Reconsidering "The Conflict Thesis"

with James C. Ungureanu, "Relocating the Conflict between Science and Religion at the Foundations of the History of Science"; and Miguel de Asúa, "The 'Conflict Thesis' and Positivist History of Science: A View from the Periphery."

THE "CONFLICT THESIS" AND POSITIVIST HISTORY OF SCIENCE: A VIEW FROM THE PERIPHERY

by Miguel de Asúa

Abstract. The historiographic tradition of the history of science that originated with Auguste Comte bears all the marks of narratives with roots in the Enlightenment, such as a view of religion as an underdeveloped stage in the ascending road in humanity's quest for a more mature understanding. This article explores the development of the peripheral branch of a tradition that developed in Argentina by the mid-twentieth century with authors such as the Italians Aldo Mieli, José Babini, and the Hungarian Desiderius Papp. It is argued that, contrary to the historiographic program of the conflict thesis developed in English-speaking countries, those scholars who cultivated the kind of "positivist" history of science that thrived in continental Europe were inclined to see science as a social and epistemological replacement of a fossilized religious outlook. In the final section, I suggest a way to relate the more or less strong versions of the conflict thesis to different patterns of secularization.

Keywords: conflict thesis; historiography of science; science and religion; secularization

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The expression "conflict thesis" may be taken broadly as a social and intellectual phenomenon, a power struggle between the values and epistemological authority of science and religion in which either of them seeks an ultimate preeminence over the other. This would be the case of the representatives of the New Atheism or, conversely, of some cases of Biblical literalism. In a restricted, historiographical sense (which is the one I will discuss in this article) the expression "conflict thesis" denotes the belief that science and religion have been fighting each other over the course of Western history on the grounds of an intrinsic incompatibility.[1] This

Miguel de Asúa is Professor of History of Science, Universidad Nacional de San Martín, and Senior Research Member in Consejo Nacional de Investigaciones Científicas y Técnicas (Conicet), Buenos Aires, Argentina; email: mdeasua@yahoo.com.

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conviction is the organizing principle in two well-known works: John W. Draper's *History of the Conflict between Religion and Science* (1875) and Andrew Dickson White's *A History of the Warfare of Science with Theology in Christendom* (1895).[2] The fact that those books are the product of English-speaking societies seems to have been overlooked in current historiographical discussions.[3] Bringing this issue to the forefront leads to the question whether in Catholic countries such as France, Italy, and those of Iberian America, the conflict narrative took a different turn. It is the burden of this article to show that it did.

Charles Taylor has differentiated between two "ideal types" of patterns of secularization in the West: (a) the Baroque Catholic societies of continental Europe which due to a total identification of one church with society he calls "paleo-Durkheimian"; and (b) those Anglophone societies in which pertaining to any of several churches implies belonging to a diffuse "church" which connects with the political identity of the nation—these are Taylor's "neo-Durkheimian" polities (the nomenclature comes from Émile Durkheim's sociology of religion which tends to an identification of the religious with social cohesion) (Taylor 2007, 454–56 and 486–87).

The analysis of the history of the conflict thesis in paleo-Durkheimian countries exceeds the aims of this article. Its more limited goal is to follow a tradition of history of science from its roots in the positivist movement to its twilight in mid-twentieth century Argentina. What is specifically interesting about Argentina? The peripheral point of view might help to take notice of the solidity of the historiographical tradition in Romance-language countries infused with a last breath of life by local historians. Strong French cultural influence and massive immigration from Italy and other European nations was the background against which this happened. Looking at the local tradition of history of science could contribute to set a historiographical long perspective from which to discern two large formats of relationships of incompatibility between religion and science: open confrontation and replacement. I shall argue that the thesis of an antagonism between science and religion as developed in the atmosphere of French positivism is less acute when compared with the familiar "Anglophone model" of the conflict thesis. Also, that in the style of history of science that flourished in "paleo-Durkheimian" societies, the dynamic between religion and science was mostly framed in terms of a substitution (replacement) of the former by the latter (I will call this, the "French" or positivist model of the conflict thesis).[4] I am aware that the boundary line between these two versions of the "conflict thesis" is far from being neatly defined, but since the goal of this article is to differentiate between them, for the time being I will leave aside the discussion about their common ground.[5]

A preliminary comment is in order. Since the 1990s, growing awareness about the use of a supposedly historical record as a legitimizing

tool in current controversies has brought historians to talk about the "conflict myth" instead of "thesis," thus underlining the contrived character of this historiographical construct (Numbers 2009; Harrison 2015). Even more, Peter Harrison has argued that the notions of "science" and "religion" are cultural constructs of modern Western civilization, a move that calls for the dissolution of any conception that would postulate a continuous strife between them (Harrison 2015, 194–98).[6] In the face of these developments, does it still make sense to talk about the conflict thesis or any such like thing? Perhaps yes, insofar as our aim is to chart the fortunes of the idea of irreconcilability between science and religion as part of a distinctive tradition of history of science shaped in the transition from French Enlightenment to positivism and with a late and odd peripheral afterlife in Argentina. Any constructive (even conventional) character that could be assigned to the interpretive concepts involved does not seem to detract from the legitimacy of a historical inquiry oriented to trace their careers in alternative cultural settings.

In the *Course of Positive Philosophy*, Auguste Comte outlined a program for a general history of science conceived in terms of a three-stage view of the history of humanity, according to which a primitive religious stage was followed by a metaphysical era in turn to be superseded by the scientific or positive age. Paul Tannery, the scholar who could well claim to be one of history of science's founding fathers, explicitly amplified Comte's original proposal with his program of a *histoire générale des sciences* [general history of the sciences] (Sarton 1913, 9–11; Tannery 1930; Paul 1976; Kragh 1987, 15–19; Christie 1990). But the person who took his inspiration from Comte's sketchy project and turned it into solid realities was George Sarton. However, he was not the only one. Aldo Mieli, a contemporaneous Italian historian of science, followed Sarton's footsteps in the attempt to provide the nascent discipline with scholarly instruments and an institutional basis with an internationalist flavor. This positivist history of science, universal in scope and embracing Western as well as Eastern civilizations, was driven by its own conceptual assumptions to address the question of the historical relationships between science and religion, which it did. We shall begin examining summarily this historiographical program before focusing on its development in Argentina, where it acclimatized itself as a result of Mieli's arrival in Buenos Aires from Paris in 1939. A local disciple, the engineer José Babini, consolidated Mieli's legacy in Argentina. I expect that the analysis of how peripheral historians condensed and distilled this long historiographical tradition will help to better define its place in the family of "conflict theses".[7] This, in turn, could help to better describe the evolution of our two models in Taylor's neo- and paleo-Durkheimian societies and suggest the outlines of a tentative interpretation in terms of patterns of secularization.

Setting the Stage: Comte and Sarton

Although a detailed analysis of the notion of history of science from the Enlightenment to positivism is out of the scope of this article, the mention of at least a few milestones seems in order. In the *Discours preliminaire* to the *Encyclopedia*, the mathematician Jean le Rond d'Alembert explains how "l'histoire des sciences" [the history of the sciences] had been the making of enlightened geniuses, from Bacon onward (d'Alembert [1751]1894, 75–76; cf. Cohen 1985, 213–28). He attributed the beginning of the progress of the human spirit to the Renaissance; the middle ages were in his view "le temps ténébreux" [the dark ages]. With waxing eloquence, d'Alembert tells how the Inquisition "condemned a famous astronomer [who remains unnamed] for having held that the Earth moves and declared him heretic," just as Pope Zacharias had condemned a bishop for not following Augustine on the inexistence of the antipodes ([1751]1894, 77–78 and 91). The contours of this inchoate narrative of progress would be more firmly delineated in the eight epochs of the Marquis de Condorcet's *Esquisse* (1795). The threads connecting the Enlightenment to Comte's ideology are discernible in Antoine Desttut de Tracy and other *idéologues* of the early Napoleonic era (Bury 1920, 260–61).

In his *Cours de philosophie positive*, Comte claims that science can be expounded either historically, through the early contributions of the founders of a given discipline, or dogmatically, as a systematized body of knowledge. For the founder of positivism, history of science becomes possible once the dogmatic stage is reached: system (contemporary science) begets history (Comte 1892, 1:63–70). The view of science as an instrument and a measure of progress is consistent with a perspective that contemplates it as superseding metaphysics which in turn was a step higher than religion. In Comte's three-stage theory, there is no open conflict between religion and science but rather the latter follows the former as a kind of social ontogeny—a view underscored by the comparison of the evolution of society with the development of the individual (1892, 1:3–4). The spirit of positive philosophy, evidently opposed ("en opposition évidente") to the theological and metaphysical spirit, affirmed itself in the times of Francis Bacon, René Descartes, and Galileo; it was then when positive conceptions extricated themselves from superstition and scholasticism (Comte 1892, 1:15–16). For Comte, the relationship between science and religion is less one of permanent confrontation and conflict than of substitution or liberation from the chains of erroneous ideas. This is made more evident by the buffering effect of the intermediate or metaphysical stage that mediates the transition from the religious to the scientific stage.

Moreover, Comte's secular Religion of Humanity was a terrain in which religion and science coexisted happily. This ambiguity was highlighted by George Sarton, the grand figure who bridged the French

and English-speaking traditions of history of science and who in one of his papers scrutinized Comte's Positivist Calendar, which sought to substitute the Catholic calendar of saints with a list of heroes and heroines of Humanity.[8] In an attempt to assess Comte's expertise as a historian of science, Sarton singled out the scientists among the "gods, heroes, and saints" chosen by Comte that he himself had mentioned in the volumes of his *Introduction to the History of Science* (Sarton 1927–1948). Although Sarton considered Comte to be "crazy," called him a "maniac," and denied that he could be called a historian in any sense, he praised the (eventually successful) efforts of the founder of positivism to create a chair of history of science at the Collège de France (Sarton 1952, 345, 347, 357 and 352).

Although Sarton is deservedly considered one of the founders of twentieth-century history of science, later historians have judged his legacy as ambivalent in several respects (Thackray and Merton 1972; Pyenson 2007). In the opening pages of his massive *Introduction to the History of Science*, he affirms that his work will deal with the development of science or "*systematized positive knowledge*" (italics in the original), conceived as "cumulative and progressive" (Sarton 1927–1948, 1:3–4). After this declaration of Comtean faith, Sarton feels bound to explain why the history of religion found a place in his magnum opus. The declared reason is that in pre-modern times, theology was not only an integral part of science in the West, but the portion of it to which the other provinces of knowledge were subordinated. Nothing, he goes on, could be more pathetic that the spectacle of the useless efforts aimed at reconciling the facts of natural experience (i.e., science) with a "system of knowledge considered a priori as perfect and unimpeachable" (i.e., religion) (1927–1948, 1:5). We should pardon our ancestors for this "delusion," says Sarton, and deal with it for the only reason that ignoring the intimate links between religion and science in antiquity would render less than justice to a historical perspective.

Sarton understood the discipline of history of science as the intellectual tool of his secular pacifist humanism (1918). As a youth in Ghent, he was a "modernist," which implied various radical or anti-bourgeois options; he had been inclined toward socialism and also cultivated links with a group of Freemasons (Pyenson and Verbruggen 2009, 65). His daughter, the writer May Sarton, gives us a defined picture of Sarton's family as typical of the educated *fin-de-siècle* bourgeoisie of French-speaking countries: males were anti-clerical, women were pious (George's maternal aunt was a nun). She adds that her father had always maintained a "tender respect" for the [Catholic] Church and—what is somewhat difficult to interpret—that he "was truly religious in spirit," although not interested in metaphysical speculations (Sarton [May] 1962). In Sarton's programmatic article published in the first issue of *Isis*, "L'histoire de la science," he contends that "science and religion have never ceased acting (*réagir*) upon each other," although these interactions were more intense and frequent as we go far back in

time (1913, 20–21). He mentions two cases in which religions have promoted the advance of science: the preservation and transmission of Greek science by the translation school of the Nestorians and the Huguenot scientists expelled from France during the sixteenth and seventeenth centuries, celebrated by the botanist Alphonse de Candolle (1873, 120–42). Sarton then goes on to deal with the antagonistic interactions between science and world religions, pointing out that the conflict was properly between science and theology or science and clerical trends. In the slightly revised English version of this paper published two years later in *The Monist*, Sarton approvingly refers to Andrew Dickson White's book, which could have been the inspiration of his previous distinction between "religion" and "theology," a difference which was crucial for the latter (Sarton 1916; for a discussion of White, see Schaefer 2015).[9] Despite this reference, it is hard to see Sarton as an unqualified adherent to the Anglophone model of the conflict thesis, insofar as his discussion begins with the *constructive* relationships between religion and science.

As befits a follower of Comte (his graduate student Robert K. Merton talked about his "Comtean progressivism"), Sarton did not see the relationship between science and religion as one of intrinsic confrontation (Merton 1985, 485 and 480). He rather framed his history in terms of a religious primitive mind having been overstepped by more advanced ways of understanding and manipulating the world: philosophy and, ultimately, science. Sarton approvingly quotes the statement of the Italian humanist Mario Nizolio—read in Ernest Renan's *Averroës*—according to which the "scholasticism" of every religion should be considered a "capital enemy of truth" (Sarton 1924, 23). History of art, of religion, and of science constitute in their unity the accomplished expression of human thought, but what sets apart science from the other two is that it is "essentially a tale of progress, of conquest" (Sarton 1924, 31). Sarton compares the knowledge of the mystics with that of the "rationalists." The former is limited and of its nature infertile, while the latter, based on the experimental method, can reveal even the folds of the immaterial world. Sarton's affirmation that science at its best "leads to a kind of sanctity" is immediately followed by its denial: it would be better not to allow this kind of talk, because science and religion are two domains which, despite their occasional overlapping, are best kept separate (1931a, 128–32). In "East and West," Sarton traces a grand view of science, from its origins in the "Greek miracle" to the modern era. He argues that in late antiquity Christianity failed to bring together the Greek and Hebrew spirits. Greek science was smothered in the early middle ages by Roman utilitarianism and "Christian sentimentality" (1931b, 93 and 115). In one of his many essays, Sarton argued that the discipline of history of science should reformulate the historiographic program proposed by Eusebius of Caesarea who in his *Historia ecclesiastica* demands that history as a chronicle of bloody wars should be replaced by

the account of the champions of the Christian faith. Sarton approves of Eusebius' understanding of the aim of historical knowledge, which should be to "emphasize the main purpose of mankind," for which it is necessary to extoll "the creative and lasting achievements and to evoke the great men who were responsible for them." But the Belgian savant differs from the bishop of Caesarea as to who those heroes were and which were their great deeds; what he agrees on are the "principles" (Sarton 1988, 170–73; cf. Eusebius 1926, 1:404–07).

Sarton's overall position as regards science and religion could perhaps be aptly summarized in a quotation taken from the second edition of Renan's *L'avenir de la science*, which he used as the closing statement of his article on the author of *La vie de Jésus*: "My religion has always been the progress of reason, i.e. of science" (1948, 115; cf. Renan 1890, vii).

Enter Mieli

During the late 1930s and 1940s, Argentina became involved in the international scene of history of science. This was a result of the arrival in the country of Aldo Mieli. Born in 1879 into an affluent Jewish family of Livorno (Tuscany), this romantic socialist and pioneer of gender studies followed upon the steps of Sarton in his attempt to become a leading figure of the nascent discipline of history of science (for his biography, see Pogliano 1983; Dall'Orto 2002; Abbri 2010). His long career began in his native country, which he left in 1928 to establish himself in Paris, as director of the Section of the History of Sciences at the Centre de Synthèse and as perpetual secretary of the Académie International d'Histoire des Sciences, which he organized and ran (Tosi 1997). In 1939, he emigrated to Argentina, where an Institute of Philosophy and History of Science was set up for him at the Universidad del Litoral (Rosario); it was closed in 1943 as consequence of a military coup, which also ousted future Nobel prize winner Bernardo Houssay from the University of Buenos Aires (Sarton 1944). Mieli moved to Buenos Aires where, beset by ailments and financial difficulties, he continued working until his death (Asúa 1997, 275). He depended for economic support on some fitful and ineffective official initiatives, *emigrés* from the Spanish Civil War, and his disciple José Babini. The publication of *Archeion* (the organ of the *Académie*) was suspended because of a critique of Hitler signed by Mieli, who on this account contacted Henry Sigerist, at that time at Johns Hopkins. The famous historian of medicine in turn passed on Mieli's address to Sarton. Sarton told Mieli that he and Sigerist had been trying to get something for him in the United States or in Mexico (Asúa 1997, 276; for Sigerist and Argentina, see Asúa 2005). In their efforts toward establishing bibliographical instruments, a large specialized library, and an international organization with an emblematic journal, Sarton and Mieli had parallel

professional lives. It is plausible that in the heyday of his academic career in Paris, Mieli saw himself as competing with his more famous colleague for the role of founder of the discipline (Bucciantini 1987; Asúa 1997, 276–78). The last letters they exchanged express a sense of community of destinies, a shared sadness for the unfinished task and a longing for the atmosphere of pre-WWI Europe.

Unlike Sarton, Mieli was not fond of programmatic essays. But in a youthful article on the history of science in which he aligned himself with the idea of defending the project of a general history of science against the writing of separate histories of each of the disciplines, Mieli defined *storia della scienza* [history of science] in contradistinction to "religious intuition" and "artistic creation." According to him, the former should be concerned with "the development of that part of human thought devoted to the systematic knowledge of what is real, either through speculative or empirical methods" (Mieli 1916–1919, 45). His characterization of religion as an intuition amounted to no more than an epistemological depreciation. The Italian historian was not a religious person by any standards. In a phrase that was as much a description of his tutor as an implicit self-characterization, Babini claimed that the young Mieli had been exposed to a liberal education "free of any religious prejudice" (Babini 1962, 74).

That Mieli's historiographical approach was akin to Sarton's is evident in the *Panorama general de historia de la ciencia*, a modest version of the latter's *Introduction* published in Buenos Aires by the editorial house Espasa-Calpe. Mieli wrote the first five volumes of this work; volumes 6 through 12—all of them lacking notes and bibliography—were composed by his disciple José Babini and the Hungarian historian of science Desiderius Papp, at that time in Buenos Aires (see below). Mieli's preface to the *Panorama* oscillates between an autobiography and a declaration of principles colored with a strong anti-fascist sentiment, in which he claims that the work is the culmination of "a life devoted to what is good and to science"—due to the political contents of the preface, the editor refused to publish it (Mieli 1948, 495). The preface ends with two stanzas of *Il canto dell'amore* by Giosuè Carducci, the prominent liberal and anti-clerical poet, author of the "Hymn to Satan" (Carducci 1913, 94).

Mieli's attitude with respect to religion as expressed in the *Panorama* is worth exploring. In the first volume of the work dedicated to science in the ancient world, he depicts the third century C.E. as an epoch of magic and astrological ideas which flourished in the wake of the spread of mystery religions, a denomination which included Christianity. But he points out that although many historians have attributed the decadence of ancient science to the influence of Christianity, "nothing could be further from the truth." He cites St. Basil and St. Gregory as examples of Christian apologists of science and claims that the responsibility for the alleged decay of science in late antiquity should be sought in the new cultural

climate and not in the rise of any particular religion (Mieli 1945–1961, 1:246–50). There is also a chapter on Hindu science in which he mentions the geometrical and astronomical materials in the sacrificial rituals prescribed in the brahmanas and sutras (1945–1961, 2:15). The layout of the *Panorama* is linear. Science began with the "Greek miracle" (what came before, "Primitives and Ancient Civilizations," is packed in eight pages) and prospered in Roman soil ("Roman science and philosophy are completely Greek in their aspirations") (1945–1961, 1:1–8 and 184). It was transmitted to the Arabs through the intermediation of five cultural channels: Nestorians, Monophysites, the Sabians of Harran, the Zoroastrians, and the Jews (1945–1961, 2:1–12). Mieli is conversant with the relevance of these different religious communities in the translation movement of late antiquity. In his view, Western science experienced a "new awakening" under the influence of Arabic science, a theme to which he had substantially contributed while in Paris (1945–1961, 2:191; cf. Mieli 1936).

The Italian historian conceives medieval thought as an ascending arch that extends from a position of conciliation between Aristotelian philosophy and theology to "a separation between theology and philosophy and the inclination of the latter towards experimental demonstration" (Mieli 1945–1961, 2:215). Western medieval science did not rank high in Mieli's appreciation: he presents it as "subjected to [religious] dogma" and allegedly ridden with otiose and sophistic arguments; although it took from the Greeks the encyclopedia of knowledge, it left aside the vivifying spirit of the latter (1945–1961, 3:40). The obvious high point of this grand story is the Italian Renaissance, with two outstanding characters: Christopher Columbus and Leonardo da Vinci—Mieli dedicated a full volume of the *Panorama* to the latter (vol. 4). In relation to the test case of Copernicus, he took it that, while the Lutheran leaders were hostile to the new cosmology, at first most of the representatives of the Catholic Church were favorable to it (1945–1961, 3:256–58). He planned to deal with the conflict of Galileo in a future volume, but died before he could write it.

Mieli's history of science is framed along the lines of the Enlightenment narrative, a parabola of progress that originated in Greece and culminated in the Italian Renaissance, but the sharpest edges of confrontation between science and religion appear blunted. Despite occasional irksome commentaries, Mieli's history is suffused by a spirit of openness and understanding.

Babini: The Faithful Disciple

José Babini, who as Mieli's Argentinian follower continued the tradition of history of science in the country, was an engineer, professor of mathematics, and university administrator (Ortiz and Pyenson, 1984; Kohn Loncarica, 1985; Babini 1992). His father, who had immigrated to Argentina from Forlì (Emilia-Romagna, Italy), had strong Republican convictions (Babini

2001, 7). Babini wrote a considerable number of works on the history of science and his hectic activity as an editor and in the cultural arena did much to popularize the subject, but his historiography never proceeded beyond the kind of writing he learned from Mieli and which he found congenial (even though by the 1970s Babini was aware of the important historiographical shifts in the field). Unlike Mieli, who had been a scholar in the Continental mold, Babini was a Latin American essayist who used explanatory footnotes occasionally and did not care too much for bibliography. Although articulate, his prose is unimaginative and flat. An inspiring teacher of mathematics in several official universities and a public intellectual, Babini was appointed Dean of the School of Exact Sciences of the University of Buenos Aires by the administration that resulted from the civic and military coup that overthrew General Perón from government. Babini did much for making Sarton known in Argentina with the translation of many of his books: the first two volumes of the 1959 edition of the *Introduction*, *The History of Science and the New Humanism*, *The Life of Science*, and *Six Wings.* He regularly sent Sarton copies of the books he himself wrote and those he translated, as well as books from other colleagues to be reviewed in *Isis* with unequal success (Asúa 2000, 257). Until recently, Babini had been the only Argentine author to publish a paper in that journal other than book reviews and necrologies (his 1964 paper was a three-page note in Spanish).

Babini was a liberal and a staunch secularist.[10] But this viewpoint does not necessarily inform his books on general history of science, such as the volumes of Mieli's *Panorama* he co-authored with Papp, which cover the Renaissance to the nineteenth century. In contradistinction to Mieli's audible authorial voice, these volumes are mosaics of thematic blocks paraphrased from more specialized works (the result of the uneasy collaboration between the authors).[11] The history told in those books reverberates with "enlightened" overtones. In the volume on the eighteenth century, we learn how science finally occupied the center of social attention as a result of the displacement of theology and the substitution of natural laws for sacred scripture (Mieli [Papp and Babini] 1945–1961, 8:3). But the chapter on Galileo is free from the ballast associated with the conflict thesis. After reproducing the condemning resolution of the Holy Office and some lines from Galileo's recantation, the authors point out that "Galileo was neither tortured nor was he ever in the dungeons of the Inquisition. The well-known legend of the 'Eppur si muove' [and yet it moves], which originated in the circles connected to the French *Encyclopédie* is also false" (1945–1961, 7:57–58). During the years of the 1966–1972 military dictatorship in Argentina, to make ends meet Babini began publishing a series of small books (around 100 pages each) intended to cover a comprehensive history of science—they did not go further than the Renaissance.[12] His views were very close to those of Mieli: on the one hand, he affirms that "some

Christians disregarded curiosity about the natural world and tried to keep people apart from the study of philosophy," but on the other hand "other thinkers, such as Saint Clement [of Alexandria] and Origen showed that that kind of study was not incompatible with Christian life" (Babini 1968, 13).

One would look in vain in Babini's "universal" history of science (as it was called) for the episodes and rhetoric of the Anglophone model of the conflict thesis. But its traces are discernible in the field of Argentine history, which lent itself more readily to the manifestation of political commitments. Babini's ideological allegiances were consonant with a vision of the country's past that downplayed its Spanish and Catholic tradition—defended by traditionalists and right-wing nationalists—and exalted liberal, cosmopolitan, and secularized currents of thought and action. This can be seen in his *Historia de la ciencia en Argentina*, a work which went through several editions and became his best known production (I am using the posthumous edition, Babini 1986). Babini categorically denies the existence of anything like science during the whole colonial period while attributing to the Jesuits the main responsibility for the cultural and educative backwardness of colonial Río de la Plata: "We must conclude that during the long colonial period Argentina did not harbor any kind of scientific manifestation" (1986, 65–66). Or else: "The expulsion of the Jesuits in 1767 contributed to the spread of the new ideas, for that religious order not only monopolized education but was also the zealous warden of the conceptions which those new ideas sought to combat" (1986, 60). At that time, the Jesuit historian Guillermo Furlong Cardiff was publishing his many research articles and books on colonial social and intellectual life, with much attention paid to science (much of this research was gathered in Furlong 1969). Furlong was a traditionalist and a rare kind of Argentine nationalist (unlike the rest, he did not look down on the British), whose historical approach was bent on glorifying the action of the Society of Jesus in the territory of what would later become Argentina. He had studied in Spain and at Woodstock College (Baltimore) and had a PhD from Georgetown University (Asúa 2015).

Babini and Furlong are scarcely comparable. Furlong was a solid professional historian with a large amount of original scholarly work and edition of sources, but his interest in history of science was limited to the colonial period in Río de la Plata. By the energy deployed in his overall activity and on account of his books, translations, interpretative essays, and popular lectures Babini became the embodiment of the history of science in Argentina, although his scholarly contributions to the field were scant. Both of them addressed the issues surrounding the relationship between religion and science within the framework of a value judgment about the role of the Catholic Church as a cultural and political actor in a long-span history of their country. Within this context, Furlong's move can be

understood as an attempt to bring to his side of the controversy the authority of science, which in the history of that country had been an emblem of the secularizing and liberal factions.

Central European Coda: Papp

Desiderius [Desiderio] Papp was a science writer and historian of science born in Budapest with a life marked by the disruptions brought by WWI and the dissolution of the Austro-Hungarian Empire. Papp (his birth name was Deszö Pollack) was the son of a rabbi and carried on the family's scholarly tradition studying classical philology in Budapest and science in Vienna and Paris. Fluent in several languages, with a solid Central European culture and a talented personality, Papp crisscrossed the map of war-ridden Europe in a cinematographic scape that included a period in a French prison camp and stints of scholarly activity. He managed to take refuge in a Jesuit house in Barcelona and eventually landed in Buenos Aires (all the members of his family were killed in Auschwitz). He spent the rest of his life in the southern cone of South America. Despite being celebrated and recognized (the Academies of Medicine in Argentina and Chile admitted him as an honorary member), Papp was never quite fully integrated into the Argentine university system. He had a good command of Spanish and his many books on history of science were written in that language—some of them edited in Buenos Aires, others in Santiago de Chile, where his work was more valued than in the neighboring country. His work belongs in the essay, not the erudite tradition; Papp made a living writings books, magazine and newspaper articles as well as books, doing part-time university teaching, and lecturing for general audiences (Papp 1985; Kohn Loncarica 1993).

The epistolary interchange between Papp and Sarton carried on in April 1951 throws some light upon the position of the former in the world scene of history of science. Papp had written to Sarton apparently asking him to introduce the second edition of his *Historia de la fisica*. The Belgian inquired about the academic profile of his correspondent and Papp responded that, while taking courses in physics and astronomy in Vienna (for which he admitted he lacked mathematical training), he stumbled upon the four volumes of the second edition of Friedrich Dannemann's *Die Naturwissenschaften in ihrer Entwicklung und ihre Zusammenhange* (Leipzig, 1920–1923) and the two volumes of August Heller's *Geschichte der Physik* (Stuttgart, 1882–1884). These works opened an academic field to him in which his linguistic, philosophic, scientific, and literary interests could coalesce and he decided to devote his life to it.[13] Apparently Sarton answered this letter graciously, for in a subsequent letter from 18 April, he told Papp that he could use his previous letter as a prologue to the book.[14]

It is not easy to form an opinion of Papp's ideas with respect to science and religion. It seems that he had an agnostic position: according to one testimony, he once claimed that he would like "to find out that those who believe in God were not wrong . . . science does not contain any element that denies the existence of the Supreme Being—but it does not exhibit the least proof of His existence either" (Kohn Loncarica 1983, 72). Almost all of his works (at least those that are relevant to this question) are surveys intended for the general public. We can take as an example his *Historia de las ciencias*, a panoramic introductory history of science from antiquity to the present, reprinted posthumously (Papp 1996). Over a total of 334 pages, Papp devotes 17 to the middle ages, most of which are occupied with alchemy and Arabic science (1996, 78–91). In the two-page section entitled "The Decadence of Learning," he claims that "with the invasion of the Barbarians, the long 'medieval night' descends upon Europe, a long night of stagnation and decadence of all the branches of learning." The Church Fathers, says Papp, were eminent moralists, but ignorant of science; for them, the sensible world was but God's footstool, and physical phenomena were "less worthy of study than theological problems, useful for the salvation of the soul" (1996, 75). Papp depicts the last act of Galileo's "painful drama": a 70-year old man, kneeling in front of his judges, recanting from all his "errors" and disowning all his doctrines—but he rehearses that the "and yet it moves" was not pronounced by "his trembling lips" (1996, 131). What we find here is, once more, a narrative patterned along the lines of Enlightenment history of science. Among the historians acting in Argentina, Papp perhaps came closest to indulging in a rhetoric akin to the Anglophone model of the conflict thesis, but even then his writings lack the shrill overtones of a strong confrontational spirit.

The Two Variants of the Conflict Thesis and Patterns of Secularization

During the middle decades of the twentieth century, the southern cone of South America might seem an unlikely place to look when trying to assess the conflict thesis. But at the time, as a consequence of the migrations imposed by WWII, Argentina was something of a cultural "neo-Europe" which witnessed the emergence of a cadet branch of the kind of history of science that Sarton had taken to the United States with far more success.[15] This makes this country a particular case, for as a result of the cultural transplant it experienced it provided the stage and added some new protagonists for the last act of the secularist tradition of history of science that had originated in European paleo-Durkheimian societies. In other Iberian American countries, with even stronger cultures of positivism and secularism such as Mexico and Brazil, the tradition of history of science was mostly of local origin (this is the reason why we focus our enquiry in Argentina).

The kind of history of science cultivated in the countries of Catholic Europe was born in the cradle of enlightened thought and grew and developed in the progress-intoxicated atmosphere of positivism. More than perpetual confrontation between religion and society, the tradition that took Comte's outline of a general history of science as its point of departure was naturally in tune with historical discourse envisioning the growth of science as a more advanced civilizational stage than an earlier religious phase. In what I have called the "French model" of the conflict thesis, developed out of positivism, science *replaced* religion. In the writings of Sarton, this approach at times merged into a view impregnated with the Anglophone model of the conflict thesis, taken from Andrew Dickson White: science *is at war* with theology. But as the case of Mieli shows, the transition from the milder to the starker model of conflict was not imperative—nor even in Sarton's case. Mieli was the source of an Argentine indigenous tradition embodied in the work of Babini, mostly derivative and patterned along the general lines of positivist historiography. As was the case with his teacher, Babini's universal history is rather free of the more aggressive traits of the Anglophone model of the conflict thesis, which nevertheless seem to emerge in what was probably his more original contribution, that is, the history of a "national" history of science, in which he downplayed those aspects related to the institutional Catholic Church.

How relevant is the question of secularization to the issue of the relationships between science and religion? Historians of science agree that science was not an agent or a cause of secularization—claiming the opposite would be to consent to the conflict thesis (Numbers 2007; Brooke 2009, 2010). Sociologists of religion also reject the idea of science as a secularizing engine, but in this case with some qualifications. For instance, Steve Bruce calls attention to "the subtle impact of naturalistic ways of thinking" (Bruce 2011, 47). José Casanova invokes "a scientific and scientistic worldview," which would have replaced religion in some kind of paradigm shift (Casanova 1994, 24). Taylor contends that not science itself but the worldviews associated with it are the forces that "beat out . . . 'religion'" (Taylor 2007, 362–66). Philosophies or ideologies associated with science, among which positivism is a leading case, seem to have played a role in the process of secularization, which is borne out by what happened in Argentina (Asúa forthcoming).

It is well known that the progress of secularization in France and other Catholic countries by the second half of the nineteenth century resulted in societies much more secularized than those in Protestant nations such as England and the Scandinavian countries. In France, religion was increasingly displaced from the political and public scene: the *laicïsme* of the Third French Republic exhibited a striking contrast with a country like the United Kingdom with an established Church. The same could be said of Italy. In both countries with a Catholic majority, a certain strain of

patriotism has been traditionally tied to anti-Catholic sentiment and the affirmation of "republican" values (Chadwick 1975, 161–88; Rémond 1999; McLeod 2000, 47–50; Lalouette 2002, 225–99). The countries of Iberian America, obviously including Argentina, belong in this group of "paleo-Durkheimian" societies (Bastian 2004).

It seems reasonable that the more aggressive cultural expressions of the confrontation between science and religion (the Anglophone model of the "conflict thesis") emerged in the cultural milieu of "neo-Durkheimian" countries in which by the end of the nineteenth century religion still held a fair amount of social power, at least as a catalyst of national identity. In France—and Latin America—*belle époque* secularists could conceive of religion as an enemy that had lost its teeth in the decades spanning from late Enlightenment to post-revolutionary times. This was somehow translated in the preference for the "French" positivist version of the conflict thesis which interpreted science as a substitute for religion in the triumphal march of progress. Further enquiries would be needed to confirm or disregard this hypothesis.

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Notes

1. Of course there is a close connection between what I am calling the broader and the narrower sense of the notion of "conflict thesis" insofar as they usually seek to legitimate each other. But it still seems possible to delimit a properly historiographical approach to the notion, embodied in a definable corpus of writings. (I owe the distinction between these two senses of the conflict thesis to a remark of one of the referees.)
2. One of the earliest exposition of the conflict thesis can be found in Goodman (1974, 30–49). Cf. the canonical treatment of the question in Brooke (1991, 2–15).
3. See, for example, Cantor (2010). In recent historiography-conscious surveys, the kind of enquiry that comes closer to our question is Lightman (2011).
4. I owe the use of a clear-cut distinction between these two models of the conflict thesis (the "Anglophone" model of confrontation and the "French" model of substitution) to a suggestion of one of the referees.
5. One of the referees interestingly pointed out the connections between these two traditions, detectable for example in the positivist strain in Andrew Dickson White. I agree that further inquiries may show new instances of cross-fertilization.

6. See the various papers commenting on Harrison's *The Territories of Science and Religion* in *Zygon: Journal of Religion and Science* 51:3 (2016).
7. For a brief account of historiography of science in Argentina, see Asúa (1993).
8. Sarton 1952. Cf. Comte (1849). For Comte's religion of humanity, see Wernick (2001) and de Lubac (1995, 131–267).
9. See James C. Ungureanu, "George Sarton's Appeal to Andrew D. White," https://jamescungureanu.wordpress.com/2017/02/14/george-sartons-appeal-to-andrew-d-white/. This blog entry, which points out the differences in the French and English version of Sarton's paper (1913 and 1916), also quotes relevant extracts from Sarton's correspondence with White.
10. He could be best described as *reformista* (the 1918 "Reform" university movement had been associated with the Partido Radical, a middle-class liberal national party with secularist leanings).
11. I owe this information to the late Nicolás Babini, José Babini's son and a historian of technology in his own right.
12. They were edited under the general title of *Enciclopedia de historia de la ciencia*, 14 vols. [incomplete] (Buenos Aires, CEAL, 1967–1969). Babini had originally planned to write 30 volumes in all.
13. Papp to Sarton, 5 April 1951 (in French). Papers of George Sarton, Houghton Library, Harvard University.
14. Sarton to Papp, 18 April 1951. Papers of George Sarton, Houghton Library, Harvard University.
15. I am extending the notion of "neo-Europe," made famous in environmental history in Crosby (2004), to the cultural sphere.

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