

Reidemeister, Kurt Werner Friedrich I

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(b. Brunswick, Germany, 13 October 1893; d. Göttingen, Germany, 8 July 1971)

mathematics.

The son of Hans Reidemeister and the former Sophie Langerfeldt, Reidemeister attended school in Brunswick. His student years at the universities of Freiburg, Munich, and Göttingen were interrupted by four years of military service during [World War I](#). He passed the *Staatsexamen* in mathematics (Edmund Landau was his examiner), philosophy (at Freiburg H. Rickert had been his teacher), physics, chemistry, and geology in 1920. After having accepted an assistantship with E. Hecke at the University of Hamburg, he earned his doctorate in 1921 with a dissertation on algebraic [number theory](#), “Über die Relativklassenzahl gewisser relativquadratischer Zahlkörper” (published in *Abhandlungen aus dem Mathematischen Seminar, Universität Hamburg*, 1 [1921]). At the same time he studied affine geometry, published several papers, and assisted Wilhelm Blaschke in editing the second volume of his *Vorlesungen über Differentialgeometrie* entitled *Affine Differentialgeometrie* (Berlin, 1923).

In 1923 Kurt Reidemeister accepted an associate professorship in Vienna, where he came in close contact with Hans Hahn, with research on the foundations of mathematics, and with the Vienna philosophical circle. Two years later he accepted a full professorship at Königsberg, where he worked with other young mathematicians, notably Ruth Moufang, Richard Brauer, and Werner Burau. His interest at this time was in the foundations of geometry and combinatorial topology. He wrote books and articles in both fields. His *Knotentheorie* (Berlin, 1932; repr [New York](#), 1948) remained the standard work on knot theory for several decades.

In April 1933 Reidemeister was expelled from his Königsberg professorship because he opposed the Nazis. In 1934 he became professor at the University of Marburg, in the chair of Kurt Hensel. He remained there—except for a two-year visit to the [Institute for Advanced Study](#) at Princeton in 1948–1950 until he moved to the University of Göttingen in 1955. While at Marburg he collaborated with F. Bachmann, laying the foundations of a development which culminated in Bachmann’s *Aufbau der Geometrie aus dem Spiegelungsbegriff* (1959), and with Helene Braun.

The foundations of geometry and topology established on a purely combinatorial and group-theoretical basis without introduction of a limit concept, always held a prominent place in Reidemeister’s mathematical research. He was convinced the problems in mathematics that are original should arise from vivid perception, and even from the beauty of geometrical objects, and that abstraction should only be the result of intensive thought, which justifies the lack of immediate visualization. In accordance with this view he was critical of the modern trend of replacing traditional geometry by linear algebra. He had worked out a modern course along the lines of [Felix Klein](#)’s “Erlanger Programm,” classifying the various geometries by their related groups. His book *Raum und Zahl* (Berlin-Göttingen-Heidelberg, 1957) gave an idea of this concrete approach to mathematics in which mathematical thinking and reflections on thought are to illuminate each other.

Besides mathematics it was the historical origin of mathematical and rational thought that fascinated Reidemeister most—the Greeks in particular and philosophy in general. Three of his historical articles were republished in 1949 under the title *Das exakte Denken der Griechen*. In several publications he expounded his own philosophical position, one of critical rationalism. Reidemeister was strongly opposed to existentialism, which came into vogue in Germany after 1945. He reproached it for lack of objectivity and logical reasoning (*Die Unsachlichkeit der Existenzphilosophie* [Berlin, 1954; 2nd ed., 1970]).

Although an advocate of enlightenment and rationality, Reidemeister was highly sensitive and responsive to beauty and symmetry. Among his publications are two small volumes of essays and poems: *Figuren* (Frankfurt, 1946) and *Von dem Schönen* (Hamburg, 1947). His last book was a memorial to Hilbert: *Hilbert-Gedenkband* (Berlin-Heidelberg-[New York](#), 1971).

Reidemeister was married to Elisabeth Wagner, a photographer and the daughter of a Protestant minister at Riga.

BIBLIOGRAPHY

Reidemeister’s publications are listed in Poggendorff, VI, 2144; and VIIa, 714.

Obituaries include R. Artzy, "Kurt Reidemeister, 13. 10. 1893–8. 7. 1971," in *Jahresbericht der Deutschen Mathematiker-Vereinigung*, **74** (1972), 96–104, with bibliography; and F. Bachmann, H. Behnke, W. Franz, "In Memoriam Kurt Reidemeister," in *Mathematische Annalen*, **199** (1972), 1–11.

Christoph J. Scriba