

Rockefeller Philanthropy and Mathematical Emigration between World Wars*

REINHARD SIEGMUND-SCHULTZE

“If Hitler had set out, with benevolent intent, to build up America as the world’s great mathematical center, he could hardly have achieved more successfully the result, which his ruthlessness has accomplished.”¹

Raymond B. Fosdick

President of the Rockefeller Foundation, 1943

The Rockefeller Foundation was not the only agency to support immigrant mathematicians. However, unlike various other actors, philanthropies based on Rockefeller money had an older tradition of support for the internationalization of basic sciences such as mathematics and physics dating back at least to the aftermath of World War I.

Between the two World Wars, when state support for fundamental science was marginal, the fellowships financed by the private Rockefeller philanthropy had been crucial in assisting American research to gradually reach the European standard. Support was channeled either through the American National Research Council or more directly through the International Education Board (1923–1928, henceforth IEB), one of the Rockefeller philanthropies, which had a strong focus on physics and mathematics. The

IEB program, which provided for a lively travel exchange and oral communication between European and American scholars and supported more than 100 mathematicians up to the age of about 35, was continued at a considerably reduced scale by the Rockefeller Foundation (in the narrow sense, henceforth RF) after the dissolution of the IEB in 1928 and under changed economic, political, and scientific conditions.

One particular aspect of Rockefeller support for mathematics is the subject of this article: the emigration of mathematicians from Europe to America. This topic splits into two, both chronologically and with respect to changing social and political conditions: fellowship programs and the emergency program for refugees from Europe.

Although the fellowship programs did not primarily aim at recruiting foreign mathematicians to the United States

*This article discusses one aspect of Rockefeller support for mathematics: the emigration of mathematicians from Europe. For the broader policies of the Rockefeller philanthropies for internationalization of mathematics, see my monograph Siegmund-Schultze (2001), which together with other sources will be broadly used in the following and will be quoted as FI.

¹Fosdick (1943: 120).

(although some of the fellows finally ended up there), the emergency program of the Rockefeller Foundation from 1933 responded to the seizure of power by the Nazis in Germany and helped a group of excellent European mathematicians of a certain age (preferably between 30 and 60), who were not considered to threaten the job market for young Americans, to settle in the United States.

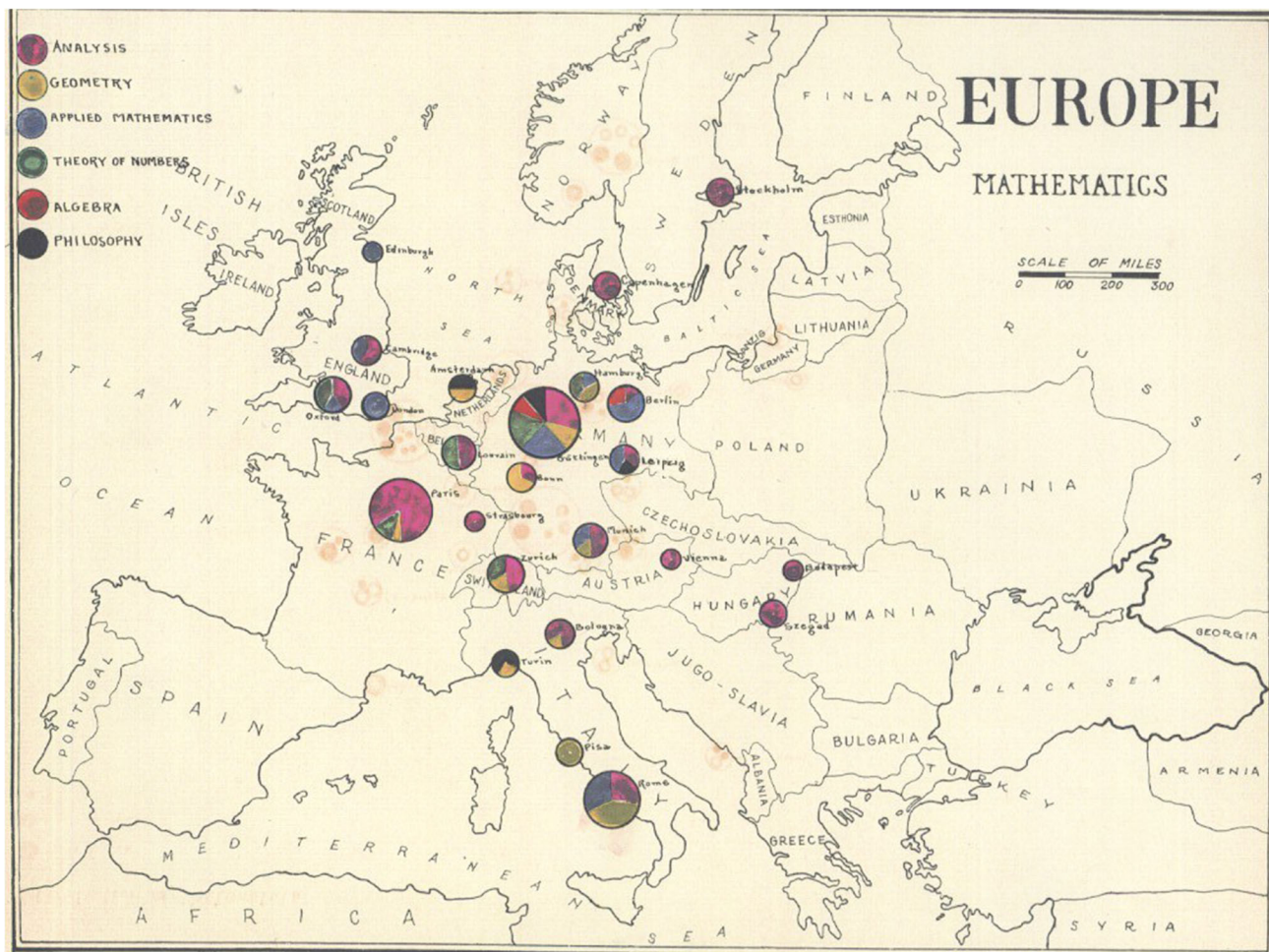
There are close connections between the fellowship programs and the emergency program in terms of the persons involved (fellows, senior mathematicians as advisors, foundation officers) and the experiences gained. Moreover, both programs have to be seen in relation to the Rockefeller philanthropy's other international engagements and investments in mathematics. Among the latter were the two mathematical institutes in Paris and Göttingen, financed by Rockefeller money, which opened respectively in 1928 and 1929. There was further support by Rockefeller for senior mathematicians, for mathematical abstracting and other publications, and, rather late and during the war, for applied mathematics, which had repercussions for the emigration of mathematicians, too.

The Rockefeller Fellowship Programs and the Internationalization of Mathematics

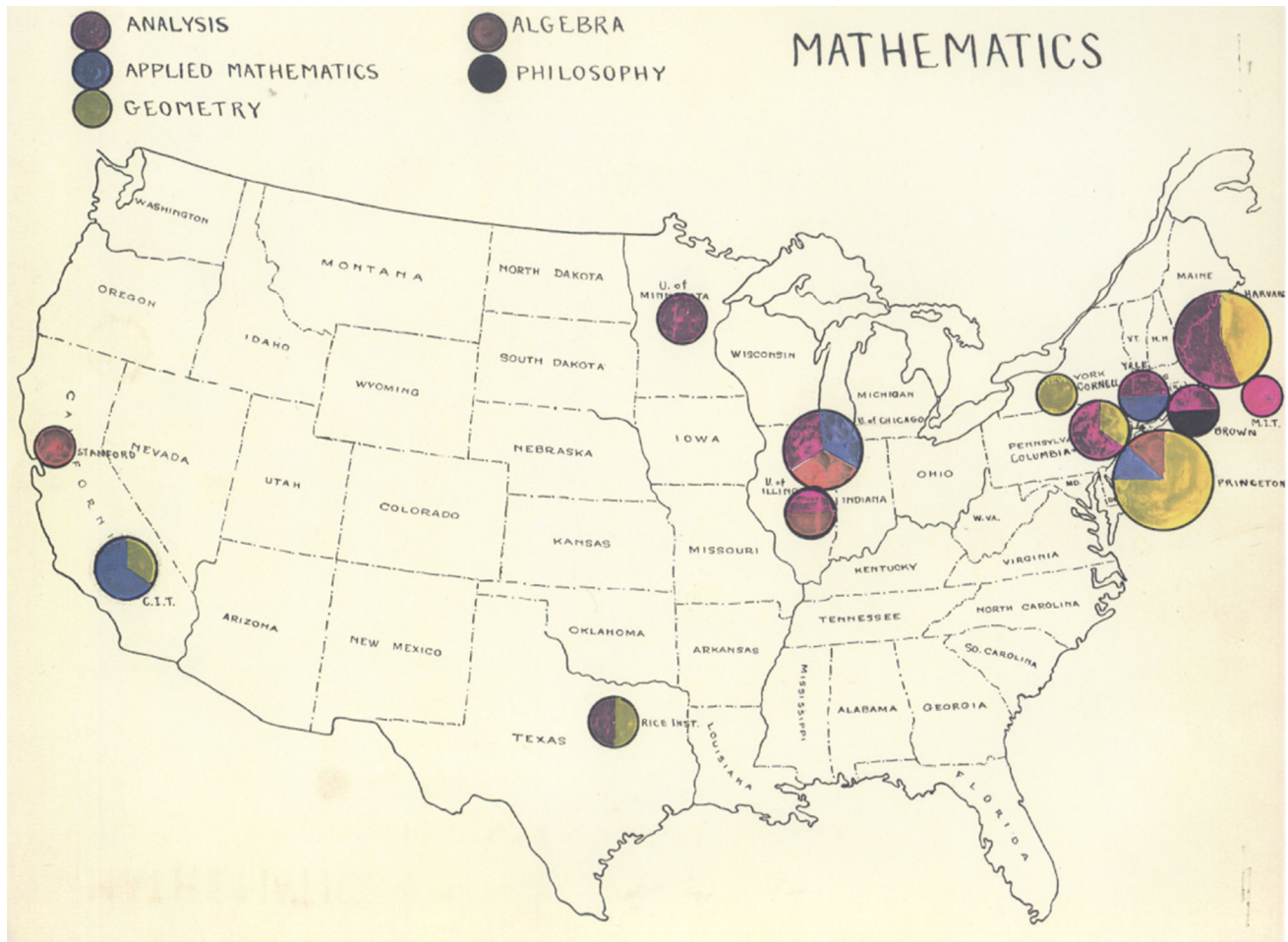
After World War I, various philanthropies financed by Rockefeller money focused on “education” and on international

exchange. One should be aware, however, that these initiatives were largely confined to European-American relations and to elitist research, deliberately excluding, among other things, matters of school mathematics and minority education. Support for African and Asian scholars by the IEB or the RF was expressly ruled out as late as 1932. That year one Rockefeller officer said, “we are not permitted to consider subjects from India” (RI: 18). It was only in the mid-1930s that—because of problems in continuing the projects in Europe—South American candidates were increasingly supported by Rockefeller and other American philanthropies. Even within Europe, the American philanthropists made clear differences in their support between the so-called scientifically and culturally “advanced” and the “backward” countries. In the case of Soviet Russia, political and cultural barriers, and to some extent the ignorance on the American side, were so high that no adequate support was provided to that important, fledgling mathematical community before political developments within the Soviet Union made further support impossible.

After the International Education Board was founded in 1923, its first president, Wickliffe Rose, and leading American mathematician George D. Birkhoff undertook separate trips to Europe in 1923–1924 and 1926, respectively. The documents furnished from these trips and in their preparation discuss the political and economic conditions for



Maps drawn by Rockefeller collaborators—based on information by American mathematicians—concerning mathematical centers in Europe and the U.S. about 1926. Courtesy Rockefeller Archive Center, Sleepy Hollow, NY



international scientific collaboration after World War I and, in Birkhoff's case, particularly the situation in mathematics.

Birkhoff hoped, among other things, to win European mathematicians for permanent positions in the United States:

"If there were any possibility of useful liaison work in the mathematical field under your direction, I would be very glad to stay on until the late summer months. There are fine young men of mathematical promise in Europe who cannot secure the kind of position which they deserve where they are, and who could be absorbed in our American mathematical community, to the advantage of all concerned."²

This led to the IEB's decision to send Birkhoff as a "traveling professor" for from 6 up to 9 months to Europe. In September 1926 Birkhoff sent a revealing report to Rose.³ He had not found time "to visit the less advanced countries scientifically," among which he apparently counted the Soviet Union, although he recognized the rise of "young men of high ability" there. In the conclusion "Possible Needs in Europe and America" Birkhoff proposed the creation of traveling fellowships, not only for young scholars but also for experienced ones, because the Europeans did not have an equivalent to the American "sabbatical year." Moreover, the visits of Europeans to America

were very much in the interest of the Americans themselves. During the trips to Europe by Rose, Birkhoff, and various other Rockefeller functionaries, a network of advisors to the Rockefeller Foundation was created. This included mathematicians such as Harald Bohr (Copenhagen), G. H. Hardy (Cambridge, England), Hermann Weyl (Zürich), and Richard Courant (Göttingen). All of them played a considerable role during the emigration from Europe a decade or so later.

The IEB, in its 5 years of existence, paid for more than 500 fellowships in the "pure sciences" and in agriculture, mostly for Europeans and U.S. citizens. Among the grantees were future Nobelists such as Enrico Fermi and Werner Heisenberg. Under the program, about half of the fellowships were spent on physics and mathematics. Eighty-six international fellowships (for non-Americans) went to mathematics. The RF program from 1929 on supported another 44 young mathematicians, although the RF increasingly put its main emphasis on molecular biology.⁴ Several of the IEB/Rockefeller research fellows of the 1920s and early 1930s became immigrants to the United States then or "refugees" later (a term I will reserve for victims of the racial and political purge in Europe).

²Birkhoff to W. Rose, March 25, 1925 (RI: 42).

³The report is dated Paris, September 8, 1926, and is published as Appendix 7 to RI, pp. 265-271.

⁴The list of 130 IEB/RF fellows in mathematics, given as Appendix 15 to RI, is probably nearly complete. Applied mathematician Warren Weaver led the Division of Natural Sciences of RF. He was also responsible for the reduced program in mathematics, which, from the 1930s on, focused on statistics.

Information Concerning Fellowships

Awarded by the

International Education Board

1—A limited number of fellowships will be granted by the International Education Board to assist young scientific men who are working under the direction of scientists. Grants will be made to men of unusual promise in their respective fields, so that they may pursue abroad, under guidance, studies which they can not pursue at home with equal advantage.

In making grants, the Board will give preference, for the present, to men under thirty-five years of age who are working in the fields of chemistry, biology, physics, mathematics and agriculture. An adequate knowledge of the language of the country which they intend to visit is required. The grant will cover the period needed for the contemplated course of study abroad, provided it is not less than six months. In case more than a year is required, the fellowship will be granted for the year, and a request for an extension will be considered by the Board.

Courtesy Rockefeller Archive Center, Sleepy Hollow, NY

The official and published criteria for the original IEB fellowship program included: proven excellence of the candidate, the plan for study abroad, the existence of “sponsors,” a preferred time span of approximately 1 year of study, the relative youthfulness of the candidates, and the fulfillment of language requirements.

There were, in addition, unofficial stipulations: among them a guarantee that the candidates have a job to return to in their country of origin after the completion of the fellowship, an interview with an official of the Paris office (either in Paris or during a trip by the official), and the prohibition of vacations during the fellowship.

It is of interest that whereas only “men” are addressed in the IEB flyer, four women (Nina Bari, Marie Charpentier, Echo D. Pepper, and Mayme Logsdon)⁵ were selected as fellows.

Among the fellows there were many who would have a decisive impact on the further development of various mathematical disciplines. These included Bartel Leendert van der Waerden, who wrote the “bible” of the abstract structural approach to modern algebra in the spirit of his teachers Emil Artin (Hamburg) and Emmy Noether (Göttingen); André Weil, who was one of the founders and perhaps the guiding spirit of the influential group of French mathematicians named “Bourbaki”; and Alfred Tarski, who was one of the principal founders of modern mathematical logic, especially its semantic aspects.

The Numbers of Rockefeller-Supported Mathematical Immigrants to the United States

Thirty-three of the altogether 130 fellows of the period 1924 to 1945 would permanently emigrate from their home countries later in their careers,⁶ a decision that undoubtedly in many cases was inspired or facilitated by the experiences gained in the previous fellowship program. Twenty-four of the 33 went to the United States: John, Lewy, Menger, von Neumann, Pólya, Tarski, Weil, Weinstein, and Zygmund as refugees from the Nazis, and others (e.g., Hlavatý, Magnus) only after World War II. Seven of the former IEB or RF fellows were also among the 21 supported by the emergency program of the RF after 1933 (the list of the 21 is given below). This yields a total of $9 + (21 - 7) = 23$ who were supported by Rockefeller through either the fellowship or the emergency program. This is about a quarter of the at least 100 mathematical refugees⁷ from the Nazis who ended up in the United States. In addition there were several refugees from Europe (such as Rudolf Carnap, Willy Feller, Emil Julius Gumbel, Otto Neugebauer, Carl Ludwig Siegel) who were supported through other Rockefeller funds.

Reorientation of Rockefeller Support for Mathematics after 1933

One has to be aware of both historical continuity and discontinuity in Rockefeller support for science and mathematics before and after 1933.

⁵The first two (European) women were apparently selected in a more competitive atmosphere than the other two (Americans) and rose to some prominence as researchers later, especially the Russian mathematician Nina Bari.

⁶Ahlfors, Besicovitch, Bochner, Coxeter, Fenchel, Féraud, Grandjot, Hlavatý, Hopf, E., Hopf, H., Hurewicz, John, Krbek, Lewy, Magnus, Menger, Nagell, von Neumann, Neyman, Ore, Pólya, Radó, Schoenberg, Struik, Tarski, van der Waerden, Vasilesco, Weil, Weinstein, Wilson, Wintner, Zariski, Zygmund.

⁷The total number of 100 mathematical refugees from the Nazis is a very rough estimate. My book (Siegmond-Schultze, 2009), quoted henceforth as MF, counts 82 German-speaking (!) mathematical refugees to the United States. Although clearly this group is by far the biggest, it does not include, for instance, French and Polish mathematicians such as Weil and Zygmund.

There is a clear line of continuity as to the standards and procedures applied in the selection of fellows and immigrants/refugees (demanding “excellence,” social adaptability, etc.). There is also continuity with respect to the people who actually performed the selection, among them former advisors to the RF such as Harald Bohr, Hardy, Courant, and Weyl. Furthermore, there were still remnants of their earlier policies noticeable in the actions of the Rockefeller philanthropy after 1933; the Foundation was obviously anxious to safeguard its investments in Europe and generally did not support long-term appointments of refugees in the United States. In fact, several refugees from the Nazi empire, such as Emil Julius Gumbel (statistics), Beniamino Segre (geometry), Otto Neugebauer (mathematical reviewing, history of mathematics), and Willy Feller (stochastics), were supported in Europe as long as the political development would allow.

But there was clear discontinuity in the Rockefeller policies too, especially with respect to the goals of the Rockefeller support.

First, whereas “pure mathematics” had been the main agenda of the IEB, more applied fields entered into the domain of the Rockefeller activities during the 1930s. Among the mathematical immigrants supported by the Rockefeller Foundation in the 1930s and 1940s were applied mathematicians such as Felix Bernstein (biostatistics), Richard Courant (differential equations in physics), Willy Feller, and Kurt Friedrichs (analysis, engineering mathematics).

Second, Rockefeller support was no longer directed toward international scientific communication *per se* but had to take into account to a much higher degree the ramifications for science in the United States, especially for the academic job market. The social sciences and the humanities were much less problematic in this respect, because refugees in those fields were not as likely to compete with young Americans as was the case in the much more internationalized mathematics. So the Rockefeller emergency programs spent 37% of their money on refugees in the social sciences but only 24% on refugees in the natural sciences. Concern on the part of the American refugee organizations for the domestic job market was also responsible for tightened rules as to eligibility for RF grants. Usually the candidates for RF as well as for EC grants (for the latter, see below) had to be between 30 and 60 years of age,⁸ they had to have been forcibly dismissed in Europe, and a regular academic position held no longer than 2 years before application was considered a prerequisite, which was difficult to meet in cases of earlier dismissal.

To put the Rockefeller support for mathematics in a proper historical perspective, it is necessary to understand it as a part of a concerted effort—with the various parties sometimes acting at cross-purposes—to “salvage exceptionally able intellectuals” (RI: 194) from Europe for their discipline’s sake and/or for the benefit of American research. The Rockefeller Foundation cooperated

intimately with Stephen Duggan’s Emergency Committee in Aid of Displaced German (later: European) Scholars (EC) and, as far as mathematics was concerned, with the American Mathematical Society (AMS) and the School of Mathematics within the Institute for Advanced Study (IAS) in Princeton. In fact, the situation in mathematics was a very special one, as there did exist a haven for outstanding European mathematicians, mostly of rather “pure” persuasion, such as Hermann Weyl, John von Neumann, Solomon Bochner, Richard Brauer, Claude Chevalley, Carl Ludwig Siegel, and Kurt Gödel. This haven was the IAS in Princeton, which had been erected in 1932 by the Bamberger-Fuld Foundation with the help of former Rockefeller officer Abraham Flexner. The IAS seems to have played a role in mathematics similar to the one the University in Exile of the New School for Social Research (NSSR) would play in the social sciences (and, incidentally, in some border subjects of mathematics as well). It helped exempt outstanding researchers among the refugees from the ordinary duties of academia in the United States. Many foreigners, not only in mathematics, who were struggling with English, were not accustomed to the large extent of teaching for undergraduate students common in the United States—students who were frequently ill-prepared by European standards. To outstanding mathematicians who were considered socially ill adapted, such as Carl Ludwig Siegel and Kurt Gödel, the IAS also would provide relief.

In the institutional triangle consisting of Princeton (American mathematician Oswald Veblen and Weyl), New York City (EC, RF, Courant; see the following), and Providence, Rhode Island (Roland G. D. Richardson, secretary of the AMS, at Brown University), the relief work was organized with the Rockefeller Foundation mostly acting behind the scenes and providing matching funds for appointments at various colleges and universities.

Three days before the creation of the first Rockefeller emergency program for deposed European scholars, on May 12, 1933, topologist Oswald Veblen of Princeton, perhaps the most influential among the American organizers of immigration for mathematicians fleeing from Hitler, contacted the Rockefeller Foundation.⁹ He promptly convened a meeting with Duggan’s EC to discuss support for approximately 25 mathematicians to be matched by funds from RF and “by a group of wealthy Jews.”¹⁰ Interestingly enough, this was about the number of mathematicians finally supported by the EC, partly with assistance from the RF. It should be noted that two important men in the Rockefeller philanthropy in the early 1930s had mathematical backgrounds: Max Mason, president of the RF until 1935, had taken his doctorate under David Hilbert in Göttingen in 1903, and Warren Weaver, director of the division for natural sciences in the Foundation since 1932, had been a student of Mason’s in Wisconsin and was a mathematical physicist. Weaver served in this position in the RF until well after the war, and took, in addition, the lead in the Applied

⁸Duggan, S. and Drury, B. 1948: 186.

⁹For the following, cf. RI: 195.

¹⁰Ibid.

Mathematics Panel (APM) in the American war research organization called the Office of Scientific Research and Development (OSRD), founded under (analogue) computer pioneer Vannevar Bush in 1942. It was Weaver who was most attentive to the needs of mathematics in the United States during those years and tried to coordinate this recognition with his policies in the RF. The one personal relation that was most stimulating for Weaver's development toward applied mathematics was apparently his dialogue with Richard Courant from Göttingen, who was now a refugee at the city where the Rockefeller headquarters were located: New York.

There were, however, more refugees than the RF could support. So, in spite of widespread academic unemployment in the United States, many were placed in American universities and colleges *without* funds from either RF or EC but with strong support by American mathematicians lobbying for their colleagues from Europe: "Of the 131 mathematical scholars who were driven out of Central Europe and came to the United States, twenty-eight were assisted by grants from the Foundation."¹¹ Having failed to find in the Rockefeller files a complete list of names of all refugee mathematicians supported under the emergency programs, I had to compile the following list of 21 mathematicians from various scattered sources.¹² The list, which is probably incomplete, is confined to mathematicians who were at least partly supported by Rockefeller emergency funds *within* the territory of the United States.¹³

1. Alt, Franz (1910–2011), Austria, actuary, support after 1938
2. Bernstein, Felix (1878–1956), Germany, biostatistics, support 1933–1935
3. Courant, Richard (1888–1972), Germany, appl. math, support 1934–1936
4. Feller, Willy (1906–1970), Germany, stochastics, support until 1939 (partly Stockholm)
5. Friedrichs, Kurt (1901–1982), Germany, appl. math, support 1937–1939
6. Gumbel, Emil J. (1891–1966), Germany, statistics, support 1934–1942 (partly Lyon)
7. Hadamard, Jacques (1865–1963), France, analysis, support after 1941
8. John, Fritz (1910–1994), Germany, analysis, support 1935–1937 (later RF)
9. Kogbetliantz, Ervand (1888–1974), France, appl. math, support after 1940
10. Kraitichik, Maurice (1882–1957), Belgium, number theory, support after 1940
11. Lewy, Hans (1904–1988), Germany, appl. math, support 1933–1937 (formerly IEB)
12. Mandelbrojt, Szolem (1899–1983), France, analysis, after 1940 (IEB)

13. Neugebauer, Otto (1899–1990), Germany, history, support 1933–1942 (partly in Copenhagen)
14. Noether, Emmy (1882–1935), Germany, algebra, support 1933–1935
15. Rademacher, Hans (1892–1969), Germany, number theory, support 1934–1936
16. Szasz, Otto (1884–1952), Germany, analysis, support 1933–1939
17. Szegő, Gabriel (1895–1985), Germany, analysis, support 1934–1936
18. Tarski, Alfred (1901–1983), Poland, logic, support 1939–1940 (RF)
19. Weil, André (1906–1998), France, algebra, support after 1941 (IEB)
20. Weinstein, Alexander (1897–1979), Germany, appl. math, support after 1940 (IEB)
21. Zygmund, Antoni (1900–1992), Poland, analysis, support 1940–1941 (IEB)

Only three of the 21 did not fit into the 30 to 60 age scheme: Alt and John were rather young, Hadamard rather old when supported.

Examples and Criteria of Rockefeller Support for Mathematical Immigration to the United States

Let us consider examples of Rockefeller support for mathematics during the 1930s from several points of view.

American Self-Interest and the Academic Job Market

There is no doubt that some Americans, among them Rockefeller functionaries, saw the expulsions from Germany as an opportunity for American science. When Richard Courant, by then an émigré in the United States, visited the Rockefeller office in New York in October 1934, he described the non-Jewish German mathematician Carl Ludwig Siegel as "the most able and promising mathematician alive."¹⁴

Apart from the possible gains from immigration, concern for American science had another side to it. The strict selection rules for refugees discouraged several efforts on the part of émigrés to help others settle in the United States. Courant had hoped for much from Max Mason, his old acquaintance from Göttingen, but was soon disappointed because of Mason's anxious concern for the American academic job market. In January 1936, Courant wrote to another Göttingen refugee, physicist James Franck:

"Mason welcomed the New School because it is suited best to solve the problem of refugees outside the domain of American universities. In humanitarian respect his speech did not impress me very favorably. It simply reflects the well-known fact that everywhere there is resistance and people in responsible positions feel compelled to comply with this sentiment." (RI: 198)

¹¹Fosdick 1943: 121. This coincides largely with my figures.

¹²The list, which is probably incomplete, is given as Appendix 17 to RI.

¹³Do not confuse the list of the Rockefeller emergency fund with a compilation of *all* mathematicians supported by the RF, because the regular fellowship program was continued to a certain extent.

¹⁴Cf. MF: 159.

Warren Weaver remarked in September 1941:

“[Laurent Schwartz] is supposed to be one of the most brilliant of the younger students of mathematics. He has not received his doctorate. WW subsequently informs B[rillouin] that we have already been approached for aid to S. and found it necessary to decline.” (RI: 199)

The Jewish mathematician Schwartz, who later became famous for his theory of distributions, managed to survive in occupied France under a false name.¹⁵

Safeguarding European Investments

The ambiguity of the effects of emigration was palpable. In Fosdick’s words,

“If, as a result of the present cataclysm on the other side of the Atlantic, Europe freezes into an Arctic night, we shall not easily keep the fires lit in the universities and laboratories of America.” (RI: 199)

France had been a principal target of Rockefeller support in the early 1920s and early 1930s, and the RF was anxious to support promising developments in mathematics there, for example in the Parisian *Institut Henri Poincaré*, founded by the International Education Board in 1926-1928.

One Jewish refugee in mathematics working in France during the 1930s was the German Emil Julius Gumbel.¹⁶ At Heidelberg, Germany, in the 1920s, he had worked on the statistics of extremes and rare events (such as longevity and floods). He was also widely known for his left-wing, antinationalist, and antimilitaristic politics. Gumbel lost his teaching permit in Germany in 1932, even before the Nazis came to power, because of political campaigns of German nationalists. He went to France, where he found financial support from Rockefeller’s Social Sciences Division, thanks to leading French mathematicians such as Jacques Hadamard, Émile Borel, and Maurice Fréchet. Gumbel continued to work with Rockefeller support at the University of Lyon until 1939; in 1940 he fled to New York City to take a temporary appointment at the Rockefeller-financed NSSR. A former IEB fellow, Italian geometer Beniamino Segre, who had made it to England after the racial laws came into effect in Italy in 1938, was not transferred to the United States. Segre was described in October 1940 by Weyl and Veblen in Princeton as “a particularly good man to import to this country, both because we are relatively weak in the field he represents, and because S. is himself [an] unusually ‘salable’ foreign mathematician” (RI: 200). However, the Foundation found its “investment” Segre safe in England and apparently supported him there via the British SPSL (RI: 200).

Anti-Semitism in the Foundation and Political Positions of Immigrants

The RF’s anxious concern for its investments in Europe and for the domestic job market led several among the functionaries to

understate the effects of Nazi rule. There were discussions within the Foundation and in the American public, for instance, about whether the RF should abide by its promise to fund the physics institute of the Kaiser Wilhelm Gesellschaft in Berlin. The institute was finally opened in Berlin in 1937 with Rockefeller funding, only to be placed under military rule during the war.¹⁷ There was an early concern in the RF for the fate of Jewish scholars in Germany, and the Foundation made inquiries to this effect in Europe.¹⁸ But at the same time sympathies for the anti-Semitic policies of the Nazis could occasionally be found among some of the functionaries,¹⁹ sympathies that had a tradition in the virulent academic anti-Semitism in the United States. In this respect there were differing attitudes of the RF proper and the Rockefeller-sponsored NSSR in New York: “The ambivalence of the Rockefeller Foundation toward Jews, an attitude that Alvin Johnson [the director of the NSSR] in no way shared, also characterized the difference between the two rescue efforts.”²⁰

To some extent mathematics as a field was also affected by this ambivalence, especially if the mathematicians concerned articulated leftist or pacifist political opinions. It may not be a mere coincidence that André Weil and Emil Julius Gumbel, whose political views differed markedly from the standard opinions of the American and European middle classes, were supported only “indirectly” by Rockefeller money through Alvin Johnson’s NSSR. After Weil’s arrival in 1941 the influential former secretary of the AMS, Roland G. D. Richardson, first asked for an assurance of Weil’s anticommunist position and received the following response from an RF functionary:

“In short I think that I am on entirely safe ground in saying that Weil is not only not a Communist but, as a rabid individualist, is strongly anti-communist and anti-Stalinist.” (RI: 201)

But Richardson found this assurance only partly sufficient. He objected to Weil’s individualism and pacifism, shown by his alleged lack of (French) patriotism in 1939. Richardson also had apparently anti-Semitic resentments as well as reservations against Weil’s very pure and abstract brand of mathematics. Although several pure mathematicians at the IAS had emphatically supported Weil, the personal animosity of at least one influential Princeton mathematician (Solomon Lefschetz) prevented his placement at this other (beside the NSSR) haven for “socially ill-adapted” refugee mathematicians. Weil repeatedly complained after the war that the Americans did not give him a friendly welcome, overburdened him with teaching, etc.²¹

Gumbel was probably personally more adaptable than Weil but he was, both politically and with respect to his subject, even more of an outsider in the community of American mathematicians.

¹⁵Cf. Schwartz 1997.

¹⁶There exists a comprehensive, yet unpublished biography on Gumbel by Sebastian Hertz, Dissertation Lyon, 1997.

¹⁷Macrakis 1989.

¹⁸See, e.g., the report to the Foundation, compiled by Harald Bohr “together with various German friends” on the situation of mathematics and physics at German universities, dated 26 June 1933 and published as Appendix 3.1. In MF: 368- 371.

¹⁹Cf. RI: 200, quoting Rutkoff/Scott 1986: 98.

²⁰Rutkoff/Scott 1986: 95.

²¹Cf. Weil 1991.

The Rockefeller people had helped him to find a temporary position at the NSSR. They were, however, not enthusiastic about Gumbel's politics. An RF functionary who interviewed Gumbel in 1942 found with some astonishment that Gumbel was "slightly less adaptable than the rest of the family, and even a little critical of U.S. academic and scientific circles" (RI: 203). After Gumbel's position at the New School had expired and when the remilitarization of Germany was under way, Gumbel reflected on his new political problems in the Cold War in a letter to mathematician and founder of cybernetics Norbert Wiener in December 1950:

"I was and am a convinced antifascist and anti-militarist. And I had to leave Germany + France for this reason. As an unrepentant sinner I am not welcome at a time when the Nazis and Militarists are put back into power in Germany. Consequently + rightly I am without a job." (RI: 203)

For Gumbel and Weil, indeed, the NSSR had served only as a temporary buffer.

RF Support for Border Subjects

Gumbel was an import to the United States who did not particularly fit into the mainstream in mathematics²² any more than in politics. However, border subjects of mathematics came increasingly to the attention of the Rockefeller functionaries. The RF had supported refugee Richard Courant during the first years of his appointment at New York University. Warren Weaver's diary testifies to frequent visits by Courant to his office in the RF Division for Natural Sciences during the mid-1930s and early 1940s. In most interviews the famous applied mathematician from Göttingen played the role of a tactful and modest applicant seeking "advice" rather than actual support, occasionally asking for limited assistance for others (Kurt Friedrichs), not for himself. Although most interviews ended with Weaver's remark (as documented in his diary) that Courant's projects lay outside the Rockefeller domain, there is no doubt that the emerging friendship between the two men considerably shaped the future of applied mathematics in the United States. If shortly before and during the war most of the Rockefeller help for applied mathematics was channeled to the American-led enterprise at Brown University—where the faculty consisted of more foreigners than American-born mathematicians—the long-range effect of Courant's visits would prove itself after the war. Courant—after obtaining his American citizenship—collaborated closely with Weaver's Applied Mathematics Panel (AMP). His mathematical institute at New York University took the lead in the field shortly after the war, supported both by Rockefeller means and federal money to which he and Weaver had had access since their position in the AMP during the war. Courant's collaboration with Weaver culminated in the erection of the Courant Institute of Mathematical Sciences in the early 1960s, with its main building named "Warren Weaver Hall."²³

But there were certain elements of the broader system of mathematics—and with it refugees responsible for it—that were supported by the RF even earlier, during the 1930s. This applies especially to the publication system in mathematics, where there was a tradition of Rockefeller-affiliated agencies subsidizing American and foreign journals. One old desire on the part of the American mathematicians had been a mathematical abstracting journal of their own, as they felt uneasy with the German monopoly in that field. In 1934 the leading German abstracting journal *Zentralblatt für Mathematik und ihre Grenzgebiete*, edited by Springer in Berlin, transferred its managing office to Copenhagen to avoid political interference by the Nazis. The managing editor, Otto Neugebauer, was henceforth supported by Rockefeller money in Copenhagen. When, in 1938, the enforcement of racial laws in German journals rendered Neugebauer's situation unbearable even in Copenhagen, the Americans pondered the question of founding their own abstracting journal and applied for money from the RF. The discussion on that point within the Foundation in February 1939, as reproduced in Weaver's diary, is very revealing:

"The possible transfer of the '*Zentralblatt*' or its equivalent to this country is one instance of a general situation of considerable importance and interest—namely, the transference to this country of responsibility for the maintenance and protection of certain cultural values which historically have been chiefly located in Europe. This journal, moreover, is more accurately viewed as an international coordinating and synthesizing influence in mathematics than as a mere mechanical bibliographical aid." (RI: 211)

Indeed, the Foundation became increasingly interested in the broader social environment of mathematics, and in the applications and cultural values coming with it. RF showed interest even for some border subjects of mathematics such as the historiography of the discipline or epistemology. This reorientation of the Foundation during the war was, so it seems, partly connected to the great influx of federal money, especially from defense funds, for mathematics and the sciences.

Weaver, who would take a growing responsibility for interests beyond the private philanthropies in his work within the government-funded Applied Mathematics Panel in the years to come, explained to RF president Fosdick the need for a reorientation immediately after the American entrance into the war, alluding to a proposal by logician and philosopher Rudolf Carnap, himself an émigré from Europe:

"WW points out that NS [division of Natural Sciences within RF; R.S.] will probably be more directly and severely hit than any other division by war circumstances. Our 'normal' business will be very much reduced; and we will have a large number of queer proposals, some of which will be foolishly queer and others of which may be attractively and wisely queer. It will be a continuous and perplexing difficulty to sift out the two sorts. WW offers

²²As late as 1944, H. Weyl expressly denied a chance for Gumbel to find a position at the IAS in Princeton. Cf. MF: 167.

²³Cf. Reid 1976.

the example of a grant-in-aid for one year's salary for Prof. Carnap at Chicago as an illustration of a queer proposal, and one which we would not ordinarily think of approving, but one which WW would be glad to put through. RBF agrees." (RI: 213/214)

Rockefeller Charity?

Supporting a man such as Felix Bernstein, the famous biostatistician from Göttingen, who was 55 at the time of his emigration in 1933, was almost an exception because Bernstein soon approached the age limit set by the Foundation. This exception was probably made because Bernstein's specialty was rather close to biology, the preferred discipline of the RF. However, the experience proved particularly unfortunate to the RF because Bernstein had problems coping with the much-diminished prestige of his new volatile and temporary position in New York City:

"B. was the one definite misfit among the displaced scholars aided by the committee [i.e., the EC, partly financed by the RF; R.S.J.]" (RI: 204)

Experiences such as this may have even strengthened the selection criteria with respect to the age of the refugees. When in September 1940 American-Dutch mathematician Dirk J. Struik approached the Foundation on behalf of the eminent French analyst Jacques Hadamard who as a Jew was threatened in occupied France but was already 75 years of age, Weaver felt unable to help:

"WW makes it clear that the RF could not help in such an instance, which is clearly one of personal charity. WW describes to S. the types of cases we are prepared to consider either through Dr. Alvin Johnson or directly." (RI: 204)

However, as to "charity," the American mathematicians themselves were frequently even more reserved than the Foundation. Gumbel's attempt in 1940 to reciprocate for the help he had received from Hadamard in France met a rather cold response from AMS secretary Richardson:

"While it is true that Brown University would be glad to welcome Professor Hadamard and pay him a small stipend if he were passing through, we recommend that he not be invited to come to this country, and I have said this to other persons. In his day, Hadamard was a great figure in mathematics and he has visited this country and received a warm welcome, but he is now old and has not done anything significant in mathematics for a decade.

There are persons in Europe whom the mathematicians of this country would much prefer to have come and there are persons in this country who might make a tour under the auspices of some mathematical group with more success than Hadamard." (RI: 205)

It was finally, again, the peculiar conditions of the *University in Exile* within Johnson's *New School* that secured Hadamard's immigration. His leftist political position and the special relations of the NSSR to France may have helped in this endeavor. The fate of other well-known European mathematicians of an advanced age, such as the German

Felix Hausdorff, was less fortunate and these ended in suicide or death at the hand of the Nazis.²⁴

Failed Rescue Efforts

Elderly scholars, such as Hadamard and Hausdorff, were not the only ones to encounter problems entering the United States. Among the promising mathematicians who could not be saved by the Foundation, although it had made provision for them, were German logician Kurt Grelling and Polish analyst Stanislaw Saks.

Fleeing from the Nazis, Grelling had been deported to camps in southern France. He could not accept the offer of an associate professorship at the NSSR in January 1941, most likely because of the restrictive entry conditions imposed by the United States. He and his wife were murdered in the gas chambers of Auschwitz in 1942.²⁵

Saks had been a fellow of the Foundation in 1931-1932 when he visited the United States. In early 1941, Alvin Johnson of the NSSR tried to save Saks, who was then in Russian-occupied Lwow (Lemberg). The RF had even earmarked money in April 1941 to finance a position for Saks at the New School (RI: 206). Six weeks before, on February 22, a functionary of the American embassy in Moscow had written to Johnson:

"The Soviet Government declines to entertain even the most informal representations from me or my Embassy with respect to individuals who are not American citizens. Accordingly, while there will probably be little if any difficulty in arranging for the necessary American visa for Professor Saks. I have very grave doubt that he will be able to obtain the necessary permission to proceed to Moscow for the purpose of presenting himself at the Embassy in order to obtain the desired visa. In this connection you are of course aware of the fact that the Soviet authorities severely restrict the movement of all residents within the Soviet Union and that permission to visit Moscow is rarely granted." (RI: 206)

In fact, Saks would not make it and was murdered by the Nazis after they invaded the Soviet Union in June 1941.

The policies of the Rockefeller Foundation shared in many respects the virtues and vices of American immigration policies overall. During and after the war, several Americans who had been active in foundations (Weaver, Bush) became involved in state-sponsored science organizations, which came to dominate postwar U.S. science policy. The impact of mathematical immigration on American mathematics would only be fully understood after the war (see the introductory quote by Fosdick.) The Rockefeller Foundation, which he headed, was a major agent in the shift of the global center of gravity in mathematics toward the United States.

Faculty of Engineering and Science
University of Agder
Gimlemoen, Postboks 422
4604 Kristiansand S
Norway
e-mail: reinhard.siegmund-schultze@uia.no

²⁴MF: 96/97, and Purkert 2008.

²⁵Cf. Peckhaus 1994.

LITERATURE

- Duggan, S., and Drury, B. 1948: *The Rescue of Science and Learning: The Story of the Emergency Committee in Aid of Displaced Foreign Scholars*, New York: Macmillan.
- Fosdick, R. B. 1943: Hitler and Mathematics, *Scripta Mathematica* 9, 120-122.
- Macrakis, K. 1989: The Rockefeller Foundation and German Physics under National Socialism, *Minerva* 27, 33-57.
- MF = Siegmund-Schultze, 2009.
- Peckhaus, V. 1994: Von Nelson zu Reichenbach: Kurt Grelling in Göttingen und Berlin. In: Danneberg, L., Kamlah, A., and Schäfer, L., eds.: *Hans Reichenbach und die Berliner Gruppe*, Braunschweig, Wiesbaden: Vieweg, pp. 53-86.
- Purkert W. 2008: The Double Life of Felix Hausdorff/Paul Mongré, *The Mathematical Intelligencer* 30, no. 4, 37-50.
- Reid, C. 1976: *Courant in Göttingen and New York: The Story of an Improbable Mathematician*, New York: Springer.
- RI = Siegmund-Schultze, 2001.
- Rutkoff, P. M., and Scott, W. B. 1986: *New School: A History of the New School for Social Research*, New York: The Free Press.
- Schwartz, L. 1997: *Un mathématicien aux prises avec le siècle*, Paris: Odile Jacob.
- Siegmund-Schultze, R. 2001: Rockefeller and the Internationalization of Mathematics Between the Two World Wars, Basel: Birkhäuser (quoted as RI).
- Siegmund-Schultze, R. 2009: *Mathematicians Fleeing from Nazi Germany: Individual Fates and Global Impact*, Princeton and Oxford: Princeton University Press (quoted as MF).
- Weil, A. 1989: *Souvenirs d'apprentissage*, Basel: Birkhäuser.