

**Erika Luciano**

Università degli Studi di Torino, Italy

ORCID 0000-0002-4037-7676

# Italian and Polish Mathematicians Face Racial Persecution and Emigration: Backgrounds, Individual Fates and Global Aspects

This paper provides a new analytical perspective on the socio-cultural interactions involving members of two main Italian research communities – the School of Mathematical Logic and the Italian School of Algebraic Geometry – and some of their Polish colleagues (Samuel Dickstein, Wiesław Jezierski, Alfred Rosenblatt et al.). I shall argue that the intricate network of relationships between Giuseppe Peano, Corrado Segre and their protégés paved the way for an intensification of scientific exchanges between Italy and Poland in the 1930s. The climax manifested in visits by Tullio Levi-Civita and Mauro Picone to Warsaw and Krakow. Simultaneously, this network fostered instances of remarkable cross-solidarity when Polish and Italian mathematicians faced a period of severe anti-Semitic persecution and migration. An appendix containing unpublished letters documents Rosenblatt’s role in assisting aspiring Italian refugees in securing positions in Peru.

**Keywords:** international relationships, Italian mathematics, persecution

**Słowa kluczowe:** stosunki międzynarodowe, włoscy matematycy, prześladowania

## Introduction

When one thinks about the relationships between Italian and Polish mathematics, some names immediately spring to mind: Vito Volterra (1860–1940), Tullio Levi-Civita (1873–1941), and Giuseppe Peano (1858–1932). As a matter of fact, the literature has already highlighted some aspects of this narrative. In 1947, for example, Stanisław Gołąb (1902–1980) published an article in the journal “*Bollettino dell’Unione Matematica Italiana*” under the title *Il contributo dei matematici polacchi contemporanei alla scienza mondiale*, reviewing the

rich contribution that Polish mathematicians made to the advancement of many important branches of modern mathematics, including several where they led

the field. Some names are dear to every reputable mathematician, such as, for example, those of the Krakow and Lvov Schools: [Stanisław] Zaremba, [Paulin Kazimierz Stefan] Żorawski, [Antoni Maria Emilian] Hoborski, [Stefan] Banach, [Alfred] Rosenblatt, [Hugo Dyonizy] Steinhaus, [Tadeusz] Ważewski, [Franciszek] Leja, [Juliusz Paweł] Schauder, and those of the Warsaw School: [Wacław Franciszek] Sierpiński, [Stefan] Mazurkiewicz, [Antoni] Zygmund, [Kazimierz] Kuratowski, [Stanisław] Saks, [Karol] Borsuk, [Alfred] Tarski, [Otto Marcin] Nikodym.<sup>1</sup>

Similarly, in recent years, the influence of Wacław Sierpiński (1882–1969) and Zygmunt Janiszewski (1888–1920) on Peano’s seminal work on continua (the space-filling curve) has been emphasized, as well as the reception of Giuseppe Vitali’s contributions in measure theory and the heritage of works in functional analysis by Volterra, Cesare Arzelà (1847–1912), and Giulio Ascoli (1843–1896) from the Scottish Café group in Lvov.<sup>2</sup> Furthermore, contributions such as the Polish edition of the Peano-Frege correspondence have brought new insights that help to evaluate the contacts between the Italian and Polish Schools of Logic.<sup>3</sup>

The perspective of this contribution is quite different, being that of the so-called social history of mathematics. Social history focuses on all forms facilitating the dissemination of knowledge, such as mathematical journals and international publishing ventures. It also explores the dynamics and pathways through which individuals and ideas circulated in the twentieth century. This entails examining the movement of people across various geographic regions influenced by international events or the social practice of educational travels. Social history largely takes advantage of the use of archival sources (primarily correspondence).

Among its main categories of analysis, social history includes that of the ‘School.’ What exactly is a Mathematical School? The concept of a research School, examined in its variations and national characteristics, has recently been linked to the notions of a tradition.<sup>4</sup> Without entering into further detail, we can define a mathematical research School as ‘a group, led normally by only one mathematician, localized within a single institutional setting, and which counts on a significant supply of advanced-level students, whereas a mathematical tradition implies that one can find a common research orientation in different actors who do not share a common institutional site, but are linked by traceable influences on each other.’<sup>5</sup>

- 1 S. Gołąb, *Il contributo dei matematici polacchi contemporanei alla scienza mondiale*, “Bollettino dell’Unione Matematica Italiana” 1947, vol. 2, no. 3, p. 244.
- 2 K. Kuratowski, *The Past and Present of the Polish School of Mathematics*, [in:] *The Founders of the Polish Schools and Scientific Models Write about Their Works*, ed. by I. Stasiewicz-Jasiukowa, Wrocław, Warszawa 1989, p. 47–80; R. Duda, *Pearls from a Lost City. The Lvov School of Mathematics*, Providence 2014.
- 3 G. Besler, „Podążamy tymi samymi lub podobnymi drogami myślowymi.” *Tematyka korespondencji logicznej Gottloba Fregego z Giuseppe Peanem, Davidem Hilbertem i Bertrendem Russellem*, Katowice 2019. Let me also regrettably admit that, as a considerable part of scholarship is written in Polish, it is difficult for me to thoroughly cover the material. Hence, any possible omissions in the references are due to unavoidable linguistic limitations.
- 4 D. Rowe, *Mathematical Schools, Communities, and Networks*, [in:] *The Cambridge History of Science*, vol. 5, ed. by M.J. Nye, Cambridge 2002, p. 111–132.
- 5 J. Ferreirós, *Labyrinth of Thought: A History of Set Theory and its Role in Modern Mathematics*, Basel 1999, p. XXII–XXIII.

In light of these considerations, we can fix the time and spatial coordinates of our case study. As far as time is concerned, it will cover the period 1890–1939, apart from a brief mention of the restoration of exchanges between Italy and Poland after the Second World War. As far as the spatial dimension is concerned, the situation is more complex. Two Italian hubs will be considered: Turin and Rome. In Turin, between 1890 and 1945, two research Schools flourished with a very specific identity or style: those of Peano and Corrado Segre (1863–1924). Rome, referred as ‘the Princeton of Italy,’ was a pole of development of mathematical studies from the beginning of the 1900s when Guido Castelnuovo (1865–1952), Volterra and Francesco Severi (1879–1961) moved there from Turin, followed by Levi-Civita and Federigo Enriques (1871–1946).

We have mentioned two Turin research Schools. The first, the School of Peano, is also known as the Italian School of Mathematical Logic, although it is actually debatable whether it can be classified as such.<sup>6</sup> To settle the question of whether the Peano group should be considered as a research School or as a mathematical tradition, we would first need to deconstruct several scholarship clichés and clarify the nature of Peano’s leadership, the circulation of knowledge within his group, and the role of some collective enterprises (e.g., the *Formulario*). However, this piece is not appropriate for discussing that. Adopting a pragmatic approach, we will use hereafter the term: ‘The School of Peano’ to mean a community of 42 scholars (4 university professors and 38 teachers) linked to the milieu of the University of Turin and collectively engaged in developing a common research program in mathematical logic and foundations. The term ‘Italian mathematical logic’ refers to the special symbolic language (ideography) that the Peanians formulated and used in most of their publications and teaching practice. The School of Peano emerged in all its splendour at the International Congress of Philosophy and at the International Congress of Mathematicians in Paris in 1900 but had already faded away in the 1920s. Literature on the subject has often sought to find reasons to explain this phenomenon. General explanations include: the non-academic nature of the group; the dominating interest of many of Peano’s collaborators (Peano included) in pedagogical and political endeavors; the miscellaneous topics of their activities, ranging from mathematics to linguistic and universal languages; a general belief that Peano was not interested in set theory and in the metalogical and metamathematical investigation of the properties of axiomatic theories.<sup>7</sup>

The School of Segre, also called the Italian School of Algebraic Geometry, had its leader in Corrado Segre.<sup>8</sup> It was an academic scholarly group comprising some thirty university

6 E. Luciano, *Characterizing a Mathematical School. Oral Knowledge and Peano’s Formulario*, “Revue d’Histoire des Mathématiques” 2017, vol. 23, p. 1–49.

7 P. Cantù, E. Luciano, *Giuseppe Peano and His School: Axiomatics, Symbolism and Rigor*, “Philosophia Scientiae” 2021, vol. 25, no. 1, p. 4–5.

8 A. Conte, L. Giacardi, *Segre’s University Courses and the Blossoming of the Italian School of Algebraic Geometry*, [in:] *From Classical to Modern Algebraic Geometry. Corrado Segre’s Mastership and Legacy*, ed. by G. Casnati et al., Basel 2016, p. 3–91; E. Luciano, C.S. Roero, *Corrado Segre and His Disciples: The Construction of an International Identity for the Italian School of Algebraic Geometry*, [in:] *From Classical to Modern Algebraic Geometry. Corrado Segre’s Mastership and Legacy*, ed. by G. Casnati et al., Basel 2016, p. 93–241.

professors<sup>9</sup> and a dozen teachers in middle and secondary schools.<sup>10</sup> It mostly developed around three locations (Turin, Bologna and Rome) and over four generations: the first and second (which chronologically fall outside our narrative) chose as their leaders Luigi Cremona (1830–1903), Giuseppe Battaglini (1826–1894) and Enrico D’Ovidio (1843–1933), the third in Segre and Eugenio Bertini (1846–1933), while the fourth grew under the guidance of Enriques and Severi. The group was ethnically homogeneous: more than a third of Segre’s protégés (Segre included) were Jews. As is evident from its name, the research program focused entirely on geometry in two main components: classical algebraic geometry and projective-differential geometry, both settled according to a typically Italian approach and characterized by three essential elements: 1) a large heritage of geometric culture, especially in hyperspatial projective geometry; 2) a particular style of treatment and exposition, pervaded by frequent appeal to intuition and synthetic arguments; 3) from the 1920s onward, a weak preparation in abstract algebra and algebraic topology, cultivated only by a few members: Gaetano Scorza (1876–1939), Achille Bassi (1907–1973), Piero Buzano (1911–1993) and Fabio Conforto (1909–1954). The School reached its *führende Stellung* (a leadership position) – as it was labelled in the *Encyklopädie der mathematischen Wissenschaften*<sup>11</sup> – in the first years of the 20<sup>th</sup> c. when the theory of algebraic surfaces was developed through a joint research venture between Segre, Castelnuovo, Enriques, and Severi. The major contributions of Italian geometers occurred before WWI. Afterwards, Italian algebraic geometry entered a period of profound crisis, in which the limits of its peculiar style emerged, together with a demand for new methods and tools to carry out a complete refoundation of the theory. Despite Severi’s efforts to address some of these issues, particularly concerning transcendent and topological methods, his vision remained fundamentally rooted in tradition. His lack of competence in abstract algebra and algebraic topology, combined with an autarkic vision of research organization and a swaggering self-centeredness, caused the decline of the School. From the early 1930s to WWII, Severi dragged his students Beniamino Segre (1903–1977), Enzo Martinelli (1911–1999), Conforto, Giacomo Albanese (1890–1947), and Annibale Comessatti (1886–1945) into an endless loop of attempts – all doomed to failure – to establish the theorem of characteristic linear series. The School was liquidated by racial persecution in 1938.

The two Schools can be classified as antagonistic (due to differences between the two leaders on very serious issues in the philosophy of mathematics, such as the role of intuition and rigour in mathematics, but also because of personal rivalries and academic clashes). However, some points of contact can be identified. Firstly, there were some intermediary figures, like Mario Pieri (1860–1913), Alessandro Padoa (1868–1937),

9 Luigi Cremona, Giuseppe Battaglini, Riccardo de Paolis, Eugenio Bertini, Enrico D’Ovidio, Giuseppe Veronese, Corrado Segre, Mario Pieri, Beppo Levi, Guido Castelnuovo, Gino Fano, Luigi Berzolari, Gino Loria, Federico Amodeo, Arturo Maroni, Federigo Enriques, Francesco Severi, Enrico Bompiani, Gaetano Scorza, Michele de Franchis, Carlo Rosati, Guido Fubini, Giovanni Giambelli, Luigi Brusotti, Annibale Comessatti, Alessandro Terracini, Eugenio Togliatti, Oscar Chisini, Giacomo Albanese, Ruggiero Torelli, Beniamino Segre, Luigi Campedelli, Fabio Conforto, Achille Bassi and Piero Buzano.

10 Emilio Artom, Ugo Amaldi, Roberto Bonola, Alessandro Padoa, Alberto Tanturri, Luisa Viriglio, Francesco Palatini, Vittorina Segre, Annetta Segre, Elsa Bachi, Alice Osimo, Pilo Predella, Umberto Perazzo, Matteo Bottasso, Maria Mascacchi, Umberto Bini, Emma Castelnuovo, Adriana Enriques, etc.

11 W.F. Meyer, H. Mohrmann, *Vorrede zum dritten Bande*, [in:] *Encyklopädie der mathematischen Wissenschaften mit Einschluss ihrer Anwendungen*, vol. 3.1, *Geometrie*, Leipzig 1923, p. VI.

Beppo Levi (1875–1961) and Gino Fano (1871–1952), who felt a sense of belonging to both research units and who had to their credit a mixed output, i.e., production in logic and projective-differential geometry, or in number theory and foundations of mathematics. A second aspect of cultural contiguity was the strong sensitivity towards educational issues: Peano, Segre, and their followers were (almost all) specifically interested in methodological questions, teaching, teacher training and school textbooks. Many of their members were ‘brokers’: teachers not affiliated with a university institution but also researchers in logic, foundations or advanced geometry.

Finally, as regards Poland, we do not apply any clear-cut criteria, considering ‘Polish mathematicians’ mostly as those men and women born in the Congress Kingdom of Poland (within the Russian Empire) or Galicia (within the Austro-Hungarian Empire) and educated there (at least up to high-school level), speaking Polish as one of their primary languages.<sup>12</sup> In short, among those listed as ‘Polish mathematicians’ will be such figures as Oscar Zariski (1899–1986) or Szelem Mandelbrojt (1899–1983), who developed their professional careers mainly abroad, despite having completed their training in Poland.

Having defined (hopefully in a relatively coherent and clear manner) the historiographical terms of the discourse, this paper aims to provide a new analytical picture of the collaborative exchanges that involved the members of the two main Italian research communities and some of their Polish colleagues. I shall argue that the network of relations woven by Peano, Segre, and their protégés before WWI laid the foundations for an intensification of scientific exchanges in the 1920s and 1930s. This network also led to some remarkable instances of cross-solidarity when Polish and Italian mathematicians confronted the harrowing period of anti-Semitic persecution and forced emigration. Accordingly, this narrative unfolds in three acts: the period of internationalism from 1890 to the First World War, the 1920s and 1930s, and the phase of racial persecution and emigration.

### The golden age of scientific cosmopolitanism

Relations between Italian and Polish mathematicians can be traced back to 1891 when Peano reviewed the book *Pojęcia i metody matematyki* by Samuel Dickstein (1885–1954) in the first issue of the “*Rivista di Matematica*,” the journal which he had founded five months earlier and which would become the first and only Italian journal entirely devoted to logic and foundations prior to the post-war period.<sup>13</sup> The review is interesting for various reasons, starting from a singular convergence of opinions between the author and reviewer on the epistemological status of logic and on the reciprocal relationships between logic and mathematics. On that occasion, Peano also mentioned the theme of the universality of mathematical symbolism vs. the phenomenon of the new Tower of Babel that, in his opinion, mathematical literacy would have to face shortly after that,

12 S. Domoradzki, M. Stawiska, *Polish Mathematicians and Mathematics in World War I. Part I: Galicia (Austro-Hungarian Empire)*, “*Studia Historiae Scientiarum*” 2018, vol. 17, p. 23–49; *idem*, *Polish Mathematicians and Mathematics in World War I. Part II: Russian Empire*, “*Studia Historiae Scientiarum*” 2019, vol. 18, p. 55–92.

13 G. Peano, *Samuel Dickstein, Pojęcia i metody matematyki, tomo I. Warszawa, 1891, pag. 268. Prezzo rubli 2,50, “Rivista di Matematica” 1891, vol. 1, p. 124.*

with the emergence of new mathematical communities such as the Polish one. The subject of languages (natural, symbolic, or artificial) would become a leitmotif of the correspondence between Peano and Dickstein.

From 1891, the interactions between Peano and Dickstein essentially evolved in three directions: foundations, but primarily, the history of mathematics and mathematics education. As for the first, Dickstein addressed Mario Pieri, one of the bridge figures I mentioned before, who was the expert *par excellence* among the members of the Peano School on the foundations of projective and Euclidean geometry.<sup>14</sup> Between 1896 and 1901, the two debated the principles of geometry of position and exchanged offprints and publications (that Dickstein could not obtain in Warsaw), which he needed to complete the Polish translation of Peano's *Saggio di calcolo geometrico*.<sup>15</sup> The practice of translation is of fundamental importance: the journal edited by Dickstein, "Wiadomości Matematyczne," published the Polish translation of various works by the Peanians from that date onward. Among these was a paper by Giovanni Vailati (1863–1909) on the history of science.<sup>16</sup> The third common interest between Peano and Dickstein was represented by mathematics education. As mentioned previously, the Peano School was strongly engaged in the realm of philosophy of mathematics education. In a period lasting around thirty years, the Peanians published over 80 texts on elementary mathematics for different types of schools, in which they stated their reflections on axiomatics, sometimes even introducing logic symbols. Among these textbooks, two volumes of arithmetic and early algebra stand out, written by Marco Nassò (1864–1920) and Peano in 1898 and 1902, respectively, which Dickstein very positively reviewed in "Wiadomości Matematyczne."<sup>17</sup>

Among the translations appearing in Dickstein's journal that were important for the cultural appropriation of Italian mathematical traditions by Polish colleagues, there is also that of the keynote lecture held by Segre at the International Congress of Mathematicians in Heidelberg in 1904: *La geometria d'oggi e i suoi legami con l'analisi*.<sup>18</sup> Segre himself recalled how events unfolded: immediately after the conclusion of his *lectio magistralis*, a Polish Jewish professor (i.e. Dickstein) approached him. Amidst the conversations about the emancipation of Polish Jews and Zionism, Dickstein asked him for permission to translate the text of his lecture into Polish in order to open a new field of research in his homeland.<sup>19</sup> The translation was edited in 1905 and can be considered the starting point of relations between the Polish and Italian mathematical Schools in the sub-field of algebraic geometry.

14 S. Dickstein to M. Pieri, Warszawa 18.04.1896 and 20.03.1901, [in:] *Lettere a Mario Pieri (1884–1913)*, ed. by G. Arrighi, Milano 1997 (Quaderni Pristem, vol. 6), p. 54.

15 G. Peano, *Zarys rachunku geometrycznego*, transl. by S. Dickstein, Warszawa 1897, p. 32.

16 G. Vailati, *Metoda dedukcyjna jako narzędzie badania*, transl. by S. Dickstein, "Wiadomości Matematyczne" 1898, vol. 2, no. 3–4, p. 81–122. See also Department of Philosophy of the State University of Milan, Archive of Giovanni Vailati [AGV], S. Dickstein to G. Vailati, Warszawa 19.01.1899, 28.12.1900, 21.09.1907.

17 M. Nassò. 1) *Algebra elementare 1898*. 2) *Elementi di calcolo algebrico 1898 (Sprawozdawca S. Dickstein)*, "Wiadomości Matematyczne" 1899, vol. 3, no. 3–4, p. 194–197; G. Peano. *Aritmetica generale e algebra elementare (S. Dickstein)*, "Wiadomości Matematyczne" 1903, vol. 7, no. 1–2, p. 83–87.

18 C. Segre, *Geometria dzisiejsza i jej związki z Analizą*, "Wiadomości Matematyczne" 1905, vol. 9, no. 1–2, p. 7–21.

19 C. Segre to Olga Michelli Segre, Heidelberg 13.08.1904, [cited in:] E. Luciano, C.S. Roero, *Corrado Segre and His Disciples*, p. 182–183.

The exchanges between the two milieux (Turin and Warsaw) were already consolidated when Witold Wilkosz (1891–1941) arrived in Turin with a reference letter from Dickstein.<sup>20</sup> Wilkosz, who was Banach’s classmate in Krakow, had shown early interest in mathematics and linguistics. In 1910, after secondary school, he started linguistic studies in Beirut. In 1912, he enrolled at the Royal University of Warsaw and soon requested a study sojourn in Turin. There, Wilkosz took courses in mathematics held by Peano, Segre and one of Segre’s most promising pupils: Guido Fubini. Under their supervision, Wilkosz prepared his PhD thesis on the theory of the Lebesgue integral and he obtained his doctoral degree in 1914. Papers by Wilkosz, in Italian, would be submitted to the “Rocznik Polskiego Towarzystwa Matematycznego” in the 1920s, long after his return to his homeland. In the years 1914–1925 Wilkosz also published at least 8 papers in Italian, in “Annales de la Société Polonaise de Mathématique,” “Fundamenta Mathematicae,” “Bulletin international de l’Académie des sciences de Cracovie,” and in “Rendiconti della R. Accademia dei Lincei.”<sup>21</sup>

WWI shocked consciences, leaving Segre and Peano feeling that their pacifist and internationalist convictions had been betrayed. During this period, Peano, who had been fascinated by Esperanto since 1903, shifted his focus to non-mathematical studies and became involved in constructing a form of international language called *latino sine flexione*. Dickstein was a perfect interlocutor for him: pacifist and internationalist like Peano, he had been interested in artificial languages since the 1890s. From 1914 onwards he climbed the ladder of the Academia pro Interlingua (an association created to promote various projects of International Language and chaired by Peano) and at the same time began to publish in “Wiadomości Matematyczne” some papers in *latino sine flexione* by Peano’s collaborators such as Ugo Cassina (1897–1964) and Elisa Viglezio (1894–1984).<sup>22</sup> Several of Dickstein’s colleagues were involved in the Academia pro Interlingua: Edward Stamm (1886–1940), Tadeusz Banachiewicz (1882–1954), who would also become a member of the Academia Board of Trustees in 1924, and Wiesław Jezierski (1899–1934), a professor of linguistics from Krakow, who was to become one of the most fervent supporters of *latino sine flexione*.<sup>23</sup> The Peano archives in Cuneo and Turin hold many correspondences among these individuals.<sup>24</sup> Furthermore, dozens of interventions by these co-idealists and friends of Peano from Warsaw and Krakow were featured in the magazine “Circulares,” edited by the Academia pro Interlingua.<sup>25</sup>

20 See for example W. Wilkosz, *Aspetto integrale delle curve involuppi*, “Rocznik Polskiego Towarzystwa Matematycznego” 1922, vol. 1, p. 85–97.

21 See S. Domoradzki, M. Stawiska-Friedland, *The Position of the Jagiellonian University and Its Mathematical Community Before and After WWI*, [in:] *The Development of Mathematics Between the World Wars. Case Studies, Examples and Analyses*, ed. by M. Bečvářová, London 2021, p. 123–164.

22 U. Cassina, *Calcolo de Approssimazione*, “Wiadomości Matematyczne” 1923, vol. 27, no. 1, p. 17–20; E. Viglezio, *Extractione graduale de radice quadrato*, “Wiadomości Matematyczne” 1923, vol. 27, no. 2, p. 55–58.

23 See *Academia pro Interlingua*, [in:] *Cronologia della vita e degli scritti di Giuseppe Peano*, ed. by E. Luciano, C.S. Roero, Torino 2008, p. 81–82.

24 See the correspondences with Dickstein, Jezierski, Stamm, Antoni Marian Rusiecki (1892–1956) and Józef Słonimski (1860–1934), [digitized in:] *L’archivio Giuseppe Peano*, ed. by C.S. Roero, N. Nervo, T. Armano, CD-ROM N. 2b, Torino 2008.

25 See for example: W. Jezierski, *Cathedra de historia de lingua Internationale in uno ex Universitates de Polonia*, “Academia pro Interlingua Circulares” 1924, vol. 3, p. 11; idem, *Lectoratu de linguas internationale auxiliare in Universitate de Cracovia*, “Academia pro Interlingua Circulares” 1927, vol. 4, p. 79–80. In 1932 Peano was commemorated in interlingua in Odessa. See *Commemorationes de G. Peano in Odessa*, “Schola et Vita” 1933, vol. 8, p. 140.

## The post-war years

After the rupture in relations during the First World War, international exchanges were re-established between 1919 and 1920, albeit on a vastly different basis. In fact, the two Turin research Schools followed divergent paths of evolution throughout the 1920s. The School of Peano exhausted its creative vein; some of its major representatives, like Pieri and Vailati, died, while others left Turin. Since 1914, Peano had devoted himself much more to interlinguistic propaganda than to research in logic and foundations, so much so that there is no evidence that Peano was informed about some important publications by the Lvov-Warsaw School of Logic – Kazimierz Twardowski (1866–1938), Jan Łukasiewicz (1878–1956), Stanisław Leśniewski (1886–1939). By contrast, the Italian School of Algebraic Geometry was in its golden age. Some members of the School (Castelnuovo and Severi) had moved from Turin to Rome. However, the research project had been renewed and extended: alongside hyperspace projective geometry, in which Segre had been an undisputed master, other lines of study had been added: projective-differential geometry, with Guido Fubini (1879–1943), Enrico Bompiani (1889–1975) and Alessandro Terracini (1889–1968), and geometry of varieties, with Severi, Gino Fano and Beniamino Segre, Corrado's cousin. Pursued to a much lesser extent, but still present, were enumerative geometry and topology.

Links with the Polish counterpart reflect the changes the two communities had undergone. Those of the Peano School all revolve around a journal that represents the synthesis of Peano's two prevailing interests in the 1920s: teaching and interlingua. The journal, edited between 1926 and 1939 under the title "Schola et Vita," is a periodical written entirely in interlingua, which published articles, reports and news on the widest subject questions concerning scientific, professional, artistic, intellectual, moral and social education, mainly addressed by foreign authors, including many Poles. In "Schola et Vita" Dickstein published 4 works, Stamm 10 papers, and Jezierski 15.<sup>26</sup> Their contributions (which were sometimes translations in interlingua of articles published elsewhere) tackled subjects ranging from mathematical instruments to Peano's logic, from the metaphysics of infinitesimal calculus to psycho-mathematics, from the false position method to Weber's planetary. In accordance with the ideological convictions of the editorial staff, "Schola et Vita" published articles of a political nature as well. These included papers on the education of handicapped children, on public education and school communities in Poland, on the rights of cultural and ethnic minorities, on teaching in Zionist and Soviet schools, and reports of events such as the 26<sup>th</sup> Peace Congress, held in Warsaw in 1928.

Regarding the Italian School of Algebraic Geometry, the situation was very different as the research activity was still in full swing. The relationships between the many Italian and few Polish geometers that emerged from the meeting between Segre and Dickstein in Heidelberg were strengthened in the next International Congresses of Mathematicians in Rome (1908), Cambridge (1912), and Strasbourg (1920). The Polish delegation in Bologna

<sup>26</sup> For the complete bibliographical references of these papers see the indexes of all the 13 volumes of "Schola et Vita" (1926–1939), [in:] *Cronologia della vita e degli scritti di Giuseppe Peano*, ed. by E. Luciano, C.S. Roero, Torino 2008, p. 97–127.



(1928) was particularly very large,<sup>27</sup> with 41 participants, including five delegates of the Polish government: Sierpiński, Leon Chwistek (1884–1944), Stefan Kaczmarz (1895–1939), Jerzy Sława-Neyman (1894–1981), and Kazimierz Władysław Bartel (1882–1941). Sierpiński and Banach were also convened as delegates of the Polish Academy of Arts and Sciences in Krakow. Almost all the major Polish mathematicians of the time attended the conference. On that occasion, the logicians acknowledged to Peano ‘the glory of the pioneer,’ and Dickstein publicly applauded the *latino sine flexione*.<sup>28</sup> Łukasiewicz also wrote a touching letter to Peano.<sup>29</sup> The geometry section was dominated by Severi, who had taken the leadership after Segre’s death, together with Fano, Fubini and two young protégés of the second generation: Beniamino Segre and Alessandro Terracini.

Bologna 1928 was a turning point in relations between Italian and Polish mathematicians. Analysis of the patrimonies of Italian geometers reveals that their personal libraries and collections of offprints included, from that date onwards, more and more pieces from the Polish Schools in Warsaw, Krakow, and Lvov. By contrast, in the case of Peano, the roots of his substantial departure from the international research scene in the fields of logic and philosophy of mathematics are confirmed by the analysis of his asset: Peano’s personal library held, in fact, very few texts by Polish authors (and none by those one would expect).<sup>30</sup>

Another practice was established in the 1920s and 1930s: spending a study sojourn in Italy, especially in Rome. Among the young Polish mathematicians who reached Rome to complete their training were Szolem Mandelbrojt and Oscar Zariski. The first, educated in Kharkiv, continued his studies in Paris and presented at the Mathematical Seminar in Rome a talk entitled *Recherches modernes sur la série de Taylor* on 27 December 1924. A relatively famous photo of him attending the Mathematical Seminar in late 1924 exists.

- 27 See *Atti del Congresso Internazionale dei Matematici Bologna 3–10 Settembre 1928 (VI)*, vol. 1, Bologna 1929, p. 63; K. Ciesielski, *Wykłady polskich matematyków na Międzynarodowych Kongresach Matematycznych*, “Wiadomości Matematyczne” 2018, vol. 54, no. 1, p. 55–65. The effective Polish participants in Bologna (with 26 papers, marked by \*) were: S. Banach\*, L. Chwistek\*, A. Denizot, S. Dickstein, Stanisław Gołąb\*, Aleksander Gruzewski\*\*, Halina Gruzewska\* (Milicer-Gruzewska), S. Kaczmarz\*, Stefan Kempisty, Bronisław Knaster\*\*, K. Kuratowski\*, Franciszek Leja\*, Antoni Łomnicki, Zbigniew Łomnicki, J. Łukasiewicz\*, S. Mazurkiewicz\*, Jerzy Neyman\*, Władysław Nikliborc\*, Otto Nikodym\*, Stanisława Nikodym\*, Antoni Przeborski, Alfred Rosenblatt\*\*\*, S. Ruziewicz, Stanisław Saks\*, W. Sierpiński\*, H. Steinhaus, Włodzimierz Stożek, Alfred Tarski\*, Antoni Zygmund\*, Eustachy Żyliński\*. Banach, Dickstein and Rosenblatt were presidents of the sections of Analysis, Geometry, History and Education, respectively.
- 28 See S. Dickstein to G. Peano, Bologna 7.09.1928, [in:] *L’archivio Giuseppe Peano*; P. Chinaglia, *Latino sine flexione in Congresso internazionale de Mathematicos*, “Schola et Vita” 1928, vol. 3, *Supplemento 27 agosto 1928 Collectioe de scripto in honore de Prof. G. Peano in occasione de suo 70° anno, edito per cura de interlinguistas, collegas, discipulos, amicos*, p. 201–202.
- 29 J. Łukasiewicz to G. Peano, Warszawa 31.07.1928, [in:] *L’archivio Giuseppe Peano*. ‘Sehr geehrter Herr Professor! Bitte mich vielmals zu entschuldigen, dass ich Deutsch schreibe, aber ich verstehe leider nicht so viel italienisch, um mich mit Ihnen in Ihrer Muttersprache zu verständigen. Ich habe nicht gehofft, dass ich an dem Internationalen Kongresse der Mathematiker in Bologna werde teilnehmen können. Nun hat sich mir die Möglichkeit geboten, nach Bologna zu kommen. Ich bitte daher, Herr Professor, wenn es nur irgendwie möglich ist, meine verspätete Anmeldung von Kommunikanten gütigst berücksichtigen zu wollen. Seit Jahren arbeite ich im Gebiete der mathematischen Logik, doch habe ich meine wichtigsten Ergebnisse aus dem Aussagenkalkül und dessen Geschichte bisher nicht veröffentlicht. Es wäre mir sehr lieb, wenn ich meine Resultate gerade in Italien, das so sehr für die mathematische Logik verdient ist, der internationalen Gelehrtenwelt vorlegen könnte. Sollte es nicht mehr möglich sein, dass ich am Kongresse aktiv teilnehme, so wäre ich für eine Mitteilung darüber sehr dankbar. Bitte, Herr Professor, den Ausdruck meiner vorzüglichsten Hochachtung entgegenzunehmen Dr. Jan Łukasiewicz.’
- 30 Peano kept in his personal library books by Dickstein, Władysław Mieczysław Kozłowski (1858–1935), Leśniewski, and Stanisław Zaremba (1863–1942), a leader of the group of Krakow’s mathematicians.



Fig. 1. Mathematical Seminar at the University of Rome, 1924. From left to right, first row: Dirk Struik, Saly Ruth Ramler Struik, Ugo Amaldi; second row: Zariski, Giuseppe Corbellini, unknown, Mandelbrojt (source: C. Parikh, *The Unreal Life of Oscar Zariski*, Boston 1991, p. 27)

Zariski, born in Kobryn, in today's Belarus, arrived in Rome from Kyiv with a Polish passport in 1920 and remained there until 1927. Parikh's *The Unreal Life of Oscar Zariski* offers a beautiful description of his stay in Rome.<sup>31</sup> After the Bologna conference, Alfred Rosenblatt spent a research stay in Rome in 1926 and again in 1928. These visiting scholars from Poland collaborated in that period with Castelnuovo, Enriques, Severi; in some sense, they were advised by 'Italian Masters.' The number of such mentorships is smaller in the realm of logic studies. In fact, the only early career scholar who would have aspired to come to Turin was Tarski. Unfortunately, he 'missed' Peano by a hair's breadth because his request for a Rockefeller fellowship reached Turin seven months after Peano had passed away.<sup>32</sup> A further chapter concerns applied mathematicians: young Polish scholars who lived for some time within the Italian scientific community and came into contact with Levi-Civita, Volterra, and Mauro Picone (1885–1977), who in turn had established relationships with Dickstein, Sierpiński, Banachiewicz, and others.

31 C. Parikh, *The Unreal Life of Oscar Zariski*, Boston 1991, p. 17–43.

32 A. Tarski to G. Peano, Warszawa 2.11.1932, [in:] *L'archivio Giuseppe Peano. 'Hoch verehrter Herr Professor! Ich nehme mir die Freiheit, Sie mit einer privaten Angelegenheit zu behelligen. Ich habe nämlich die Aussicht, für das kommende Jahr 1933/4 das Rockefeller-Stipendium für das Studium in Ausland zu bekommen, und würde mich sehr freuen, wenn ich eine Zeit unter Ihrer Führung in Turin arbeiten durfte. Würden Sie damit einverstanden sein? In Erwartung Ihrer freundlichen Antwort verbleibe ich inzwischen In vorzüglicher Hochachtung Dr. Alfred Tarski.'*

Finally, many outstanding Italian mathematicians travelled to Poland several times: Fubini, Leonida Tonelli (1885–1946), Severi, Fano and Levi-Civita in 1925; Fano, Fubini and Levi-Civita in 1927, and again in 1937; Picone in 1939. In 1930, for Zaremba's scientific jubilee, a dozen letters and telegrams of congratulations from Italian mathematicians reached him.<sup>33</sup>

### Persecution and emigration

The year 1939 leads us to the last phase we consider, an era marked by war, Nazi occupation, and racial persecution. This period definitively erased the internationalist ideals that the mathematicians we have mentioned had so passionately shared.

Some introductory information may prove useful. The fascist dictatorship lasted for twenty years, from 1922 to 1943, when Italy was occupied by the German troops. During the fascist regime, two distinct periods can be identified: the authoritarian phase, which spans from 1922 to 1936, and the dictatorial-autarchic phase, which begins with the colonial war in Africa and ends with the armistice. Throughout the first phase, fascism did not adopt any discriminatory measures against Italian Jews. By contrast, Italian Jews, entirely assimilated, held top positions in the State system. Their contribution to mathematics was especially remarkable from the Risorgimento onwards: Giulio Ascoli, Salvatore Pincherle, Volterra, Levi-Civita, Fubini, Segre, Fano, the two brothers-in-law Castelnuovo and Enriques, and many others were all Jews.

The social conditions of Jews had been comparatively better in Italy than in Poland during the 1920s and 1930s. The correspondence between Rosenblatt and Levi-Civita contains many interesting elements in this regard:

I am oppressed by the political situation in which the Jews of my country find themselves. You certainly know the Steiger process in Lvov, a new page in this martyrdom. It is good that I have where to escape: in the domain of ideas, in the domain of the scientists of this radiant country, Italy.<sup>34</sup>

We do not massacre the Jews in Poland, as in Romania and now in Lithuania, but we deprive them of the means to live, and we force them either to convert or to leave the country. This occurs in the first place in the universities, which are here, as in all of Eastern Europe, the cribs of anti-Semitism.<sup>35</sup>

33 From Volterra, Levi-Civita, Pincherle, Fano, Tricomi, Enriques, Loria, Amaldi, Severi and Fubini. See *Jubilé scientifique de M. Stanislas Zaremba (1 février 1930)*, Cracovie 1930.

34 Archives of the Academy of Lincei [AAL], Private Archives, Tullio Levi-Civita Archive [TLCA], A. Rosenblatt to T. Levi-Civita, Krakow 4.12.1925: '*Je suis aussi opprimé par la situation politique dans laquelle se trouvent les juifs de notre pays. Vous connaissez certainement le procès Steiger à Leopold, nouvelle page de ce martyr. Il est bien que j'ai où m'enfuir dans le domaine de cette pensée claire et profonde, dans la domaine des idées des savants de ce pays rayonnant qu'est l'Italie.*' It should be noted that in Poland there was a very limited number of chairs for mathematics and almost all were occupied since early 1920s, some even earlier. Steinhaus and Kuratowski, although of Jewish origins, succeeded in obtaining positions in Lvov and Warsaw. Kuratowski got a chair at the Lvov Polytechnic in 1927 and in 1934 at the University of Warsaw, and was the youngest docent in Poland. The antisemitic prejudice perceived by Rosenblatt did not condition their professional trajectory. The author is very grateful to one of the referees for this information.

35 AAL, TLCA, A. Rosenblatt to T. Levi-Civita, Krakow 16.12.1927: '*On ne massacre pas les juifs en Pologne, comme en Roumanie et maintenant en Lithuanie, mais on leur ôte les moyens de vivre et on les forces de cette façon*

This situation had a special consequence: many Polish university students or young researchers of Jewish ethnicity sought refuge in Italy.<sup>36</sup> They built a new life and career here, sometimes even gaining Italian citizenship. Suffice to mention, at the University of Florence, David Diringer (1900–1974, doctor in Linguistic and Paleography), Jacob Teicher (1904–1981, Philosophy), and Enrico Zvi Jolles (1902–1971, Chemistry).

The 1938 racial legislation resulted in a complete upheaval: the racial laws (*Provvedimenti per la difesa della razza italiana*) deprived the Italian Jews of civil and political rights. Unable to tolerate the loss of rights and professional marginalisation, many people chose to emigrate.<sup>37</sup> Worse was the situation of foreign Jews, who were forced to leave the country by March 1939. At this dramatic junction, the web of international relations we have traced up to now played a significant role. Three figures – Myron Mathisson (1897–1940), Izaak Opatowski (1905–1976) and Alfred Rosenblatt – will support this thesis.

Myron Mathisson, from Warsaw, whose field of expertise was in mathematical physics, had written a PhD thesis under the supervision of Czesław Białobrzewski (1878–1953). In 1925, he left Warsaw for Palestine, but in 1929, he returned to Poland, and a year later, he got his PhD from Warsaw University. After a study stay in Rome, he spent 18 months in Krakow, collaborating with Józef Weysenhoff. Mathisson had enjoyed correspondence with Levi-Civita since 1932. In the autumn semester of 1937, Levi-Civita invited him to give a series of seminars in Rome about Hadamard's problem relating to the diffusion of waves. On friendly terms with Levi-Civita, Volterra and Castelnuovo, in the spring of 1939, he left Krakow for Paris, next for Cambridge, where he encountered Volterra's son, Enrico, former assistant to Levi-Civita and himself a mathematical physicist refugee on racial grounds. In August of 1939, he turned to Levi-Civita:

Mr. Professor, I lost my position in Poland. Mr. Hadamard has just submitted my application to Jerusalem, where the chair of Theoretical Physics is vacant. May I ask you to write a few words of appreciation for my work? Could you not tell me who in England would be interested in my research? Currently, my situation is critical.<sup>38</sup>

Levi-Civita, Hadamard and Volterra (Vito) wrote the reference letters allowing Mathisson to get this position in Jerusalem.

Izaak Opatowski, born in Warsaw in 1905, a polyglot and a mathematician of versatile talent, graduated in engineering from Turin Polytechnic in 1929 and in Mathematics in 1932.<sup>39</sup> He had as teachers Peano, Fano, Fubini and Francesco Giacomo Tricomi (1897–1978),

*ou de se convertir ou bien de quitter le pays. Cela se rapporte en premier lieu aux Universités, qui sont ici comme dans toute l'Europe Orientale les centres de l'antisémitisme.'*

36 K. Voigt, *Il rifugio precario. Gli esuli in Italia dal 1933 al 1945*, Firenze 1993.

37 See E. Luciano, *Looking for a Space of Intellectual Survival. The Jewish Mathematical Diaspora from Fascist Italy 1938–1948*, Cham 2024 [forthcoming].

38 M. Mathisson to T. Levi-Civita, Cambridge 25.08.1939, [in:] *Aspetti di Meccanica e di Meccanica Applicata nella corrispondenza di Tullio Levi-Civita (1873–1941)*, ed. by P. Nastasi, R. Tazzioli, Palermo 2003 (Quaderni Pristem, vol. 14), p. 184–185: '*Monsieur le Professeur, J'ai perdu ma situation en Pologne. Monsieur Hadamard vient de poser ma candidature à Jérusalem où la chaire de Physique théorique est vacante. Puis-je vous prier d'écrire quelques mots appréciant mes travaux? Ne pourriez-vous pas m'indiquer qui en Angleterre aurait de l'intérêt pour mes recherches? Actuellement ma situation est critique.'*

39 Historical Archive of the University of Turin [HAUT], minutes of meetings, Opatowski's final graduation exam.

who had followed Peano on the chair of Infinitesimal Analysis in 1925. Between 1934 and 1936, Opatowski was a substitute teacher at the technical institute in Turin and, from 1936 to 1938, worked at the Fiat automobile company. Being a foreign Jew, naturalized after 1919, he was forced to leave Italy by March 1939. Opatowski, too, sought assistance from Levi-Civita:

Some recent events and my being a foreigner and an Israelite push me to ask you for advice. The recent government measures make it clear to me that the class of people to which I belong is unfortunately no longer desired in Italy and make me seriously fear that I will be faced with an abrupt change in my situation. Just yesterday I heard of a person who, being in similar conditions to mine, was ordered to leave Italy within eight days. So, I took the liberty of disturbing you in the hope that you could kindly give me some advice. I know several foreign languages; could I hope to have some chance abroad? And where? I've heard of fellowships that are available in the United States also to foreign people. Given the difficulties on the part of Argentine authorities, I presented my case to a former compatriot of mine, prof. O. Zariski, at Johns Hopkins University, who suggested I apply for a fellowship by courtesy, attaching letters of recommendation from Italian professors.<sup>40</sup>

The network of his early mentors recommended him to Julio Rey Pastor (1888–1962) for a position in Argentina; at the same time, they suggested that he look for an opening in the States. Thanks to the endorsement and reference letters signed by four Italians – Fubini, Levi-Civita, Tricomi and Carlo Somigliana (1860–1955), and by two former compatriots (Mandelbrojt and Zariski), Opatowski was given a job at the Institute of Technology of the University of Minnesota.

The third instance of solidarity occurs in the 'opposite direction': a Pole who helped his Italian colleagues (his former mentors) during the harrowing period of racial persecution. It was Alfred Rosenblatt: born in Krakow, he became a Doctor of Philosophy at the Jagiellonian University in 1908; his formal supervisor was Zaremba. Then Rosenblatt had research training in Göttingen and, in 1920, was appointed extraordinary professor of mathematics in Krakow at the Jagiellonian University. Steinhaus and Dickstein proposed him as a candidate for chairs in Poznan and Lvov in 1923, 1926 and 1928, but he always failed due to the opposition from Zaremba and Sierpiński. Desperately trying to find a permanent position, in May 1930 Rosenblatt informed Dickstein:

Simultaneously with a letter from you, I received a letter of professor J. Rey Pastor from Buenos-Aires in which he reports on my appointment in La Plata (Argentina, near Buenos Aires, not Lima in Peru!). We will soon receive an official notification

40 I. Opatowski to T. Levi-Civita, Torino 5.8.1938, [in:] *Aspetti di Meccanica e di Meccanica Applicata nella corrispondenza di Tullio Levi-Civita (1873–1941)*, p. 569–570: 'Alcuni avvenimenti dei giorni scorsi e le mie qualità di straniero e di israelita mi suggeriscono di pregarla di un consiglio. I recenti provvedimenti del Governo, mi fanno apparire in modo chiaro, che la classe di persone a cui appartengo è purtroppo non desiderata in Italia e mi fanno temere seriamente di trovarmi di fronte ad un brusco cambiamento della propria situazione. Proprio ieri ho ricevuto notizia di una persona che trovandosi in analoghe condizioni alle mie, è stata intimata di lasciare l'Italia entro otto giorni. Mi sono permesso perciò di disturbarla, nella speranza che forse Ella potrebbe gentilmente darmi qualche consiglio. [...] Conosco parecchie lingue estere; potrei sperare in qualche possibilità all'estero? E dove, secondo il suo parere? Ho sentito dei "fellowships" che negli Stati Uniti sono accessibili anche agli stranieri.'

of the terms, etc. I am getting the chair of mathematics here with the help of Enriques, Severi, Levi-Civita, and Einstein, to whom, in the last instance, the dean from La Plata turned for an opinion about me. I enjoy the recognition that I have abroad. Einstein also told me: I am surprised that Poland allows so many to go, they have so few people.<sup>41</sup>

Rosenblatt obtained paid leave from the Jagiellonian University and a business passport for Argentina, but because of the military coup in September 1930, he could not go there. During one of his travels in Europe in the late 1920s and early 1930s, Godofredo García (1888–1970), Dean of the Faculty of Exact Sciences at the University of San Marcos in Lima, visited Poland. It was then that he established contacts with Rosenblatt, who, soon after, wrote to him about the risks many Poles of Jewish origin faced due to anti-Semitism. García promptly invited Rosenblatt to work as a lecturer in Lima. Rosenblatt accepted the invitation and, in 1936, arrived in Peru.<sup>42</sup> He took with him from Europe the latest news on research work in differential equations, topology and algebraic geometry. Shortly after his arrival in Lima, Rosenblatt convinced Levi-Civita to go to Peru as a visiting professor. Levi-Civita arrived on 4 August 1937 and held nine lectures on *The relativistic two-body problem*, receiving a festive welcome.<sup>43</sup>

Soon after, Rosenblatt addressed Fano asking him to contribute to the “Revista de Ciencias de la Universidad Mayor de San Marcos” and to exchange it with Italian journals.<sup>44</sup> Finally, in 1938, Rosenblatt and other mathematicians from the Universidad Mayor de San Marcos founded the National Academy of Sciences of Peru: Levi-Civita, Fano, Fubini and Terracini were soon elected as its corresponding members.<sup>45</sup>

These circumstances were fundamental. When in 1938 Italian mathematicians looked for a host country, Levi-Civita directed them to García and Rosenblatt. In the questionnaires of these scholars preserved in the archives of one of the main international Jewish rescue agencies, the Society for the Protection of Science and Learning, Italians consequently indicate Peru as one of their favorite destinations, along with Argentina and Brazil.<sup>46</sup>

Positions were offered to the mathematician Fubini, the jurist Edoardo Volterra (1904–1984) and the astronomer Luigi Giuseppe Jacchia (1910–1996).<sup>47</sup> Papers of refugees from Italy were among those sent down from the Emergency Committee in Aid of Displaced Foreign Scholars for use at the Lima Conference.<sup>48</sup> Recruitment was not always successful,

41 A. Rosenblatt to S. Dickstein, 23.05.1930, [in:] D. Ciesielska, L. Maligranda, *Alfred Rosenblatt (1880–1947). Polish–Peruvian Mathematician*, “Banach Center Publications” 2019, vol. 119, p. 60–61.

42 Oswald Veblen Papers [OVP], General correspondence, *Rosenblatt, Alfred*, 1925–50, box 11: A. Rosenblatt to O. Veblen, Lima 17.09.1936.

43 See Archive of the family Silberstein-Ceccherini [ASC], Rome, Cahier de voyage of Libera Trevisani Levi-Civita, Travel in South America 1937, 6 fols.

44 University of Turin Special Mathematical Library, Gino Fano Archive [GFA], A. Rosenblatt to G. Fano, Lima 21.04.1937, in appendix.

45 AAL, TLCA, G. García to T. Levi-Civita, Lima 7.07.1939.

46 See for example Bodleian Libraries, Oxford, Archive of the Society for the Protection of Science and Learning [ASPSL], Correspondence relating to individual scholars, Mathematics, *Terracini, Professor Alessandro (1884–)*, File 1938-46, 285/5, f. 340.

47 See the letters published as appendix to this paper.

48 The New York Public Library, Manuscripts and Archives Division [NYPL MAD], Emergency Committee in Aid of Displaced Foreign Scholars Records 1927–1949, Records, *Italy: Interview with Laurence Duggan*, New York 11.3.1939, ECADFS to J.P. Chamberlain, New York 24.07.1939.

but it still had positive effects. Thanks to Rosenblatt, Levi-Civita, Fubini, Terracini, and Beppo Levi, who previously published in the “Revista,” joined the Academy of Sciences of Lima and published in its “Actas.” Volterra was solemnly commemorated in Lima.<sup>49</sup>

In the meantime, the situation had dramatically worsened in Europe. The betrayal of the internationalist ideals that had animated Peano, Segre, Dickstein and many others happened at several levels. Picone’s and Severi’s visits to Warsaw and Krakow were no longer scientific trips but missions of science and Italianness. For example, during his visit in Poland Picone gave four purely mathematical talks and a political lecture, *Gli apporti del Consiglio Nazionale delle Ricerche italiano al progresso dell’Economia e della potenza militare della nazione*, delivered in Krakow on 22 April 1939 and replicated in Warsaw on 7 May.<sup>50</sup> Some passages of Picone’s correspondence are even more impressive. In a letter to Sierpiński and Banachiewicz, we read for example:

You certainly know the anti-Jewish measures taken by our government for universities and academies and it is therefore urgent that scientists of Aryan race collaborate as actively as possible to show how science can equally advance even without Jewish intervention, and this will be all the more effective if such collaboration be international. I therefore ask you to send me your own unpublished works or papers by your followers as soon as possible for publication in the periodicals edited by the Academy of Lincei and the Royal Society of Naples. In particular, works from Arians are needed for the Accademia dei Lincei, in which the number of members of the Jewish race has reached a very high percentage. Sure that you will certainly want to promote a great increase in Aryan-Polish scientific collaboration with the Italian Academies, waiting for your positive response, I send you [...] my best wishes.<sup>51</sup>

The epilogue is tragic. Picone’s last letter to Banachiewicz is dated 10 October 1940. Italy had entered the war exactly four months before. A long break in relationships followed. Picone rallied for the release of Wilkosz, Gołąb and Stanisław Turski (1906–1986), who were arrested in the Aktion Gegen Universitat Professoren, but he received no evidence that his appeals were welcomed.<sup>52</sup> Relations were re-established in the autumn of 1945. Both the Polish and the Italian mathematical Schools had been terribly affected by war and persecution. Warsaw University had been burned down. Lvov University was no longer in Poland. More than 60% of Polish mathematicians had been killed (by Germans

49 A. Rosenblatt, *Vito Volterra*, “Revista de Ciencias” 1942, vol. 44, p. 423–442.

50 For a detailed historical reconstruction of Picone’s travel see: *Mauro Picone e i matematici polacchi* ed. by A. Guerraggio. M. Mattaliano, O. Nastasi, Roma 2007, p. 68–133.

51 M. Picone to W. Sierpinski, Roma 7.01.1939, [in:] *Mauro Picone e i matematici polacchi*, p. 58: ‘ *Voi conoscete certamente i provvedimenti antiebraici presi dal nostro Governo per le Università e per le Accademie ed urge, pertanto, che gli scienziati di razza ariana collaborino il più attivamente possibile per mostrare come la scienza possa egualmente progredire anche senza l’intervento giudaico, e ciò sarà tanto più efficace quanto più detta collaborazione sarà internazionale. Vi prego quindi, anche per tali ragioni, di volere al più presto possibile inviarmi Vostri lavori inediti, o dei Vostri discepoli, per la pubblicazione di essi nei Rendiconti dell’Accademia dei Lincei e della Società Reale di Napoli. Specialmente occorrono lavori provenienti da ariani per l’Accademia dei Lincei, nella quale i soci di razza ebraica raggiungevano una percentuale elevatissima. Sicuro che vorrete senz’altro farVi promotore di un grande incremento della collaborazione scientifica ariano-polacca con le Accademie italiane, in attesa di un Vostro cenno di assenso Vi invio [...] l’espressione del più cordiale saluto.*’

52 Banachiewicz and Leja were also arrested, but Picone did not mention them in his letter. Wilkosz was released on 7 November, in Krakow.

or Soviets) or died in the years 1939–1945. Before and after the war, many excellent mathematicians emigrated (Eilenberg, Ulam, Zygmund, Kac, Nikodym). The Italian School of mathematics no longer existed: Fano, Fubini, Segre, Terracini, and Levi had emigrated; Fubini, Volterra and Levi-Civita had passed away. The Turin University had burned down in 1943, but miraculously, part of its heritage was saved by some willing students and young professors like Tricomi who transferred it to cellars and shelters in the city by night. Picone and Severi themselves failed to conceive so much brutality in a people that gave birth to Goethe and Schiller and to a profusion of scientists whom they loved and with whom they had lived in spiritual communion throughout their intellectual lives.

The last act in this history is again an episode of solidarity. In the name of the scientific exchanges that had united Italian and Polish mathematicians since 1891, the surviving members of the Schools of Peano and Segre organised a sort of rescue mission:

we badly need to make friends abroad, and Poland is certainly very fertile ground for the renewal of friendships with Italy. Much of the misfortunes that occurred to Europe and in particular in Poland are due to fascisms, and also for this reason it is a duty that Italy try to make amends in those sectors in which it is possible to do so<sup>53</sup>.

The action was coordinated by Picone, who, with a heart full of horror in front of the evidence of Nazi crimes, organized the donation to the Mathematical Seminar in Warsaw of the entire collections of mathematical journals published by Italian scientific academies and societies. In Turin, Tricomi and Fano made available their complete collections of *Fundamenta Mathematicae* and *Studia Mathematica*; in Rome, Castelnuovo, president of the reconstituted *Accademia dei Lincei*, sent copies of all Lyncean publications to Warsaw. Levi-Civita's widow, Libera Trevisan, donated the series of scientific journals from her husband's personal library, especially the complete collections of *Annali di matematica pura e applicata* and *Rendiconti del Circolo Matematico di Palermo*. The following years would see a renewal of relations between Italy and Poland on other bases and with other actors. Twenty Italian university professors visited Poland in the summer of 1947 to document the disasters caused by the Nazi occupation and to restore scientific collaboration.

## Unpublished letters concerning Rosenblatt's action in favor of Italian persecuted mathematicians

### A. Rosenblatt to G. Fano, Lima 21.04.1937

University of Turin, Special Mathematics Library, Gino Fano Archive, f. 1r

Lima, Torres Paz 1167

D. 21/4 37

53 M. Picone to U. Amaldi, 24.12.1945, [in:] *Mauro Picone e i matematici polacchi*, p. 152: 'abbiamo estremo bisogno di farci degli amici all'estero, ed un terreno fertilissimo per l'amicizia verso l'Italia, è certo quello della Polonia. Buona parte delle disgrazie toccate all'Europa ed in particolare alla Polonia, sono dovute al fascismo italiano, ed anche perciò è doveroso che l'Italia, in quei settori in cui le è possibile, cerchi di riparare.'



Illustre Signora Collega,

Io ho ricevuto i suoi importanti lavori mandatimi da Cracovia. Io sono attualmente in Lima, invitato per due anni. La Facoltà pubblica una Rivista la "Revista de Ciencias" ed il Decano della Facoltà prof. G. García sarebbe molto lieto se Ella vorrebbe inviare i Suoi importantissimi lavori e anche pubblicare [un] lavoro nella Revista. La ringrazio molte volte e gradisca i sensi della più perfetta riverenza.

Il suo profondamente devoto Prof. Alfred Rosenblatt

Translation:<sup>54</sup>

Distinguished Colleague, I have received your important works sent to me from Krakow. I am currently in Lima, invited for two years. The Faculty publishes a journal, "Revista de Ciencias," and the Dean of the Faculty, prof. G. García, would be very happy if you would like to submit your very important works, to be published in the "Revista." I thank you heartily and I beg to appreciate the senses of the most perfect reverence. Yours deeply faithful Prof. Alfred Rosenblatt.

#### A. Rosenblatt to G. Fubini, Lima 4.11.1938

Fubini Family Collection, Laurie and David G. Fubini's private archive, Boston, f. 1r

Illustre Professor Guido Fubini,

ho avuto il piacere di ricevere la sua gentile lettera [...]. Deploro l'attitudine al riguardo dei più illustri scienziati: disgraziatamente ora l'Europa attraversa una situazione critica, nella quale non si riconosce e non si venera l'alto valore degli uomini che fanno epoca nel progresso scientifico dei popoli civili. Ho preso nota del suo desiderio di venire in Perù, e quando discuteremo al congresso Universitario il piano di conferenze e proiezioni che deve aver luogo l'anno prossimo, farò presente il suo desiderio, che appoggerò nel modo più deciso. Se i miei sforzi avranno esito favorevole, mi farà un vero piacere di fargliene parte immediatamente. La prego gradire, illustre professore, l'espressione della mia alta stima e considerazione.

Translation:

Distinguished Professor Guido Fubini, I had the pleasure of receiving your kind letter [...]. I deplore the attitude of the most distinguished scientists in this regard: unfortunately, Europe is now going through a critical situation, in which the high value of the men who made an epoch in the scientific progress of civilized nations is not recognised and venerated. I have taken note of your desire to come to Peru, and when the University Board discuss the plan of conferences and invitations for the next year, I will inform them of your wish, which I will support in the most decisive way. If my efforts are successful, I will be very pleased to communicate it to you immediately. Please accept, distinguished Professor, my high esteem and consideration.

54 All English translations by the author.

**G. García to G. Fubini, Lima 16.12.1938**

Fubini Family Collection, Laurie and David G. Fubini's private archive, Boston, f. 1r

Lima, 16 de diciembre de 1938

Señor Doctor Guido Fubini.

Muy ilustre Profesor y amigo:

Por la presente tengo el agrado de saludarlo y comunicarle, que he gestionado su ingreso al Cuerpo de Catedráticos de la Universidad de "La Libertad." Es ésta una de las tres Universidades Menores del Perú, que funciona en la Ciudad de Trujillo, situada en la Costa y dotada de toda clase de comodidades y de un hermoso clima. Si así le conviniera, podría obtener allí las Cátedras de Matemáticas Generales y de Física, por cuyas dos asignaturas dan el haber correspondiente de quinientos soles oro (soles oro 500) al mes; esto sería a partir del 1° de Abril próximo, también posteriormente puede Ud. ocupar la Cátedra de Físico – Atómica.

Si Ud. Encontrara conveniente la propuesta, inmediatamente puede escribir al señor Rector de la Universidad de La Libertad, Departamento de La Libertad – Trujillo, Dr. Ignacio Meave Seminario, indicando sus condiciones. Sería oportuno me enviara un duplicado de la carta para el caso en que, el señor Rector viniera a Lima, como es muy posible, en ese caso le entregare personalmente.

Dadas las condiciones de vida que posee la Ciudad de Trujillo, el sueldo sin ser crecido, es suficiente para vivir con comodidad; su población es muy culta y está dotada de toda clase de comunicaciones para transportarse con facilidad en cualquier momento a la Capital, Lima.

Conviene apresure su respuesta, pues el periodo de vacaciones se aproxima.

Su amigo de su mayor consideración y estima,

Godofredo García

N.B. La dirección exacta a la cual debe dirigirse es: Dr. J. Ignacio Meave Seminario, Rector de la Universidad de "La Libertad", Trujillo – Perú Sud-América

Translation:

Mr. Doctor Guido Fubini, very illustrious Professor and friend: Now I have the pleasure of greeting you and informing you that I have arranged for you to enter the Cuerpo de Catedráticos de la Universidad de 'La Libertad'. This is one of the three minor Universities of Peru, which operates in the city of Trujillo, located on the coast and equipped with all kinds of comforts and a beautiful climate. If it is suitable for you, you could obtain there the chairs of General Mathematics and Physics; for each of the two assignments you will be given the corresponding credit of five hundred gold soles per month; this would be from next April 1st; later, you could occupy the chair of Physics – Atomics also. If you find the proposal convenient, you can immediately write to the Rector of the University of La Libertad, Department of La Libertad - Trujillo, Dr. Ignacio Meave Seminario, indicating such conditions. It would be opportune if you could send me a duplicate of the letter, in case the Rector comes to Lima, as is very possible. In that case, I will deliver it personally. Given the living conditions that the city of Trujillo offers, the salary is enough to live

comfortably; the population is highly cultured and the town is equipped with all kinds of transport to easily travel to the capital, Lima, at any time. It is advisable to hurry with your response, as the vacation period is approaching. Your most respectful and reverent friend, Godfrey Garcia. N.B The exact address to which you should write is: Dr. J. Ignacio Meave Seminario, Rector of the University of "La Libertad," Trujillo – Peru South-America.

**A. Rosenblatt to O. Veblen, Miraflores Peru, 4.08.1940**

Oswald Veblen Papers, General correspondence, *Rosenblatt, Alfred*, 1925–50, box 11, f. 1r–v

Miraflores, Perù, Calle Atahualpa 152

4/8 40

Dear Sir,

I have received your letter on returning from a journey to the interior, and I thank you many times. Prof. García thanks you also very heartily.

I have spoken with Dean G[arcía] on the affair of the two men; you suggested finding a place for them.

Regarding Prof. P., I think, and this is also the opinion of Prof. G[arcía], that he seems not to fulfil the requirements needed for this country. His speciality is scarcely needed here, and he seems to lack on the other side of the volume which would enable him to do good work here.

You know that we have in Poland many first-class mathematicians who would be an adorn for this country (Banach, Saks, Schauder, Stenhaus, Mazur, etc.) and we hope that it will be perhaps possible to contract one of them. On the other side, what we need are zoologists, embryologists, biologists, etc., who will find here an Eldorado for their scientific work and benefit this country. //

Regarding Prof. Volterra, I heard in Cracow from my eminent colleague Prof. Taubenschlag that he is very clever in Roman Law. I will speak with the representative of this science, as well as Prof. G[arcía], and I hope that it may be possible to do something for this clever young man, son of our most famous master.

Prof. G[arcía] intends to send a Note (in English) on ballistics, on a problem treated by Levi-Civita, to be published in the Bulletin of the American Society.

We will write to you on this matter.

With best wishes. Yours most respectful

Alfred Rosenblatt

**A. Rosenblatt to O. Veblen, Miraflores Peru, 16.8.1940**

Oswald Veblen Papers, Subject File, 1918–1960, *Volterra, Edoardo*, 1940, box 34, f. 1r

Miraflores, Perù, Calle Atahualpa 152

16/8 40

Dear Sir,

I have spoken with Mr. G. Garcia on the affair of Mr. V[olterra]. But he thinks it is impossible to find a University Situation for Mr. V[olterra]. Indeed, he says that the Faculty of Law is of the opinion that only Peruvians can adequately lecture on law in Peru. The Dean of the Faculty of Law, now Minister of Public Instruction, is a nationalist. Besides nobody here knows Latin sufficiently to understand Roman Law.

It seems today, for the first time, that a change in Europe was possible sooner or later.

We would be extremely grateful if you could send us a paper to be published in the "Revista de Ciencias" or in our Academy.

With the highest regard, yours very regretful

Alfred Rosenblatt

### **O. Veblen to J. O'Hara, 23.09.1940**

Oswald Veblen Papers, Subject File, 1918–1960, *Volterra, Edoardo*, 1940, box 34, f. 1r

Dear Father O'Hara:

May I take the liberty of disturbing you again about Professor Edoardo Volterra's situation? In your letter of 30 July you said that you had written to Professor Turley of Notre Dame to ask his opinion. Have you had any reply yet? Following a suggestion that Roman Law might be more appreciated in South America than here, I wrote to an acquaintance in Lima, Peru, who went into the question very carefully but reported that the Faculty of Law there "is of the opinion that only Peruvians can adequately lecture on law in Peru." He intimates also that the Minister of Public Instruction is unsympathetic to the idea. So there appears to be no chance in that quarter. If you could make any other suggestion I should be very much obliged.

Yours sincerely,  
Oswald Veblen

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**Erika Luciano** is professor of history of mathematics at the Department of Philosophy and Education Sciences of the University of Torino, Italy. Her research focuses on social history of mathematics and science, considered as human enterprises, in the 19th and 20th centuries. In 2022 Luciano has been awarded the international prize for young researchers in history of mathematics by the Italian Mathematical Union and the Italian Society for the History of Mathematics.

e-mail: erika.luciano@unito.it

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## Włoscy i polscy matematycy wobec prześladowań rasowych i emigracji: tło, osobiste losy i aspekty globalne

Niniejszy artykuł przedstawia nowe spojrzenie analityczne na społeczno-kulturowe aspekty relacji pomiędzy członkami dwóch głównych włoskich środowisk naukowych – Szkoły Logiki Matematycznej i Włoskiej Szkoły Geometrii Algebraicznej – oraz ich niektórych polskich kolegów (Samuela Dicksteina, Wiesława Jezierskiego, Alfreda Rosenblatta i in.). Wykażę, że złożona sieć powiązań między Giuseppem Peanem, Corradem Segrem i ich uczniami doprowadziła do zintensyfikowania wymiany naukowej między Włochami a Polską w latach trzydziestych XX w. Jej szczytem były wizyty Tullia Leviego-Civity i Maura Piconego w Warszawie i Krakowie. Równocześnie ta sieć umożliwiała przypadki nadzwyczajnej solidarności, kiedy polscy i włoscy matematycy stanęli wobec brutalnych antysemickich prześladowań i migracji. Dodatek zawierający niewydane listy przedstawia rolę Rosenblatta we wspieraniu ambitnych uchodźców z Włoch w zdobywaniu pracy w Peru.