetes kiválasztás útján vagy a létért való küzdelemben előnyhöz jutott fajták fennmaradása. (Original title: The Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life. 1859). Transl. by Lajos Mikes – Gabriella Prekop. Budapest, Magyar Helikon. 636. Cited by: FARKAS, Péter (2022): Darwin istenhite [Darwin's Faith in God]. In: Barla, Ferenc – Könnyid, István – Szabó, Péter: *Az evolúció mint Isten teremtő logikája* [Evolution as the Creative Logic of God]. Győr, Szent Mór Perjelség. 37.

[30] The relationship between Darwin and Asa Gray is described in detail in the book by David N. Livingstone. See Livingstone 1997, 62–64.

[31] SZENTPÉTERY, Péter (2008): *Omnia sunt per facta ipsum. Darwin hatása a teremtéshitre – teológiai és emberi kérdések* [Omnia sunt per facta ipsum. Darwin's impact on creationism – theological and human issues]. Private edition (with the support of the Lutheran Theological University). 124–125.

[32] It should be noted that after the emergence of the theory of evolution, there were theologians who strongly rejected Darwin's theory, including Charles Hodge, the Presbyterian theologian who led Princeton Theological Seminary from 1851 to 1878. He summarily described evolution as atheism. See LIVINGSTONE 2014, 159.

theistic evolutionism as "the most common form of reconciling the biblical belief in creation with the current scientific model of the world. Many Christians profess to have no problem with this... The majority of theologians in the historic churches treat the evolutionary view of history as fact. They, therefore, interpret the biblical accounts in this light."[33] In her study published in 2021, Zsuzsa Vankó, in agreement with Szentpétery, points out the possible pitfalls of reconciling the two theories by quoting several biblical verses:

"Theistic evolutionism, therefore, denies not only that God personally created every detail and every living thing in the created world, but also, as a logical necessity, that God's work is a continuous sustaining work. Yet, we read such a statement in the pages of the Old Testament: 'If he set his heart upon man, if he gather unto himself his spirit and his breath; All flesh shall perish together, and man shall turn again unto dust' (Job 34:14–15 KJV)."[34]

In this paper, Zsuzsa Vankó argues that the idea of theistic evolutionism is not consistent from the perspective of biblical systematic theology. Not only in the Old Testament but also in the New Testament we can read statements with similar content: "Jesus also spoke in the present tense about God 'mak[ing] his sun to rise on the evil and on the good and send rain on the just and the unjust.' (Matt 5:45 KJV) Elsewhere in the New Testament, we read that God is 'upholding all things by the word of his power' (Heb 1:3 KJV)."[35] Creation and sustenance are, therefore, inseparable on the basis of the testimony of the biblical verses, and this is a basic tenet of Seventh-day Adventist biblical teaching.

In addition, God's infinite wisdom is also spoken of in several biblical verses, including Isaiah and Jeremiah. "Don't you know? Haven't you heard? The LORD is the eternal God, the Creator of the ends of the earth. He does not grow tired or weary; and his understanding cannot be fathomed" (Isa 40:28 ISV). "The LORD is the one who made the world by his power, who established the earth by his wisdom and

[33] Szentpétery 2008, 482–483.

[34] VANKÓ, Zsuzsa (2021): Hézagpótló isteneszme, vagy élő, teremtő Isten? A teista evolúciótan és a bibliai teremtéstan [A Substitute God Theory or a Living, Creative God? Theistic Evolution and Biblical Creationism]. In: Vankó, Zsuzsa (ed.): *Istenképek és az „élő Isten"* [Images of God and the "Living God"]. Biatorbágy, Spalding Kiadó. 24.

[35] Ibid.

stretched out the heavens by his understanding" (Jer 10:12 ISV). This is crucial because the Scripture always relates God's creative power to God's infinite wisdom. Zsuzsa Vankó claims the following in this context: "There is no revelation about how creation works, and such a thing is indeed inconceivable on the basis of the laws of nature as we know them now. God's word of command may work – in today's familiar terms – like a code. This is not to explain the inexplicable for us at present but merely to illustrate that, counting on God's infinite wisdom, it is not so inconceivable."[36]

It is also crucial that theistic evolutionism is also incompatible with many other biblical ideas. According to Zsuzsa Vankó, the idea of theistic evolution is incompatible with sin as a historical event, with the fact that the cause of death is sin (Rom 5:12), and with the fact that the Bible calls death "the enemy" (1 Cor 15:26). The evolutionary process is governed by the law of natural selection, where death is in a sense indispensable, and even promotes evolution. In Zsuzsa Vankó's opinion, "the whole system of Christian thought collapses: hamartiology, soteriology, the whole doctrine of salvation. Christ's redemptive work, his deliverance from sin and death, becomes meaningless (...) Theistic evolutionism is incompatible with Christian eschatology, too."[37]

Zsuzsa Vankó also quotes Nobel Prize-winning physicist Alfred Kastler, who was also disturbed by the incompatibility of Darwinian theory and Christian redemption theory. Kastler is frank about his struggles with this issue and refers to another world-renowned Nobel Prize-winning theologian and physician, Albert Schweitzer, who was preoccupied with the same ideas:

> The purpose of the life of certain beings is based on sending other beings to death, which also have the same purpose... Where is the divine love of which Christ speaks? These questions are profoundly disturbing, and I know that my compatriot Albert Schweitzer was also disturbed, without his faith being affected, and this is the most terrible question for me. There can be no compromise between Darwin's God, the creator of the world, who imposed on creatures the implacable and inexorable law of selection, and the loving God of Jesus.[38]

[36] Op. cit. 25.

[37] Op. cit. 26–27.

[38] KASTLER, Alfred (1980): *Az a különös anyag* (Original title: *Cette Étrange Matière*. 1976). Transl. by Károly Ladányi. Budapest, Gondolat Kiadó. 268. Cited by: VANKÓ 2021, 27.

So, as one can see, the theory of evolution can raise serious questions even among the greatest thinkers and scientists. In her 2023 article, Zsuzsa Vankó points out, among other things – as already indicated in the quoted thoughts of Barnabás Géczy –, that the idea of evolution was not based on scientific observations alone, but that the influence of the spirit of the age and certain speculative ideas also played a role in its creation. On a purely scientific basis, it is undecided whether the principle of uniformism, as conceived by Charles Lyell and which inspired much of Darwin's theory of evolution, or catastrophism is right – that is, whether human life has evolved gradually over millions and billions of years, or whether the Bible's description of creation ex nihilo, the fall and the flood can be taken as true.

According to Adventist theological thinking, from beginning to end, the biblical record is consistent in its support of the latter. Moreover, in the letter of the apostle Peter, we read a remarkable prophecy: "In the last days... they willingly are ignorant of, that by the word of God the heavens were of old, and the earth standing out of the water and in the water" (2Pet 3:3.5 KJV). Against this background, Zsuzsa Vankó asks the question, "What is the motive, the subjective reason why people deliberately reject the biblical doctrine of creation directly accomplished by God, by a unique divine power?" Her answer is that "self-centred man wants to be autonomous out of a visceral instinct. Man also finds it difficult to give the first place to God, the creator of all things, and to recognize Him as superior to himself. Man reveres and worships created things rather than the Creator (Rom 1:25)."[39] This is in line with the idea of Péter Szentpétery, who says that the reason for the "vehement rejection of short-term models of the origin of the world is that the Creator comes within reach and cannot be evaded".[40]

Conclusions

Seventh-day Adventist theological thought in Hungary can be said to be unified in the sense that the theologians we have studied consistently argue in favour of the

[39] VANKÓ, Zsuzsa (2023): *Alapvető emberi kérdéseink – bibliai válaszok. Biblikus rendszeres teológia* [Fundamental Human Questions – Biblical Answers. Biblical Systematic Theology]. Biatorbágy, Spalding Kiadó. 381–382.

[40] SZENTPÉTERY 2009b, 37–38.

theory of creation in their works, and also consider it necessary to point out that no reconciliation with the theory of evolution is possible on an ideological, biblical basis. It is also noticeable that they do not enter into scientific debates since, in their view, neither the process of creation nor the theory of evolution can be reconstructed or reproduced. In this sense, therefore, Hungarian Adventist theological thought is not creationist since it does not aim to prove the theory of creation by means of natural scientific tools at all costs – since it is not considered necessary. However, it is thought-provoking that the foundations of evolutionary thinking, which is based on the principle of continuous development, and the view of history based on it are beginning to falter today, as many leading natural scientists publish their devastating diagnoses of the state of the Earth and the serious problems of earthly civilization, which many consider to be insoluble – but this could be the subject of another study.

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Útmutató szerzőinknek

A *Studia Universitatis Babeş-Bolyai, Theologia Reformata Transylvanica* c. folyóirat szerkesztősége publikálásra elfogad a teológia vagy a vallásoktatáshoz és egyházi segítő foglalkozáshoz kapcsolódó tudományágak tárgykörében írott tudományos dolgozatokat, tanulmányokat. **Csak első közlésre** szánt kéziratokat fogadunk el (amelyek korábban más nyelven sem jelentek meg).

A szerkesztőségnek jelenleg nem áll módjában szerzői díjat fizetni a beküldött cikkekért, a szerzők tiszteletpéldányt kapnak abból a számból, amelyben írásuk megjelent.

A *Studia* évente kétszer jelenik meg (júniusban és decemberben), a kéziratok befogadása folyamatos, de a március 1. előtt leadott cikkek az első, a szeptember 1. előtt leadottak pedig a második számban jelennek meg. A cikkeket elektronikus formában (RTF formátumú állományban) kérjük elküldeni a következő email címre: **studiatrt@gmail.com.**

Formai és tartalmi követelmények 2026-tól:

a. A tanulmányok maximális terjedelme 45000 karakter (szóközökkel együtt). A terjedelem átlépése kizárólag a főszerkesztő előzetes, írásos jóváhagyásával lehetséges. Előzetes engedély hiányában, a szerkesztőség a kéziratot nem fogadja el**.** A szöveghez legalább kétezer betűs (karakteres) *angol nyelvű kivonatot kell csatolni*, mely tartalmazza a cikk angol címét és öt kulcsszót. A kivonat mellé írjon egy egysoros leírást önmagáról (akadémiai cím, munkahely, foglalkozás) és egy email címet és Orcid számot.

b. A szöveg tagolása áttekinthető legyen. A címeket úgy kell feltüntetni, hogy abból logikusan következtetni lehessen azok rangjára (javasoljuk, hogy a címeket arab számokkal lássák el: 1., 1.1., 1.2.1. stb., de a számozás nem fog megjelenni a lapban).

c. Kerüljék az alapszöveg túlzott formázását (lehetőleg csak a szükséges kiemelések legyenek, dőlt betűvel). A címeket nem kell formázni, rangjukra a számozásból következtetni lehet.

d. A magyar főszövegben mindig magyar nyelvű idézetek szerepeljenek, az idézet eredeti változatát lábjegyzetben közöljék. Használják a magyar idézőjeleket: „ ”.

Az öt sornál hosszabb idézeteket kérjük külön bekezdésben, jobb-és baloldali behúzással kiemelve közölni. Az idézeteken belüli idézetek jelölése » « jelekkel történik.

e. A cikk végén az irodalomjegyzék csak azokat a műveket tartalmazza, amelyekre a szerző az írásában valóban hivatkozott. A bibliográfiában a művek a szerzők vezetéknevének magyar ábécé szerinti betűrendjében követik egymást. Ugyanannak a szerzőnek a nevét valamennyi írása előtt ki kell írni, az egyes művek a publikálásuk éve sorrendjében követik egymást, és az ugyanabban az évben megjelent műveket az ábécé betűivel jelzik (pl. 2008a, 2008b stb.). Az egyes műveket a következőképpen kell jegyezni:

A szerzők vezetékneve áll az első helyen KISKAPITÁLIS betűkkel[1], majd a keresztneve, amelyet nem magyar szerzők esetén vessző választ el egymástól. Több szerző közös publikációja esetén a szerzők nevét nagykötőjellel kapcsoljuk[2] egymáshoz, amit szóköz előz meg és szóköz követ (pl.: TÖRÖK István – KOCSIS Elemér – SZŰCS Ferenc). Ezt követi a mű első közlésének éve zárójelben.

A név és zárójel után kettőspont áll, majd a mű címe és esetleges alcíme dőlt betűszedéssel, amit pont követ. Jön a kiadás helye, ettől vesszővel elválasztva a kiadó neve. A hivatkozást ponttal zárjuk. Általános mintaként szolgál a következő példa, ahol az írásjelek és egyes szavak szerkesztése pontosan tükrözi a leírtakat: CSALÁDNÉV Keresztnév (évszám): *Cím, Alcím,* Kiadás Helye, Kiadó Neve.

– Önálló kötet esetén CSALÁDNÉV Keresztnév (évszám): *Cím, Alcím*. Kiadás Helye, Kiadó Neve. Oldalszámok. pl.: BARTH, Karl (1924): *Wort Gottes und die Theologie*. München, Kaiser Verlag.

– Önálló kötet esetén, ha reprint kiadvány, akkor a fenti módon tüntetjük fel az eredeti kiadás adatait, és zárójelben a reprint: formula bevezetésével az új kiadás adatait kiemelés nélkül pl.: HALASY-NAGY József (1944): *A Filozófia*, Budapest, Pantheon (reprint: Budapest, Akadémiai Kiadó, 1991.)

– Önálló kötet esetén, ha nem első kiadás, a használt kiadás számát a megjelenés éve előtt kisebb, megemelt arab számmal kell jelezni. Az első kiadás évszámát nem kell feltüntetni pl.: NAGY Barna ([2]1999): *A teológiai módszer problémája az úgynevezett dialektika teológiában.* Budapest, Kálvin Kiadó.

[1] Formátum – Betűtípus – KISKAPITÁLIS, tehát NEM csupa nagybetű!

[2] Alkalmazás módja: Ctrl + a Mínusz jel a billentyűkészlet számai között, illetve Beszúrás – Szimbólumok – Különleges karakterek – Gondolatjel.

– Önálló kötet esetén, ha az fordítás, a szerző után a megjelenés évét, és lehetőleg azt is feltüntetjük az előzőek szerint, hogy hányadik kiadás, a cím után zárójelben az eredeti címet, maj a fordító nevét és az új kiadás adatait tüntetjük fel, pl.: SOGGIN, J. Alberto ([4]1987): *Bevezetés az Ószövetségbe* (Eredeti címe: Introduzione all'Antico Testamento). Fordította: Hoffmann Béla – Víg István, Budapest, Kálvin János Kiadó, 1999.

– Folyóiratban megjelent tanulmányból való idézés esetén nem az idézett közlemény, hanem a folyóirat címét írjuk dőlt betűkkel, amelyet az „In" szóval vezetünk fel, és közöljük a folyóirat fontosabb adatait (évfolyam, kötet), valamint az idézett közlemény teljes terjedelmének pontos oldalszámát. Pl.: MOLNÁR János (2008): A Tízparancsolat, In: *Studia Universitatis Babeş-Bolyai, Theologia Reformata Transylvanica*. 54. 1–2.

– Tanulmánykötetben szereplő írás esetén, vagy közös kötetben megjelent fejezet esetén a folyóiratban megjelent közleményhez hasonlóan jegyezzük, ezúttal a szerkesztő/k feltüntetésével. A szerzők vezetéknevét kiskapitálissal írjuk, a szerkesztőkét viszont nem. pl.: PÜSÖK Sarolta (2019): Interplay of Tradition and Innovation in the Transylvanian Reformed Church after 1989, In: Lukács Olga – Nagy Alpár – Péter István (szerk.): *From Movement to Inherritance – Hidden Assets from the Treasury of Hungarian Reformation*, (Refo500 Academic Studies, Volume 59, Edited by Herman J. Selderhuis). Göttingen, Vandenhoeck & Ruprecht. 185–192.

– Lexikonban szereplő szócikk esetén: PÉTER Katalin (1999): *Francisc David (szócikk),* In: Owen Chadwick (szerk.): *Oxford Encyclopedia of Reformation.* New York – London, Oxford University Press, I., 148.

– Levéltári forrásokra való hivatkozás esetén az idézett dokumentum azonosításához szükséges adatokat az illető lelőhely (levéltár és irattár) saját hivatkozási módja szerint kell feltüntetni. Egy levéltári hivatkozásnak mindenképp tartalmaznia kell a hivatkozott irat szerzőjét, címét vagy legalább rövid leírását (pl. XY jelentése), a levéltár nevét, a levéltári fond számát, azon belül a tétel és a doboz vagy köteg számát, illetve a kötegen belüli oldalszámot. Pl.: NAGY Ferenc: *Helyzetkép a Dél-Erdélyben maradt Református Anyaszentegyház életéről a II. bécsi döntéstől 1943. május 5-ig.* Magyar Nemzeti Levéltár Országos Levéltára (MNL OL), K 610 (Sajtó levéltár), 91. cs. (Dél-Erdélyi Adattár), VI/11. 11.

– Elektronikus forrásokra való hivatkozás esetén a kiadványra vonatkozó előzőekben megadott összes elérhető adatot követően fel kell tüntetni a honlap adatait és az utolsó letöltés időpontját: BENKŐ Levente: Magyar nemzetiségpolitika Észak-Erdélyben, 1940–1944, http://www.xxszazadintezet.hu/rendezvenyek/korrajz_2002_konyv-bemutato/benko_levente_eloadasa.html (utolsó megtekintés dátuma: 2009. július 31.).

Az esetleges hiányzó, az adott publikációban fel nem tüntetett bibliográfiai adatot a megfelelő helyen [szögletes] zárójelben kell jelölni teljes kiírással vagy rövidítve, pl. [hely nélkül/ h.n.], [kiadó nélkül/ k.n.], [évszám nélkül/ é.n.].

f. A lábjegyzetek a következő minták szerint készüljenek:
10 pont betűméret, normál sortávolság, sorkizárt. Minden lábjegyzetet egy mondatvégi írásjel zár le.
A *lábjegyzet-szám* és az utána következő szöveg közé egy nem törhető szóköz kerül.[3]
Az első hivatkozás alkalmával közöljük az irodalomjegyzékben szereplő teljes adatot, végül az idézet, hivatkozás pontos oldalszáma következik. Ha az idézet szövege a forrásmunkának nem egyetlen oldalán olvasható, akkor az idézet kezdő és záró oldalszámát is meg kell adni, mindig teljesen kiírva, a két oldalszám között szóközök nélkül nagykötőjel áll. (pl. 237–238.)
A második és következő hivatkozás alkalmával elég vesszővel elválasztva jegyezni a szerző vezetéknevét kiskapitálissal, zárójelben az első közlés évét, majd az oldalszámot.
Egymást követő lábjegyzetekben ugyanannak a szerzőnek ugyanazon munkája esetében megengedett az i.m. (idézett mű) rövidítés és oldalszám, amennyiben az oldalszám is azonos, egyszerűen uo. (ugyanott) jegyezhető.

g. A bibliai idézetek helyét nem lábjegyzetben, hanem a főszövegben, egyszerű zárójelben kell jelölni. A bibliai könyveket a protestáns új fordítású Biblia függelékében (első kiadás: 1975, legfrissebb kiadás: 2014) felsoroltak szerint rövidítjük.
A számozott bibliai könyvek esetében az arab könyvszám és a rövidítés között nincs szóköz, a bibliai könyv nevének rövidítése után nem áll pont (2Móz). A fejezet- és versszámok arab számok, a kettő között szóköz nélkül vessző áll, a versszám mögött nincsen pont (Ézs 1,9). Több, nem ugyanabból a fejezetből

[3] Alkalmazás módja: Shift + Ctrl + szóköz, vagy: Beszúrás – Szimbólumok – Különleges Karakterek – Nonbreaking Space

származó igehelyet pontosvessző és mögötte szóköz választ el (Lk 3,12; 12,11). Egy fejezeten belül több vers számát szóköz nélküli pont választja el, a fejezetszámot ekkor csak egyszer írjuk ki (Lk 2,2.4.11; ApCsel 2,3.8). Hosszabb szakaszok kezdő és záró versszáma között nagykötőjel áll, sem a nagykötőjel előtt, sem mögötte nem áll szóköz (Róma 8,1–12; Jel 2,2–14).

h. A közölni kívánt cikkek legkevesebb 10, legtöbb 20 oldalasak lehetnek (1 oldalt A4-es papírmérettel, mindenütt 2,5 cm margóval, 12 pontos betűmérettel és másfeles sorközzel kell számítani).

i. Amennyiben a szöveg héber és görög betűs szöveget is tartalmaz, csatolják a betűtípusokat is. Ha a szövegben képek, ábrák szerepelnek, azokat külön, nagy felbontású (javasolt érték 600 dpi, de legalább 150 dpi) JPEG képként csatolják.

j. Ha a szövegben táblázatot vagy ábrát szeretnének közölni, ezeket szerkeszthető formában, külön is szíveskedjenek csatolni. A táblázatokhoz és / vagy ábrákhoz leírást kell csatolni a következő minták szerint:

1. táblázat: *A táblázat adataira vonatkozó rövid elnevezés.*

1. ábra: *Az ábra megnevezése*.

k. A folyóiratban recenziók is publikálhatók, ezek terjedelme nem haladhatja meg az öt oldalt. Köszönettel fogadjuk az új, nem ismert, a teológia, vallásoktatás vagy lelkigondozás terén áttörő eredményeket ismertető munkák bemutatását. A recenzió elején közölni kell a méltatott könyv összes adatait (szerzők, szerkesztők, cím, kiadó, helység, évszám, oldalszám), és mellékelni kell a könyv borítóképét.

A szerkesztőségbe való beérkezésük után a cikkeket az egyetemünk kiadványaira vonatkozó belső szabályozás értelmében előbb megvizsgáljuk plágiumteszten, és a megfelelő kéziratokat elküldjük a szaklektoroknak. (Ezek listáját lásd a borító második oldalán.) A lektorálás névtelenül történik (blind review), egy cikket két szaklektor lektorál. Előfordulhat, hogy a lektorok bizonyos jobbításokhoz kössék egy-egy cikk megjelenését, javaslataikat a szerkesztőség megküldi a szerzőknek, a javított változatnak 14 napon belül kell visszaérkeznie. Amennyiben a szerző túllépi a megengedett határidőt, a cikk már csak a következő számban jelenhet meg.

A lektorálás után a cikkeket betördeljük és korrektúrázzuk, a nyomtatás előtt a szerzők PDF formátumban kefelenyomatot kapnak írásaikról, majd 48 órán belül emailen közölniük kell, hogy az a megadott formában megjelenhet. A szerző jóváhagyása nélkül a cikk nem jelenhet meg a folyóiratban.

A folyóirat megjelenése után a szerzők postán kapják meg, vagy személyesen vehetik át tiszteletpéldányaikat. A lap online változatban is megjelenik, ez már nyomtatás előtt elérhető a https://studia.reviste.ubbcluj.ro/index.php/subbtheologiareformata/issue/archive címen.

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The financial status of the journal does not allow for payments to the authors for their contributions, but every contributor receives a free copy of the issue in which his/her article was published. *Studia* is issued twice a year, namely in June and in December. There is no fixed deadline for the submission of the articles, but please be advised that every contribution sent to the board before March 1 will be published in the first issue, and articles sent until September 1 will appear in the second one.

Articles should be sent electronically, via email (in Rich Text Format) to the following address: **studiatrt@gmail.com.** Please do a proofreading of the text sent in for review, and adhere to the following format and content parameters:

a. The language of the article should be English (United Kingdom). Most common issues of using this language are: -ise v. -ize: Use the ending -ize, -ization, -izing (not -ise, -isation, -ising) as in the so-called Oxford (English Dictionary) spelling. (Note that the use of -ize instead of -ise does not include the spelling of words in British English that end in -yse such as analyse or paralyse, which come from Greek.)

b. The maximum length of studies is 45,000 characters (including spaces). Exceeding this length is only possible with the prior written approval of the editor-in-chief. Without prior approval, the editorial board will not accept the manuscript. Submitted text should have an at least two thousand characters English abstract, the English title of the publication and at least five keywords. The editorial board welcomes a Hungarian translation of the title and the keywords, yet this is discretionary. The authors should provide a one-line presentation that includes their profession, occupation, workplace and contact email and Orcid Nr.

c. The division of the text should be logical and consequent. Headings should be marked by the author in a way that the editors may differentiate them easily (numbering with Arabic numerals like 1., 1.1 etc. is an option, but will not appear in the journal).

d. The initials of the main words (except prepositions, articles, and coordinating conjunctions) in (sub)titles used/mentioned in the article as well as in the reference list should be capitalized.

e. Authors should avoid exceeded formatting of the text (only the important highlights should be formatted with italics). Titles should not be formatted, since their heading level can be deduced from the numbering or other type of marking.

f. The submitted text should only contain citations that have been translated into English. Provide the original reference in the source language in the footnotes. Citations exceeding 5 lines in length should be written in a separate paragraph and indented from left and right. Use typographers' quotes: “ ” for every citation.

g. References to books and articles have to be placed in the footnotes. Please add a bibliography at the end of the article, which includes only the references you have actually cited in your paper. These should be arranged in alphabetical order according to the main authors' last name. Should you cite several works of the same author, the sorting is done by the year of publication. The year of publication should be mentioned right after the name of the author. If your article references works from the same author published in the same year, please arrange them in alphabetical order with a small letter after the year (for instance: 2008a, 2008b, 2008c etc.)

References should be provided by applying the following guidelines:

Start with the last name of the first author, which should be written in SMALL CAPS[1]. Add a comma after the last name, then add the first author's first name followed by the year of publication in parentheses, and a colon.
If an article has multiple authors, the full names of the authors (LAST NAME written in small caps followed by a comma and the First Name in regular

[1] Please note that writing everything in UPPERCASE is not equivalent to using SMALL CAPS.

formatting having each word capitalised) are separated by an en dash preceded and followed by a blank, i.e.: ANDREWS, Dale – HEITINK, Gerben – JENNINGS, Theodore Wesley (2006): .

The name(s) of the author(s) is followed by the year of publication in parentheses and a colon, then all subsequent elements should be written as it can be seen in the examples below:

Referencing books

- Referencing an individual volume, that has one author:
  BARTH, Karl (1924): *Wort Gottes und die Theologie*. München, Kaiser Verlag. 75–79
- Referencing a reprint edition of a volume requires citing the original edition as presented above, followed by the data of the reprint in parentheses:
  LAST NAME, First Name (publishing year A): *Title.* Place of publishing A, publisher A (reprint: place of Publishing B, publisher B, 2010). page range.
- Referencing a later edition of a volume requires noting the number of the edition in superscript formatting right before the year of publishing. There is no need for mentioning the publishing year of the first edition. I.e.:
  LAST NAME, First Name ($^{\text{number if edition}}$year of publication): *Title.* Place of publishing, publisher. Page numbers.
- Referencing a translation of an individual volume requires indicating the following citation data of the original work in parentheses: original title and the number of the edition (if applicable)
  LAST NAME, First Name ($^{\text{number if edition}}$year of publication): *Title* (Original Title: Title in the Original Language).Transl. by: name of translator. Place of publishing, publisher, year of publication of the translation. Page range.

Referencing a journal or conference proceedings

- Upon citing a journal article, the title of the article is not italicised. This is followed by the "In" preposition, then a colon, and the name of the journal formatted in italics, which in turn is followed by the most important citation data pertaining to the journal (volume, issue) as well as the exact page range of the article cited:
  LAST NAME, First Name (year of publishing): Title of Article. In: *Journal Name*. Volume number, issue number. Page range.

- Upon citing conference proceedings, the pattern is similar to that of citing scientific journals, but in this case the editors of the volume have to be noted. The last name of the author is written in small caps, whereas the last name of the editors has regular formatting.
  LAST NAME A , First Name A (year of publication): Title of Proceeding. In: Last Name B, First Name B –Last Name C, First Name C (eds.): *Name of Conference Proceedings*. Place of publishing, publisher. Page range.
- Upon citing an entry from an encyclopaedia, dictionary, lexicon, or concordance:
  LASTNAME A, Firstname A (year of publication): *The Topic* (entry). In: Last Name B, First Name B (ed.): *Name of Encyclopaedia*. Place of Publishing, Publisher, Volume. Page range.

Referencing a primary source from an archive

LAST NAME, First Name: *Specific Item Title.* Name of Archive (ABBREVIATION), Box, Folder, Collection, Folio or page number. Please note that authors shall use the specific referencing system of the particular archive in order to identify the source of their work. The personnel of the specific archives is always the most competent to mark the exact way of referring to the archives.

Referencing an online source

LAST NAME, First Name: Title of the article published online. http:// correct link to the source (last accessed: date in DD.Month.YEAR format).

In case of missing citation data, these pieces of information should be substituted by square brackets in their respective places and they should include the category of the missing data. I.e.: [Publisher Missing], [Place of Publishing Missing], [Year Missing]

h. Footnotes

Use 10 pt font size, normal line spacing, justified formatting. Each footnote ends with a full stop.

The number of the footnote and the subsequent text providing the reference are separated by a nonbreaking space, which is a special character that can be inserted via the Insert–Symbol–Special Characters–Nonbreaking Space command, or the Shift + Ctrl + Space bar keyboard shortcut sequence.

When citing a source for the first time in the footnotes, you have to add the complete citation data of that specific reference followed by the exact page number of the cited excerpt. If you reference several parts of a work that has multiple pages, note the first and the last page of the work's range joined by an en dash (i.e.: 237–238.).

When citing a source for the second time, it is enough to note the last name of the author in small caps followed by the year of publication, a comma and the page number, ending in a full stop. (i.e. LAST NAME year of publication, 55.) If your article refers to several works by the same author from the same year, the last name of the author in small caps and the year of publication is followed by a small latter (i.e. 2008a), by a comma, the page number, and ended with a full stop. (i.e.: LAST NAME 2008a, 55.)

In the case of consecutive footnotes referencing the same work of the same author, you may use the Op. cit.[2] standing in for repetition of the full title of the work, followed by the page number, ending with a full stop. (i.e.: Op. cit. 22.)
In the case of consecutive footnotes referencing the same work of the same author, and the very same place in that specific work, you may use Ibid.[3] This footnote also ends with a full stop. (i.e.: Ibid.)

i. When citing a passage of scripture, include the abbreviated name of the book, the chapter number, and the verse number in round parentheses in the body of the text, and not in the footnotes. Books that have numbers preceding their name are noted with Arabic numbers, and the numbers are followed directly by the abbreviation of the name of the book without any interceding blank spaces. The abbreviation of the name of the books is not followed by a full stop within the parentheses such as in this example: (2Sam). Arabic chapter and verse numbers are separated by colons without blank spaces, and no full stop at the end of the citation within the parentheses: (Isa 1:9). The correct form of citing several verses from different chapters is by using a semicolon followed by a blank space for separating the chapters: (Luke 3:12; 12:11). Several verses cited from one chapter are delimited by full stops; in this case the chapter number is noted only once: (i.e.: Lk 2:2.4.11;

[2] It is an abbreviation of the Latin phrase *opus citatum*, meaning the work cited.
[3] It is an abbreviation of the Latin adverb *ibidem*, meaning in the same place.

Acts 2:3.8). Texts spanning over several verses are noted by using the starting and the ending verse number connected by an en dash, which is not preceded nor followed by a blank space: (i.e.: Rom 8:1–12; Rev 2:2–14).

j. Submitted papers should have the length at least 10, at most 20 pages (pages should be formatted with A4 paper size, 2,5 cm wide margins on every side, font Times New Roman with size of 12 pt and line spacing of 1,5).

k. If your text contains Hebrew or Greek characters, please attach the fonts to your email.

l. If the text contains images, please attach them separately in high resolution (preferably 600 dpi, but at least 150 dpi) JPEG format.

m. Tables and figures should be attached also separately and provided with a description following these patterns:

Table 1. *The environmental and relational characteristics and institutional network*

Figure 6. *Diagram of local characteristics regarding outsourcing companies*

The journal also accepts book reviews for publication, which should not be longer than 5 pages. Book reviews regarding new publications, which present recent results in the field of theology, religious education or pastoral care. The book review should start with the details of the presented publication (author(s), editor(s), title, publisher, place, year, number of pages) and the scanned image of the cover should be attached.

After we receive the submitted papers, we send them to the reviewers (see their list on the inside cover page). The board uses blind reviewing, one article is reviewed by 2 reviewers. It is possible that reviewers would request the author to improve the article, their suggestions will be sent to the author, and the revised version of the article should arrive back to the editors in 14 days. If the author misses this deadline and does not send the revised version back, the article will not be published in the upcoming issue, yet it may be published in a future one.

After reviewing the texts in accordance with our university's internal policy on publications, we will first carry out a plagiarism test and identify the appropriate manuscripts, and only thereafter will they be edited and proofread, following which the final version of the text is sent in PDF format to the authors. This copy should be approved in 48 hours by the author. Without this approval, the article will not be published.

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