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From Duns Scotus to Early Modern Scottish Philosophy. A History of Unexpected Legacies and Flourishing Convergences

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Abstract:

This essay deals with Scottish intellectual history, beginning with John Duns Scotus (d. 1308) and ending on the threshold of the early Scottish Enlightenment. The essay is structured through the prism of three perspectives that complement each other. The first level is the foundational idea that Scottish intellectual life between the Fourteenth and Eighteenth centuries was given a certain unity and continuity by the early impulse of Duns Scotus' work. The crucial

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and tragic intersections of the ecclesiastical history played a major role in the development of a cultural uniqueness. The second level is that Scottish thought in this period was distinctively open to continental European influence, much more so than England, and certainly in the area of the law. Finally, there is a more implicit and submerged level according to which the specific features of the Enlightenment in Scotland were owing to this distinctively Scotist intellectual tradition and in particular to an entirely local evolution of a (reformed) scholastic orientation which - integrated with the theological novelties of Humanism and the Reformation as well as challenged by the breach of Cartesianism - ventures towards very original epistemological forms, which lay the foundations for the flowering of an exceptional period for Scotland.

Keywords: History of Scotland, Global History, History of Philosophy, Intellectual History, History of Education, History of Political and Economic Thought, History of Law, History of Mathematics, Medieval Philosophy, Early Modern Philosophy

Resum:

Aquest assaig tracta sobre la història intel·lectual escocesa, començant amb John Duns Scotus (mort el 1308) i acabant en el llindar de la primera Il·lustració escocesa. L'assaig s'estructura a través del prisma de tres perspectives que es complementen. El primer nivell és la idea fundacional que la vida intel·lectual escocesa entre els segles XIV i XVIII va rebre certa unitat i continuïtat per l'impuls primerenc de l'obra de Duns Scotus. Les interseccions crucials i tràgiques de la història eclesiàstica van jugar un paper important en el desenvolupament d'una singularitat cultural. El segon nivell és que el pensament escocès en aquest període va estar clarament obert a la influència europea continental, molt més que Anglaterra, i sens dubte en l'àmbit de la llei. Finalment, hi ha un nivell més implícit i submergit segons el qual les característiques específiques de la Il·lustració a Escòcia es devien a aquesta tradició intel·lectual distintivament escocesa i, en particular, a una evolució completament local d'una orientació escolàstica (reformada) que -integrada amb les novetats teològiques de l'Humanisme i la Reforma, així com desafiada per la violació del Cartesianisme- s'aventura cap a formes epistemològiques molt originals, que posen les bases per a la floració d'un període excepcional per a Escòcia.

Paraules clau: Història d'Escòcia, Història Global, Història de la Filosofia, Història Intel·lectual, Història de l'Educació, Història del Pensament Polític i Econòmic, Història del Dret, Història de les Matemàtiques, Filosofia Medieval, Filosofia Moderna

Resumen:

Este ensayo trata sobre la historia intelectual escocesa, comenzando con Juan Duns Escoto (m. 1308) y terminando en los albores de la Ilustración escocesa. El ensayo se estructura a través del prisma de tres perspectivas que se complementan entre sí. El primer nivel es la idea fundamental de que la vida intelectual escocesa entre los siglos XIV y XVIII adquirió cierta unidad y continuidad gracias al impulso inicial de la obra de Duns Escoto. Las cruciales y trágicas intersecciones de la historia eclesiástica desempeñaron un papel importante en el desarrollo de una singularidad cultural. El segundo nivel es que el pensamiento escocés de este periodo estaba claramente abierto a la influencia continental europea, mucho más que el inglés, y sin duda en el ámbito del derecho. Por último, hay un nivel más implícito y sumergido según el cual las características específicas de la Ilustración en Escocia se debieron a esta tradición intelectual distintivamente escotista y, en particular, a una evolución totalmente local de una orientación escolástica (reformada) que , integrada con las novedades teológicas del humanismo y la Reforma, y desafiada por la ruptura del cartesianismo , se aventura hacia formas epistemológicas muy originales, que sientan las bases para el florecimiento de un período excepcional para Escocia.

Palabras clave: Historia de Escocia, Historia global, Historia de la filosofía, Historia intelectual, Historia de la educación, Historia del pensamiento político y económico, Historia del derecho, Historia de las matemáticas, Filosofía medieval, Filosofía moderna temprana

Introduction

This article deals with Scottish intellectual history, beginning with John Duns Scotus (d. 1308) and ending on the threshold of the early Scottish Enlightenment. For this reason, it is an articulated and cross-disciplinary attempt to reveal the (latent) interconnections between local and global history with not insignificant effects on culture and philosophy. The article is

structured through the prism of three perspectives that complement each other. The *first level* is the foundational idea that Scottish intellectual life between the Fourteenth and Eighteenth centuries was given a certain unity and continuity by the early impulse of Duns Scotus' work and the wider legacies of Scholastic thought. The *second level* is that Scottish thought in this period was distinctively open to continental European influence, much more so than England, and certainly in the area of the law. Finally, there is a more implicit and submerged level according to which the specific features of the Enlightenment in Scotland were owing to this distinctively Scotist intellectual tradition and in particular to an entirely local evolution of a (reformed) scholastic orientation which - integrated with the theological novelties of Humanism and the Reformation as well as challenged by the breach of Cartesianism *first* (and – through the mediation of the Baconian method – Newtonianism *later*) - ventures towards very original epistemological forms, which lay the foundations for the flowering of an exceptional period for Scotland.

For the above reasons, the article is substantially divided into three parts. *Firstly*, it is necessary to highlight the evolution of the Franciscan scholastic thought in Scotland through some eminent figures. *Secondly*, an indisputable diffusion of Scottish authorities at a continental level is combined with a unique capacity for incubation, from which - *thirdly* - some aspects will emerge over the centuries that are completely peculiar and original both from a purely philosophical standpoint and in terms of scientific results. Therefore, Scottish history cannot be understood without its international roots. Nor without Medieval (Franciscan) thought, particularly the contributions of Scotist movements and currents with the cross-pollination of scientific ideas coming from Continental cultural centers. Some niche studies - especially in the field of the history of economic thought - confirm this process and it doesn't seem like a coincidence that a celebrated article by Odd Langholm traces "an early tradition in value theory",[2] starting from the Franciscan Peter of John Olivi (1248-1298) up to Francis Hutcheson (1694-1746) with a series of correlations that can be accepted and extended beyond the boundaries of a disciplinary frontier. Undoubtedly, the contributions of the Eighteenth Century are a decisive watershed, especially in the realm of epistemology, social theories, human rights

[2] Odd Langholm, "Olivi to Hutcheson: Tracing an Early Tradition in Value Theory", *Journal of the History of Economic Thought*, vo. 31, N. 2, (June 2009), 131-141.

and the rule of law. Hence, it is useful to reconstruct an intertwining of relationships and events that led to this flourishing.

John Duns Scotus: from the primacy of will to a scientific approach

In the late Middle Ages, the dynamic role played by the Franciscans cannot be underestimated.[3] The unity of *care and wonder*, based primarily on their Founder's 'love of nature' gave priority to a poetic and epistemological emphasis,[4] that brought about a pioneering scientific method.[5] This approach was also extended to the study of society, which was at the centre of a commercial and urban revolution.[6] Even though the Thomistic attempt at harmonising and christianising Aristotelianism had a common substrate with the Platonic-Augustinian vision of the *Franciscan School*, their encounter-clash, albeit sometimes very problematic, was immensely prolific. Starting from the Augustinian synthesis of man as a Trinitarian representation in which *understanding, memory and will* come to express themselves (as faculties of the soul), their practical sense is based on actual existence and transformed into action.[7] Franciscans analyse the realities of the world with an extremely original dynamism aiming "at an absolute transparency of the language of every science".[8]

In the early 1300s, the Franciscan John Duns Scotus (1266-1308) became a professor in Paris. In his pragmatic attempt to achieve a convergence between the Franciscan school and the Dominican School, he developed an original thesis that combines the aspects of both schools in a new, creative way.[9] The development of this theory is inextricably linked to his *principle*

[3] See among others: Michael Robson, *The Franciscans in the Middle Ages*, (Woodbridge: The Boydell Press, 2006) and John R. H. Mormann*, A History of the Franciscan Order from Its Origins to the Year 1517*, (Oxford: Clarendon Press, 1968).

[4] "He [Francis] loved the rocks and the forest, the meadow and the vineyard, the rivulet and the blue sky, fire and water and wind; and called upon them to remain pure, to praise their Maker and be His servants." John M. Lenhart, "Science in the Franciscan Order: An Historical Sketch", *Franciscan Studies*, No. 1 (January, 1924), pp. 5-44.

[5] Keith Warner, *Knowledge for Love: Franciscan Science as the Pursuit of Wisdom*, (Saint Bonaventure, NY : Franciscan Institute 2012).

[6] Giacomo Todeschini, *Franciscan Wealth: From Voluntary Poverty to Market Society*, (Saint Bonaventure, NY: The Franciscan Institute, 2009).

[7] Giovanni Patriarca, "Questioning Nature in Late Middle Ages. A History of Method, Praxis and Innovation", *Medievalia*, vol. 53 núm. 2 (2021), 5-29.

[8] Amos Funkenstein, *Theology and the Scientific Imagination from the Middle Ages to the Seventeenth Century*, (Princeton, NJ: Princeton University Press, 1986), 57.

[9] Cfr. Paul Haffner, *The Mystery of Reason*, (Leominster: Gracewing, 2001), 101-102.

of individuation according to which individuality is an essential property and "individual is a transcendent term".[10] This is historically revolutionary and grounds a *responsible and radically independent agency* in the theory of the moral law.

From the subjective point of view, the aforementioned empowerment or "responsibilisation" is based on two pillars: the *negative freedom* and the *positive freedom.* The latter is an "openness to opposites" in the context of temporal situations and choices: "we are independent, therefore, in the double sense that we are both free from nature and free to realize one of the several mutually opposed possibilities that are always open to us".[11] Here the primacy of will over intellect is an evident influence of Scotus's Franciscan inheritance. In his commentary on the Sentences of Peter Lombard, John Duns Scotus insisted with conviction on the subjective utility of a commodity as the main source of its intrinsic value. Although his innovative contractualism does not reject the traditional concept of justice,[12] his analytical novelty lies in the consideration of a more complex series of factors and variables (such as material, psychological, individual) that directly determine the price and value.[13]

On this last point, a further distinction is both necessary and fundamentally pregnant. According to Duns Scotus, *natural value* is the objective value that comes directly from God as a gift. *Use value*, on the other hand, is more complex because the price is determined on the availability, possibility of production and ability to distribute. Reflecting on the morality of merchants, Duns Scotus (and his early followers) justify the right to an adequate remuneration or fair profit for service to the community in the exchange of goods useful to its members. In his *Questiones quodlibetales ex quattuor Sententiarum – a*fter having listed the traditional social norms commonly accepted according to the evangelical imperatives, the patristic commentaries and the subsequent theological speculation - he states that:

> "Beyond the rules given here on what is right and what is not, I would issue two more. The first is that the exchange is useful for the community, and the second is

[10] Antonie Vos, *The Theology of John Duns Scotus*, (Leiden: Brill 2018), 168.
[11] Alexander Broadie, "Scotus and the Idea of Independence", in Edward J. Cowan (ed.), *The Wallace Book*, (Edinburgh: John Donald, 2007), 79
[12] See Robert I. Mochrie, "Justice in Exchange: The Economic Philosophy of John Duns Scotus", *Journal of Markets & Morality* 9, no. 1 (Spring 2006): 35-56.
[13] See also, Odd Langholm, *The Legacy of Scholasticism in Economic Thought. Antecedents of Choice and Power*, (Cambridge: Cambridge University Press, 1998).

> that a person receives a reward in exchange for her commitment, her prudence, her eagerness and the risk incurred. [...] This second rule comes from the fact that every man, who serves the community in an honest way, must be able to live of his work"[14]

In this historical context, it is undeniable that John Duns Scotus's philosophical ideas "cast a long shadow across the Scottish philosophical scene",[15] as Alexander Broadie points out. His legacy is so emblematic that it has formed entire generation of scholars.[16] Let us pay some attention to the "scientific notion" of the Pseudo-Duns Scotus according to which the experience of the senses must be completed by a research for the proper causes of those experiences. If "something that has properties can be scientifically investigated by deriving those properties from known principles",[17] we are in the realm of a *conditional science* (*scientia conditionalis*).[18] "that remains to be verified, and not a proper affirmative demonstrative science".[19] This epistemological asset – deepened by the Ockhamist circles – opens the doors to the ontological argument for the *significabile complexe* that "relies on the […] analogy between sensorial knowledge and scientific knowledge".[20] This reflection extends in a completely original mode to the concept of time and eternity.[21]

From an independent legal substratum to the early Scotism

In Fourteenth Century, moreover, a local juridical tradition was forming that would profoundly determine the history of Scotland. In addition to the feudal system of unwritten *memorial law* and *common law* (especially concerning landed property), a legal system was being

[14] John Duns Scotus, Questiones quodlibetales ex quattuor Sententiarum, d. 15, q. 2.22

[15] Alexander Broadie, *The Shadow of Scotus: Philosophy and Faith in Pre-Reformation Scotland*, (Edinburgh: T&T Clark, 1995), 7.

[16] See William Courtenay, "Early Scotists at Paris: A Reconsideration", *Franciscan Studies*, 69 (2012/1), 175-229

[17] Lucian Petrescu, "The threefold object of the scientific knowledge. Pseudo-Scotus and the literature on the Meteorologica in fourteenth-century Paris", *Franciscan Studies*, vol. 72, (2014), 477.

[18] Pseudo-Scotus*, In I Meteor, q, 1,8, p. 8a*: "Ad quartam [quia hujusmodi impressiones,ut in presentibus non sunt, sicut patet de tonitru, fulmine, iride, et hujusmodi], dico quod quaecumque non sunt hujusmodi impressiones, de iis est solum *scientia conditionalis*, et non categorica affirmativa demonstratio."

[19] Lucian Petrescu (2014), *op. cit*, 479.

[20] *Ibid.*, 491.

[21] See Marco Rossini and Chris Schabel, "Time and Eternity among the Early Scotists: Texts on future contingents by Alexander of Alessandria, Radulphus Brito, and Hugh of Novocastro", *Documenti e studi sulla tradizione filosofica medievale*, 16 (2005), 299-304.

consolidated in a wholly original way, in which *canon law* played a major role. This aspect is essential for understanding the Scottish distinctiveness. In the context of the struggles for Scottish Independence from England, the famous "*Declaration of Arbroath*" – dated 1320 – is of significant note. This was a letter Pope John XXII had received that had been drafted by canon lawyers, who sought to enable the law to legally depose an unjust king in cases of serious violations.[22]

The continued hostilities with England led to the so-called "*Auld Alliance*" with France, which strengthened Scottish ties with the Continent from both a cultural and a purely administrative point of view. Moreover, in this framework one must not forget the *Education Act* in 1496, which made compulsory – for the first time in history – that landowners attend grammar schools, which helped to increase literacy, with a special emphasis on Latin.[23] As William Ewald affirms:

> "the results of these accumulated developments were to turn Scotland into a fully-fledged civil jurisdiction. By the mid-1500s, Scotland could boast of a flourishing legal profession. Its judges and lawyers were trained in the universities of the Continent. They were expert both in Roman and canon law, and skilled in the procedural techniques developed by the Ecclesiastical courts. The influence of English common law was scant; indeed, at this time, Scots law was both closer the European mainstream and technically more sophisticated than was law in England"[24]

This closeness to the continental mindset will be a constant in the history of the country. The glorious and centuries-old history of the *Garde Écossaise* – an elite military unit at the service of the French kings – should also not be forgotten.[25] Moreover a renewed presence of Franciscan Observants in Scotland – originating in Flanders and under the province of Cologne – should be taken into consideration as a transmission chain.[26] This totalled 9 houses by 1470,

[22] See Edward J. Cowan (ed.), *"For Freedom Alone": The Declaration of Arbroath, 1320*, (East Leaton: Tuckwell Press, 2003).
[23] Cfr. Giovanni Patriarca, "On the Scottish Distinctiveness. From Late Scholasticism to Scottish Enlightenment. A Preliminary Perspective", *Review of Austrian Economics*, (33/2020), 513–520.
[24] William Ewald, "James Wilson and the Scottish Enlightenment", *Journal of Constitutional Law*, (12/2010), 1074-1075.
[25] See Francisque Michel, *Les Ecossais en France, les Français en Ecosse*, (Paris: A. Franck, 1862).
[26] Alison More, "Franciscans and Tertiaries in Later Medieval Scotland", *Franciscan Studies*, vol. 77 (2019), 111-133.

followed by a series of residences of the Franciscan Tertiaries, whose first known house is the hospital of St. Martha in Aberdour, established around 1487.[27]

In those years, the irruption of Scotism in the Thomistic organic complex causes a change of course: social analysis begins to take more into account the aspect of individual choices. For pastoral reasons, the Franciscans are in close contact with extremely productive segments of society, intercepting their requests and avant-garde ideas. In this framework, the Franciscan Luca Pacioli (1445-1517) codified a long tradition of (commercial) mathematics through the *Summa de arithmetica, geometria, proportioni e proportionalità* (1494), which is a milestone in that transdisciplinary process of emancipation between science, philosophy and economics.[28] Although bookiping [and not only] "was spread throughout the world by a series of plagiarism and imitations of Pacioli",[29] his book – especially the chapter titled "*De Comptibus et Scripturis"*[30] – summarizes and completes the ultracentenary tradition of the *Abacus Schools*, without which his systematization would not have been possible.[31]

In that timeframe from the first *abacus masters* to the Renaissance abacus treatises, the line of demarcation between speculative thought, canon law, commercial practice and reflection on concrete ethical cases or social dilemmas is so invisible,[32] that Luca Pacioli expressly refers to John Duns Scotus,[33] sharing "the epistemological consequences of [his] theology".[34] Franciscanism (*in general* and the Scotist movements *in particular*) became the unwitting

[27] William Ross, "Notice of the Hospital of St Martha at Aberdour, Fife", *Proceedings of the Society of Antiquaries of Scotland*, (3/1858), 214-220.
[28] See Argante Ciocci, *Luca Pacioli e la matematizzazione del sapere nel Rinascimento*, (Bari: Cacucci Editore 2003).
[29] Henry Rand Hatfield, "An Historical defense of Bookiping", *Journal of Accountancy*, vol. 37/4 (1924): 245.
[30] "It is seldom the case that a first book on a subject has so dominated its literature as was the case with Pacioli's *De Computis et Scripturis*. It is nearly true that for a hundred years the texts appearing in England, France, Germany, Italy and the Low Countries were at the best revisions of Pacioli, at the worst servile transcriptions without even the courtesy of referring to the original author." Henry Rand Hatfield, "An Historical defense of Bookkeeping", *Journal of Accountancy*, 37/4 (1924): 245.
[31] Jens Høyrup, The World of the Abbaco. Abbacus Mathematics Analyzed and Situated Historically Between Fibonacci and Stifel, (Basel: Birkhäuser, Basel 2024).
[32] See Joel Kaye, *Economy and Nature in the Fourteenth Century. Money, Market Exchange, and the Emergence of Scientific Thought*, (Cambridge: Cambridge University Press, 1998).
[33] Pacioli refers to John Duns Scotus both in the letter dedicating the Summa to Guidobaldo of Montefeltro in 1494 and in the one in which he dedicates the Divina Proportione (1498) to Ludovico Maria Sforza.
[34] Argante Ciocci, "Le proporzioni e il moto dei corpi: l'eco della scuola francescana di Oxford in tre problemi di cinematica della Summa di Pacioli", www.centrostudimariopancrazi.it/images/slides/la-scuola-francescana-di-Oxford-e-Pacioli.pdf (latest vision 7 October 2022), 9.

vehicle of a mathematical literacy that has significant epistemic effects. This influence was so strong that Scotism turns into a decisive current of thought in European university disputes.[35]

From John Mair to the Scots Colleges

The subtle Scotist argumentations on free will and the human intellect, on moral attitudes and liberal virtues as well as on reason and faith, served as a common speculative fodder for the next generation of philosophers, among them John Mair (1467-1550) and his contemporaries, thus forming a link to the subsequent developments in Scottish history.[36] Mair earned his doctorate in Paris and even became rector there. Subsequently, he served as Principal at the University of Glasgow and Provost at the St. Salvator's College in the University of St. Andrews. He devoted himself with deep attention to the study of logic and the analytical method, carrying forward the thought of medieval scholars such as Buridan and Oresme that made an important contribution to the development of mathematics, physics and astronomy.
In the wake of nominalism, Mair also extends his interest in the *theory of language*, which later becomes a central theme in the so-called *Scottish School of Common Sense* and among the first interests of Adam Smith.[37] Mair's philosophical conception is based precisely on co-editing and a re-reading of John Duns Scotus's *Reportata Parisiensia* – published in 1518 – focusing on the problem of authority and its degenerations, emphasizing the natural freedom of human beings as well as structural methods of logical reasoning, whose prosecution and implementation towards embryonic forms of modern induction and causal inference is due to George Lokert of Ayr.

In support of his thesis, Mair used a process of detailed examination of cases and their consequences. It is remarkable that among his circle of students in Paris were pupils that were also immensely influential themselves, such as Antonio Coronel who taught John Calvin,[38] and

[35] Ludger Honnefelder, "Scotus und der Scotismus. Ein Beitrag zur Bedeutung der Schulbildung in der mittelalterlichen Philosophie", in Maarten J. F. M. Hoenen, Jakob Hans Josef Schneider, Georg Wieland (Hrsg.): *Philosophy and Learning. Universities in the Middle Ages*, (Leiden: Brill, Leiden 1996): 249–262.
[36] See Alexander Broadie, *The Tradition of Scottish Philosophy: A New Perspective on the Enlightenment*, (Savage: Barnes and Noble, 1990).
[37] Jorge López Lloret, "El proto-evolucionismo ilustrado de la teoría del lenguaje de Adam Smith", *Daimon Revista Internacional de Filosofia*, (83/2021), 105 - 121.
[38] John C. Olin, *The Autobiography of St. Ignatius Loyola, with Related Documents*, (New York: Fordham University Press, 1992), 73.

Ignatius of Loyola.[39] It is commonly accepted that his *casuistic approach* and his ideas about subjective rights of individuals and peoples influenced not only the Scottish academia but also the Spanish Late Scholastics which found its everlasting expression in the *School of Salamanca*.[40] This School helped to deepen and make accessible the tradition already begun by Peter of John Olivi and supported by the works of Bernardine of Siena and Antoninus of Florence.[41]

In this climate of intense debates, the contribution of George Buchanan (1506-1582) is primary.[42] After his studies in Paris, he became a professor at the prestigious *Collège Sainte-Barbe*. As tutor to James Stewart, 1st Earl of Moray, he was not afraid to openly criticize the Franciscans, not without consequences, and in 1539 he had to flee Scotland after being imprisoned due to the persecution for his "Lutheran practices". After taking refuge in France, he taught for years at recently established *Collège de Guyenne* in Bordeaux, where he was Montaigne's teacher. That college – whose first principal was the Portuguese André de Gouveia, former Rector of the University of Paris – is remembered not only for modernizing the *curriculum* according to the ideals of the Renaissance but also for a profound interreligious sentiment and a sympathy to humanistic claims.[43] George Buchanan will then be called in 1547 to teach at the University of Coimbra, where his ideas against corruption in State and Church are a source of inspiration and tension. Also due to a remarkable Latin eloquence,[44] his legal-historical production leaves an indelible mark so that his *De jure regni apud Scotos (On the Law of the Kingdom among the Scots)* was translated into English and published in Philadelphia

[39] David Steinmetz, *Calvin in context*, (Oxford, Oxford University Press, 2010), 6.
[40] Read Alexander Broadie, *George Lokert: Late-Scholastic Logician*, (Edinburgh: Edinburgh University Press, 1983).
[41] Raymond De Roover, *San Bernardino of Siena and Sant'Antonino of Florence. The Two Great Economic Thinkers of the Middle Ages*, (Cambridge, MA: Harvard University Press, 1967).
[42] John Durkan (ed.), *George Buchanan: (1506-1582) : Renaissance Scholar and Friend of Glasgow University : a Quartercentenary Exhibition*, (Glasgow: Glasgow University Library, 1982).
[43] "At the period of the Reform the humanist scholars of France were in large part inclined to sympathy with the new doctrines" William H. Woodward, *Studies in Education During the Age of the Renaissance, 1400-1600*, (Cambridge: Cambridge University Press, 1924), 140.
[44] "It is usually the fate of "modern" Latin poetry to be neglected by classical scholars and students of vernacular literature alike, even though the works of many Renaissance Latinists are of considerable importance. One such Latinist is George Buchanan, poet, educator, courtier, religious reformer, satirist, historian, political theorist, and tutor of Mary, Queen of Scots, and of her son James VI and I." W. Leonard Grant, "The Shorter Latin Poems of George Buchanan, 1506-1582", *The Classical Journal*, Vol. 40, (No. 6/1945), 333.

in 1766.[45] Furthermore, the network of *Scots Colleges* in Europe deserves to be mentioned. They not only consolidate Scotism but are cultural accelerators both for a fruitful exchange of ideas with the continental avant-gardes and for the structuring of an own cultural identity. If the origins date back to the first institution founded in Paris in 1326, they play a pivotal role "together with three Benedictine monasteries in Southern Germany" and "represented the only remaining formally recognized Scottish Catholic authorities" in a reformed country.[46]

The Reformation and the Counterreformation

In the sixteenth century, the Reformation erupts in Scotland. The country is now at the center of religious controversies. John Knox (1513-1572) escapes persecution in Geneva while he was under the influence of Calvin and brings Calvinist beliefs to the Scots, laying the foundations of the Presbyterian church, which was of decisive importance not only from a religious but also social standpoint. Even though John Durkan has shown that the Reformed Church built her structures on the sound foundations of the "old regime", the establishment of a school in every parish had not secondary consequences.[47] Literacy rates in Scotland were higher than in any other country in Europe.[48]

After a period when political and religious tensions subsided, stability then ensued, bringing about the necessary conditions for human flourishing. The time was fertile for a cultural flowering. Not least there was the presence of an organized university system. Before the Enlightenment, Scotland had four renowned universities. This is not at all inconsequential, considering the fact that England, at the same time, had only two. In addition, it should also be noted that the emphasis on humanistic studies, together with the emphasis on the teaching of Latin, did not diminish during decades. This solid cultural formation facilitated the thriving contacts with European learning centers and just as well, the advancement of the exact sciences.

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[45] *De jure regni apud Scotos: Or, A dialogue, concerning the due privilege of government, in the kingdom of Scotland*, *betwixt George Buchanan and Thomas Maitland, by the said George Buchanan*, Philadelphia: Andrew Steuart, 1766.
Not surprisingly this work contains embryonically the political arguments and vocabulary used by the Founding Fathers of the United States.

[46] Tom McInally, *The Sixth Scottish University. The Scots Colleges Abroad: 1575 to 1799*, (Leiden: Brill, 2012), 2.

[47] John Durkan, *Scottish Schools and Schoolmasters 1560-1633*, (Glasgow: Scottish History Society, 2013).

[48] Lawrence Stone, "Literacy and Education in England 1640-1900", *Past & Present*, (Volume 42, Issue 1, 1 February 1969), 69-139.

If Paris and France are the favored midpoints,[49] of no less importance are Switzerland (for the Calvinist movements), Germany, Flanders and Italy, especially Padua,[50] whose university was at the center of an epochal flowering in the field of experimental physics and where Galileo Galilei (1564-1642) taught and carried on his doctrines also through the manufacture of original optical instruments.[51] This positive trend in astronomic research reaches one of its peaks with Duncan Lidell (1516-1613) and John Craig (d. 1620) who studied and taught in Prussia in the context of the Copernican reforms and were influenced by the local academia, particularly through the scholarship of Ticho Brahe (1546-1601).

Another noteworthy moment is reached in the Counter-Reformation. In Scotland, "[T]he Dominican order was publicly involved in the examination of doctrine and pronouncement of heresy",[52] the Jesuits spread not only the Ignatian exercises and practices of discernment but also the *Ratio Studiorum.*[53] With its cutting-edged pedagogical techniques, it inspired a vibrant network of colleges, whose didactic model is based on a proficient knowledge of Latin and Greek, rhetoric and philosophical reasoning as well as an "order to follow to attain proficiency in the mathematical disciplines".[54] Latin exercises are based on Cicero and his stoic legacy.

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[49] It's worth noting, as Houston states in a detailed article, that many Scots chose to study law in France. One of the major centers for legal studies was the (now defunct) *University of Bourges*, founded in 1463 and closed during the French Revolution. Its fame was due to the presence among its professors of Andrea Alciati (1492 - 1550), a leading exponent of legal humanism. To understand its historical significance, its students included the reformer John Calvin (1509–1564), the Swiss naturalist Conrad Gessner (1516–1565) - closely associated with Zwingli -, and the Scottish bishop Patrick Adamson (1537 - 1592), famous for an intra-Presbyterian diatribe. See: Robert A. Houston, "Law & Literature in Scotland, c 1450 to 1707". in Lorna Hutson (ed.), *The Oxford Handbook of English Law and Literature*, 1500-1700, (Oxford: Oxford University Press, 2017): 681 and Stéphan Geonget (éd.), *Bourges à la Renaissance, hommes de lettres, hommes de lois*, (Paris: Klincksiek, 2011).

[50] "The increased knowledge of the English and Scots students, and probably their mutual dislike, caused their eventual separation into distinct Nations. In the new statutes of 1331 they were still enumerated together, and in 1465 the "Nation" is called that of the English and Scots, but in 1534 the Scottish and English "Nations" were definitely separated, nor did they ever again formally unite as long as the "Nations" lasted - that is, to 1738." A. Francis Steuart, "The Scottish 'Nation' at the University of Padua", *The Scottish Historical Review*, Vol. 3, No. 9 (Oct., 1905): 53-62.

[51] The extensive correspondence between Giovanni Antonio Magini (1555-1617) – professor of astronomy -, Tycho Brahe (1546-1601), Johannes Kepler (1571-1630) and other famous European astronomers demonstrates Padua's centrality in the reception of the most important innovations in the fields of physics and kinematics in that turbulent time immediately preceding and following the Copernican paradigm shift. It should also be noted that Copernicus (1473-1543) studied in Padua from 1501 to 1503. See: Antonio Favaro (ed.). *Carteggio inedito di Ticone Brahe, Giovanni Keplero e di altrt celebri astronomi e matematici dei secoli XVI e XVII con Giovanni Antonio Magini*, tratto dall'archivio Malvezzi de' Medici di Bologna, (Bologna: Zanichelli, 1886).

[52] Janet P. Foggie, *Renaissance Religion in Urban Scotland: The Dominican Order, 1450-1560*, (Leiden: Brill, 2003), 39.

[53] See John W. O'Malley, *The First Jesuits*, (Cambridge: Harvard University Press, 1993).

[54] Christofer Clavius (2016), "Teaching Mathematics in Jesuit Colleges (1581)", Cristiano Casalini – Claude Pavur, *Jesuit Pedagogy, 1540–1616: A Reader*, (Boston: Institute of Jesuit Sources – Boston College, 2016), 283.

The Scottish theologian James Tyrie (1543-1597) belonged to the *Committee of Six* that – with the Superior General Claudio Acquaviva (1543-1615) – eventually drew up the first edition of the *Ratio*, published in 1586.

On this basis, a certain form of theological probabilism is inserted and developed on the substratum of the "via moderna". In this *Wegestreit,* the Scotist approach influenced all the European academic circles so much so that during the Renaissance and early modern period,[55] the Scotists were so many that the Cistercian Juan Caramuel Lobkowitz wrote without hesitation that "*Scoti Schola numerosior est aliis simul sumptis*" (the school of Scotus counts more than all the other schools taken together).[56] Although with a certain sarcasm, Dutch Calvinist theologian Gisbert Voetius (1589-1676) confirms this theory, affirming that the Jesuits "*non raro scotizant, quamvis scribant ad Thomas*" (*not rarely scotize, even though they deal with Thomas Aquinas*).[57] Effectively, the vibrancy of the first century of the foundation of the *Societas Jesu* is characterized by the centripetal force of the *Roman College* – established by Ignatius of Loyola in 1551. Robert Abercromby (1536-1613) – whose name is strictly linked to the famous *allegiance oath controversy* – studied in Rome as many other young men from all over Europe. Among them, there are the Scots James Gordon (1541-1620), William Chrichton (1535-1617) and Edmund Hay (1540-1591), whose missionary spirit and lifestyle are memorable.

At that time, his relative John Hay (1546-1608) also joins the Society of Jesus. Hay's Latin translation of the Diego de Torres Bollo's *De rebus Peruanis*, published in Antwerp in 1604, as well as other translations of reports from the Orientare relevant for the development of cultural anthropology. [58] It also led to a first introduction to the Ibero-American scholasticism (so called *Scholastica Colonialis*) with a whole series of innovations produced by the

[55] "Diesen Tendenzen zum Trotz zeigen die Quellen, daß der Scotismus in der frühen Neuzeit immer größeren Einfluß gewann. Stellten die Scotisten im 15. Jahrhundert noch eine Minderheit an den Universitäten dar, war dies im 17. Jahrhundert ganz anders." Maarten J. F. M. Hoenen, "Philosophie und Theologie im 15. Jahrhundert. Die Universität Freiburg und der Wegestreit", in D. Speck-D. Martens, B. Martin, C. Rüchardt (Eds), *550 Jahre Albert-Ludwigs-Universität Freiburg*, Freiburg in Breisgau, Alber 2007, p. 85.

[56] Juan Caramuel Lobkowitz, *Theologia intentionalis* (Lyon: Bode, 1664), l.II, c. 3, disp. 10, n. 1264, 273.

[57] Gisbert Voetius, *Exercitia et Bibliotheca Studiosi Theologiae*, (Utrecth: Strick 1653) 162.

[58] A year after the great success of the *De rebus Peruanis*, John Hay publishes by the same typographer in Antwerp the *De rebus Japonicis, Indicis et Peruanis epistolae recentiores* (1605). His previous work titled "*Demandes faictes aux ministres d'Escosse: touchant la religion Chrestienne*" (1583) has been translated a couple of years later into German as "*Fragstuck des Christlichen Glaubens, an die neuwe sectische Predigkanten*" (1586).

consequences of the "conquest".[59] The rich penitential literature of the *Pragmatici* is consolidated precisely in that historical moment.[60]

Moral philosophy and social dynamics

Taking into account purely philosophical dimensions, one will notice that Mair's structured and accepted teachings merged with the subsequent continental speculative approach. In the context of Reformation – with its emphasis on sovereignty of God, authority of the Bible and covenant theology – doctrinal disputes developed in a wholly original way with very specific geographic and national nuances. According to Anthony Ross[61], Scottish Dominicans were "aware of the humanist development current in European theology" and had "wide-ranging theological interests",[62] especially inspired by the *Siglo de Oro* with its refined canonists and moral theologians. Their commentaries on changes[63] and loans,[64] introduce a *scarsity theory of value*, forerunner of the *quantity theory of money*, and define the *time value of money* with its time preference and discount function.

In Salamanca, Dominicans theologians had already "devoted a large share of their efforts to reshaping the old *ius gentium* in order to regulate the relationship that had recently arisen between the conquered peoples of America and the Spanish Crown. But they… [also theorised] on political, social, and economic theory, to which the discovery of the New World gave powerful impetus".[65] All these vibrant discussions are joined by Tomás de Mercado (1530-

[59] See Germán,Martinez Argote (1999), "La Escolástica americana del Siglo XVII y la supuesta "Tibetización" de la cultura hispana", *Universitas Philosophica*, (n. 33/1999), 83-96; Manuel Lázardo Pulido (2011), "Scholastica Colonialis: El contexto curricular de los misioneros franciscanos extremeños", *Curiensia*, vol. VI (2011), 147-167 and Jessica Marcelli Sánchez, "Los textos escolásticos y la dinámica educativa en la América Virreinal", *Opción: Revista de Ciencias Humanas y Sociales*, (Nº. Extra 13/2016), 435-455.

[60] See Thomas Duve – Otto Danwerth (eds.), *Knowledge of the Pragmatici. Legal and Moral Theological Literature and the Formation of Early Modern Ibero-America,* (Max Planck Studies in Global Legal History of the Iberian Worlds, Leiden: Brill 2020).

[61] Anthony Ross, "Libraries of Scottish Blackfriars", *IR,* XX (1969), 3-36.

[62] *Ibid*., p. 3.

[63]Martin de Azpilcueta Navarro publishes his *Comentario resolutorio de cambios* in 1556. After having taught in Salamanca and Coimbra, he is active in Rome until his death.

[64] Luis de Alcalá publishes in Toledo in 1546 his *treatise on loans* titled "*Tractado de los prestamos que passan entre mercaderes y tractantes y por consiguiente de los logros cambios compras adelantadas y ventas al fiado*".

[65] Marjorie Grice-Hutchinson (1952), *The School of Salamanca: Readings in Spanish Monetary Theory, 1544-1605*, (Oxford: Clarendon Press, 1952), 40-41.

1575),[66] and the Jesuit Juan de Mariana (1536-1624). According to the latter, tyrannicide is justified in certain conditions of abuse of power[67]. This doctrine binds him to all the contemporary political literature from Niccolò Machiavelli (1469-1527) and Jean Bodin (1529-1596) to Giovanni Botero (1544-1617), with their strategies for power acquisition, the insurgence of *raison d'État* and a structured administrative machinery with its fiscal policies.

In his *De Ponderibus et Mensuris* (On weight and Measures),[68] and in *De Monetae Mutatione* (*On Alteration of Money*),[69] Mariana judges financial (unethical) adjustment in an extremely negative way and criticizes the government intervention in monetary issues. In *A Defence of the Antiquity of the Royal Line of Scotland* – published in London in 1685 – Sir George Mackenzie of Rosehaugh (1636–1691), His Majesty's Lord Advocate, focuses on the ancient and modern sources of national history with a profound comparative analysis. On page 38 whilst analysing the historiographical style of Buchanan, he states that the later authors "have preferr'd none to him, save *Mariana the Jesuite,* whom all men know to be far inferior, but they prefer Mariana because Buchanan was a *Protestant*".[70] This shows how popular these Southern European (especially Italian, Iberian and Lusitan) authors were even if treated with a certain distance, for purely political reasons. Having reversed the power positions and their narratives, "education was both a preservative against and an antidote to popery. Just as Catholic teachers were seen as a potential threat, Protestant schools were presented as a means of consolidating the Church of Scotland".[71]

[66] In 1569 he publishes in Salamanca the *Tratos y contratos de mercaderes y tratantes*, whose expanded edition is published under the name of *Suma de tratos y contratos* in Sevilla in 1571.
[67] See: Takashi Jinno, "Tyrannicide as an act of divine justice. The doctrines of tyrannicide of John of Salisbury and Juan de Mariana", in Fernanda Alfieri and Takashi Jinno, *Christianity and Violence in the Middle Ages and Early Modern Period: Perspectives from Europe and Japan*, (Berlin; De Gruyter Oldenbourg. 2021): 63-77
[68] It should not be ignored that John Locke had in his personal library a copy of both Juan de Mariana's *De Ponderibus et Mesuris* and the homonymous works by Alciati and Budaeus, to which the Spanish Jesuit referred several times. See: John Harrison & Peter Laslett (Eds.), *The Library of John Locke*, (Oxford: Clarendon Press, 1971): 70, 96 and 184 and Giovanni Patriarca, "A Minor Masterpiece? Reconsidering De Ponderibus et Mensuris by Juan de Mariana", *Economic Affairs*, 44 (3/2024): 487-500.
[69] Natascia Villani, "Juan de Mariana e la sua analisi della politica monetaria del tempo", in *Annali 2016–2018*, (Napoli: Università degli Studi Suor Orsola Benincasa, 2021): 237–255), and Stephen Grabill, *Sourcebook in Late-Scholastic Monetary Theory: The Contributions of Martin de Azpilcueta, Luis de Molina, S. J., and Juan de Mariana*, S. J., (Lanham, MD, Lexington Books, 2007).
[70] George Mackenzie, *A Defence of the Antiquity of the Royal Line of Scotland (with a true Account when the Scots were governed by Kings in the Isle of Britain)*, (London: R.C. Abell Swalle, 1685), 38.
[71] Clotilde Prunier, 'They must have their children educated some way': the education of Catholics in eighteenth-century Scotland", *The Innes Review,* (vol. 60 no. 1/2009), 24.

Paradoxically, a new model in the interconnections between pedagogy and didactics comes from the *School of Coimbra*, influencing European education. According to the *Cursus conimbricensis* "the exposition of the science of philosophy will seek to follow a pedagogical-educational standard, without trying to circumvent the difficulties in the intersection between dignity, discovery/teaching and the principle of evidence".[72] This approach allows Francisco Suárez (1548–1617) to deeply affect the ontology of knowledge, balancing the aporias of Thomism, Scotism and nominalism in a harmonic synthesis. In his reflection, the principle of individuation extends to the frontiers of legal and social conceptions by inserting many controversial themes of his time.

All these aspects are differently integrated into the diverse European contexts of the Renaissance and Late Scholasticism, where (firstly) Erasmus of Rotterdam and (successively) the Calvinist, Jansenist and Lutheran thinkers give new trajectories. Wars of religion, intolerance and violence leave an indelible mark. The Scottish Jesuit John Ogilvie (1579-1615) – after his studies and missions between France, Germany, Moravia and Belgium – is publicly hanged on 10 March 1615 in Glasgow. Another critical and dramatic point is that among the sixteenth and seventeenth centuries, all the Continent, including the northern shores and the Islands, were struck by very aggressive epidemic waves.[73] The great plague of 1645 was the most devastating that Scotland ever experienced.[74] In 1647 a bubonic plague epidemic kills a quarter of the population of Aberdeen.

If the connections with France have been demonstrated,[75] the influence of the intellectual vibrancy of the *Dutch Golden Age* must not be ignored.[76] According to J. I. Israel, Spinoza sets

[72] Mario Santiago de Carvalho, "Cursus Conimbricensis", *Conimbricenses.org Encyclopedia*, M. S. de Carvalho - S. Guidi (eds.),"http://www.conimbricenses.org/encyclopedia/cursus-conimbricensis/", (latest revision: May, 28th, 2019).

[73] Guido Alfani, "Plague in seventeenth-century Europe and the decline of Italy: an epidemiological hypothesis", *European Review of Economic History*, (Volume 17, Issue 4, November 2013), 408-430.

[74] Charles F. Mullett, "Plague Policy in Scotland, 16th - 17th Centuries", *Osiris*, (vol. 9/1950), 435–456.

[75] Alezander Broadie, *Agreeable Connexions: Scottish Enlightenment Links with France*, (Edinburgh: Birlinn, 2012).

[76] The Low Countries, moreover, were an incubator for the Cartesian philosophy of science so much so that his ideas were disseminated and entangled with different scientific paradigms at that point of (not only geographical) connection between diverse philosophical and religious philosophical traditions. Remind that a good part of the Flemish territories was under the Spanish crown - the so-called *Spanish Netherlands* - that lasted from 1556 to 1714. See: Andrea Strazzoni, *Dutch Cartesianism and the Birth of Philosophy of Science: From Regius to Gravesande*, (Berlin-Boston: Walter de Gruyter, 2018).

in motion – unexpectedly - an "underground international movement",[77] whose rationalist emphasis on individual liberty and reason fosters the philosophical prerequisites that fully blossom only during the Enlightenment.[78] His critical philosophy of religion brought about a very influential "economic" debate on pursuit of wealth, egalitarianism and corruption.[79] In Scotland since the late Middle Ages there had already been a presence and a significant "communication with Flemish and Italian merchants".[80] At the same time, Scottish traders are active in Europe[81] and, many artists (and artisans) developed their techniques when they visited the Netherlands[82] and Italy[83]. In Belgium the Jesuit Leonard Lessius (1554-1623) "considers money as an instrument of work, neither sterile nor unproductive. On the contrary, for Lessius, money has virtual power and potentiality, which are well attested by the activities of those who know how to manage their capital and to use money to ensure (sometimes considerable) profit".[84]

Furthermore, scholastic literature was enriched by the fruitful encounter and confrontation with the skeptical Renaissance[85] and the reformed systems of religious worldviews.[86] Additionally,

[77] So-called *Spinozism* has often been identified as a form of classical pantheism or a more refined modern version of it (especially according to the German philosopher F. H. Jacobi). The Dutch philosopher of Portuguese-Jewish origin had a significant influence through his major work, *Ethica more geometrico demonstrata*, where he constructs a monistic worldview, according to which God is nothing other than the "one substance" that encompasses all existence and outside of which nothing else can exist. Consequently, spirit and matter are not separate substances, as assumed by Cartesianism, but rather two properties (attributes) of the one substance (God). Human beings and all other finite things in the world, at the end, are simply determinations (modes) in which God's essence is expressed..

[78] Jonathan Israel, *Radical Enlightenment: Philosophy and the Making of Modernity 1650-1750*, (Oxford:nOxford University Press 2001).

[79] Eric Schliesser, "Spinoza and Economics", in Yitzhak Y. Melamed (ed.), *A Companion to Spinoza,* (London: Wiley, 2021): 410-421

[80] Patrick Fraser Tytler, *History of Scotland*, vol. II, (Edinburgh: William Tate, 1845) 200.

[81] Christopher Smout, "The Culture of Migration: Scots as Europeans 1500-1800", *History Workshop Journal*, (No. 40/1995), 108-117.

[82] Duncan Thomson, *Painting in Scotland 1570–1650*, (Edinburgh: The Trustees of the National Galleries of Scotland, 1975).

[83] Marion Amblard, "The Scottish painters' exile in Italy in the eighteenth century",*Études Écossaises*, (13/2010), 59-77.

[84] Paola Vismara, "Moral Economy and the Jesuits", *Journal of Jesuit Studies*, (5/2018), 618.

[85] In Renaissance humanism, the primary recovery of ancient Greek and Roman philosophy must be kept in mind. In this milieu, after Henri Estienne's translations of the works of Sextus Empiricus, the driving force of Pyrrhonism - as a form of (radical) skepticism - appears to be of no secondary importance. Its leading exponents were not only Montaigne but also the mathematicians Marin Marsenne (1588-1648) and Pierre Gassendi (1592-1655). See: Richard Henry Popkin, *The History of Scepticism: from Savonarola to Bayle* (Oxford: Oxford University Press, 2003).

[86] "The literally and humanistically educated people, the *literati* and *eruditi,* among whom are to be found the first supporters and disseminators of a reforming organization of the Church – scholarly preachers, students of

the moral and economic decisions started to be interpreted through the prism of the *calculation of chances,* that "made a great leap forward with Girolamo Cardano's *treatise on gambling*".[87] Due to his reputation in medicine, Cardano (1501-1576) was called by John Hamilton, Archbishop of St Andrews, to be his personal physician in 1552.

In this creative intersection, a reformed scholastic tradition, open to further hybridization, began to take shape. It will subsequently be structured in universities and intellectual centres without radically losing sight of the solicitations - both theological and scientific - coming from the Continent.[88] Samuel Rutherford (1600-1661) is a case in point. Deeply engaged with Catholic thought, in his celebrated *Lex, Rex* (1644) he borrowed the ideas about human liberty,[89] the law of nations, and popular sovereignty from the School of Salamanca and imbued them with Calvinism. As brilliantly demonstrated by K. Schultz, this shows a certain porosity of "traditional confessional boundaries" in early modern thought.[90]

A Scottish School of Mathematicians?

This intersection of interests is also visible in Patrick Anderson (1575-1624). A brilliant linguist, philosopher and mathematician, he became the first Jesuit rector of the *Scots College in Rome* in 1615. To this Scottish Jesuit generation belongs Hugh Sempill (c.1589-1654). He taught geometry, geography and hydrography in Madrid. His predisposition to scientific matters culminates with the *De Mathematicis disciplinis* (1635) and the *Experientia Mathematice. De compositione et divisione numerum, linearum, quadratorum* (1642) that were

law, leading chancellery officials *et al.* – were mediators between the rule of their princes and magistrates and the Common Man." Berndt Hamm, *The Reformation of Faith in the Context of Late Medieval Theology and Piety*, (edited by R. J. Bast), (Boston: Brill, 2004).

87 Rudolf Schuessler, *The Debate on Probable Opinions in the Scholastic Tradition*, (Leiden: Brill, 2019) 67.

88 Giovanni Gallera, "Reformed scholastic philosophy in the seventeenth-century Scottish universities", in Alexander Broadie (ed.), *Scottish Philosophy in the Seventeenth Century*, (Oxford: Oxford University Press, 2020): 94−110.

89 The original title was "*Lex, rex, or, The law and the prince: a dispute for the just prerogative of king and people, containing the reasons and causes of the most necessary defensive wars of the kingdom of Scotland and of their expedition for the aid and help of their dear brethren of England. In which their innocency is asserted and a full answer is given to a seditious pamphlet entituled, "Sacro-sancta regum majestas", or, The sacred and royal prerogative of Christian kings; under the name of J.A., but penned by John Maxwell*" (1591–1647), who served the Church of Scotland and Church of Ireland as Bishop of Ross (1633–1638), Bishop of Killala and Achonry (1640–1645) and, then, Archbishop of Tuam (1645-1647).

90 Karie Schultz, 'Catholic political thought and Calvinist ecclesiology in Samuel Rutherford's Lex, Rex (1644)', *Journal of British Studies*, 61 (2022): 162-84.

very successful and have a strong impact in the academic community. Undoubtedly John Napier (1550-1617) is rightly considered the most internationally known and admired of this modern Scottish scientific chain due to his tables of natural logarithms. No less important for the creation of a cultural humus and fertile for physical-mathematical speculation are James Bassantin (d. 1568) with his astronomic works[91] and a treatise on the improvement of the astrolabe as well as Alexander Anderson (1582-1620) with his detailed essays on geometry and algebra.

Timothy Pont (1560-1627) and Robert Gordon of Straloch (1580-1661) both also belong to this scientifically vibrant generation. Starting from the established tradition of Genoese, Venetian, Catalan and Portuguese portolan charts, they initiate an innovative cartographic methodology, which will continue until the works of Robert Sibbald (1641-1722). Contemporary of René Descartes, James Hume (d. 1639) published in 1636 a *Traité de la trigonometrie* (in French) and another treatise devoted to the explanation and implementation of the François Viète's algebra, in which he introduced the modern exponential notation. The trigonometric work on plane and sphere titled *Trissotetras* published in 1645 by Thomas Urquhart (1611–1660) – where he also develops a technique of memorization – may also be considered a unique achievement.

In this framework – as Gallera also stated in one of his valuable studies –even though Descartes' method was the cause of no small amount of tension in the Reformed circle,[92] "philosophers of the Scottish universities warmed up to Cartesianism because they saw it as a newer, better version of their own traditional Reformed scholasticism, chiefly in metaphysics and natural philosophy".[93] This transition occurred not accidentally on a Scotist (reformed) substratum which – by giving priority to a scientific approach – had unconsciously prepared the ground in an almost natural way for the acceptance of the Cartesian trends.[94]

[91] His *Astronomique Discours* was published at Lyons in 1557. Around 40 years later, it was translated into Latin and published at Geneva in 1599.

[92] Giovanni Gallera, "The Philosophy of Robert Forbes: A Scottish Scholastic Response to Cartesianism", *Journal of Scottish Philosophy* Volume 11, Issue 2 (2013): 191–211.

[93] Giovanni Gallera, "The Reception of Descartes in the Seventeenth-Century Scottish Universities: Metaphysics and Natural Philosophy (1650–1680)", *Journal of Scottish Philosophy*, Volume 13, Issue 3 (2015): 179-201.

[94] See Tad M. Schmaltz (ed.), Receptions of Descartes. Cartesianism and Anti-Cartesianism in Early Modern Europe New York: Routledge 2005 and Daniel Garber, "Experiment, Community, and the Constitution of Nature in the Seventeenth Century". In Daniel Garber, *Descartes Embodied: Reading Cartesian Philosophy through Cartesian Science*, (Cambridge: Cambridge University Press; 2000):296-328. In this essay Garber puts

Consequently, the *Baconian method* led to the radical distancing from Aristotelianism,[95] proceeding towards the Newtonian scientific revolution.[96] In this context, the works of James Gregory (1638-1675) and his student (the most famous) John Craig (1663-1731) cannot be put aside. Apart from some prestigious works about the mechanism of infinitesimal calculus, and by way of a theological inquiry into the most important religious events of Christianity, Craig introduces some "mathematical principles",[97] that have been seen as a first step into modern statistics and probability through an early definition of likelihood-ratio.[98]

For his part, James Gregory described and gave the proof of the *fundamental theorem of calculus* and his infinite series in 1668 anticipated the *Leibniz formula for π,* named after the German polymath who proposed it in 1676.[99] Moreover, he furthered his studies in astronomy, optics and motion in Padua (from 1664 to 1667) with the famous mathematician and *Jesuate* Stefano degli Angeli (1623-1697), who introduced him to the teachings and discoveries of Bonaventura Francesco Cavalieri (1598-1647) and Evangelista Torricelli (1608-1647). [100] This experience resulted in the description of the *Gregorian reflecting telescope*, formed by two concave mirrors: a paraboloid and an elliptic. This mechanism of reflection enabled the collection of the light and brings it to a focal point, correcting not only the classical difficulties of spherical aberration but also the chromatic distortion typical of the refracting telescopes.

"Descartes' epistemiology in the context of larger movements in seventeenth-century thought, and show[s] how Descartes radically individualistic epistemology eventually gave way to a more social conception of knowledge and scientific inquiry, as institutions such as the Royal Society in London and the Académie des Sciences in Paris entered the scene, and redefined the scientific world." (p. 19).

95 "There is the same degree of licentiousness and error in forming axioms as in abstracting notions, and in the first principles, which depend in common induction; still more is this the case in axioms and inferior propositions derived from syllogisms", Francis Bacon, *Novum Organum* (New York: P. F. Collier & Sons. 1902): XVII.

96 See: Tamás Demeter, *David Hume and the Culture of Scottish Newtonianism. Methodology and Ideology in Enlightenment Inquiry*, (Leiden: Brill 2016). In this book, the author argues that many affinities emerge in Hume's natural philosophy with Newton-inspired Scottish scientific movements.

97Cfr. Johannes Craig, *Theologiae Christianae Principia Mathematica*, (London: T. Child, 1699).

98 S. M. Stigler, John Craig and the probability of history: from the death of Christ to the birth of Laplace, Journal of the American Statistical Association 81 (1986), 879–887.

99 Charles H. Edwards, *The historical development of the calculus*, (Dordrecht: Springer, 1994), 247.

100 Bonaventura Francesco Cavalieri and Stefano degli Angeli belonged to the religious order of the Jesuates, founded by Giovanni Colombini of Siena in 1360. The Jesuates (or *Jesuati*) were abolished by Pope Clement IX in 1668. See: Georg Dufner, *Geschichte der Jesuaten*, (Roma: Edizioni di Storia e Letteratura, 1975) and Isabella Gagliardi (ed.), *Le vestigia dei gesuati. L'eredità culturale del Colombini e dei suoi seguaci*, (Firenze University Press, Firenze, 2020).

To Gregory's family belonged not only the aforementioned Alexander Anderson but also the professor of astronomy and mathematics David Gregory (1659-1708), who played a major role in the spread of Newtonian physics and rules. When carefully examined, we will note very strict family ties thus demonstrating that, in the intellectual circles between Saint Andrews, Edinburgh, Glasgow and Aberdeen, there is the positive exchange of notions and theories with a typically transdisciplinary approach, harbinger of crucial innovations. The presence of all these personalities who contributed to the development of the exact and natural sciences should be taken account more seriously. Indeed, at this point it would be appropriate to speak of a pre-enlightenment *Scottish School of Mathematicians*.

Approaching the Scottish Enlightenment

Between the 17th century and 18th century this long chain of contacts and mutual influence with the European vanguards continues. Hugh Trevor-Roper shows in his *History and the Enlightenment (2010)* some of the unexpected roots of the Enlightenment philosophy in the vibrancy of Geneva, meeting point of prominent intellectual figures, religious diaspora and political refugees.[101] Among them, the contribution of Pietro Giannone with his theory of *Civil History* should not be underestimated.[102] In this conjecture it is understandable why the Scottish cultural circles were deeply influenced by the Cartesian method with their cognitive and psychological approach as well as by Blaise Pascal.[103]

His *Lettres provinciales* were very popular and these links reinforce the importance of the French social and economic contribution. Not only Montchrétien but also Boisguillebert, Quesnay, Turgot and the Physiocrats "formally entered the Scottish Universities, and before very long, the British political economy".[104] In addition, as John Laures stated, "England did not contribute anything of value to the discussion until the Seventeenth Century; and only in

[101] See Hugh Trevor-Roper, *History and the Enlightenment*, (New Haven: Yale University Press, 2010).
[102] See also Carlo Gentile, *Pietro Giannone, Edward Gibbon e il Triregno*, (Livorno: Bastogi, 1976).
[103] In his *Lettres provinciales* - originally published under the pseudonym Louis de Montalte and written with the help of the theologian Louis Arnauld - appeared his mathematical theories and the controversy against Jesuit probabilism.
[104] William L. Taylor, "G. Carmichael. A Neglected Figure in British Political Economy", *South African Journal of Economics*, (vol. 23/3 -1955), 255.

the Eighteenth century was the theory of money definitely fixed by the (new) science (of Political Economy)".[105]

Trevor-Roper is also convinced that "the great capitalists who dominated trade and financed the war efforts of Protestant and Catholic powers alike in the early seventeenth century were "Calvinists" only of convenience; under their outwardly Calvinist allegiance they were really Armenians, who rejected the dogma of predestination in favour of free will and were therefore heirs to the irenic, undoctrinaire religion of Erasmus".[106] In this framework of social, political and theological inquiries, "the sources reveal an extraordinary degree of continuity between scholastic natural law (not only Aquinas) and the natural law doctrines that dominated Protestant Europe during the seventeenth and much of the eighteenth century"[107]

If - inspired by I. Hont and M. Ignatieff - the history of political economy and natural jurisprudence begins "with Aquinas, because it was he who set the terms of the argument on the origins and limits of property right in the grain-trade debates of mid-eighteenth-century*",*[108] this approach to "the collective stewardship of the human species as a community of goods",[109] was not at all unfamiliar to the Scotist currents – as already briefly demonstrated – but finds in them a substantial criticism of some aporias of Aristotelianism such as in the case of the alleged "sterility of money"[110], which has been harshly opposed.[111] The widespread diffusion of this critical reception occurs thanks to the legal mediation and wide dissemination of the *Summa*

[105] John Laures, *The Political Economy of Juan de Mariana*, (New York: Fordham University Press, 1928) 162.
[106] John Robertson, "Editor's introduction", in Hugh Trevor-Roper, *History and the Enlightenment*, (New Haven: Yale University Press, 2010) IX.
[107] Knud Haakonssen, *Natural Law and Moral Philosophy: From Grotius to the Scottish Enlightenment*, (Cambridge: Cambridge University Press, 1996) 15.
[108] Istvan Hont and Michael Ignatieff, Michael, "Needs and Justice in the Wealth of Nations: An Introductory Essay", in Istvan Hont and Michael Ignatieff (eds.), *Wealth and Virtue* (Cambridge: Cambridge University Press, 1983); 26.
[109] *Ibid.*
[110] "To Christianize Aristotle was to adapt his immediate teaching to aims he could not envisage'. Odd Langholm, *Wealth and Money in the Aristotelian Tradition. A Study in Scholastic Economic Sources*, (Oxford: Oxford University Press, 1983): 66.
[111] In the Franciscan tradition, different economic and monetary cases are presented. In them, classical usury is juxtaposed with a series of deviations to contractual facts like credit and money fraud. Thus, following Olivi's teachings, two forms of capital emerge: *the first* is incorporated into production and viewed as a lasting investment; *the second* simply regards money as a means of saving, similar to any other asset, and thus lacks any transformative or generative capacity.

Astesana,[112] which takes up and elaborates many anti-Aristotelian arguments through a detailed casuistry, especially in terms of credit forms and monetary transactions.[113] The Book V (*Canones penitentiales*) was very popular and often reprinted until eighteenth century as an appendix to other juridical works.[114]

By attacking the Aristotelian concept of distributive justice, Hugo Grotius (1583-1645) extends the concept of "individual natural rights", based on which he constructs his account of public international law. According to his vision, each person is free and able to act as long as her actions do not violate the freedom of others. Such a rationalist position is so widespread and accepted that – according to Murray Rothbard – "the eighteenth century Enlightenment was essentially spinning out of the Grotian framework".[115] It should also be added that it is no coincidence that John Locke – one of the greatest English-speaking thinkers of the time – structures his critical philosophy on Scholastic sources,[116] so much so that Iversen Vaugh affirms that "there can be little doubt that Locke as a natural law philosopher absorbed many concepts typical of Scholastic thought and was a carrier of Scholastic tradition".[117]

To track this mingling of ideas and natural law theories,[118] Gershom Carmichael (commonly recognized as the founder of the *Scottish School of Philosophy*),[119] adopted as textbook the

[112] Giovanni Ceccarelli, "Usura e casistica creditizia nella "Summa Astesana". Un esempio di sintesi delle concezioni etico-economiche francescane", in Barbara Molina – Giulia Scarcia (eds.), *Ideologia del credito fra Tre e Quattrocento. Dall'Astesano ad Angelo da Chivasso*, (Asti: Centro Studi sui Lombardi e sul Credito nel Medioevo, 2001) 103-143.

[113] Astesanus of Asti (d. around 1330) was a Franciscan jurist and theologian. His *Summa de casibus conscientiae* – commonly known *as Summa Astesana* – is divided into 8 books. It also contains a very detailed legal vocabulary with punctual references on the legal uses of the time.

[114] Pierre Michaud-Quantin, *Sommes de casuistique et manuals de confession au moyen âge (XII–XVI siècles)* (Leuven: Nauwelaerts, 1962): 57–60.

[115] Murray Rothbard, *An Austrian Perspective on the History of Economic Thought*, Volume 2, (Cheltenham: Elgar Publishing 1995), 370.

[116] Recent studies are demonstrating a not entirely marginal link between Spanish scholastic thought - especially Jesuit - and British philosophy as in this case: Leopoldo J. Prieto López -José Luis Cendejas Bueno, *Projections of Spanish Jesuit scholasticism on British thought: new horizons in politics, law and rights*, (Leiden; Boston : Brill, 2023).

[117] Karen Iversen Vaughn, *John Locke: Economist and Social Scientist*, (Chicago: University of Chicago, 1980): 109–10.

[118] James Moore and Michael Silverthorne, 'Gershom Carmichael and the natural jurisprudence tradition in eighteenth-century Scotland', in Istvan Hont and Michael Ignatieff (eds.), *Wealth and Virtue: The Shaping of Political Economy in the Scottish Enlightenment* (Cambridge: Cambridge University Press, 1983): 73-87.

[119] To get an idea of the continuity/discontinuity in German legal and philosophical debate between the Reformation and the early Enlightenment, read the following article: Horst Dreitzel, "Von Melanchthon zu Pufendorf. Versuch über Typen und Entwicklung der philosophischen Ethik im protestantischen Deutschland

Samuel Pufendorf's *De Officio* in the Latin original version so that the German philosopher "played a vital role both in the history of Scottish philosophy and in the history of economic thought".[120] It is interesting to note that "Smith and Hume's mentor, Francis Hutcheson, were the first in Scotland to lecture in English rather than Latin."[121] This shared academic language, however, facilitated for centuries a transnational dissemination of knowledge and it was very common to find a book printed in Venice or Amsterdam at the Leighton library[122] or in private collections in Scotland.[123]

Moreover, the *Scots College* in Paris represented a kaleidoscope of tensions and visions. There the Scottish Catholic communities (abroad) found a kind of safe haven in the storm. According to a letter of Thomas Innes (1662-1744) dated 16th February 1711, "the Missioners of Scots Clergy, which in former time from the Reformation had almost not tie one to another nor a common Superior, […] were in the year 1653 erected by the Congregation of Propaganda into one body under a common head."[124] Innes was a notable representative of this institution – reaching the position of vice-principal – and his intellectual figure must be taken into serious consideration.

His philosophy and hermeneutics of history appears to be an ideal platform for further historical investigation on national history.[125] Innes' methodological and scientific approach is never

zwischen Reformation und Aufklärung," in Martin Mulsow (ed.), *Spätrenaissance-Philosophie in Deutschland 1570–1650. Entwürfe zwischen Humanismus und Konfessionalisierung, okkulten Traditionen und Schulmetaphysik*, (Tübingen: Niemeyer, 2009): 321–98.

[120] Arild Saether, *Natural Law and the Origin of Political Economy: Samuel Pufendorf and the History of Economics*, (Abingdon: Taylor & Francis, 2017), 214.

[121] Sheila Dow, "Knowledge, Communication and the Scottish Enlightenment", *Revue de philosophie économique*, (2009/2 - vol. 10), 4.

[122] See Gordon Willis, *The Leighton Library, Dunblane: Its History and Contents*, (Stirling: University of Stirling Press, 1981).

[123] David Hume was an avid reader and his collection – as demonstrated by the monograph written by D.F. Norton and M.J. Norton – included several hundred titles. Among them they identify many books from French, Spanish and Italian authors.

[124] Quoted in William J. Anderson, "Narratives of the Scottish Reformation, II. Thomas Innes on Catholicism in Scotland 1560-1653", *The Innes Review*, (Volume 7, Issue 2/1956), 112-121.

[125] "Now I easily foresaw that each of these parts of our ancient history – I mean the civil and the ecclesiastical – if trated apart by itself, would be so very inconsiderable and interrupted, for want of ancient monuments to go upon, especially in the times I have in view, that it would not be possible to reduce such small parcels into one continued series. Wherefore I could not but choose to join both parts together, and interweave them so in the order of time, as much as it can be observed, that both together might make one thread of history. Which method will, I hope, be attended with this farther advantage that each part will mutually give light one to another." Thomas Innes, *The Civil and Ecclesiastical History of Scotland*, (Aberdeen: Spalding Club, 1853), (Author's Preface), lxiii-lxiv.

detached from its significant religious background and metaphysical orientation, marvelously expressed in the second volume of his monumental *Critical Essay on the Ancient Inhabitants of Scotland.* There he states that "All these dispensations of the mercy of God hav[ing] often, in the common course, a certain connexion to the civil state and circumstances of people on whom it pleases God to bestow them, according to his infinite wise providence".[126]

Pedagogically, for contingent reasons, Catholic missions in the Highlands are obliged to implement a non-formal education in the "peripatetic missions",[127] where it was common practice "to collect the children of the villages and give them familiar catechetical instructions."[128] In this environment "Jesuits were regarded negatively (nicknamed 'birlies' after township clerks who laid down rules) by influential members of the secular clergy".[129] In an uninterrupted history of "polymathic, erudite, and transnational scholars, readers, and polemicists",[130] a web of priests and rebels (according to Kelsey Jackson Williams' research) contributed to the emergence of a pre-Enlightenment thought, that would have been "made up overwhelmingly of Episcopalian, Catholics and the Jacobites: outsiders who found themselves arrayed against the establishment politically, theologically, culturally and intellectually".[131]

Although one can agree with this historical analysis (that underlines a native tradition of philosophy, mathematics as well as of educational and political theories), it is worth highlighting that the roots of the Eighteenth century cultural flourishing find its deeper roots in an original and interconnected development of (reformed) Scholasticism and in a common (and predominant) European Latin culture.[132] According to J. Schmutz, Scotism, in particular, played a pivotal role in the transition to the Modern Era both in Protestant milieus and across

[126] Thomas Innes, *A Critical Essay on the Ancient Inhabitants of Scotland*, vol. II, (London: William Innys, 1729), 760.
[127] See Henry Foley, *Records of the English Province of the Society of Jesus*, 7 vols. (London: Burns & Oates, 1883), 7:202.
[128] Alasdair Roberts, "Jesuits in the Highlands: Three Phases", *Journal of Jesuit Studies*, (Volume 7: Issue 1/2020), 103.
[129] *Ibid.*
[130] Kelsey Jackson Williams (2020), *The First Scottish Enlightenment: Rebels, Priests, and History*, (Oxford: Oxford University Press, 2020), *Back cover*.
[131] "[…] This generation was decisively rejected by the better known Scottish Enlightenment of the later Eighteenth century, an unsurprising move given its radical opposition to the politics and theology of its successors." Kelsey Jackson Williams*, The First Scottish Enlightenment,* 2.
[132] John Durkan- Anthony. Ross, *Early Scottish Libraries*, (Glasgow: Burns, 1961).

the Ocean, having by then reached the shores of the New World.[133] Some recent studies demonstrate how vividly Scotist thinkers discussed not only practical (economic) issues but even cognitive matters until the 17th century through their ontological and scientific spectrum.[134]Along this line, R. Schuessler's valuable comparative work has pointed up some profound similarities between late scholastic methodology and analytic philosophy.[135]

A conclusion

Without losing sight of the wisdom of the past, the Scottish tradition combined the best of historical ideas with the innovations of modernity.[136] All these ingredients allowed Scotland to be both an incubator and an innovator. A. H. Williamson seems to agree with this argument, when – with a good dose of intellectual honesty – he does not hesitate to make manifest some criticisms on the methodology of contemporary historical research applied to Scottish history. In one part of his work – unfortunately little known – he is convinced that "Modern historians of Sixteenth Century Scotland, or at least Scotland prior to the *Armada crisis*, rarely find themselves much concerned about contemporaneous Spain and Portugal. Still less there does appear to be much of immediate interest to Scotland in the enormous empire which the Iberian Kingdoms were then creating. For moderns, all of that seems, almost inevitably, to be far away from the small northern realm; and the contemporary impact on it of these global developments, however important in the long run, is normally perceived today as marginal and remote. But the sixteenth-century Scottish intellectuals saw things differently; and with striking consistency they adopted perspectives in some ways less parochial than the perspective of those who now study them for centuries later".[137]

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[133] Jacob Schmutz, "L'héritage des Subtils: Cartographie du scotisme du XVIIe siècle," *Les Etudes philosophiques* (2002/1): 51–81.

[134] "The Scotist tradition is transepochal in nature. It originates in the early fourteenth century, when the early followers and Franciscans confreres of John Duns Scotus trotted in his proverbial footsteps, studying, interpreting, and in many cases significantly transforming his philosophical and theological doctrines, - and it lasted well into the eighteenth century, when the traditional scholastic schools, including the Scotist one, declined and ultimately vanished from the scene.", Claus A. Andersen, "Short Introduction to a Long Tradition", in Claus A. Andersen & Daniel Heider (eds.), *Cognitive Issues in the Long Scotist Tradition*, (Basel: Schwabe Verlag, 2023): 9.

[135] Rudolf Schuessler, "Analytic Philosophy and Scholastic Thought: How Deep Do Their Similarities Go?", *Studia Neoaristotelica,* Volume 21, (Issue 1, 2024) :74-104.

[136] See Tatsuya. Sakamoto – Hideo Tanaka (Eds), *The Rise of Political Economy in the Scottish Enlightenment*, (New York: Routledge 2005).

[137] Arthur H. Williamson, "George Buchanan, Civic Virtue and Commerce: European Imperialism and Its Sixteenth-Century Critics", *The Scottish Historical Review*, (Vol. 75, No. 199, Part 1 - Apr., 1996): 27.

This conclusion expands on Williamson's line and Broadie's thesis. According to them, the cultural and religious history of 17th century Scotland has been partly neglected and unjustifiably defined as a "dark age".[138] This essay wanted to show an intellectual chain that has never been interrupted in history. On the contrary, this vibrant philosophical tradition has not disappeared or has been eradicated. In turn – due to historical vicissitudes – it has evolved into a completely original form not only because of the influence of the Reform (in all its expressions) but also through *a logical-mathematical approach* which had the merit of filtering the arguments in a more scientific way, creating – simultaneously – the essential conditions for the Enlightenment mindset.

Through these authors and their works, one notices a significant link that connects Hutcheson, a Carmichael pupil, to the prominent Scottish Enlightenment's members, whose economic and scientific reasoning accepted and developed many ideas already present embryonically in the above-mentioned philosophers and schools.[139] It can be now better understood the famous saying of Schumpeter: "*the skeleton of Smith's analysis hails from the scholastics and natural-law philosophers*".[140] This multifocal intersection between legal, moral, theological, social and scientific issues is the natural and cultural background of the Scottish Enlightenment.

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[138] Alexander Broadie, "Introduction. Seventeenth-Century Scottish Philosophy", in Alexander Broadie (ed.), *Scottish Philosophy in the Seventeenth Century,* (Oxford: Oxford University Press, 2020), 3.
[139] "The scholastic science of the Middle Ages contained all the germs of the laical science of the Renaissance. And these germs developed slowly but steadily within the system of scholastic thought so that the laics of the sixteenth and seventeenth centuries continued rather than destroyed scholastic work. This applies even where it is most persistently denied." J. A. Schumpeter, *History of Economic Analysis*, (Oxford: Oxford University Press, 1954) 77.
[140] J. A. Schumpeter, *History of Economic Analysis*, (Oxford: Oxford University Press, 1954), 182.

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Bibliography

Alfani, Guido, "Plague in seventeenth-century Europe and the decline of Italy: an epidemiological hypothesis", *European Review of Economic History*, Volume 17, Issue 4, November 2013, 408-430.

Amblard, Marion, "The Scottish painters' exile in Italy in the eighteenth century", *Études Écossaises*, 13/2010, 59-77.

Andersen, Claus A., "Short Introduction to a Long Tradition", in Claus A. Andersen & Daniel Heider (eds.), *Cognitive Issues in the Long Scotist Tradition*, Basel: Schwabe Verlag, 2023.

Anderson, William J. , "Narratives of the Scottish Reformation, II. Thomas Innes on Catholicism in Scotland 1560-1653", *The Innes Review*, Volume 7, Issue 2/1956, 112-121

Bacon, Francis, *Novum Organum*, New York: P. F. Collier & Sons. 1902.

Bengtsson, Jan O., *The worldview of personalism: Origins and early development*, Oxford: Oxford University Press 2006.

Broadie, Alexander, *Scottish Philosophy in the Seventeenth Century,* Oxford: Oxford University Press, 2020.

Broadie, Alexander, *Agreeable Connexions: Scottish enlightenment links with France*. Edinburgh: Birlinn 2012.
———. "Scotus and the Idea of Independence", in E. J. Cowan (ed.), *The Wallace Book*, John Donald, 2007, 75-89.
———., *The shadow of Scotus: Philosophy and faith in pre-reformation Scotland*, Edinburgh: T&T Clark, 1995.
———., *The tradition of Scottish philosophy: A new perspective on the enlightenment*, Savage: Barnes and Noble, 1990.
———., *George Lokert of Ayr: Medieval man of ideas*. Ayrshire Ayrshire: Archaeological and Natural History Society, 1983.

Buchanan, George, *De jure regni apud Scotos: Or, A dialogue, concerning the due privilege of government, in the kingdom of Scotland, betwixt George Buchanan and Thomas Maitland*, Philadelphia: Andrew Steuart, 1766.

Ceccarelli, Giovanni, "Usura e casistica creditizia nella "Summa Astesana". Un esempio di sintesi delle concezioni etico-economiche francescane", in Barbara Molina – Giulia Scarcia (eds.), *Ideologia del credito fra Tre e Quattrocento. Dall'Astesano ad Angelo da Chivasso*, (Asti: Centro Studi sui Lombardi e sul Credito nel Medioevo, 2001): 103-143.

Ciocci, Argante, "Le proporzioni e il moto dei corpi: l'eco della scuola francescana di Oxford in tre problemi di cinematica della Summa di Pacioli", www.centrostudimariopancrazi.it/images/slides/la-scuola-francescana-di-Oxford-e-Pacioli.pdf (latest vision 7 October 2022).
———., *Luca Pacioli e la matematizzazione del sapere nel Rinascimento*, Bari: Cacucci Editore 2003.

Courtenay, William, "Early Scotists at Paris: A Reconsideration", *Franciscan Studies*, 69 (2012/1), 175-229

Clavius, Christofer, "Teaching Mathematics in Jesuit Colleges (1581)", in Casalini Cristiano; Pavur, Claude, *Jesuit Pedagogy, 1540–1616: A Reader*, Boston: Institute of Jesuit Sources. Boston College, pp. 281-301.

Cowan, Edward J. (ed.), *For freedom alone: The declaration of Arbroath, 1320*. East Leaton: Tuckwell Press 2003.

Craig, Johannes, *Theologiae Christianae Principia Mathematica*, London: T. Child, 1699.

De Carvalho, Mario Santiago, "Cursus Conimbricensis", *Conimbricenses.org Encyclopedia*, M. S. de Carvalho - S. Guidi (eds.),"http://www.conimbricenses.org/encyclopedia/cursus-conimbricensis/", latest revision: May, 28th, 2019.

Demeter, Tamás, *David Hume and the Culture of Scottish Newtonianism. Methodology and Ideology in Enlightenment Inquiry*, Leiden: Brill, 2016.
De Roover, Raymond, "Joseph A. Schumpeter and scholastic economics", *Kyklos,* 10(II/1957), 115–146.
———., *San Bernardino of Siena and Sant'Antonino of Florence. The two great economic thinkers of the middle ages*. Cambridge: Harvard University Press, 1967.
Dow, Sheila, "Knowledge, Communication and the Scottish Enlightenment", *Revue de philosophie économique*, 2009/2 (vol. 10), 3-23.

Dreitzel, Horst, "Von Melanchthon zu Pufendorf. Versuch über Typen und Entwicklung der philosophischen Ethik im protestantischen Deutschland zwischen Reformation und Aufklärung," in Martin Mulsow (ed.), *Spätrenaissance-Philosophie in Deutschland 1570–1650. Entwürfe zwischen Humanismus und Konfessionalisierung, okkulten Traditionen und Schulmetaphysik*, (Tübingen: Niemeyer, 2009), 321–98.

Dufner, Georg, *Geschichte der Jesuaten*, Edizioni di Storia e Letteratura, Roma, 1975.
Durkan, John, *Scottish Schools and Schoolmasters 1560-1633*, Glasgow: Scottish History Society, 2013.

Durkan, John (ed.), *George Buchanan: (1506-1582) : Renaissance Scholar and Friend of Glasgow University : a Quartercentenary Exhibition*, Glasgow: Glasgow University Library, 1982.

Durkan, John-Ross, Anthony, *Early Scottish Libraries*, Glasgow: Burns, 1961.

Duve, Thomas – Danwerth, Ottto (eds.), *Knowledge of the Pragmatici. Legal and Moral Theological Literature and the Formation of Early Modern Ibero-America,* Max Planck Studies in Global Legal History of the Iberian Worlds, Leiden: Brill, 2020.

Edwards, Charles Henry, *The historical development of the calculus*, Dordrecht: Springer, 1994.

Ewald, William, "James Wilson and the Scottish enlightenment", *Journal of Constitutional Law*, n.12/2010, 1074–1075.

Favaro, Antonio (ed.). *Carteggio inedito di Ticone Brahe, Giovanni Keplero e di altrt celebri astronomi e matematici dei secoli XVI e XVII con Giovanni Antonio Magini*, tratto dall'archivio Malvezzi de' Medici di Bologna, Bologna: Zanichelli, 1886.

Foggie Janet P., *Renaissance Religion in Urban Scotland: The Dominican Order, 1450-1560*, Leiden: Brill, 2003

Foley, Henry, *Records of the English Province of the Society of Jesus*, 7 vols. (London: Burns & Oates, 1883), 7:202.

Fraser Tytler, Patrick, *History of Scotland*, vol. II, Edinburgh: William Tate, 1845.

Funkenstein, Amos, *Theology and the Scientific Imagination from the Middle Ages to the Seventeenth Century*, Princeton, NJ: Princeton University Press, 1986.

Gagliardi, Isabella (ed.), *Le vestigia dei gesuati. L'eredità culturale del Colombini e dei suoi seguaci*, Firenze University Press, Firenze, 2020.

Gallera, Giovanni, "Reformed scholastic philosophy in the seventeenth-century Scottish universities", in Alexander Broadie (ed.), *Scottish Philosophy in the Seventeenth Century*, (Oxford: Oxford University Press, 2020), 94−110.
———., "The Reception of Descartes in the Seventeenth-Century Scottish Universities: Metaphysics and Natural Philosophy (1650–1680)", *Journal of Scottish Philosophy*, Volume 13, Issue 3 (2015), 179-201.
———.,"The Philosophy of Robert Forbes: A Scottish Scholastic Response to Cartesianism", *Journal of Scottish Philosophy* Volume 11, Issue 2 (2013), 191–211

Gentile, Carlo, *Pietro Giannone, Edward Gibbon e il Triregno*, Livorno: Bastogi, 1976.

Geonget, Stéphan (éd.), *Bourges à la Renaissance, hommes de lettres, hommes de lois,* Paris: Klincksiek, 2011.

Grabill, Stephen, *Sourcebook in Late-Scholastic Monetary Theory: The Contributions of Martin de Azpilcueta, Luis de Molina, S. J., and Juan de Mariana, S. J.*, Lahman, MD: Lexington Books, 2007-

Grant, W. Leonard, "The Shorter Latin Poems of George Buchanan, 1506-1582", *The Classical Journal*, Vol. 40, No. 6/1945, 331-348.

Grice-Hutchinson, Marjorie, *The School of Salamanca: Readings in Spanish Monetary Theory, 1544-1605,* Oxford: Clarendon Press, 1952.
Haakonssen, Knud, "Natural law and the Scottish enlightenment", *Man and Nature, 4*(1985), 47–80.

Haffner, Paul, The mystery of reason, Leominster: Gracewing, 2001.
Harrison, John & Laslett, Peter (Eds.), *The Library of John Locke*, Oxford: Clarendon Press, 1971.

Hamm, Berndt, *The Reformation of Faith in the Context of Late Medieval Theology and Piety*, (edited by R. J. Bast), Boston: Brill, 2004.

Hatfield, Henry Rand, "An Historical defense of Bookiping", Journal of Accountancy, vol. 37/4 (1924), 241-253.

Hoenen, Maarten J. F. M., "Philosophie und Theologie im 15. Jahrhundert. Die Universität Freiburg und der Wegestreit", in D. Speck-D. Martens, B. Martin, C. Rüchardt (Eds), *550 Jahre Albert-Ludwigs-Universität Freiburg*, Freiburg in Breisgau, Alber 2007, 67-91.

Hoenen Maarten J. F. M., Schneider Jakob Hans Josef, Wieland Georg (Hrsg.): *Philosophy and Learning. Universities in the Middle Ages*, Leiden: Brill, Leiden, 1996.

Honnefelder, Ludger, "Scotus und der Scotismus. Ein Beitrag zur Bedeutung der Schulbildung in der mittelalterlichen Philosophie". in Maarten J. F. M. Hoenen, Jakob Hans Josef Schneider, Georg Wieland (Hrsg.): *Philosophy and Learning. Universities in the Middle Ages*, (Leiden: Brill, Leiden 1996), 249–262.

Hont, Istvan and Ignatieff, Michael (eds.), *Wealth and Virtue: The Shaping of Political Economy in the Scottish Enlightenment*, Cambridge: Cambridge University Press, 1983.

Houston, Robert A., "Law & Literature in Scotland, c 1450 to 1707". in Lorna Hutson (ed.), *The Oxford Handbook of English Law and Literature, 1500-1700*, (Oxford: Oxford University Press, 2017), 667–686.

Høyrup, Jens, *The World of the Abbaco. Abbacus Mathematics Analyzed and Situated Historically Between Fibonacci and Stifel*, Basel: Birkhäuser, Basel 2024.

Innes, Thomas, *A Critical Essay on the Ancient Inhabitants of Scotland*, vol. II, London: William Innys, 1729
———.,*The Civil and Ecclesiastical History of Scotland*, Aberdeen: Spalding Club, (Author's Preface), 1853.

Israel, Jonathan, *Radical Enlightenment: Philosophy and the Making of Modernity 1650-1750*, Oxford: Oxford University Press 2001.

Iversen Vaughn, Karen, *John Locke: Economist and Social Scientist*, Chicago: University of Chicago, 1980.

Jackson Williams, Kelsey, *The First Scottish Enlightenment: Rebels, Priests, and History*, Oxford: Oxford University Press, 2020.

Jinno, Takeshi, "Tyrannicide as an act of divine justice. The doctrines of tyrannicide of john of salisbury and Juan de Mariana", in Fernanda Alfieri and Takashi Jinno, *Christianity and Violence in the Middle Ages and Early Modern Period: Perspectives from Europe and Japan*, (Berlin; De Gruyter Oldenbourg. 2021), 63-77.

Kaye, Joel, *Economy and Nature in the Fourteenth Century. Money, Market Exchange, and the Emergence of Scientific Thought*, Cambridge: Cambridge University Press, 1998.

Langholm, Odd, "Olivi to Hutcheson: Tracing an early tradition in value theory". *Journal of the History of Economic Thought,* June 31/2009, 131–141.
———., *The Legacy of Scholasticism in Economic Thought. Antecedents of Choice and Power*, Cambridge: Cambridge University Press, 1998.
———., *Wealth and Money in the Aristotelian Tradition. A Study in Scholastic Economic Sources*, Oxford: Oxford University Press, 1983.

Lázardo Pulido, Manuel, "Scholastica Colonialis: El contexto curricular de los misioneros franciscanos extremeños", *Curiensia*, vol. VI (2011), 147-167

Laures, John, *The Political Economy of Juan de Mariana*, New York: Fordham University Press, 1928.

Lorna Hutson (ed.), *The Oxford Handbook of English Law and Literature, 1500-1700*, Oxford: Oxford University Press, 2017.

Caramuel Lobkowitz, Juan, *Theologia intentionalis*, Lyon: Borde1664.

Mackenzie, George, *A defence of the antiquity of the royal line of Scotland with a true account when the Scots were govern'd by kings in the isle of Britain*, London: R. Chiswell, 1685.

Marcelli Sánchez, Jessica, "Los textos escolásticos y la dinámica educativa en la América Virreinal", *Opción: Revista de Ciencias Humanas y Sociales*, Nº. Extra 13/2016, 435-455

Martinez Argote, Germán, "La Escolástica americana del Siglo XVII y la supuesta "Tibetización" de la cultura hispana", *Universitas Philosophica*, n. 33/1999, 83-96;

T. McInally, *The Sixth Scottish University. The Scots Colleges Abroad: 1575 to 1799*. Leiden: Brill 2012.
Melamed, Yitzhak Y. (ed.), *A Companion to Spinoza*, London: Wiley, 2021.

Michaud-Quantin, Pierre, *Sommes de casuistique et manuals de confession au moyen âge (XII–XVI siècles)*, Leuven: Nauwelaerts, 1962.

Michel, Francisque, *Les Ecossais en France, les Français en Ecosse*, Paris: A. Franck, 1862.
Robert I. Mochrie, "Justice in Exchange: The Economic Philosophy of John Duns Scotus", *Journal of Markets & Morality,* 9, no. 1 (Spring 2006), 35-56.

Molina Barbara – Scarcia Giulia (eds.), *Ideologia del credito fra Tre e Quattrocento. Dall'Astesano ad Angelo da Chivasso,* Asti: Centro Studi sui Lombardi e sul Credito nel Medioevo, 2001.

Moore, James and Silverthorne, Michael, 'Gershom Carmichael and the natural jurisprudence tradition in eighteenth-century Scotland', in Istvan Hont and Michael Ignatieff (eds.), *Wealth and Virtue: The Shaping of Political Economy in the Scottish Enlightenment* (Cambridge: Cambridge University Press, 1983): 73-87.

More, Alison, "Franciscans and Tertiaries in Later Medieval Scotland", *Franciscan Studies*, vol. 77 (2019), 111-133.

Mullett, Charles F., "Plague Policy in Scotland, 16th - 17th Centuries", *Osiris*, vol. 9/1950, 435-456.

Mulsow, Martin (ed.), *Spätrenaissance-Philosophie in Deutschland 1570–1650. Entwürfe zwischen Humanismus und Konfessionalisierung, okkulten Traditionen und Schulmetaphysik*, Tübingen: Niemeyer, 2009.

Olin, John C., *The autobiography of St. Ignatius Loyola, with related documents* (p. 73). New York: Fordham University Press, 1992.

O'Malley, John W., *The First Jesuits*, Cambridge: Harvard University Press, 1993.

Patriarca, Giovanni, "A Minor Masterpiece? Reconsidering *De Ponderibus et Mensuris* by Juan de Mariana", *Economic Affairs*, 44 (3/2024), 487-500.
———., "On the Scottish Distinctiveness. From Late Scholasticism to Scottish Enlightenment. A Preliminary Perspective", *Review of Austrian Economics*, 33/2020, 513-520.
———., "Questioning Nature in Late Middle Ages. A History of Method, Praxis and Innovation", *Medievalia*, vol. 53 núm. 2 (2021), 5-29.

Petrescu, Lucian "The threefold object of the scientific knowledge. Pseudo-Scotus and the literature on the Meteorologica in fourteenth-century Paris", *Franciscan Studies*, Vol. 72, (2014), 465-502.

Popkin, Richard Henry, *The History of Scepticism : from Savonarola to Bayle*, Oxford: Oxford University Press, 2003.

Prieto López, Leopoldo J. - Cendejas Bueno, José Luis, *Projections of Spanish Jesuit scholasticism on British thought: new horizons in politics, law and rights*, Leiden ; Boston : Brill, 2023.

Prunier, Clotilde, 'They must have their children educated some way': the education of Catholics in eighteenth-century Scotland", *The Innes Review* vol. 60 no. 1/2009, 22-40.

Roberts, Alasdair, "Jesuits in the Highlands: Three Phases", *Journal of Jesuit Studies*, Volume 7: Issue 1/2020, 103-115.

Robertson, John, "Editor's introduction", in H. Trevor-Roper, *History and the Enlightenment*, New Haven: Yale University Press, 2010, VI-XXII.

Ross, Anthony, "Libraries of Scottish Blackfriars", *IR,* XX (1969), 3-36.

Ross, William, "Notice of the Hospital of St Martha at Aberdour, Fife", *Proceedings of the Society of Antiquaries of Scotland*, 3 (1858), 214-220.

Rossini, Marco and Schabel, Chris, "Time and Eternity among the Early Scotists: Texts on future contingents by Alexander of Alessandria, Radulphus Brito, and Hugh of Novocastro", *Documenti e studi sulla tradizione filosofica medievale*, 16 (2005), 299-304.

Rothbard, Murray N., *Economic thought before Adam smith: An Austrian perspective on the history of economic thought* II, Cheltenham: Elgar Publishing 1995.
Saether, Arild, *Natural law and the origin of political economy: Samuel Pufendorf and the history of economics* (p. 214). Abingdon: Taylor & Francis, 2017.

Sakamoto, Tatsuya - Tanaka, Hideo (Eds.), *The rise of political economy in the Scottish enlightenment*, New York: Routledge, 2005.

Schliesser, Eric, "Spinoza and Economics", in Yitzhak Y. Melamed (ed.), *A Companion to Spinoza*, (London: Wiley, 2021): 410-421

Schmutz, Jacob, "L'héritage des Subtils: Cartographie du scotisme du XVIIe siècle," *Les Etudes philosophiques* (2002/1): 51–81.

Schuessler, Rudolf, "Analytic Philosophy and Scholastic Thought: How Deep Do Their Similarities Go?", *Studia Neoaristotelica,* Volume 21, (Issue 1, 2024), 74-104.
———., *The Debate on Probable Opinions in the Scholastic Tradition*, Leiden: Brill, 2019
Schultz, Karie, 'Catholic political thought and Calvinist ecclesiology in Samuel Rutherford's Lex, Rex (1644)', *Journal of British Studies*, 61 (2022): 162-84.

Schumpeter, Joseph A., *History of economic analysis*. Oxford: Oxford University Press, 1954.
Smout, Christopher, "The Culture of Migration: Scots as Europeans 1500-1800", *History Workshop Journal*, No. 40/1995, 108-117.

Speck, Dieter- Martens, Dieter -Martin, Bernd – Rüchardt, Christoph (Eds), *550 Jahre Albert-Ludwigs-Universität Freiburg*, Freiburg in Breisgau, Alber 2007

Steinmetz, David, *Calvin in context* (p. 6). Oxford: Oxford University Press, 2010.

Steuart, A. Francis, "The Scottish 'Nation' at the University of Padua", *The Scottish Historical Review*, Vol. 3, No. 9 (Oct., 1905), 53-62.

Stone, Lawrence, "Literacy and education in England 1640–1900", *Past & Present,* 42(11 February 1969), 69–139.

Strazzoni, Andrea, *Dutch Cartesianism and the Birth of Philosophy of Science: From Regius to Gravesande*, Berlin-Boston: Walter de Gruyter, 2018.

Taylor, William L., "G. Carmichael. A neglected figure in British political economy", *South African Journal of Economics*, vol. 23/3–1955, 251-255.

Thomson, Duncan, *Painting in Scotland 1570–1650*, Edinburgh: The Trustees of the National Galleries of Scotland, 1975

Todeschini, Giacomo, *Franciscan Wealth: From Voluntary Poverty to Market Society*, Saint Bonaventure, NY: The Franciscan Institute, 2009.

Trevor-Roper, Hugh, *History and the Enlightenment*, New Haven: Yale University Press.

Villani, Natascia, "Juan de Mariana e la sua analisi della politica monetaria del tempo", in *Annali 2016–2018*, Napoli: Università degli Studi Suor Orsola Benincasa, 2021, 237–255.

Vismara, Paola, "Moral Economy and the Jesuits", *Journal of Jesuit Studies*, 5/2018, 610-630.

Voetius, Gisbert, *Exercitia et Bibliotheca Studiosi Theologiae*, Utrecth: Strick 1653.

Vos, Antonie, *The theology of John Duns Scotus*. Leiden: Brill, Leiden, 2018.

Warner, Keith, *Knowledge for Love: Franciscan Science as the Pursuit of Wisdom*, Saint Bonaventure, NY : Franciscan Institute 2012.

Williamson, Arhtur H., "George Buchanan, Civic Virtue and Commerce: European Imperialism and Its Sixteenth-Century Critics", *The Scottish Historical Review*, Vol. 75, No. 199, Part 1 (Apr., 1996), 20-37.

Willis, Gordon, *The Leighton Library, Dunblane: Its History and Contents*, Stirling, University of Stirling Press 1981.

Woodward, William H., *Studies in Education During the Age of the Renaissance, 1400-1600*, Cambridge: Cambridge University Press, 1924.