



Credit: Marjin Heule

Otto Neugebauer

Edward Dunne

This column comes from a note that I originally wrote on **Otto Neugebauer's birthday** (May 26, 1899–February 19, 1990). Otto Neugebauer was the founder and first editor-in-chief of both *Zentralblatt für Mathematik und ihre Grenzgebiete* and *Mathematical Reviews*. Normally, on his birthday, the staff of Mathematical Reviews would have a gathering in the kitchen with a cake. I would remind people that Neugebauer left Europe, eventually ending up in Providence, Rhode Island, because he opposed the demands being put on *Zentralblatt* by the Nazis with regards to Jewish editors and reviewers, and attempts to maintain a German identity for the journal. But we are working remotely now, so I wrote a long message to the staff at Mathematical Reviews instead, reminding them that our origin story is one of a principled person acting to maintain those values.

In his carefully researched article mentioned below, which heavily informs this column, Reinhard Siegmund-Schultze describes Neugebauer's views of mathematics and the history of mathematics. He explains that Neugebauer embraced "the rationalistic and internationalist ideals long associated with Göttingen science and mathematics," in particular working with and hiring the best people regardless of where they came from. When Richard Courant was forced out as director of the Mathematics Institute at the University of Göttingen, Neugebauer became his successor. But he resigned after only one day, when the pro-Nazi students issued a declaration of no confidence in

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Neugebauer. Neugebauer left Göttingen for Copenhagen, where he continued to run *Zentralblatt*. From Copenhagen, he attended the ICM in Oslo and gave an invited address there. At this point, Neugebauer was a recognized leader in the history of mathematics, especially that of ancient Mesopotamia. In an interview with a Norwegian newspaper, Neugebauer was asked why the Babylonians did so well at mathematics. Neugebauer answered,

Presumably through the specific blend of different types of people down there. The Babylonians built on the Sumeric culture which the English have studied very extensively through excavations at Ur¹ that you have probably heard about.

This belief in the value of "different types of people" strongly disagreed with the racist "Deutsche Mathematik" that was ascendant in Germany at the time. Remarkably, Neugebauer claimed in letters to friends that he did not feel pressure to influence his editorial policies even up to late 1937 (even though he had left for Copenhagen in 1934). In March 1938, he received a letter from Blaschke (a member of the *Zentralblatt* editorial board), stating it "seems that the number of German collaborators, and even the role of the German language in *Zentralblatt* is constantly diminishing. If this continues, the publisher is going to face difficulties sooner or later." In October 1938, legislation in Italy caused the Jewish *Zentralblatt* editor Levi-Civita to lose his professorship of rational mechanics at the University

¹Ur was a Sumerian city-state in ancient Mesopotamia, with earliest evidence of its existence from circa 3800 BCE and written evidence from 2600 BCE.

of Rome, and Springer unilaterally dropped Levi-Civita from the editorial board without informing Neugebauer, the editor-in-chief. Shortly thereafter, Neugebauer severed all his relations with Springer, resigning his editorships at *Zentralblatt, Ergebnisse* (the famous book series, which was founded by Neugebauer, Courant, and the other editors of *Zentralblatt*), and *Quellen und Studien* (an important journal on the history of mathematics that Neugebauer founded).

The founding of *Mathematical Reviews* under the auspices of the American Mathematical Society was true to Neugebauer's international vision of mathematics. Neugebauer eventually came to believe that it was necessary to found a new journal in the United States to allow mathematicians from every country to participate, as political situations in Europe were tense all over. There were many at the AMS who enthusiastically welcomed the opportunity to found such a reviewing journal—indeed there had been discussions as early as during World War I, but Neugebauer got there first. With the changes in Germany and at *Zentralblatt*, there was now a growing sense of urgency. There was also some resistance, however, particularly from the influential Harvard mathematician G. D. Birkhoff, who has a problematic reputation of anti-Semitism. Fortunately for *Mathematical Reviews*, many more members were in favor of the proposal. The international perspective was established from the beginning. At the meeting of the AMS Council in December 1938, the resolution to sponsor a new abstracting journal included the passage “provided that a suitable mode of cooperation with foreign mathematicians, especially in Great Britain, can be effectively arranged and that adequate financial backing can be obtained.” *Mathematical Reviews* was founded with grants from the Carnegie Corporation, the Rockefeller Foundation, the AMS, and the MAA. The funding from the Carnegie Corporation was reported to the AMS as “for the support of ‘an international mathematical journal’ over a preliminary period, ‘to be sponsored by and eventually supported by various mathematical societies.’” On top of the foundational grants, most of the early issues were sponsored by mathematical societies outside the United States. For instance, Volume 1, Issue 1 was sponsored by the AMS, the MAA, Academia Nacional de Ciencias Exactas, Físicas Y Naturales de Lima (Peru), Het Wiskundig Genootschap te Amsterdam (Netherlands), and the London Mathematical Society (Great Britain).

As I like to remind the people who work at *Mathematical Reviews*, Otto Neugebauer uprooted himself and his family in order to do what he saw as the right thing. He believed that it was wrong to discriminate against people because of their religion or nationality. Moreover, he believed that by including a broad group, you are stronger. You can see those principles today. We have reviewers from 142 different countries. We cover journals from almost as many countries. Even our staff is international, with people from all over the world. *Mathematical Reviews* is a place where I am proud to work.

Fortunately, many things have changed since the dark times of the 1930s. The editors at *Mathematical Reviews*, for instance, have a very good relationship with the editors at zbMATH (what *Zentralblatt* has transformed into). The two editorial groups recently completed the years-long collaborative process of revising the subject classification to produce MSC2020. The journals covered by zbMATH come from all over the world. I don't have access to their reviewer database, but even a casual perusal of zbMATH reviews shows that their reviewers are quite international. I would be remiss if I didn't also point out the obvious: movements for national identity and distrust of foreigners are on the rise again, in my own country, as well as in Europe and elsewhere. It is worrying, but I believe Martin Luther King's statement, “The arc of the moral universe is long, but it bends toward justice.” The arc does not bend itself. The bending force is the action of people such as Otto Neugebauer.

If you want to learn more about the founding of *Mathematical Reviews*, here are some resources:

- “Mathematical Reviews,” by Everett Pitcher, www.ams.org/samplings/math-history/hmpitcher-mr.pdf, which is a chapter in:

MR1002190

Pitcher, Everett

American Mathematical Society centennial publications. Vol. I.

A history of the second fifty years, American Mathematical Society, 1939–1988. *American Mathematical Society, Providence, RI*, 1988. viii+346 pp. ISBN: 0-8218-0125-2

- “The Founding of *Mathematical Reviews*,” by G. Baley Price, www.ams.org/publications/math-reviews/GBaleyPrice.pdf. (This article was sent by Price to a previous executive editor on the occasion of the fiftieth anniversary of *Mathematical Reviews*. Price lists some of the other scientific societies that sponsored some of the early volumes.)

The following collection of articles is about Neugebauer, his research as a historian of mathematics, and his roles at *Zentralblatt* and at *Mathematical Reviews*:

- **MR3410193**

A mathematician's journeys.

Otto Neugebauer and modern transformations of ancient science. Including revised and expanded papers from the conference held at New York University, New York, 2010. Edited by Alexander Jones, Christine Proust and John M. Steele.

Archimedes: New Studies in the History and Philosophy of Science and Technology, 45. Springer, Cham, 2016. xi+342 pp. ISBN: 978-3-319-25863-8; 978-3-319-25865-2

In particular, the article in this volume by Siegmund-Schultze is very informative about Neugebauer's editorial work in Germany, Denmark, and the United States:

• MR3496894

Siegmund-Schultze, Reinhard (N-UIA2EN)

"Not in possession of any Weltanschauung": Otto Neugebauer's flight from Nazi Germany and his search for objectivity in mathematics, in reviewing, and in history.

A mathematician's journeys, 61–106,

Archimedes, 45, Springer, Cham, 2016.

For a description of Neugebauer's development as a scientist and historian, see

• MR3496893

Rowe, David E. (D-MNZ-NDM)

From Graz to Göttingen: Neugebauer's early intellectual journey.

A mathematician's journeys, 1–59,

Archimedes, 45, Springer, Cham, 2016.

I wish that I could have consulted Siegmund-Schultze's book about the *Jahrbuch über die Fortschritte der Mathematik*. Among other things, the book discusses the competition between the JFM and Neugebauer's *Zentralblatt*. There is a copy in the library just a mile from where I live, but the library is currently closed.

• MR1253317

Siegmund-Schultze, Reinhard

Mathematische Berichterstattung in Hitlerdeutschland. (German) [Mathematical reviewing in Hitler's Germany]

Der Niedergang des Jahrbuchs über die Fortschritte der Mathematik. [The decline of the *Jahrbuch über die Fortschritte der Mathematik*] *Studien zur Wissenschafts-, Sozial- und Bildungsgeschichte der Mathematik* [Studies on the Scientific, Social and Educational History of Mathematics], 9. Vandenhoeck & Ruprecht, Göttingen, 1993. x+263 pp. ISBN: 3-525-40316-X.

NOTE. An interim version of this column was posted to the Mathematical Reviews / MathSciNet blog "Beyond Reviews" (blogs.ams.org/BeyondReviews).



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