

Notes and Sources

Emmy Noether, Hermann Weyl, and the Göttingen Academy
A marginal noteNorbert Schappacher^{a,*}, Cordula Tollmien^b^a IRMA, 7 rue René Descartes, 67084, Strasbourg cedex, France^b Rehagen 7, 34346 Hann. Münden, Germany

Available online 8 December 2015

Abstract

A new document about Hermann Weyl's attempt to have Emmy Noether elected into the Göttingen Academy is presented.
© 2015 Elsevier Inc. All rights reserved.

Keywords: Emmy Noether; Hermann Weyl; Göttingen Academy

It is well-known [Becker et al., 1998, p. 42] that the only time Emmy Noether, the mother of modern algebra, was treated by a German authority just as her distinguished male colleagues, and not according to her inferior hierarchical position, occurred when the Nazi government put her on leave, forbidding her to teach at the mathematics institute of Göttingen University, by way of a telegram dated 25 April 1933. The reason given there was to “await final decision” in view of the racist and politically repressive *Gesetz zur Wiederherstellung des Berufsbeamtentums*—i.e., *Law for the restoration of the professional civil service*, as it was called—of 7 April 1933. Indeed, Emmy Noether never held a position in the civil service; she was a *nichtbeamteter außerordentlicher Professor* and was therefore not formally concerned by the cited law at the time.¹

Cordula Tollmien has documented in detail [Tollmien, 1990, 1991] the formidable opposition that Noether's supporters, and in particular David Hilbert, had to fight within the *Philosophische Fakultät* of Göttingen University in order to finally—after unsuccessful attempts in 1915 and 1917—get her accepted for *Habilitation* in June 1919, thus giving her the right to teach courses, and subsequently to secure at least

* Corresponding author.

E-mail address: schappacher@math.unistra.fr (N. Schappacher).

URLs: <http://www-irma.u-strasbg.fr/~schappa/NSch/Home.html> (N. Schappacher), <http://www.tollmien.com> (C. Tollmien).

¹ Even though it is true that this law was later, on 6 May 1933, extended by decree also to certain non-civil-servants like Emmy Noether.

the meagre position which the Nazis would then dismiss her from. Since the strongest resistance in the *Fakultät* came from the *Historisch-Philologische Abteilung*, i.e., the representatives of the humanities, the battle for Emmy Noether would be one of the driving factors which finally, in 1922, led to the creation of a separate *Mathematisch-Naturwissenschaftliche Fakultät* at Göttingen, leaving the humanities to themselves in what remained of the *Philosophische Fakultät*.

In this note we present a newly discovered document which highlights, and allows to date, a peculiar silent echo of these past fights. The echo occurred after David Hilbert had been succeeded on his chair by Hermann Weyl in 1930, and it happened not at the university but within the Academy of Sciences at Göttingen, which at the time was still called *Gesellschaft der Wissenschaften zu Göttingen*. The folder *Pers 25* in the archives of the Academy holds (sheet 154) the following letter written on 4 December 1932 by Hermann Weyl to the then secretary of the Göttingen *Gesellschaft der Wissenschaften*, the zoologist Alfred R.W. Kühn, in which Weyl reports on his contact with the president of the philological-historical class of the Academy, the classical archeologist and former rector of Göttingen University Hermann Thiersch²:

Lieber Herr Kühn,

Herr Thiersch teilt mir mit, daß nach seiner Umfrage von seiten der philologisch-historischen Klasse mit einer fast einmütigen Ablehnung des Antrags gerechnet werden müsse, Fr. Noether zum Mitglied der Gesellschaft der Wissenschaften zu machen. Da ich an nutzlosen Demonstrationen kein Interesse habe, ziehe ich daher diesen Antrag zurück – so sehr ich es im Interesse unserer Gesellschaft bedaure, daß sie auf die Mitwirkung einer so starken produktiven Kraft verzichtet aus Gründen, die mir nebensächlich und nicht stichhaltig erscheinen.

Mit herzlichem Gruß Ihr H. Weyl

That is: “Herr Thiersch tells me that, according to his inquiries, one has to expect a nearly unanimous refusal by the philological-historical class [of the Academy] of the proposal to elect Miss Noether as member of the *Gesellschaft der Wissenschaften*. Since I have no interest in useless demonstrations, I therefore retract this proposal – as much as I regret in the interest of our *Gesellschaft* that it prefers to forgo the collaboration of such a strong productive force for reasons which seem to me to be besides the point and not cogent.”

By the time of the letter, Noether’s ‘productive force’ had already left its traces in many places, in particular also in the Academy’s *Göttinger Nachrichten*; the well-known *Noether theorems* in invariant theory were presented there—see [Noether, 1918a, 1918b, 1919, 1926]. Since she was not a member of the Academy, these notes had been presented by member colleagues: her early papers by Felix Klein, and the later one [Noether, 1926] by Richard Courant.

The ‘reasons’ for the opposition to Noether, which Weyl alludes to without spelling them out, were most certainly threefold, while their ranking probably varied between the various distinguished colleagues: Emmy Noether was a woman, she was Jewish, and she had clearly leftist political opinions. In 1932, Emmy Noether would have been the first woman full member (*ordentliches Mitglied*) of the Göttingen Academy. But the physicist Lise Meitner had been elected corresponding member in 1926. Since she was also Jewish, she was excluded from the Academy in 1938. In 1947, she graciously accepted the invitation to re-enter the Academy along with a majority of the Jewish members excluded in 1938, in spite of the fact that the re-invitation had been presented by Rudolf Smend in 1945 and 1946 in a particularly awkward letter—see [Schubert, 2000, pp. 119–121], see also [Schappacher, 2015, §2].

In two talks, in 1929 [Weyl, 1930, esp. p. 299] and particularly in 1931 [Weyl, 1932], Hermann Weyl had expressed doubts about abstract algebra, i.e., about Emmy Noether’s method, because it tended not to deal

² Weyl had been a corresponding member of the Göttingen Academy since 1920, and became full member (*ordentliches Mitglied*) in 1930 after he moved to Göttingen. He himself mentions in [Weyl, 1935/1970, p. 60] that he had tried to secure a better position for Emmy Noether and to get her elected into the Göttingen Academy.

directly with concrete problems that arise naturally, and he had warned that “the fertility of these abstracting methods” might be “approaching exhaustion” [Weyl, 1932, p. 187]. Looking back in his obituary on Emmy Noether, he records that she had “protested against” his doubts, and suggests he had been willing to respect her opinion: “indeed she could point to the fact that just during the last years the axiomatic method had disclosed in her hands new, concrete, profound problems by the application of non-commutative algebra upon commutative fields and their number theory, and had shown the way to their solution.” [Weyl, 1935/1970, p. 67] We are not aware of explicit evidence dating from 1931 or 1932, when Emmy Noether and Hermann Weyl were colleagues in Göttingen, indicating that Weyl mitigated his skeptical attitude with respect to abstract algebra.³ Yet, as Christophe Eckes points out in [Eckes, 2016], Weyl did suggest to Abraham Flexner in June 1932 to balance subjects and hire an algebraist for the School of Mathematics at the Institute for Advanced Study; he suggested the names of Emil Artin, Emmy Noether, Helmut Hasse, and Richard Brauer, recommending especially Artin. And at the very least, his 1932 attempt to have Emmy Noether elected into the Göttingen Academy clearly expresses the high esteem in which he held the scientific achievements of the woman whom he “knew to be my superior as a mathematician in many respects” [Weyl, 1935/1970, p. 60]. Let us also note that, considering the date of his letter to Kühn, he probably tried to propose Emmy Noether to the Academy in the Fall of 1932, i.e., after her plenary ICM talk at Zürich. Unfortunately, we have not managed to find Weyl’s original proposal which he withdrew in December 1932.

When Emmy Noether died in 1935, less than two years after her emigration, in Bryn Mawr, PA, USA from a post surgery complication, she was not a member of any Academy of Sciences. She had joined various Mathematical Societies, though: the *Circolo matematico di Palermo* as early as 1908, the *Deutsche Mathematiker-Vereinigung* in 1909 (over the years she presented a total of 11 talks at its annual meetings until 1932), the Moscow Mathematical Society probably in 1928. In terms of distinctions she gave a plenary lecture at the Zürich ICM in 1932, as was already mentioned, and received the *Ackermann-Teubner Gedächtnispreis* that same year. In 1934, the Bryn Mawr College created the Emmy Noether Fellowship and Emmy Noether Scholarship. In the same year, she became a member of the American Mathematical Society.

References

- Becker, Heinrich, Dahms, Hans-Joachim, Wegeler, Cornelia, 1998. *Die Universität Göttingen unter dem Nationalsozialismus*, 2nd edition. Saur, München.
- Eckes, Christophe, 2016. Un premier aperçu de la correspondance Hecke/Weyl (1930–1938). *Revue d’histoire des mathématiques*, in press.
- Noether, Emmy, 1918a. Invarianten beliebiger Differentialausdrücke. *Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-Physikalische Klasse*, 37–44.
- Noether, Emmy, 1918b. Invariante Variationsprobleme. *Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-Physikalische Klasse*, 235–257.
- Noether, Emmy, 1919. Die Endlichkeit des Systems der ganzzahligen Invarianten binärer Formen. *Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-Physikalische Klasse*, 138–156.
- Noether, Emmy, 1926. Der Endlichkeitssatz der Invarianten endlicher Gruppen der Charakteristik p . *Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen, Mathematisch-Physikalische Klasse*, 28–35.
- Schappacher, Norbert, 2015. Ideologie, Wissenschaftspolitik, und die Ehre, Mitglied der Akademie zu sein. Ein Fall aus dem zwanzigsten Jahrhundert. *Res Doctae. Akademie der Wissenschaften zu Göttingen*. <http://hdl.handle.net/11858/00-001S-0000-0023-9A17-2>.

³ Weyl’s later (12 July 1933) letter of support for Emmy Noether to the Nazi Ministry also does not constitute such direct evidence, given the political context of this source. The letter is in *Geheimes Staatsarchiv Dahlem*, PK, I. HA Rep. 76 Kultusministerium, Nr. 10081, sheets 39–40. Cf. the copy of this letter on Peter Roquette’s webpage <http://www.rzuser.uniheidelberg.de/~ci3/gutachten/noether-gutachten.htm>.

- Schubert, Ernst, 2000. Wissenschaftliche Unabhängigkeit und gesellschaftliche Verantwortung: Der Wandel von Leitbildern in der Geschichte der Akademie. *Jahrbuch der Akademie der Wissenschaften zu Göttingen*, 71–124.
- Tollmien, Cordula, 1990. “Sind wir doch der Meinung, daß ein weiblicher Kopf nur ganz ausnahmsweise in der Mathematik schöpferisch tätig sein kann . . .” Emmy Noether 1882–1935. *Göttinger Jahrbuch* 38, 153–219.
- Tollmien, Cordula, 1991. Die Habilitation von Emmy Noether an der Universität Göttingen. *NTM Schriftenreihe für Geschichte der Naturwissenschaften, Technik und Medizin* 28, 13–32.
- Weyl, Hermann, 1930. Felix Kleins Stellung in der mathematischen Gegenwart. *Die Naturwissenschaften* 1930, 4–11.
- Weyl, Hermann, 1932. Topologie und abstrakte Algebra als zwei Wege mathematischen Verständnisses. *Unterrichtsbblätter für Mathematik und Naturwissenschaften* 38, 177–188.
- Weyl, Hermann, 1935/1970. Emmy Noether. *Elemente der Mathematik*. Beihefte 13, 53–72. Published for the first time in: *Scripta Mathematica* 3 (1935) 201–220.