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The Early Days of the History of Science in Uruguay: Its First Courses and Practitioners

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Abstract:

In this article, I provide an initial approximation to the establishment and the early stages of the history of science in Uruguay. To do so, I focus on the first courses on the subject dictated in Uruguay and the first figures—both local and foreign—that took part in the process. With this objective, first, I examine the introduction of the discipline into the *Río de la Plata*—and into Argentina more particularly—via the arrival of European historians. I then analyze the role played by some of the first most significant figures in the history of science in Uruguay in the second quarter of the twentieth century. Finally, I explore and briefly describe the first courses dictated at the *Facultad de Humanidades y Ciencias (School of Humanities and Sciences)* of the *Universidad de la República (University of the Republic)* during the mid-twentieth century.

Keywords: History of Science in Uruguay; First Half of the Twentieth Century; *School of Humanities and Sciences*; Eduardo García de Zúñiga; Paul Schurmann; Desiderio Papp.

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From Europe to the *Río de la Plata* during the First Half of the 20th Century

The first institutions completely devoted to the history of science can be traced back to the end of the 19th century and the beginning of the 20th. During that same period, the first research centers and national societies devoted to the study of the discipline were

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established, the first international events were organized, and the first specialized journals commenced publication.

In 1907 in Italy, the *Società Italiana di storia critica delle scienze mediche e naturali* (Italian Society for the Critical History of Medical and Natural Sciences) was constituted. Three years later, the *Società* started publishing its journal, and it was there where Aldo Mieli (1879-1950)² published his first contributions to the history of science. There, Mieli attempted to trace some of the programmatic limits that would make of the history of science an independent discipline—one that was to be understood as providing the examination of the development of all cognitive activities whose objective was attaining a systematic knowledge of reality, both through speculative and empirical means. After the First World War, Mieli got ready to follow the path of George Sarton (1884-1956), whose work had made a decisive contribution to the consolidation of the history of science as an academic discipline in the United States. There, Sarton had developed a program for the general history of the sciences, which was, for its part, inspired in Paul Tannery's (1843-1904) and Pierre Duhem's (1861-1916) proposals. Sarton's historiographic approach was influenced by a positivist, presentist, and internalist historiography. Sarton defended the idea of a relentless progress of reason went hand in hand with the evolution of civilization, in such a way that the history of science should be studied and taught as a fundamental pillar of the cultural history of humanity. During the early years of the 1910s, he followed this approach, and began publishing *Isis* academic journal in Belgium. Afterwards, during his exile in the United States, he became the founder of the *History of Science Society* (1924).

In 1919, and following Sarton's tracks, Mieli created the *Archivio di storia della scienza* (Archive for the History of Science), which in 1927 became *Archeion*, a journal which allowed him to promote the international organization of the history of science. A year later, during the International Conference of Historical Sciences that took place in Oslo, Mieli proposed, successfully, to create an international committee.³ A year later, this committee became the *Académie internationale d'histoire des sciences* (International Academy of the History of Science), which was based in the *Centre International de Synthèse*, located in Paris, and whose official organon was *Archeion*. The Second World War, however, led Mieli into exile, forcing him to flee, first, to Paris, where he acted as the director of the *Centre International de Synthèse*, and then to Argentina, where he arrived in 1939, and where had intellectual friendships with figures such as Umberto Giulio Paoli—who had been his chemistry professor in Pisa—and with the Spanish mathematician Julio Rey Pastor (1888-1962).⁴ Just like Mieli, Rey Pastor had been a member of the *Académie internationale d'histoire des sciences* of Paris since 1934, and in Argentina he had constituted the *Grupo Argentino de Historia de la Ciencia* (Argentinian History of Science Association) in 1933.⁵ It was through Rey Pastor that the Italian historian found a place that suited his research interests and that allowed him to pursue his work, something he did in the *Universidad del Litoral*, located in the province of Santa Fe, which created for him the *Instituto de Historia y Filosofía de la Ciencia* (Institute for

2. Aldo Mieli obtained a Chemistry degree in Pisa (1904) with a theorico-experimental thesis. Four years later he moved to the *Sapienza* University of Rome where he later began his teaching career.

3. The committee was originally conformed by Abel Rey, George Sarton, Henry Sigerist, Charles Singer, Karl Suddhoff and Lynn Thorndike.

4. Even while Mieli was legally not a refugee, in practical terms he was one. The conservative Europe of the 1930s discriminated him for being Jewish, socialist, and homosexual.

5. The groups existence was fleeting, and was integrated by Amado Alonso, Nicolás Besio Moreno, Ángel Cabrera, Juan A. Dominguez, Enrique Herrero Ducloux, Ricardo Levene, José F. Molfino, Emilio Ravignani and the Uruguayan Eduardo García de Zúñiga (Plá 2003, 92).

the History and Philosophy of Science).⁶ There, he was able to keep on publishing his journal until 1943.⁷

Mieli arrived in Argentina with his personal library, one of the most valuable ones in the field, something that facilitated research and thus allowed for the production of serious scholarship. In the institute, Mieli worked with a group of young researchers, one of them being the mathematician and engineer José Babini (1897-1984), a disciple of Rey Pastor, and the Hungarian emigrant, Desiderio Papp Pollack (1895-1993). It was also in the institute that Mieli began working on his *Panorama general de la historia de la ciencia* (General Overview of the History of Science), the first general work dedicated to the history of science to be published in Spanish. The first volume appeared in 1945, and Mieli kept working on the project until the time of his death in 1950, managing to publish the first five volumes. After Mieli's death, Babini and Papp took over his work, publishing seven more volumes.

Just like Sarton, considered by Mieli to be “the greatest representative of the contemporaneous science historians” (Mieli 1951, 2), the Italian historian took the history of science to be “an organic whole where all the parts are intimately connected with one another, and not a juxtaposition of different histories, each devoted to a particular discipline, or, what is more, to specialized fragments of a single discipline” (Mieli 1951, 2). At the core of his historiographic conception lay the idea of a General History of the Sciences, that is, the idea of a fundamentally universalist history which was to reveal science organically, not only by showing the connection between its parts, but by acting as a bridge between the humanities and the sciences.

On the one hand, Mieli's approach to the history of science was guided by the theses of continuism (Mieli 1951, ix), and thus approached an internalist approach. Yet, on the other hand, Mieli believed that the history of science had a pedagogical objective:

We believe that the student who, on a par with contemporary science, knows how it has been constituted and who, in particular, knows in depth the history of their specialty, will find themselves in a privileged position, not only with regards the production of original research, but also in relation to their professional practice (Plá 2003, 95).

3

The History of Science in Uruguay After the Second Quarter of the 20th Century

In the first decades of the 20th century, the development of the history of science began its promotion within Uruguay. In the School of Mathematics of the *Universidad de la República* (University of the Republic), for example, the engineer and professor of mathematics Eduardo García de Zúñiga (1867-1951)⁸ defended the centrality of the humanities and of

6. The institute performed the following functions: carrying original research that contributed to the advancements of the history and philosophy of science; contributing to the formation of new researchers; establishing local and international links with similar scientific entities or institutes; dictate specialized courses and develop a bibliography devoted to the history and philosophy of science as well as to the development of contemporary science (Plá 2003, 94).

7. In 1943, due to the military coup, the institute disappeared, the publication of *Archeion* was interrupted, and Mieli had to flee to Buenos Aires, where he resided until his death in 1950. In 1947 *Archeion* came back to life under the name *Archives Internationales d'histoire des sciences* thanks to the sponsorship of the UNESCO. The journal is still edited to this day.

8. Eduardo García de Zúñiga graduated from the School of Mathematics in 1892 with a degree as a Bridges and Highways Engineer. Years later he travelled to Europe, where he specialized in advanced mathematics, in port-construction, and in materials testing. He was a professor, counsitor, and a dean of the School of Mathematics (later called School of Engineering), as well as the author of several

research for engineering, and promoted the development of the history of mathematics and of the history of science more generally. One of the actions he partook in to achieve this was the creation of a bibliographic archive—a set of works and periodicals which essentially acted as sources for the history of mathematics and its corresponding historiography. The archive also included numerous materials related to the history of science more generally, as well as to other scientific disciplines, making it an extremely rich collection—one that, at the time, could hardly find a comparison to any other such collection in Latin America. See (Martínez 1994).

Between 1924 and 1935, García de Zúñiga dictated a series of conferences about the history of mathematics.⁹ His intention in so doing was to broaden the extracurricular formation of engineering students. These conferences exposed the high amount of material and information that he handled, his deep knowledge of the discipline's evolution, and his broad socio-historical perspective. In this regard, Cheroni writes:

In this field García de Zúñiga occupies the place of a pioneer in our country [...] He put in place research tasks that were articulated upon highly elaborated methodological conceptions. His work was not limited to Uruguay; it gained international recognition and was part of a vanguard that was, around the world, struggling to help the new discipline reach its own professional status. (Cheroni 1992, 37)

For the lectures, García de Zúñiga relied on some chapters of Isaac Newton's *Principia* as well as from the *Optics* that he himself translated—these were actually some of the first versions of Newton's work to be translated to Spanish directly from the Latin.¹⁰

During that time, a transformation was taking place within the University, and in particular within the School of Engineering. The institution, formerly focused mostly on the formation of professionals, was turning into a place where researching the basic sciences became paramount. In that context, in 1932, the *Certificado de Estudios de Matemáticas Superiores* (Certificate of Superior Mathematical Studies) was created, following a syllabus planned by Rey Pastor, and which included a course on the History of Mathematics taught by García de Zúñiga. It should be noted, in this vein, that Rey Pastor's involvement with the development of the *Certificado* went beyond the mere development of the syllabus. The

works and articles on engineering and mathematics. He was president of the *Instituto de Estudios Superiores*, a member of the board of the FHC – *Facultad de Humanidades y Ciencias* (School of Humanities and Sciences) – , and, in 1940, he was made an *ad-honorem* professor from the School of Engineering, as well as *honoris-causa* doctor from the *Universidad de la República*. He worked in the *Departamento Nacional de Ingenieros*, in the *Inspecciones Técnicas Regionales*, in the *Inspección General de Ferrocarriles*, and in the *Dirección de la Administración Nacional de Puertos del Uruguay*. Along with other researchers, he was a founding member and an active participant from the *Asociación Uruguaya para el Progreso de la Ciencia*, as well as an honorary member of the *Instituto Histórico y Geográfico del Uruguay*, of the *Junta N. de Historia y Numismática de Buenos Aires*, of the *Real Academia de Ciencias of Madrid*, of the *Academia de Ciencias Exactas, Físicas y Naturales* of Lima, and of the *Instituto Histórico del Perú*. He represented Uruguay in the *Consejo de Patronato de la Sociedad de Matemáticas Española*, he was an academic from the *Academia de la Historia de la Habana*, member of the *Instituto Paraguayo de Investigaciones Históricas* and from the *Consejo de la Sociedad de Historia de las Ciencias* in the United States of America, and these are just some of his institutional affiliations.

9. Published in the *Revista del Centro de Estudiantes de Ingeniería*, 1924, 1925, 1928, 1929 and in the *Revista de Ingeniería*, 1932, 1934 y 1935. The themes of the conferences were: The beginnings of mathematics in Greece. Thales and the Pythagorean school; Mathematics in the Alexandrian era; Euclid; the Arab mathematicians; Mathematics in the Medieval Christian period.

10. The work referred to is *Isaac Newton. Selección*. Requested and translated by Eduardo García de Zúñiga and J. Novo Cerro. Colección Austral No. 334, Espasa Calpe, Buenos Aires, 1943.

Spanish mathematician actually travelled systematically to Montevideo to teach lectures which were part of the curriculum he developed.

Notably, García de Zúñiga's defense of the importance of the history of science, as well as his fight for its inclusion and progress, was not limited to his work in the aforementioned School. As the permanent president of the *Instituto de Estudios Superiores* (Institute of Higher Studies, hereafter referred to as IES) and as chairman of the *Facultad de Humanidades y Ciencias* (School of Humanities and Sciences, hereafter referred to as FHC), he also actively took part in the materialization of the corresponding lectureships.

In 1937, at the request of García de Zúñiga, the *Sección de Historia de la Ciencia* (Section of History of Science) of the IES was created. The Institute, which had only been inaugurated in 1930, had been created to tap into the blindspots of the professionalist education taught in the University's schools, an education that, for one, had no cultural concern. The IES's objective was thus to bring scholars together and stimulate their intellect, acting as a space for the free development of thought and where they could have academic freedom. In line with this, the IES promoted equal respect for all disciplines, regardless of whether or not these belonged to the official syllabi and programs.¹¹ Its main aim was to run courses, conferences, and publications, among others. Overlooked subjects such as Latin, Greek, or the history of music were therefore taught and studied with the same impetus as those that constituted the backbone of the official education. It was in this context that the aforementioned *Sección de Historia de la Ciencia* was created. Its directorship fell upon the figure of Paul F. Schurmann, a figure to which we will return below.

García de Zúñiga was a member of the *Grupo Argentino de Historia de la Ciencia* (Plá 2003, 92) until he—alongside some of his colleagues and peers—took part in the constitution of the *Grupo Nacional de Historia de la Ciencia* (National Association for the History of Science) of Uruguay, an association that became a plenary member of the International Association of the History of Science affiliated to the UNESCO. The group was comprised of figures such as Ergasto Cordero, Paul Schurmann, Carlos Etchecopar, and Rafael Schiaffino, among others,¹² and it pushed for the development of the history of science in Uruguay. It did this, among other ways, by requesting to the FHC's council that the history of science was to be “recognized by this School as a fundamental discipline, one that is formative and informative not only for science and philosophy but for any general cultural plan”. The authors also sustained:

[...] it is easy to remember that the History of Science is currently recognized as a source of indispensable precedents for all original scientific studies and investigations, and that it stands, in addition, as a necessary introduction or essential complement for the study of Philosophy and History—and even more so for the Philosophy of Science and Epistemology [...]

We, therefore, express our hopes that the History of Science is included in the School's plans, as it formerly had been: in its authentic unity and in the form of a regular and

11. The institute was a free and independent non official institution, even if it was subsidized by public entities (Schurmann 1942, 13).

12. Ergasto Cordero (1890-1951), a doctor in medicine, afterwards studied zoology in Germany, Vienna, and Paris. He co-founded the *Sociedad Uruguaya de Ciencias Naturales* (1928), he taught the Zoology courses assigned to the FHC between 1946 and 1951, and was the director of the Museo de Historia Natural of Montevideo since 1942.

Carlos Etchecopar (1908-1986), was a professor of astronomy at the IES and at the FHC, and was the director of the Observatorio de Montevideo.

Rafael Schiaffino (1881-1955), medical hygienist, and an important protagonist in the medical historiography in Uruguay during the 20th century. He was the author of *Historia de la medicina en el Uruguay*, a three-volume work (1927-1952).

specialized course that functions, preferably, following the characteristics of a documentation and study section [...].¹³

The First History of Science Courses in the FHC

The FHC was created in 1945 with a spirit that flew in the face of the professionalist profile that dominated the University at the time. It was thus conceived of as a center for “disinterested studies” that promoted a specific environment for “original” research. Some of the FHC’s particularities were that it did not issue certificates nor differentiate between degrees. Instead, the faculty was divided in chairs, and it did not serialize its courses. It emphasized the value of “study for study’s sake” and did not pursue practical ends, and hence was directed to a special student body, different from that which pursued a disciplinary and professional formation¹⁴ (París de Oddone 1995, 11).

In 1946 the professor Paul Schurmann (1895-1983) was assigned as responsible for the first History of Sciences course, a course that was part of the Physico-Chemical-Mathematical Sciences study program. Schurmann had arrived from Belgium, the country from which he emigrated into Uruguay during the decade of the 1910s. He had been a member of the International Academy of the History of Science since 1938, and his most important work was *Historia de la física* (History of Physics), published by the University’s annals in 1936 (a work that was praised by Mieli in the bibliographical recommendations contained in his own *Panorama General de Historia de la Ciencia*). The value of Schurmann’s work was also acknowledged by Rey Pastor, who contended that there were two ways of conceptualizing history and several methods to expose it: First, as the exclusive product of a few exceptional figures, to whom all of the great ideas (later developed by others) are attributed: “Mieli’s *Sumario* and Papp’s *Historia de la Física* belong to this type of schematic conception, [which is] very efficient in the portrayal of the historical process as a geodesic triangulation that only requires the highest vertices” (Rey Pastor 1947, 123). The second was as a vision of progress *qua* continual evolution, one that advances via the small yet incessant contributions of many figures, whose knowledge and comparative analysis reduces the big names to their right proportion. “[The second conceptualization] is more precise and righteous, but has to be exposed after the first one is developed in the form of a preparatory scheme. This topographic [approach] of the primary and propaedeutic triangulation is being carried forth by Mieli in his *Panorama* [...]” (Rey Pastor 1947, 123). Schurmann’s *Historia de la Física*, Rey Pastor considered,

[...] occupies a middle ground between two types that can be called telescopic and microscopic. It is, on the contrary, a natural vision, a panorama, with less of an erudite scaffolding than Mieli, but which provides to the humane element more texture and vivacity, by presenting, in its biographical and anecdotal traces, not only the culminant figures, but all of those that have done something enduring for Physics’ advances. (Rey Pastor 1947, 123)

Worried about the need to stimulate the development of the history of science in Uruguay, in 1947 Schurmann communicated some suggestions and propositions to the FHC’s

13. Note from the Group to the dean of the FHC, Carlos Vaz Ferreira, 10/2/1953, Docket 32, File 52, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

14. “The essential goal was the higher education and research in Philosophy, Literature, History and Sciences”. Among the basic principles one could find: encouraging specialization and research, promoting the culture, teach courses in various specialized fields, organizing research seminars on high culture (for national and American affairs), organizing conference series and special courses”. (París de Oddone 1995, 16).

dean, which were considered by him to be “of fundamental importance to the teaching and development of the History of Science in our School and in our medium”. Schurmann highlighted that

[...] in the last decade the study of the History of Science has seen an extraordinary increase throughout all of the world, and in particular in Buenos Aires, apparently placing Uruguay at the margins of this so necessary intellectual movement.¹⁵

He thus alluded to Rey Pastor’s (1947) opinion regarding Uruguay’s priority in this awakening, which, he continued,

[...] is founded upon the work of the engineer García de Zúñiga within the Library of the *Facultad de Ingeniería*, as well as of the present, with the publication of my *Historia de la Física*, alongside other works. Despite those antecedents, to which should be added the constitution of the *Grupo Nacional de la Historia de la Ciencia*—a part of the *Sección de Historia de la Ciencia* of the *Instituto de Estudios Superiores*—and of the History of Science course conferred upon me by this school, it is necessary to recognize that in Uruguay those dedicated to scientific studies have yet to realize that, currently, scientific progress—with its insightful revision of essential concepts—demands a perfect knowledge and an in-depth critique of the temporal development of every scientific concept. I do not think that the short course on the History of Science that has been trusted upon me will be enough to fulfill the School of Humanities and Sciences’ pressing duty to understand and propagate this urgently necessary discipline, so that our scientific environment gets in line behind the world’s scientific evolution.¹⁶

The development of the history of science, thus, was relevant not only because the discipline—as an organized and independent field—was opening its path through the curricula of superior and secondary education. It was also relevant because of the direct influence that it exerted upon the exposure methods used by a diversity of scientific subjects. Schurmann agreed with the history of science’s pedagogical aims, which were also emphasized by Mieli, Rey Pastor, and later on by Papp.

Schurmann considered that the first required measure was to generate the work environment and gather the materials needed so that the propagation of the History of Science becomes possible. This was no task for a short course, but required the support of an institute. However, at the time, there were economic constraints for the creation of such an institute. Hence why Schurmann proposed to begin by at least planting the seeds for such an organism, thus looking forward toward its future growth:

[...] a History of Science Section would be created under the direction of the subject’s professor, and with the collaboration of teaching assistants [...] The job would be subject to the following plan from its inception: a) A general study of the History of Science; b) A review of specific items; c) The study of the History of Science in Latin America and in [Uruguay]; d) The diffusion of the study of the History of Science

15. Note from Schurmann to the board of the FHC, 22/7/1947, Docket 32, File 52, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

16. Note from Schurmann to the board of the FHC, 22/7/1947, Docket 32, File 52, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

through classes, courses, the publication of journalistic pieces, communication with science professors, etc.; e) The preparation of a bibliographic documentation [...].¹⁷

Three months later, Schurmann would insist upon the need to improve the history of science within Uruguay. With the support of Sarton and Mieli's opinions, he affirmed that the classes and courses taught following the university's approach would not be sufficient as background conditions for such a task. Hence why a research plan was indispensable, as were the ordering and the diffusion of the knowledge and of the working elements, and these could only be developed by an organism inspired in the institutes's common plan. Schurmann closed the note by pointing out that he had

[...] personal relations with the greatest specialists in the History of Science, [relations that had been nurtured] permanently and for years (sic) (among which I highlight, in particular, those with Mieli and Sarton [the latter had been visited by Schurmann a few months earlier in the United States]). I can assure you that the Seminar, which will be the embryo of the "institute", will deserve all their interest, and that we will be able to count on their valuable and disinterested counseling and collaboration.¹⁸

Schurmann's proposal contemplated three academic functions: teaching, research, and outreach. Regarding the first of these, he affirmed:

The History of Science is necessary for education. It must thus be included—and given the corresponding weight—within the subjects that can find in it a wealth of useful elements. The history of "each scientific discipline" must become an integral and essential element of the lectures imparted by the professors of the corresponding disciplines, and general history of science must become one of the main components of the heterogeneous and complex study of universal history. (Schurmann 1937, 350)

With regards to the two other functions, Schurmann wrote that the seminar, in addition to being the natural place for doing research, would "perform a labor of 'synthesizing the History of Science' with didactic ends, and the results would be shared in the form of brochures, articles, synoptic tables, and so forth ... These would allow for the establishment of 'public relations', that is, the propagation of the knowledge of this new subject, which is necessary to build a supportive interest for its development within the intellectual and educational context".¹⁹

The work's execution started with a course on the History of Science. In a report written in 1949—the last year that he himself taught the course—Schurmann accounted for the advances made: the history of science's books which integrated different libraries had begun to be filed; regarding the field's dissemination, a series of articles on the "Great Milestones of Science" had begun their publication within press media; and concerning research, an analysis of the historical background of science's evolution in Uruguay was being addressed, particularly by working on the trajectory of the main national figures and institutions of fields such as botany, biology, or astronomy.

Another aspect of the story begins in 1947, when the FHC's board received a program proposal for a course in Philosophy of Science. The proposal had been advanced by Desiderio

17. Note from Schurmann to the board of the FHC, 22/7/1947, Docket 32, File 52, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

18. Note from Schurmann to the board of the FHC, 3/10/1947, p. 2, Docket 32, File 52, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

19. Note from Schurmann to the board of the FHC, 3/10/1947, p. 2, Docket 32, File 52, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

Papp (1895-1993), a Hungarian doctor in Philosophy (a degree he obtained in 1917 from the University of Budapest) who resided in Argentina. As a student, Papp had developed an interest in philosophy and philology, but in 1918 his focus started to move toward the sciences, in particular toward physics. In 1922 he encountered the work of authors such as Friedrich Dannemann, Edmund Hope and Emile Meyerson. In 1927 he moved to Vienna, where he resided until 1938 when, after being prosecuted by the Nazi regime, he had to emigrate, first to Switzerland, then to Paris—where he refined his knowledge in the history of astronomy and in the physico-mathematical sciences—and finally to Spain. Papp was a *Privatgelehrter* in universities in both Budapest and Vienna, the latter being the place where he became well known as a disseminator of science through the publication of hundreds of articles in a diversity of journals. At the same time, Papp began publishing books on the history of science.²⁰ In 1942 he arrived in Buenos Aires, where he continued teaching at the university level and publishing his work. Papp taught courses in Epistemology (1947-1962) and in The Scientific Thinking (which was a course on the history of science) (1951-1962) at the FHC.²¹ In 1948 he was elected as a *membre correspondant* for the *Academia Internacional de Historia de la Ciencia* (International Academy for the History of Science), and in 1950, after Mieli's death, he continued—alongside José Babini—with the publication of the last volumes of the *Panorama General de la Historia de la Ciencia*.²²

Before continuing with Papp's proposal, it should be noted that since the previous year the FHC had offered—within the context of the Physico-Mathematical Sciences' syllabus—an epistemology course that was taught by Carlos Evaristo Prélat (1910-1980), an Argentinian Doctor in Chemistry who had worked as a professor in Argentinian universities, imparting courses on Physico-Chemistry and on the History of Science. Prélat was also a member of the *Grupo Argentino de la Unión Internacional de Historia de la Ciencia* and was one of the first Argentinians to study and foment the history and epistemology of chemistry systematically. In this vein, between 1947 and 1950 he published three books, one of them in collaboration with Papp.²³ In 1946 Prélat had become the chair of Physico-Chemistry at the FHC in Montevideo. The main aspects of the program that he dictated while occupying such a position adumbrated his interest in the study of the discipline's history. That same year, the FHC's journal published two articles penned by him.²⁴ In the course's report that he presented, he suggested to the board that, in the future, the courses that encompass the “domains of the great field of the Philosophy of History Science should be advanced and multiplied, perhaps through the eventual creation of an Institute of Philosophy and of

20. For a list of his bibliography, see Kohn Loncarica 1993, 216-219.

21. Between 1953 and 1954 he was substituted by Francisco Marciano due to the impossibility to travel between Buenos Aires and Montevideo.

22. By the end of the 1950s he was invited by the *Universidad de Concepción* (Chile) to dictate courses that were to introduce the teaching of the History of Science and the History of Medicine. In 1961 he was hired by the *Universidad de Chile*, in Santiago, to teach and organize courses on the History of the Organic and Inorganic Sciences. He resided in Chile during 1961 and became a referent of the scientific community there. He received several awards and distinctions, such as the *Orden de Bernardo O'Higgins* (1982) and the Andrés Bello Medal from the *Universidad de Chile* (1977). He was also named an Honorary Citizen and a *honoris-causa* doctor from the *Universidad de Concepción* (1981). He died in Buenos Aires in 1993.

23. Prélat, C. (1947). *Epistemología de la química. Fundamentación observacional*. Buenos Aires: Espasa-Calpe; Prélat, C. (1948). *Epistemología de las ciencias físicas*. Buenos Aires: Espasa-Calpe; Prélat, C. y Papp, D. (1950). *Historia de los principios fundamentales de la Química*. Buenos Aires: Espasa-Calpe.

24. Prélat, C. (1947). La afinidad química. Evolución histórica de su concepto. *Revista de la Facultad de Humanidades y Ciencias* 1 (1): 275-303 and Prélat, C. (1947). Orientación Epistemológica de la Física actual. *Revista de la Facultad de Humanidades y Ciencias* 1 (2): 13-23.

science, especially within a school with a character such as this one”.²⁵ After 1948, however, he was unable to continue dictating his lectures in Montevideo, impeded by the projected activities he had to perform in Buenos Aires.

Let me return to Papp’s proposal. In a letter, Papp remarked upon the interest of philosophy students and also of those belonging to the different scientific disciplines, both pure and applied, that a course on the philosophy of science generated. Of this discipline, he affirmed: “it is founded, at least in our times, partly upon an interpretation of the sciences. In fact, the bond that brings together these two orders of knowledge has never been more strongly felt as in these decades [...]”.²⁶ Yet, Papp’s letter also illuminated the relationship between the history and the philosophy of science, insofar as he contended that

The analysis of the heuristic mechanism that permitted to find and ground our natural laws allows for frequent incursions into the history of those basic laws, and demands the exhibition of the personal procedures of their discoverers—the masters of scientific thought, whose cognitive paths, and sometimes even their mistakes, are filled with teachings. In this way, the course would also provide a glimpse into the organic development of the paths of the sciences that, together with the gnoseological criticism of the results obtained through research, constitute the **internal** history of the sciences, a history that vastly differs from its **external** one, the latter which only deals with the material and chronological development of the scientific disciplines.²⁷ (emphasis in original)

Initially, given the budgetary limitations, Papp was hired to dictate a common course in epistemology for the Philosophy, History and Biological Sciences studies. Years later, it was decided that a specialized course for the History student body should be created.

In its 1947 ‘edition’, the Epistemology course dealt with the ‘*Theory of Space and Time in Science and Philosophy*’. In the seminar that accompanied the theoretical lectures, *Identité et Réalité* was analyzed, a book written by Meyerson, a philosopher whose thought had strongly influenced Papp.

In 1949, the course’s theme was the “conceptual innovation introduced by microphysics in the contemporary Theory of Knowledge”. Special attention was paid to the quantum and wave theories of Planck, Bohr, Schrödinger, Heisenberg, and De Broglie. Throughout the course’s development, Papp’s understanding of the history of science became clear. As Papp wrote, the introductory lessons were to be devoted to the historical evolution of concepts throughout the history of philosophy and of science, and his lectures would then sketch

[...] the ideological scheme [of quantum theories], in order to expose in depth their epistemological repercussions, showing, particularly, the heuristic paths followed by its creators and the methodological media that allowed to transpose the experimental proceedings which functioned in our macrocosmic scale into a microcosmic one.²⁸

25. Prélat’s report, directed to the dean of the FHC, Carlos Vaz Ferreira, 18/10/1947, Docket 18, File 88, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

26. Note from Papp to the board of the FHC, 21/2/1947, p. 1, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

27. Note from Papp to the board of the FHC, 21/2/1947, p. 2-3, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

28. Report from Papp to the board of the FHC, 8/12/1949, p. 2, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

The 1951 Epistemology program, for its part, dwelled upon the problems that accrued to the *Purpose and Method of Scientific Knowledge*, but Papp made it clear that the intention was not

[...] to remain satisfied with a traditional abstract analysis of the methodological proceedings of science, which abound within textbooks. I pretend to provide the exposition with a different focus, showing the heuristic path truly followed by some of the great researchers such as Galileo, Harvey, Newton, Dalton, Robert Mayer and—among our contemporaries—Plank, Millikan and Bohr, in their pursuits.²⁹

But the most interesting aspect of the course was that, in the accompanying seminar, Papp affirmed that he had detached himself from the traditional way of exposing the scientific method in still another way:

We have studied [...] the psychology of the scientific discovery, usually overlooked in methodological treatises, even when it shines a light on the psychogenesis of the discovery—in many cases, it even does so over the initial stage of the path followed by the discoverers.³⁰

The authors that were dealt with that year in the accompanying seminar were Duhem, Bachelard, Cassirer, Eddington, Maritain, and Meyerson, names that reflected the main influences in Papp's thought.

That same year, as was previously mentioned, a synthetic module on the history of science (the course entitled *The Scientific Thought*) was organized for the History students. In his report from the Epistemology course dictated in 1950, Papp signaled to the school's board that there was an ongoing preoccupation within that part of the studentship, which related to the difficulty to follow the course's content, due to their poor scientific formation and to the gap between the themes dealt with there and those studied in their history modules.

When presenting himself to the call to applicants for the dictation of said course, and attending to the two difficulties mentioned, Papp proposed:

The curriculum for this [course] should include a synthetic exposition of the development of scientific thought, taking into account only the general principles and the relatively reduced core of the main empirical facts which ground the broader scientific theories [...] [The course should also] present the evolution of the sciences in close connection with the ideological, socio-cultural, and even economic spheres that accompany it [...] therefore establishing a link with the problems that the History student usually deals with [...].³¹

The proposed course, thus, was different from the Epistemology course, since it did not include the gnoseological critique of scientific concepts. However, it was to avoid being simply

29. Note from Papp, directed to the dean of the FHC, Justino Jiménez de Aréchaga, 19/1/1951, p. 1, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

30. Note from Papp to the dean of the FHC, 29/1/1952, p. 2-3, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

31. Note from Papp to the dean of the FHC, Justino Jiménez de Aréchaga, 10/1/1951, p. 1-2, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

[...]—a History of Science in its traditional guise—a coherent chronological exposition of the exploration of reality, given that the latter—as a register of theories and discoveries in their temporal unfolding—scarcely considers the socio-cultural context that acts as its framework [...] My objective, however, should be functionally different than the one traditionally pursued by science historians. **It should present the progressive acquisition of scientific knowledge within its human coordinates, trace its evolution in close parallelism to the rest of humankind's history, evidence its uninterrupted interferences with socio-political factors. In a word, it should present the evolution of the sciences as an integral part of the development of humankind's history.**³² (emphasis by the author)

In order to show the unfolding of theories and discoveries, as well as the interrelations with the events that constituted their historical background, Papp oriented the exposition of the course's themes following the next contentions: 1- the scientific theories and doctrines should be studied in their relationship with the epoch's ideological sphere (religious beliefs and metaphysical convictions intervene in the structuring of science's basic hypotheses, scientific theories possess a close relation to the contemporary philosophical doctrines); 2- as decisive as the contribution of genius figures to the progress of scientific knowledge can be, science must be understood as a social creation (it does not appear as an isolated epiphenomenon within the frame of the collective mindset, but is, instead, linked to the socio-cultural order of a determinate time); and 3- the course should also touch upon the interference between the applied sciences and the world's political history.

One of the aims that oriented the course's content was, therefore, explaining sciences' function within the political and cultural history of the world. According to Papp, three foci would allow underscoring the interactions that bring together the progressive acquisition of scientific knowledge, on the one hand, with the historical background, on the other. These were “1st – the relation of scientific progress with the ideological sphere of each epoch; 2nd – the interdependency between scientific progress and the social order and 3^d – the repercussions of progress within the sciences over the world's political history”.³³

As has been manifested, the courses taught by Papp were guided by his evolutive conception of science, and by the idea that history itself is the

[...] story of the resolution of scientific ideas, limiting itself to those that draw lines in the sand, to inflection points, changes in orientation, bifurcations on the—often tortuous—road followed by reason in its search for the real; *itinerarium mentis ad veritatem*, is the pilgrimage of intelligence towards truth. (Papp 1993, 15)

Papp's purpose was to provide a sketch of the most outstanding aspects in the history of science, centering himself on the most important figures of the evolution of scientific thought. The reasons were described by him as follows:

Even if the development of scientific knowledge and its multiple applications constitute a social work, a collective creation, we owe the primordial laws, the crucial discoveries, the general theories to a reduced group of researchers. A handful of personalities have produced the foundations and the columns that hold together the superb building of knowledge. (Papp 1993, 15)

32. Note from Papp to the dean of the FHC, 28/1/1952, p. 2-3, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

33. Report from Papp to the board of the FHC, 22/12/1952, p. 6, Docket 40, File 176, Archive of the *Facultad de Humanidades y Ciencias de la Educación*.

In line with Sarton, Papp affirmed the intimate connection between science and its times, as well as with the cultural and social environment within which it was produced. Nevertheless, much closer in this regard to the thought of Alexandre Koyré, he added:

Notwithstanding, assuming [...] that the Syracuse of the king Hiero explains Archimedes, and that the Florence of the Medici explains Galileo, or pretending that the work of Newton is conditioned by the transition of feudalism to capitalism, amounts to a blindness vis-à-vis the creative power of the genius, and leads to a distortion of the historical perspective [...]. (Papp 1993, 16)

Final Considerations

In 1937, Schurmann described the situation of the history of science in Uruguay as follows:

[...] aside from the valuable labor performed in the History of Mathematics by the Engineer Eduardo García de Zúñiga and in the History of Medicine by Doctors Rosello and Schiaffino, and aside from my own modest collaboration to the study of the History of Physics, a strongly defined interest in the History of Science is yet to be observed here in Uruguay [...]. (Schurmann 1937, 348)

Five years later, he would add:

[...] it can be argued that, from a cultural perspective, America is still to be weaned from its mother, Europe, and that its period of dependency is far from over. But, inevitably, this period must sooner or later come to an end, since America must construct its own culture [...]. (Schurmann 1942, 2)

A similar opinion was expressed by Rey Pastor (1947, 125) when referring to the flood of publications in the history of science that from *Río de la Plata* was sweeping over Spanish-speaking countries, even when he lamented that the original production was still very poor in quantity and quality.

It was in that context that the emergent researchers of the nation who were interested in the history of science, such as Schurmann and García de Zúñiga, got involved with the field's development. They established and maintained contact with internationally renowned figures from their field, conformed the *Grupo Nacional de Historia de la Ciencia*, published their works, made access to first-class bibliography possible, and even organized conferences and courses. It was also in this context that Rey Pastor, Prélat, and Papp, for example, arrived in Uruguay: 'visitors' who proposed and taught new courses. Notably, most of these intellectuals—both local and foreign—had originally studied some science (mathematics, physics, chemistry, for example) but did not have a systematic philosophical formation. All of them had virtually taught themselves philosophy. The case of Papp, who had been awarded a Philosophy degree, was the exception. However, Papp's work on the history of science did not have a philosophical angle, nor were his research and publications devoted to the philosophy of science. Even his *Filosofía de las ciencias naturales* (Philosophy of the Natural Sciences) (1945), his most epistemological work, was written in a less rigorous style than the one usually found in the contemporary works specializing on the philosophy of physics—and this holds even for those works that he himself makes reference to in his own work (Cassini 2017, 64).

Additionally, the history of science usually practiced by the aforementioned figures focused on periodization, chronicling scientific discoveries and publications, or on enumerating dates and authors. It was a history of science highly indebted to Sarton and

Mieli, authors who had brought together the history of science with the cultural history within which the former belonged. That was the spirit of the first courses on the history of science taught in Uruguay, particularly within the FHC. Once again, the case of Papp was exceptional, since his work was also influenced by thinkers of the French tradition, as has been pointed out already.

Several factors came together and prevented this first attempt from anchoring itself institutionally, thus developing the history of science in Uruguay. One of them was the lack of continuity given to the projects. An illustrative example was the attempt, based on a proposal by Schurmann, to institutionalize the discipline in the FHC. This attempt, still in its initial stages, came to a sudden halt when Schurmann left the institution. This exposes yet another important factor: the fact that the natural place for the history of science in Uruguay was a non-professional school—one whose goal was knowledge for knowledge's sake—in which the professionalization of the disciplines (both scientific and humanistic), was not an ideal to chase. This is partly why, throughout the period examined in this article, the institution did not provide adequate academic infrastructure, nor the conditions necessary to form new generations of professional intellectuals and researchers within the discipline.

A way to assess the introduction or the emergence of an intellectual tradition or of a new discipline within a nation is by focusing on *how* and *through which means* do intellectual currents arrive to it. As Santos Herceg notes (2012), one of the most chosen paths through which new ideas penetrate a nation is through its “visitors”. For Uruguay, maintaining constant relations with the exterior—something usually achieved through the lengthy stays of international figures—was vital to cultivate or to strengthen the disciplines that had insufficient or no antecedents at all. In the case of the history of science, as we have seen, the influx of European professors residing in Argentina was noteworthy. These foreign professors were the ones that, together with the local proponents of the discipline, conformed the group that promoted the growth of the history of science from the second quarter of the 20th century onwards.

Following this same analytical path, it is also interesting to assess the different activities performed by those “visitors”: Did they create new research centers? Did they publish their works? Did they leave behind a school of thought? In that sense, even when Papp was a lecturer at the FHC for over a decade (1947 to 1962), there is no evidence that a research community was forged around him. The Hungarian philosopher lectured in the country, yet it was a country to which, intellectually, he was never fully integrated: he did not settle, published, or did research in Uruguay. Papp travelled back and forth between Buenos Aires and Montevideo, yet all of his intellectual life and production stayed on the other side of the *Rio de la Plata*.

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