CHAPTER THREE

The German Academic Crisis

GERMANY in the Weimar period was notable for a remarkable efflorescence of arts, of letters, of the sciences. Peter Gay's small book on Weimar culture provides a survey of art and literature, while consciously and regrettably neglecting science.[1] Paul Forman has provided an insightful and suggestive essay concerning the possible relationship between the philosophical ideas current in Weimar and the physical and mathematical ones.[2] Kurt Mendelssohn's biography of Walther Nernst[3] describes the work of its hero and related science with passing mention of the social context. Mendelssohn does suggest[4] that times of great political and social turmoil are times of great scientific turmoil; but however well this superficially seems to fit the Weimar period in Germany, as a formula it is rather too glib to have much meaning without a deeper study of the social contextual relationships of science.

A main concern of this work is to study such relationships in the hothouse atmosphere of Nazi Germany with particular respect to mathematics. Believing that the *Third Reich*, while hardly an inevitable consequence of Weimar, was prepared there, the attitudes of academics toward society, toward politics, toward their subject matter during this period, become of interest.

The Nazi *Weltanschauung* itself had little to say about science or mathematics, and most of that was negative, but mathematicians who believed in Hitler's nationalist or cultural message made distinctions. For example, Erhard Tornier condemned axiomatics, Ludwig Bieberbach considered measure theory a subject fit only for non-Aryans, and Max Steck had no use for formalism. There certainly was no "party line" about such matters, and mathematicians who espoused similar cultural politics might disagree on how that politics affected mathematics. The very fact, though, that there were interactions of this sort suggests looking at the extra-mathematical social and cultural crises, and the professional reaction to them, at least briefly, even if this is a subject that has been often examined. Thus, this chapter looks at some of the features of Weimar academic society. When Weimar replaced Wilhelminian Germany, professors felt declassed; they resented the "unbelievable" German defeat in the war, and even more the conditions imposed at Versailles. They were "apolitical," but nevertheless carried on politics in an ideal atmosphere. In addition, anti-Semitism ran through many faculties. The German professor was generally a

[1] Gay 1968: 3.

[2] Forman 1971.

[3] Kurt Mendelssohn, *The World of Walther Nernst: The Rise and Fall of German Science, 1864–1941* (1973).

[4] Ibid.: 110, and chapter 7 below, passim.

conservative establishment figure who, under Weimar, had largely lost his establishment status.

Undeniably, the German academic community from 1918 to 1933 contained members of every political persuasion. Nevertheless, there was an academic culture of which the large majority of professors and students partook. An important part of this academic culture was of the notion of the professor as a prestigious state servant who had been declassed by the collapse of the empire and the establishment of the republic. "Academic freedom" was freedom in academic and personal matters, not the freedom of academics to speak out politically, and the life of the intellect remained confined to the academic realm without penetrating or affecting the community in any critical way.

Chapter 8 will look biographically at some particular mathematicians, but their attitudes need to be set in the matrix of attitudes held by that class so aptly termed "mandarin" by Fritz Ringer.[5] For although Ringer explicitly excludes natural scientists from the details of his study, by tradition, upbringing, and collegiality they were, as he says, "as much mandarin intellectuals as their colleagues."[6]

These "mandarin intellectuals" were also legally civil servants who had freedom in classroom instruction. In exchange for this freedom, though, they served the state. Leo Arons was a physics instructor who was, by chance, an active socialist. When the right to teach was withdrawn from him in 1898 by Prussian governmental fiat, overruling his own faculty, there was no great protest from physicists (or other academics for that matter).[7]

Less than forty years later, the attitude of professors of mathematics and natural science toward the national state had not changed much. Helmut Hasse, a distinguished mathematician, told Constance Reid in an interview around 1975:[8]

> My political feelings have never been National-Socialistic but rather "national" in the sense of the Deutschnationale Partei, which succeeded the Conservative Party of the Second Empire (under Wilhelm II). I had strong feelings for Germany as it was created by Bismarck in 1871. When this was heavily damaged by the Treaty of Versailles in 1919, I resented that very much. I approved with all my heart and soul Hitler's endeavors to remove the injustices done to Germany in that treaty. It was from this truly national standpoint that I reacted when the Faculty more or less suggested that such a view was not permissible in one of its members. It was also the background for my remarks to the Americans. They were talking about reeducating Germany, and I

[5] Fritz Ringer, *The Decline of the German Mandarins* (1969). This is an important thoroughgoing sociohistorical analysis of the development of social and political attitudes, 1890–1933, in the German professoriat.

[6] Ibid.: 6.

[7] See Hans Bleuel, *Deutschlands Bekenner* (Bern: Scherz, 1968), 50–53; Ringer 1969: 141–142; Edward Shils in M. Weber, *Max Weber on Universities*, trans. and ed. by Edward Shils (1974), 15 n. 16; and Dieter Fricke, "Zur Militarisierung des deutschen Geistesleben im wilhelminischen Kaiserreich: Der Fall Leo Arons," *Zeitschrift für Geschichtswissenschaft* (1960): 1069–1107.

[8] Constance Reid, *Courant in Göttingen and New York* (1976), 250.

said some strong things against this. It irked me that everything against Hitler was desirable, and everything that he had done was wrong. I continued to be a national German, and I resented Germany being trampled under the feet of foreign nations.

German professors of the time were always, first, "national." That inclination toward the state brought with it tremendous prestige, and that prestige could be a temptation that was ultimately deceitful and destructive. Furthermore, being "apolitical" produced a political naiveté enhancing such temptation. In 1936, Eberhard Hopf, another distinguished mathematician who was an assistant professor at M.I.T. and had become one of the best analysts of his generation, accepted a call to a professorship at Leipzig. On June 23, 1945, Hopf wrote Richard Courant, who was among the first professors dismissed by the Nazis and had emigrated to the United States:[9]

> Needless to say how deeply I have regretted my lack of political insight in 1936 when I decided to accept the call to Leipzig and to leave M.I.T., in spite of generous offers President Compton of M.I.T. made to me. When I fully realized what the men in power in Germany were heading for it was too late to return to the States. I and particularly my wife who was more reluctant about leaving the States have had to pay for my erroneous judgment of the situation. Within the last years, ill-willing people pursued us with a whole flood of denouncements and intrigues that caused additional trouble for us. (Our outspoken and strict avoiding any Nazi affiliations probably contributed to it.) My wife on whose shoulders lay, without outside help, the whole care for the four of us was forced to do half day work besides. Only by a serious breakdown she got rid of this burden. My attempt to fight against this kind of treatment only led to a threat of worse treatment. Since that time I had the distinct feeling of being watched and I was, therefore, more careful than before. But the constant swallowing of anger I found harder to stand than the many air raids in Munich.[10] Needless to say that the quick end of the last war phase came as a great relief to us and that we could not help looking upon the oncoming Americans as potential freers.

As early as 1934, in fact, Hopf had been considered as a potential faculty member for the "rebuilding" of the Göttingen mathematics department under the Nazis.[11] On September 30, 1946, Courant wrote Minna Rees at the Office of Naval Research in the same tones as Hopf had written him:[12]

[9] E. Hopf to Courant, June 23, 1945, p. 2, in Courant Papers, Courant Institute at New York University. This lengthy five-page letter was written in English.

[10] Hopf's return to Germany was to replace Leon Lichtenstein, who had died on August 21, 1933, of heart and kidney ailments. The position was left vacant for several years. Had he not died, Lichtenstein would certainly have been eventually dismissed as Jewish. In 1944 Hopf had become Carathéodory's successor in a mathematics chair at Munich.

[11] See exchange of letters, July 14–July 20, 1934, between his father Friederich and Helmut Hasse in the papers of the Göttingen Mathematical Institute. These papers (hereafter cited as MI) were discovered and organized by Norbert Schappacher and are available for inspection at Göttingen. Friederich Hopf was prepared to provide the Aryan proofs for his son and daughter-in-law as requested by Hasse.

[12] Courant to Minna Rees, Sept. 30, 1946, in Courant Papers (Courant Institute). An essentially similar view of Hopf appears in Norbert Wiener, *I Am a Mathematician* (1964), pp. 209–211.

Hopf is perhaps the best representative of mathematical analysis in Germany. His field is close to applied mathematics; there is no doubt that from a scientific point of view he would be a very noticeable addition. Hopf is unassuming and a more or less scholarly type, whose interests are entirely centered around scientific matters. I have no misgivings about his political attitude, although he committed the major blunder of accepting a position as professor at Leipzig around 1936 although at the time he held an assistant professorship at M.I.T.; Hopf has repented this step. In view of his great scientific qualifications I feel that it should no longer be held against him. There is little doubt that Hopf would be welcome at various universities. The time is too short to make inquiries now, but I can say that we would be glad to have him work on our ONR [Office of Naval Research] contract.

The "Lex Arons" of 1898, which allowed the Prussian government to overrule the Berlin faculty in matters affecting *Privatdozenten* (beginning teachers not in the civil-service faculty), was, by and large, accepted by the German professors, despite the fact that it constituted "a militarization of the academic community."[13] From before that time to Hasse and Hopf in the 1930s, the German academic community could be characterized as "national" but otherwise apolitical. German academic freedom as defined by the government in 1898 did not include the right to be a politically active Social Democrat (even if there were no politics in the physics classroom); thirty-five years later, it did not include the right to be a Jew. The majority of the German academic community seems always to have acquiesced in the narrow definition of academic freedom as freedom for specialized investigation—*akademische Lehrfreiheit*—rather than "freedom of speech." In 1784, Kant made a famous distinction between the public and private uses of Reason (which somewhat inverts our contemporary understanding of public and private) in which he praised Frederick the Great as the one prince in the world [who] says, "Argue as much as you will and about what you will, but obey!"[14]

> The public use of one's reason must always be free, and it alone can bring about enlightenment among men. The private use of reason, on the other hand, may often be very narrowly restricted without particularly hindering the progress of enlightenment. By the public use of one's reason I understand the use which a person makes of it as a scholar before the reading public. Private use I call that which one may make of it in a particular civil post or office which is entrusted to him. Many affairs which are conducted in the interest of the community require a certain mechanism through which some members of the community must passively conduct themselves with an artificial unanimity, so that the government may direct them to public ends, or at least prevent them from destroying those ends. Here argument is certainly not allowed—one must obey.

[13] Fricke 1960.

[14] The following quotation is taken from Immanuel Kant, *What Is Enlightenment*, as translated by Lewis White Beck in Immanuel Kant, *Foundations of the Metaphysics of Morals and What Is Enlightenment* (1959), 87, and 91–92. It is true that Kant was primarily talking about freedom of religious opinion, but he clearly extends the idea to general affairs of state.

These were in fact the principles under which Weimar academics came to operate. Roughly contemporary with Kant's distinction is the creation by Wilhelm von Humboldt of the "modern German University." It may be, as Wolfgang Abendroth has argued, that Humboldt hoped and believed that every autonomous individual could be developed by the university through his critical self-consciousness into an individual capable of appropriate and responsible action. Such an individual could then help in academic or governmental affairs, and develop and realize a humanistic culture as a counterweight to the contradictions and dangers of ordinary bourgeois society. Thus Humboldt believed that the university would produce an autonomous individual who was *engagé*, but at the same time whose worldly actions were informed by learning and culture, and who thus could be meaningfully responsible for those actions.[15] It may be possible, but historical reality was otherwise.[16] Instead of political individualism, a *Kulturstaat* came into being: the state would support learning in a widely humanistic sense; in return, the educated would become the trained civil servants and defenders of the state. The state would be enlightened from the inside, as it were, and so its rule could be undisputed. The professor need not be political, only "national." The idea of the "apolitical" German academic who keeps the world at a distance is well known. Perhaps less well known is how the very idea of the "German University" determined the "apolitical" character of its faculty. This is not only relevant for the ensuing discussion of the effects of Nazi policy upon mathematics and mathematicians and the autonomy of scientific development, it is also contemporaneously relevant to the United States, since the Humboldtian German University was recommended as a model for English-speaking ones by personages no less than Matthew Arnold and Abraham Flexner, among others, and has influenced university education in both the United States and Great Britain—indeed, it could be argued that the very idea of a university as a place where research is done in tandem with teaching is a German one.[17] From Wilhelm von Humboldt's suggestions to the Prussian King Friedrich Wilhelm III concerning the principles on which the University of Berlin was founded in 1809 to his latter-day disciple Eduard Spranger in the early 1930s, this apolitical attitude was part of the idea of the German University.

Wihelm von Humboldt's famous essay "Ideas toward the Determination of the Boundaries of State Activity"[18] was written around 1792, but only published

[15] Wolfgang Abendroth, "Das Unpolitische als Wesensmerkmal der deutschen Universität," in *Universitätstage 1966, Nationalsozialismus und die Deutsche Universität* (1966), 193.

[16] E.g., Ringer 1969: passim; Abendroth, 1966; Fritz Stern, *The Political Consequences of the Unpolitical German* (1960), 104–134; Eric Voegelin, "Die deutsche Universität und die Ordnung der deutschen Gesellschaft," in *Die deutsche Universität im Dritten Reich* (1966), 241–282; Frederic Lilge, *The Abuse of Learning* (1948); S. D. Stirk, *German Universities through English Eyes* (1946).

[17] For Arnold, see Stirk 1946: 13–14; for Flexner, ibid.: 18–20.

[18] Wilhelm von Humboldt, *Ideen zu einen Versuch, die Graenzen* [sic] *der Wirksamkeit des Staats zu bestimmen*, [c. 1792], translated as "The Sphere and Duties of Government" by Joseph Coulthard, Jr. (1854).

posthumously by his brother Alexander in 1851, though parts had appeared previously. The principal bar to its publication seems to have been that it was considered subversive. (The epigraph to the essay is from Mirabeau, and it appears to have been an influence on John Stuart Mill's *On Liberty*.) Nevertheless, in the next generation after Kant, while von Humboldt advocated the development of the autonomous political individual for cultural reasons, he also preferred monarchical institutions to republican ones, and for reasons similar to Kant's. In a monarchy, all that was necessary was for the citizen to be law-abiding and not do anything that would threaten state interests; then the state would not care how he comported himself. It was, of course, desirable for the duties of being a citizen of a state, and of being a private person, to be as harmonious as possible, and that happens when the duties of a citizen are not particularly peculiar, so that no sacrifice (such as religious beliefs) is required of the private person. In fact, it is exactly such a harmony that von Humboldt is aiming at. It is easy to understand the position taken by Kant and von Humboldt. It is not just that they were living under the Prussian monarchy, but also that they had before them the examples of the decline of the Athenian city-state and the Roman Republic. From an eighteenth-century Prussian viewpoint, both succumbed to demagoguery—in the former case, ending in a disastrous war, in the latter, in bloody civil war and proscriptions, with stability only restored by a monarchy. Kant preferred the fairly enlightened monarchy of Frederick the Great. Von Humboldt may perhaps have desired a constitutional monarchy (as did Mirabeau, and as Friedrich Wilhelm III had avoided providing until his death in 1840). Although this analysis of the roles of citizen and state was written around 1792, von Humboldt lived to see not only the French Revolution dissolve into terror and war, but the aftermath of Napoleon I and the ensuing European conflict, Louis XVIII, and even Louis-Philippe (von Humboldt died in 1835). For von Humboldt, human self-consciousness should inspire (in the moral person) an empathy with others, rather than a cold, callous solipsism. This striving to be a perfect citizen who does not prejudice state interests brings happiness and feelings of fulfillment. The idea of perfection "may prove a warm and genial feeling of the heart and thus transport his existence into the existence of others."[19] In short, education was to be free so that the individual could best freely serve the state.

Eric Voegelin has argued that ideas like these, translated into an academic program, produced a university that, instead of transmitting the life of the spirit and intellect (*Leben des Geistes*), into the life of the community (*Leben der Gesellschafts*) stood as an "iron curtain" between them.[20] There is no question this was almost the opposite of von Humboldt's intention. His plan for the university *was* an attack on orthodoxy and state interference in education, it *did* produce the remarkable flowering of German scholarship in the nineteenth century, but it also fitted all too well the master-servant relationship demanded by

[19] Ibid.: 79.
[20] Voegelin 1966: 262.

a monarchy. The scholar was independent as a scholar and a state servant as a civil servant. Indeed, the law of April 7, 1933, under which many academics were dismissed by the Nazis, was a law for the "reform of the civil service."

Von Humboldt's ideas fairly soon produced the aforementioned "German professor," a memorable portrait of whom has been left by William James in describing the famous philosopher Wilhelm Dilthey in 1867:[21]

> He is the first man I have ever met of a class, which must be common here, of men to whom learning has become as natural as breathing. A learned man at home is in a measure isolated; his study is carried on in private, at reserved hours. To the public he appears as a citizen and neighbor, etc., and they know at most about him that he is addicted to this or that study; his intellectual occupation always has something of a put-on character, and remains external at least to some part of his being. Whereas this cuss seemed to me to be nothing if not a professor . . . as if he were able to stand towards the rest of society merely in the relation of a man learned in this or that branch—and never for a moment forget the interests or put off the instincts of his specialty. If he should meet people or circumstances that could in no measure be dealt with on that ground, he would pass on and ignore them, instead of being obliged, like an American, to sink for the time the specialty.

And Dilthey was a philosopher who stressed the importance of the flow of life!

This "mandarin tradition" maintained itself to the bitter end. The emphasis on freely given service to the state as the end product of German education appears in an essay "Hochschule und Staat" (The university and the state) written by von Humboldt's prominent latter-day disciple Eduard Spranger in 1930. Spranger writes:[22]

> The *student body* is the youth which has grown up in this epoch and must educate itself (*sich . . . bilden*) for such great responsibilities. The way thither is through learning and through service. *Through learning*: for the political world of today is the complicated historical product of numberless forces and factors which can only be directed if one has previously attempted to understand them. *Through service*: for the way to leadership has always gone only through the vestibule of obedience and morally and freely given (*sittlich-freien*) subordination. The highest thing which the German spirit brought forth was the ethic of freely given service. Those were the old thoughts about order of the German knights, it was the idea of the genuine monarchy and the sense of every noble succession thereto, it was the good core in old Prussia. If in the future there is any sort of nobility, it will be again a nobility of service.

Of course, students' inclinations are in part determined by their instructors, and Spranger closes this essay with a threefold warning to German postsecondary schools and their teachers, to students, and to the government, which he quotes from Nietzsche:

[21] As cited by Stern 1960: 112.

[22] Eduard Spranger, "Hochschule und Staat," in Eduard Spranger, *Gesammelte Schriften* (1973), 10:220.

> All education (*Bildung*) begins with the opposite of all that which one now prizes as academic freedom, it begins with obedience, with subordination, with training, with service. And as the great leaders need those led, so do the followers need their leader: here rules in the ordered range of spiritual qualities (*Ordnung der Geister*) a mutual predisposition, indeed a sort of prestabilized harmony. This eternal order, to which things ever and again strive with appropriate weights, wishes to work against that culture which sits on the throne of the present, disturbing and destroying it. That culture wishes to demean the leaders to *its* service or bring them to humiliation; it flickers to those to be led when they seek their predestined leader and deafens with noisy means their seeking instinct. If, however, nevertheless the leader and led meant for each other have found themselves together, struggling and wounded, then there is a deep-seated wonderful feeling like the sound of an eternal lute.

Spranger concludes (in 1930) that if each of the groups he mentioned competitively strive to emulate this ideal for themselves, then there is enough work for the next decade and fruitless strife among them is unnecessary.[23]

Indeed, when in October 1932 the philosopher Theodor Litt wished to censure National Socialist student rowdies at a meeting of the corporation of German universities, Spranger dissented because he thought "the national movement among the students to be still genuine at the core, only undisciplined in its form."[24] Spranger's dissent is worth examining as the reaction and interaction to the Nazi regime of a conservative German professor who was imbued with the status of his profession. Among other items, Spranger warned Franz von Papen what dangers for the whole of Germany denunciation and lack of discipline at the universities must bring; he objected to the Nazi "Deification of the People" (*Vergottung des Volkes*) on religious grounds; he was offended when a professor (unnamed) was appointed to a newly created position of "political pedagogy" without his being consulted beforehand. He was easily outmaneuvered by the Nazi educational bureaucracy, and eventually withdrew his proferred resignation two months after he made it with a public declaration of his wish "to be able to devote his work as before to the German people (*Volk*) and State, in close connection with academic youth."[25] His influence in the university at an end, he retreated into a sort of "inner emigration" and continued teaching.

There *were* differences among the professors in the Weimar Republic; they included people of every variety of political persuasion ranging from Pan-Germanism to socialism, including "rational but not convinced" defenders of the republic like the famous historian Friederich Meinecke, radical pro-Nazi antirepublicans like the Nobel laureate physicists Philipp Lenard and Johannes Stark, as well as socialist defenders of the republic like the jurist Gustav Radbruch. However, as seen, the very conception of the German university could

[23] Ibid.: 223–224.

[24] Eduard Spranger, "Mein Konflikt mit der National-Sozialistischen Regierung 1933," *Universitas, Zeitschrift für Wissenschaft, Kunst, und Literatur* (1955), 457–473.

[25] Ibid.: 473.

lead to professors (of whatever political persuasion) who could also quite self-consciously see themselves as having nothing to do with the state, except to be a state civil servant. A consequence, at least in Wilhelminian Germany, was that the professional academic supported the state that gave him his livelihood. It is well known that this natural alliance between professors and their government ceased to exist for many during the Weimar period, but was reawakened in them by the promise of a nationalist government that stressed the dignity of being German, as the National Socialist one did.

A word more should be said, however, about the actual nature of that "academic freedom," which Nietzsche, quoted approvingly by Spranger, decried in favor of "obedience, subordination, training, service." For Spranger and Nietzsche are not speaking of students alone. What academic freedom meant (or did not mean) in late Wilhelminian Germany was castigated by Max Weber in a newspaper article of September 20, 1908 and a journal article of January 1909.[26]

Robert Michels, an open (though highly critical) Social Democrat, could not hope to "habilitate" (that is, qualify to be a teacher) in a Prussian university "as a result of the enforcement of the *lex Arons*," but also found it difficult to "habilitate" anywhere in Germany, apparently also because of his political beliefs. According to Max Weber, when this was mentioned by his brother Alfred at a teachers' congress, a Professor Theodor Fisher from Marburg said that Michels "could not, for quite different reasons, expect habilitation." Michels sought an explanation, and, says Weber:[27]

> He received a reply from Professor Fisher to the effect that the decisive reason was (1) "not just the fact of his social democratic beliefs but their public and exceptionally visible expression"; and (2) his family life: could Dr. Michels—who, lest we forget something "important," is an "aryan"—have even for a moment doubted that a man who would not allow his children to be baptised would be "impossible in any high ranking position"? The reply went on to say: "What a wonderful position you would have been able to obtain in Marburg where you were so well recommended and where many influential persons looked on you with the greatest favour! These persons have been very distressed and said it a great pity that you have wasted all this." The letter ends with the reproach that Dr. Michels used his house, of which Professor Fisher was the acting landlord, so badly that the house had still not been sold!
>
> The reproduction of these statements is not intended to put the writer of the letter in a personally poor light. On the contrary, I am, unfortunately, rather certain that—except for the last sentence which is irrelevant to this discussion, unless the landlord's "good conduct certificate" was to be taken into account in the habilitation proceeding—the content of this letter would be regarded in most academic circles as quite in order. It is characteristic of our public life in general and of the situation in our universities in particular. I cannot honestly hide the fact that it is my "personal" conviction that the existence and the influence of such views, because indeed of their very sincerity, are no honour for Germany and its culture, and that furthermore as long as

[26] Max Weber, in Weber 1974: 14–23.

[27] Ibid.: 17.

such views prevail it will be impossible—as far as I am concerned—to act as if we possess an "academic freedom" which someone could infringe.

I am convinced too—once again according to my own personal conviction—that religious communities, which knowingly and openly allow their sacraments to be used, in the same way as university fraternities and reserve officers' commissions are used—to make a career—richly deserve that contempt about which they frequently complain . . . it should be required in the interest of good taste and truthfulness that henceforward we ought not to speak of the existence of "the freedom of science and teaching" in Germany, as has always been done. The fact is that the alleged academic freedom is obviously bound up with the espousal of certain views which are politically acceptable in court circles and in salons, and furthermore with the manifestation of a certain minimum of conformity with ecclesiastical opinion or, at least, a facsimile thereof. The "freedom of science" exists in Germany within the limits of political and ecclesiastical acceptability. Outside these limits, there is none. Perhaps this is inseparably bound up with the dynastic character of our system of government. If it is, it should be honourably admitted but we should not delude ourselves that we in Germany possess the same freedom of scientific and scholarly teaching which is taken for granted in countries like Italy.

So in 1908, and in the following year, in the journal *Hochschul-Nachrichten*:[28]

[There is] the assumption, made in all seriousness, that it is possible to separate the question as to whether a university teacher's expression of a particular belief, e.g., a politically or religiously "radical" belief, should prevent his retention of a professorial chair—to which the answer was naturally negative—from the other question as to whether the same sort of belief should stand in the way of appointment to a professorial chair.

There is another equally widely shared view which asserts that the university teacher must, on the one side, "bear in mind" that he is an "official" when he acts publicly—as a citizen in elections, in statements in the press, etc.—but that, on the other side, he is entitled to claim the right that his statements in university classes are communicated no further. . . . If one links this latter viewpoint with the proposition that there is a significant difference between not permitting a professor to retain his chair and not allowing a person to be appointed to a chair when the disqualifying views are identical, one arrives at the following rather unusual conception of "academic freedom": (1) when an appointment is at issue, not only the scientific or scholarly qualifications of the candidate for an academic post may and should be examined, but also his submissiveness to the prevailing political authorities and ecclesiastical usages; (2) a public protest against the prevailing political system may justify the removal of the incumbent of a professorial chair from his post; and (3) in the lecture hall, where neither publicity nor criticism are allowed, the persons who have been appointed as university teachers may express themselves as they wish "independently of all authority."

One sees that this conception of academic freedom would be ideal for one "whose

[28] Ibid.: 18.

wants are satiated" or for the "happy possessor of manifold goods" (*beati possidentes*), to whom neither the freedom of science and scholarship as such, nor the civil rights and duties of the university teacher have any significance; it is the ideal of those who wish to be at ease in the cultivation of the "station in life" in which they find themselves. And this "freedom" can naturally serve as a "fig-leaf" to cover up, to the greatest extent possible, the imparting of a certain political tone to university teaching in all those in which it is feasible.

Less than twenty-five years separate this characterization by Weber of his colleagues and Hitler's accession to power. As Hannah Arendt has remarked with equal acidity, "[German scholars] have proved more than once that hardly an ideology can be found to which they would not willingly submit if the only reality—which even a romantic can hardly afford to overlook is at stake, the reality of their position."[29] From Humboldt on, the tradition of "freedom in scholarship" and, concomitantly, a complacent acquiescence "to sing the tune of him whose bread I eat,"[30] was the accepted role of the majority of civil-servant university professors. In some sense the *Vernunftrepublikaner* (republicans by reason if not conviction) among the German professoriat after 1918 were more "traditional" than their conservative colleagues—their allegiance was to the state, such as it was. During the Weimar period, however, the majority of German academics seemed to reverse that traditional allegiance. Their alienation from political reality became an alienation directed against the state rather than acceptance of it. This presents at least two questions. First, if German academics truly were predisposed to be apolitical, why were they so much inclined against the Weimar government? Second, to what extent can the general German academic atmosphere as illustrated by "humanists" of every persuasion be held to apply to mathematicians? The plain fact is that there does not appear to be much in the way of explicit political statement by mathematicians.

The answer to the first question is complicated and consists of many interrelated factors. Clearly there is no room here to go into any detail; nevertheless, some of these may be briefly indicated.

One factor, without question, is that under Weimar, many academics felt their elite standing threatened by an officially more open society, which publicly advocated pluralism. This coincided with a "cultural crisis" that began in the 1890s and reached its height in the years after (and no doubt because of) World War I.[31]

A second related factor is a simple yearning for restoration of the standing of the imperial years, when life was simpler and more secure (at least for those of

[29] Hannah Arendt, *The Origins of Totalitarianism*, rev. ed. (1980), 168. Earlier (p. 146) she credits Hobbes with foreseeing the social creation of this general type: a "poor meek little fellow who has not even the right to rise against tyranny, and far from striving for power, submits to any existing government."

[30] Weber 1974: 20.

[31] Ringer 1969. Cf. F. Ringer, "The German Universities and the Crisis of Learning, 1918–1932" (Ph.D. diss., Harvard University, Cambridge, Mass., 1960).

some position). The pre-1918 orientation of most of Weimar society (including the Social Democrats) has been discussed by Heinrich Winkler:[32]

> The orientation towards the authoritarian system of the pre-1918 period . . . was in any case a mortgage on parliamentary democracy. This is true not only of those strata which turned towards National Socialism after 1929 or else contributed to its rise; it is also true to a certain extent of the representatives of Weimar democracy. The conception . . . that the chief task of parliament was to criticize the government, survived the November revolution of 1918. The most important characteristic of a parliamentary system, the confrontation between the governmental majority and the opposition, was constantly obscured by this anachronistic dualism. The tendency of the parties, not least the Social Democrats, to disclaim governmental responsibility in critical situations, can ultimately be traced back to an unconscious fixation vis-à-vis the political system of the Kaiserreich. This system had failed to motivate the parties to consistently fight for a majority of the voters; their exclusion from active participation in government had favoured instead the ideological orientation of political parties and their restriction within a particular social milieu. Initially, the Weimar party system was scarcely different from that of Bismarckian Germany.

Academics who saw themselves above the mundanities of party politics had even more reason to desire a return of a hierarchical system with their assured position in it; indeed, they had spent their youth in such a system and knew its benefits firsthand.

The defeat of Germany during the war made permanent a split in the German academic community that was already well developed prior to 1918. Friedrich Meinecke remarked in 1926 that the split between those academics who during the war years had adopted an extreme annexationist or ultranationalist point of view, not even wavering in 1916 in their war aims, and those who after 1915–16 had advocated peace on a rational basis, was the historical source of the split between the German academics who stood by the Weimar constitution and those who were its enemies.[33] Certainly the German academic community as a whole had in the first phase of the war issued a number of statements and petitions: the famous petition of the ninety-three signed by an additional 4,000; "Deutsche Reden in schwerer Zeit"; and the ultra-annexationist "Intellektuellen-Eingabe" organized by Reinhold Seeberg and Dietrich Schäfer, among others.[34] These early statements defended German war aims and looked forward to a triumphant Germany that had extended its territory. Indeed the group around Seeberg and Schäfer formed a committee "for a German peace" (i.e., a non-

[32] Heinrich Winkler, "German Society, Hitler and the Illusion of Restoration, 1930–33," *Journal of Contemporary History* 11, no. 4 (1976): 10–11.

[33] Friedrich Meinecke, address (pp. 17–31), in *Die Deutsche Universität und der Heutige Staat* (1926), 21–22 and passim.

[34] For a collection of such statements throughout the war, representing a variety of opinions, see *Aufrufe und Reden deutscher Professoren im Ersten Weltkrieg*, with an introduction by Klaus Böhme (Stuttgart: Reclam, 1975).

negotiated one).[35] As the fortunes of war shifted and a grim stalemate ensued, followed ultimately by German surrender and the declaration of the republic, the academic community split largely into the two groups mentioned. The distress of the largest group among the academics, which never ceased in its ambitions for a "victorious peace" or *Siegfrieden* as the final outcome, seems to have led to a sort of narcissistic rage at the republic and belief in the "stab-in-the-back"[36] legend, as well as a disgust with parliamentary democracy (which was the "system" of the victors).

Thus a third factor was the defeat of national aspirations in World War I—German scholarship was already predominant in several areas, including mathematics, so that the ultra-annexationists and their like among academics no doubt saw the extension of national hegemony as a fitting extension of an academic superiority already felt. The boycott of German science and scholarship after the war until the late 1920s by France and Britain certainly added to these feelings of disappointed rage and rejection of the political realities. This openly expressed itself on more than one occasion in a railing against the weakness of Germany, against a state "with neither defense nor honor nor governmental power,"[37] speaking of[38]

> the grotesque idea of healing Germany through the introduction of a "west-European" (read French) constitution—what is this other than an application of the plainly ineradicable conviction of 1789 that absolutely good constitutional forms exist, that everything depends on these forms, and that like Parisian hats on the little head (*Köpfchen*) of a German lady of fashion, one can modishly set (*draufstülpen*) Parisian laws on German development without thereby preparing the greatest disaster. . . . For us [the ideas of 1789] are foreign to our nature, they have injured us unspeakably (*unsagbar*).

Included in such complaints was the appeal for a new kind of leader. For example: "If the German way (*Art*) and Christian belief unite themselves, then we are saved. Then we will work with our hands and wait for the day when the German hero will come, whether he come as prophet or as king."[39]

If rage at unfulfilled expectations in the belief that Germany's defeat was a result of political double-dealing led to a large number of academic associations

[35] Ringer 1969: 190. See also Klaus Schwabe, *Wissenschaft und Kriegsmoral* (1969), 70–74, 95–97, and passim.

[36] According to Holger Herwig, the "stab-in-the-back" legend was the creation of the *Deutschnationale Volkspartei* politician Karl Helfferich and particularly Field Marshal von Hindenburg in testimony before a subcommittee of the committee of enquiry (*Untersuchungsausschuss*) on the origins of World War I. See Holger Herwig, "Clio Deceived," *International Security* 12, no. 2 (1987): 30–31.

[37] Kurt Sontheimer, "Die Haltung der Universitäten zur Weimarer Republik," in *Universitätstage* 1966: 30 (citing Gustav Roethe in 1924).

[38] Kurt Sontheimer, *Antidemokratisches Denken in der Weimarer Republic* (1962), 236, citing Adelbert Wahl in 1925.

[39] O. Procksch, *Schriften der Universität Greifswald*, no. 11, p. 23, as cited in Sontheimer 1962: 275. Also cited in Theodor Eschenburg, "Aus dem Universitätsleben vor 1933," in *Deutsches Geistesleben und Nationalsozialismus*, Tübingen (1965), 40.

with the right-wing opposition to the Weimar Republic, still, such highly charged political statements were in a certain sense "unpolitical." Indeed, they emphasized "national" interests over "state" interests, a theme also among the Pan-Germans, which the Nazis also appropriated.[40] German academics rarely spoke in practical political terms.[41] Their discourse almost always took place in terms of *Geist*, or, as Ringer puts it: "Their critiques of modern politics almost always ended in a resolution to increase the moral impact of learning upon public life."[42] As Kurt Sontheimer has pointed out,[43]

> The hypostatization of the political task of the university [to defend the rationally discovered true] to an abstract service to the state is a dangerous thing. For the Weimar patriot-professors who called their colleagues to service for the fatherland it was regularly (*in aller Regel*) an implicit request (*Aufforderung*) to deny service to the democratic republic and to serve another, presumably more German, idea of the State.

Thus German professors who made political statements were in a very real sense "unpolitical." They operated in an ideal world. Many of them encouraged opposition to the Weimar constitution and a parliamentary form of government—in the name of what? This presents a fourth theme, already alluded to, and perhaps the most important reason for the disaffection of the majority of the German academic community from Weimar. German academics and German intellectuals in general saw no necessary connection between "Western" and "German" spirit and civilization.[44] A famous exposition of this German need for a "nonpolitical" "cultural" state is Thomas Mann's *Betrachtungen eines Unpolitischen* (1918), the reflections of a self-defined unpolitical intellectual. That (practical) politics was not German had been stated explicitly by Mann: "The political spirit, anti-German as spirit, is with logical necessity inimical to anything German (*deutschfeindlich*) as politics."[45] As an unpolitical man, he exclaimed,[46]

[40] Arendt 1980: 236–243, esp. 237.
[41] This is one of the major themes of Ringer 1969.
[42] Ringer 1969: 252.
[43] Sontheimer 1966: 37.
[44] "Intellectual" is used here in the sense of Benda's *clerc*: as someone who speaks to the world in the tones of a spiritual guide; see Julien Benda, *La trahison des clercs* (The treason of the intellectuals), trans. R. Aldington (1969). On the German intellectual attitude, cf. among others, Stern 1961; Sontheimer 1962, 1966; Mosse 1964; Abendroth 1966; and Benda 1969: passim. Benda claimed (in 1928) that most of the moral and political attitudes adopted by European intellectuals since the Franco-Prussian War were of German origin (ibid.: 58), and Germany was in particular the origin of what he saw as a pernicious nationalist particularism in all European intellectual and political matters. Kurt Sontheimer ("Antidemokratisches Denken in der Weimarer Republik, *Vierteljahresheft für Zeitgeschichte* 5 [1957]: 44) says that Weimar was called into being at a time when German intellectual life (*Geistesleben*) was rejecting the Western European Enlightenment tradition more decisively than heretofore. (This article should not be confused with the book of the same title already cited.)
[45] As cited by Abendroth 1966: 194; cf. Sontheimer 1957: 44.
[46] As cited by Abendroth 1966: 196.

> Away with the motto "democratic," foreign to our country. Never will the mechanical-democratic state of Western custom succeed with us. One only needs to Germanify the word, and say "inhering to the people" (*volkstümlich*) instead of "democratic"—and one names and comprehends the exact opposite: For "inhering to the German people" (*deutsch-volkstümlich*) means "free" inwardly and outwardly, but it does not mean "equal," neither inwardly nor outwardly.

Mann, of course, later changed his mind and became a defender of the republic;[47] nevertheless, he was the best known and at the time most gifted exponent of the need for a "German," "organic" form of government. Indeed, Mann's *The Magic Mountain* (1924) is perhaps the classic statement of Germany, intellectually between East and West, but a part of neither, seeking a "third way," and Hans Castorp ultimately descends to the reality of the trenches of World War I. Many German intellectuals besides Mann contrasted in 1918 and succeeding years the Western tradition, which had its roots in the French Revolution and the Enlightenment, with an organic, romantic, "German" tradition. The parliamentary democracy of Weimar was a foreign "Western" imposition on Germany. Its opponents sought an indigeneous German way of thought in the political realm. As Kurt Sontheimer remarks, it was this attempt to counter the Western European conception of parliamentary democracy and liberalism with a different German conception that deprived the Weimar government of a large measure of intellectual support.[48] This intellectual belief in a new and greater future for a peculiarly German *volkstümlich* form of government no doubt had some roots in the "unbelievable" defeat of the German armies during the war. The ensuing "cognitive dissonance" was perhaps yet another factor in the intellectual insistence that parliamentary democracy was "un-German" and had to be replaced by a more German form of government.[49] As already noted, academics and intellectuals participated in a whole spectrum of attitudes toward the Weimar government, and it may seem one-sided to emphasize these right-wing ones. However, there seems little doubt that the majority of German academics participated in this right-wing opposition, or, at best, supported Weimar because to do so was *vernunftig* (i.e., reasonable) rather than because of any dedication to republican ideals.[50] Academics certainly were not apolitical in the sense of not making political statements, and their antidemocratic thought did

[47] For a complete investigation of Thomas Mann's political journey, see Kurt Sontheimer, *Thomas Mann und die Deutschen* (Munich: Nymphenberger Verlag, 1961). Mann had come around to a defense of the Weimar Republic by 1922. What Kurt Sontheimer says of his attitude at this time—"The Republic is our fate and *amor fati* is the only correct relationship to it" (ibid.: 53)—is a succinct characterization of the attitude of those whose support for the republic was based on it being the rational thing to do.

[48] Sontheimer 1957: 44; many examples of these strivings can be found in Sontheimer 1962. In particular, "democratic-liberalism" and "parliamentarism" are often stigmatized as "French."

[49] For the use of the psychological idea of "cognitive dissonance," see chapter 2, note 80.

[50] Cf., e.g., Ringer 1969; Sontheimer 1957, 1962, 1966. The term *Vernunftrepublikaner*, or "republican by reason" (instead of by conviction), seems to have been coined by the historian Friedrich Meinecke (see Ringer 1969: 203).

not express a sudden revulsion against the Weimar Republic and a sea change in attitudes toward government. Rather, they wished to seek a peculiarly German and nonparliamentary form of government, and this, in part at least, because of a sense of cultural crisis that had its beginnings in the 1890s.[51] Academics were "unpolitical" in the sense that their political activity took place in a cloud-cuckoo-land filled with desires to protect art and humanity from "dirty politics," to seek refuge from the corruptions of mechanistic "civilization" in "culture,"[52] to carry on "unpolitical" discourse in a world of ideological purity, necessarily divorced from implementation, and not least to view parliamentary democracy, in the words of a popular book by a gifted right-wing publicist of the day, as the "Rule of the Less Valuable."[53] Such a quantity of "unpolitical" talk by the academic community had its undeniable political effect not only in reducing intellectual support for the Weimar government, but also in influencing the student body—it is well known that the German Student Association was already Nazi-dominated by the summer of 1931.[54] This is not to say that these professors necessarily were members of the Nazi movement—they certainly were not[55]—but that they prepared a soil in which it could flourish is undeniable.[56]

But what of mathematicians? Or natural scientists? The traditional academic gulf between "humanists" and "scientists" was no less deep in Weimar. Ernst Troeltsch wrote in 1924:[57]

[51] Ringer 1969, esp. chap. 5.

[52] The distinction between *Zivilisation* and *Kultur* appears prominently, for example, in Oswald Spengler's *Der Untergang des Abendlandes* (The Decline of the West), which appeared in the 1920s, but was scarcely original with him.

[53] Edgar Jung, *Die Herrschaft der Minderwertigen* (Berlin: Deutsche Rundschav, 1927). Jung, personally close to Franz von Papen, was among those assassinated on June 30, 1934, "The Night of the Long Knives."

[54] See, for example, Michael Steinberg, *Sabers and Brown Shirts* (1977); table 18, p. 92 there shows that at most universities by 1931, the Nazis obtained 30–40% of the vote in student elections. They were most popular in Jena, where they had 65% of the vote. However (ibid.: 91), these votes, even when not a majority, amounted to electoral control of student councils in eleven universities. In the summer of 1931, the Nazis took over the leadership of the *Deutsche Studentenschaft* at its meeting in Graz (ibid.: 111–112).

[55] On this point, see Helmut Seier, "Universität und Hochschulpolitik im Nationalsozialistischen Staat," in K. Malettke ed., *Der Nationalsozialismus an der Macht* (1984), 143–165. Here (p. 145) Seier cites, among others, Anselm Faust, "Professoren für die NSDAP," in M. Heinemann, ed., *Erziehung und Schulung in Dritten Reich* (Stuttgart: Klett-Cotta, 1980), 2:31–49, who estimates that only 1.2% of all university teachers were members of the Nazi party prior to 1933 (p. 42). See also note 95 below.

[56] See in addition to Ringer and Sontheimer, among many others, for example, Daniel Gasman, *The Scientific Origins of National Socialism* (1971), and Willy Hellpach, *Wirken im Wirren*, vol. 2, *Lebenserinnerungen, 1914–1925* (1949). Hellpach, an academic, was the candidate of the *Deutsche Demokratische Partei* for president of the republic in 1925. Many university professors seem to have been members of the party known as DNVP (*Deutschnationale Volkspartei*) (Ringer 1969: 201; cf. Hasse 1952). All writers on German academic matters in this period seem to comment on the strength of the DNVP among professors. For the role of this monarchist movement in the Weimar period, see Mosse 1964: chap. 13; Walter Kaufmann, *Monarchism in the Weimar Republic* (1953); and Lewis Hertzman, *DNVP: Right-Wing Opposition in the Weimar Republic, 1918–1924* (1963).

[57] As cited in Ringer 1969: 346.

> It is the revulsion against drill and discipline, against the ideology of success and power, against the excess and the superficiality of the knowledge which is stuffed into us by the schools, against inellectualism and literary self-importance, against the big metropolis and the unnatural, against materialism and skepticism, against the rule of money and prestige, against specialization and bossism, against the suffocating mass of tradition and the evolutionary concept of historicism. . . . Furthermore, a profound intellectual revolution undoubtedly lies in the changes within scholarship which are today still little noticed. The need for synthesis, system, *Weltanschauung*, organization, and value judgment is extraordinary. The mathematization and mechanization of all European philosophy since Galileo and Descartes . . . is meeting with growing skepticism. . . . In the cultural and historical disciplines, people are defending themselves against the tyranny of the evolutionary concept, against mere summations and critical assertions.

Nevertheless, Klaus Schwabe remarks concerning the World War I propaganda of the professors that "as fellow-travelers (*Mitläufer*), the natural scientists should have reacted similarly to their colleagues in other disciplines," and cites the fact that of 352 professors signing a Pan-German-inspired statement in 1915, thirty-nine were natural scientists.[58] The total number of *Intellektuellen* signing this statement was 1,347.[59] Ringer remarks,

> It is my impression that in their attitudes toward cultural and political problems, many German scientists followed the leads of their humanist colleagues. But I am unable fully to substantiate this conclusion, and it is certainly possible to imagine scientists taking a more favorable view than humanists of technological civilization.

Jeffrey Herf, meanwhile, has argued cogently that there was a movement, especially prominent among engineers (but among whose most prominent propagandists were "independent intellectuals" like Ernst Jünger and Oswald Spengler) to adapt technological society to reactionary uses.[60] Paul Forman has argued that German physicists and mathematicians during the Weimar period were infected by the irrationalistic stance, philosophically and intellectually popular at the time, that insisted on the cultural relativism and anthropomorphic character of *all* concepts. Forman demonstrates the probable influence of these ideas associated with Oswald Spengler and others on the development of such Weimar German scientific ideas as uncertainty in quantum physics and intuitionism in mathematics.[61]

[58] Schwabe 1969: 193 n. 38.

[59] Ibid.: 70. Among the prominent scientists who were signers were Gustav Mie, Richard Willstätter, and H. Struve. Of course, such a signature did not predict future politics. For example, Willstätter, a Nobel Prize-winning chemist and fully assimilated Jew, later resigned his university position in 1924 because of an anti-Semitic incident (see his *From My Life* [1965; original German edition, 1949], 361 ff.). A complete list of signatories exists in the *Nachlass* Schemann, available at the Universitätsbibliothek, Freiburg im Breisgau (*Handschriftenabteilung*).

[60] Ringer 1969: 6. Jeffrey Herf, *Reactionary Modernism* (1984).

[61] Forman 1971. For intuitionism, see also Walter van Stigt, "The Rejected Parts of Brouwer's Dissertation on the Foundations of Mathematics," *Historia Mathematica* 6 (1979): 385–404.

Yet, a check of the signers of the 1915 ultra-annexationist declaration mentioned above against the members of the German Mathematical Society in the same year reveals only five common names, none of them prominent as mathematicians.[62] Felix Klein did sign the well-known 1914 declaration of German intellectuals, "To the Civilized World," concerning the invasion of Belgium,[63] and it is often pointed out that Hilbert and Einstein did not,[64] but in fact Klein is the only prominent mathematician to appear among the original signatories. The argument presented earlier concerning the attitudes of German university professors during the Weimar period and to what extent those attitudes were based on the very ethos of the German university system depends (as do those of Ringer and Sontheimer) for its application to mathematicians and physical scientists on the assumption that they were no different by and large from their more outspoken "mandarin" colleagues in the humanistic disciplines.

What evidence is there of political interest on the part of the mathematicians of Weimar? Among the very few[65] academics of the far left in politics were at least four mathematicians: Emil Gumbel, Max Zorn, Fritz Noether, and Emmy Noether. On the other hand, with the exception of Gumbel, they do not seem to have been politically active.

Emmy Noether was a "*Salonkommunist*" and apparently had to move out of her lodging in a student boardinghouse in April 1933 because she was "a Marxist-leaning Jewess."[66] According to Paul Alexandroff, she was delighted, on her visit to the Soviet Union in the winter of 1928–29, by "Soviet scientific, and especially mathematical successes"; furthermore, her "sympathies were always unwaveringly with the Soviet Union; in which she saw the beginning of a new era in history and a firm support for everything progressive," despite the fact that "manifestation of these sympathies seemed both outrageous and in poor taste to most of those in European academic circles." Hermann Weyl says rather less strenuously that she "sided more or less with the Social Democrats; without being actually in party life she participated intensely in the discussion of the political and social problems of the day."[67] In any case, Emmy Noether was

[62] See above, note 59. H. Struve was a prominent mathematical astronomer, but not apparently a member of the Society.

[63] The ninety-three original signatories truly represented a Who's Who of German scholarship and science. An English text of the declaration along with a list of the signatories can be found in *Deutschland uber Alles, or Germany Speaks*, compiled and analyzed by John Jay Chapman (1914), 37–42.

[64] E.g., Reid 1970: 137–138.

[65] Ringer 1969: 201.

[66] Alexandroff, from his eulogy of Emmy Noether (reprinted in Brewer and Smith 1981: 107; see next note). See also Emmy Noether's own, much milder description in letters to Heinrich Brandt (April 8, 1933, and April 26, 1933) as published by Werner Jentsch, *Historia Mathematica* 13 (1985): 5–12. Copies of the entire text of these letters are in my possession.

[67] Auguste Dick, *Emmy Noether, 1882–1935*, Beiheft to Elemente der Mathematik (1970). This edition reprints the informative obituary eulogies of Noether by Bartel van der Waerden (in German) and Hermann Weyl (in English). An English translation of Dick's book appeared in 1981 (from the same publisher); this volume contains van der Waerden's translated eulogy and Weyl's, as

sufficiently unpolitical to have been bemused and amused by the presence in her home of a student in SA uniform in 1933[68]—the SA (or *Sturmabteilung*) were the original "stormtroopers." As Hermann Weyl said, "Her heart knew no malice; she did not believe in evil."[69]

Fritz Noether was Emmy's brother and two years her junior. He became a well-known applied mathematician, and his case is interesting in part because it shows what sort of protest was still possible in 1933 for a "full Jewish" professor of mathematics.[70] At the time of Hitler's ascension to the chancellorship of Germany, Fritz Noether was teaching at the Technical University in Breslau. He was forty-eight years old, a wounded World War I veteran who had been awarded the Iron Cross. Thus he fell under the original exceptions clauses of the April 7, 1933 law. On April 26, 1933, a group of students complained to the Rektor that his presence on the faculty "in large measure contradicts the Aryan principle," and that there was little surety he would "work in the spirit (*Sinne*) of the national movement." Noether protested immediately and, after a very brief, self-imposed interruption "because my activity at the university appears not to be safe from disturbances," took up lecturing again. On August 25, the students complained again, speaking also of his leftist orientation. Among other items, they accused Noether of being active in the "league for Human Rights," of having signed petitions in favor of Theodor Lessing,[71] of having opposed the hanging of a portrait of von Hindenburg in university public space, and the like. The letter came before the final decision to remove Noether from the faculty, but it was hardly necessary for that decision, as the formulary thereto remarked that he was "100 percent Jew," "had signed the petition for Emil Gumbel"[72] (as, indeed, had Gustav Doetsch, whose political persuasion in 1933 was antipodal to Noether's[73]), and had a political position "against the national movement."

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well as a translation of Paul Alexandroff's eulogy. Van der Waerden's and Alexandroff's statements are also reprinted in James Brewer and Martha Smith, eds., *Emmy Noether: A Tribute to Her Life and Work* (1981), and Weyl's appears also in his *Gesammelte Abhandlungen* (1968). The original appearances of these obituaries are: van der Waerden in *Mathematische Annalen* (1935): 469–476; Weyl in *Scripta Mathematicia* 3 (1935): 201–265. The translations of van der Waerden and Alexandroff referred to above differ. Citations here from Alexandroff are as in Brewer and Smith 1981; page numbers for citations from Weyl are as in Dick 1970. For above citations, see Alexandroff in Brewer and Smith 1981: 107; Weyl in ibid.: 59. Fraenkel (1967: 159) applies the word *Salonkommunist* to Emmy Noether. The location of Alexandroff's eulogy (Moscow, 1935) should probably be taken into account in evaluating its statements.

[68] The student in the SA uniform seems to have been Ernst Witt (see Clark Kimberling, "Emmy Noether and Her Influence," in Brewer and Smith 1981: 29 and 47 n. 13). Professor Kimberling has said (personal communication) that B. L. van der Waerden said Emmy Noether told him the student in question was Witt. The story of this student is well known and widespread, but he is usually anonymous.

[69] Weyl in Brewer and Smith 1981: 72.

[70] For all the information cited below about Fritz Noether and his fate, see the detailed article by Karl-Heinz Schlote, "Noether, F.—Opfer zweier Diktaturen," *NTM Schriftenreihe* 28 (1991): 33–41.

[71] The "Lessing case" is discussed later in this chapter.

[72] The "Gumbel case" is discussed later in this chapter.

[73] See below, chapter 4, "The Süss Book Project" and "Gustav Doetsch and the Philosophy of

The intention was to dismiss Noether according to section 4 of the April 7 law (he was opposed to the national state).[74] Incidentally, using this rubric meant Noether's pension would be reduced by 25 percent.

Noether appealed and categorically denied the nature of the charges against him—he had always been politically inactive—however, knowing there was no chance he could reverse his dismissal, he instead asked that section 5, which allowed movement to other positions, be used instead, after which he would petition to be emerited. The point of the difference was that in this way, he could not only retain a pension, but also his reputation as a loyal German civil servant. This was agreed to, and in fact Noether did receive such a pension. However, this was cancelled when he emigrated to the Soviet Union in 1933, where he became a professor at Kubischev University in Tomsk. He was present in Moscow in 1935 on the occasion of Alexandroff's memorial address for his sister. He attended the International Mathematical Congress in Oslo in 1936, where he gave a paper, and in 1939 was in a Soviet jail accused of treasonable activities.[75] The year 1936 marked the beginning of the "purge trials" in Moscow. Noether seems to have been the only mathematician to travel to Oslo from a Soviet location, presumably on his German passport, since Soviet citizens apparently were not allowed to travel to the congress. At the time of the "purge trials," the charge was made that Trotskyists had intrigued with the Germans, among others, to overthrow Stalin, and this may have had something to do with Noether's arrest, especially since Trotsky was living in Oslo in 1936. On the other hand, the last of the major trials was held in late 1938, and by the spring of 1939 the negotiations had begun that would lead to the Molotov-Ribbentrop pact of friendship and non-aggression between the Soviet Union and Nazi Germany in August of that year, eight days before the onset of World War II. Nothing was heard of Noether after 1939, and the mystery of his disappearance was only recently cleared up thanks largely to the determined efforts of his two sons, Hermann and Gottfried Noether (died 1992), and the *glasnost* of Mikhael Gorbatchev, which allowed the opening of previously secret files.

On November 22, 1937, Noether was arrested on charges of being a German spy who not only spied on the Russian armament industry but committed acts of sabotage against it. On October 13, 1938, he was sentenced to twenty-five years in prison and confiscation of all his belongings. It appears that all the evidence against Noether and the three Russians accused with him was falsified.

Mathematics." Both Noether and Doetsch were undoubtedly complaining about the procedural irregularities in Gumbel's case. There is no reason to think that Noether or Doetsch shared Gumbel's (or Lessing's) politics.

[74] Section 3 of the law called for the dismissal of Jews, but had the exceptional clauses about World War I veterans and old-time civil servants. Thus Noether had to be dismissed via a different rubric. For similar reasons, no doubt, Edmund Landau (see below, chapter 4, "Hasse's Appointment at Göttingen") was let go according to section 6 rather than section 3. Such Nazi punctiliousness about "legal niceties" at the time may strike us as curious, but were nevertheless the fact.

[75] See Alexandroff in Brewer and Smith 1981: 99; Maximilian Pinl, "Kollegen in einer dunklen Zeit I," *JDMV* 71 (1969): 203–204; and Dick 1970: 34.

It is possible but uncertain that Fritz Noether appeared on a Nazi list of people to be arrested with the German conquest of Soviet territory. In any case, by Nazi decree, he lost his German citizenship in 1938, and so was clearly not available in 1939 for the exchange of persons following the Molotov-Ribbentrop pact. Hitler's surprise attack on the Soviet Union began June 22, 1941, and the German army had tremendous early success. Fritz Noether, imprisoned at Orel, was charged with further acts against the Soviet Union, and on September 8, sentenced to death. On September 10, he was executed. Presumably the second sentence was to provide juridical justification for the execution of prisoners in Orel before its capture by the Germans. This latter happened on October 8, 1941. In late 1988, the Supreme Court of the Soviet Union decided that Noether had in fact not been guilty of any crime, and on May 12, 1989, Hermann Noether was officially informed of the "complete rehabilitation" of his father: "Please accept my deepest sympathy although I understand that no words can alleviate your pain."[76]

Emil Gumbel was a mathematical statistician of note who wrote books of political import as well as statistical articles. Among the former were *Four Years of Political Murder* and *From the* Feme-*Murders to the Reichschancellery*: books that dealt with right-wing assassination in the Weimar Republic. On July 27, 1924, Gumbel made the following statement about the dead German soldiers of World War I: "Now, I would not exactly say that they fell on the field of dishonor, however, nevertheless, they lost their lives in a detestable way." The uproar that followed had even supporters of the republic saying that Gumbel did not deserve to be on a university faculty like Heidelberg's, and everyone who had lost a son, brother, father, or husband felt wounded inwardly by such remarks. Gumbel at first apparently took a rather arrogant attitude toward the disturbance, but, when he was suspended from teaching, he ended by apologizing for the slip in his mode of expression and by saying that he did not mean to dishonor fallen German soldiers. Nevertheless, the controversy did not die. Gumbel, who seems to have been a communist already, spent the 1925–26 winter semester in Moscow at the Marx-Engels Institute; in 1926 he returned to Heidelberg. He was not given to mild expressions of opinion: he told a group of Marxist students with reference to the starvation in Germany at the war's end that an appropriate war memorial in Heidelberg was for him not a lightly clothed maiden carrying the palm of victory but rather "a single large turnip." Gumbel was promoted to *ausserordentlicher Professor* (roughly "associate professor") by the Baden ministry in 1930 over faculty protest, but continuing protests from faculty and students, including a threatened student boycott, eventually resulted in revocation of the promotion (under a new minister) and in Gumbel's losing the *venia legendi*, or right to teach in a German university, in 1932.[77] According to Willy Hellpach, the liberally inclined Baden minister, him-

[76] Schlote 1991: 40.

[77] All material about the "Gumbel case" is taken from the extensive collection of original sources in the Heidelberg University archive, unless otherwise indicated. As Dr. Hermann Weisert, the

self an academic, who was charged with handling the "Gumbel affair" in 1925, not only did rightist nationalists carry on year after year about the Gumbel affair as an example of the contemptibility of the Weimar Republic, but it still reverberated after World War II.

Max Zorn became a communist by way of the *Monistische Jugend* (or "Monist Youth") at age twenty-one in 1927. Although others have emphasized the right-wing associations of the monist movement founded by Ernst Haeckel,[78] its youth movement was as much an outlet for romantic rebellion as the larger German youth movement with which it was associated. For Zorn in 1927, this led to communism. A student at Hamburg, he wrote his dissertation, which established an important abstract algebraic result on "alternative division rings," under the direction of Emil Artin. Unable to acquire the *venia legendi*, or right to teach, because of his politics, he was forced to emigrate, and did so in 1934. Shortly after emigrating, he published a three-page set-theoretic paper (in English) that has associated his name forever with one of the most used of mathematical principles.[79] According to Zorn, after his compulsory dismissal in 1934 by the head of the Hamburg mathematics faculty, Wilhelm Blaschke, Blaschke bought him a steamer ticket to the United States. Max Zorn and another young mathematician, Günther Höwe, were both naval buffs and friends; however, Höwe told him after Zorn's dismissal that it pleased him, because otherwise his conscience would have compelled him to denounce Zorn—such was the temper of the times.[80]

Two other mathematicians of reputedly leftist persuasion were Kurt Reidemeister and Robert Remak. Robert Remak was a brilliant algebraist and number-theorist, though an apparently more than somewhat difficult colleague. He had the reputation of being a "communist," and there were also rumors in the 1920s that he was "not completely Aryan," but this seems to have been mostly a result of his sarcastic personality, eccentricities, and unkempt habits, rather than stemming from any real knowledge about him or any political activity on his part. In fact, he was Jewish. He was twice denied *Habilitation* and the right to join the teaching faculty in Berlin, in 1919 and 1923, again largely because of his demeanor and habits. However, finally, on January 11, 1929, Remak (who had received his doctorate in 1911) was accepted on his third attempt. In September 1933, he lost the right to teach, and after the *Kristallnacht* of November

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Heidelberg archivist in 1988, remarked to me, the "Gumbel case" has been described "a hundred times," and almost no book discussing any aspect of universities during the Weimar period fails to mention it. Nevertheless, the first full-scale biography of Gumbel, by Christian Jansen, did not appear until 1991 (Heidelberg: Verlag Das Wunderhorn), and an extensive biographical notice of Gumbel and "the case" was written by Karen Buselmeier in 1979 and used as a foreword (pp. 7–31) to the reissue of Gumbel's book *Verschwörer* (1984). Gumbel died on September 10, 1966, in New York. See also Anselm Faust, *Der Nationalsozialistische Studentenbund* (1973), 2: 57–62.

[78] Gasman 1971: passim.

[79] *Bulletin of the American Mathematical Society* 41 (1935): 667–670.

[80] Above material on Max Zorn comes from Maximilian Pinl, "Kollegen in einer dunklen Zeit III," *JDMV* 73 (1972), under Hamburg, and an interview with Zorn in Bloomington, Indiana (Mar. 18, 1991).

8–9, 1938, spent two months in the Sachsenhausen concentration camp. Released, he managed to emigrate to Holland, only to be recaptured during the war and deported to Poland. Remak died in Auschwitz sometime during or after 1942.[81]

Unlike Max Zorn, Kurt Reidemeister[82] was no youthful leftist, but he was someone who believed strongly in the traditional notions of freedom of scientific inquiry and scientific universalism. His life intersected significantly with several people who appear in this book. Born in 1893, the man who was to become internationally famous as a geometer and topologist, one of the founders of knot theory, was at first more interested in philosophy than mathematics. As a nineteen-year-old, he heard Edmund Husserl's lectures in Freiburg, and took courses in Marburg and Göttingen (such travel was then the custom among German students). Four years of service in World War I (he advanced to lieutenant) interrupted his study, and after the war he went back to Göttingen, where he qualified as a secondary-school teacher simultaneously in mathematics, philosophy, physics, chemistry, and geology. Edmund Landau, not known as an easy examiner, was his mathematics examiner and dismissed him after only thirty minutes with the grade of "distinction." In 1920 Reidemeister followed Erich Hecke to Hamburg, completing a dissertation in algebraic number theory under Hecke's supervision in less than an additional year. In Hamburg, he met Wilhelm Blaschke, who turned him toward an interest in geometry, and Blaschke entrusted the brilliant student with cooperation on the second volume of his *Differential Geometry*. Indeed, just a few months after receiving his doctorate, Reidemeister gave a plenary lecture on this subject, quite different from that of his dissertation, at the annual meeting of the German Mathematical Society. However, his other cultural interests were not left by the wayside. He wrote stories and poems and lectured on Spengler's *Decline of the West* (which has a long section on varieties of mathematics). Although not yet "habilitated," he received a call to a professorship in Vienna (just two years after following Hecke to Hamburg). There he pursued philosophical as well as mathematical interests, studying the philosophy of Ludwig Wittgenstein with Moritz Schlick and being part of that famous philosophical circle, the *Wiener Kreis*. There he also married. In 1925, he went to Königsberg, where his well-known books on knot theory and combinatorial topology appeared. In January 1933, shortly before Hitler's accession to power, National Socialist students at Königsberg fomented a disturbance directed against the university Rektor. Reidemeister devoted a whole mathematics lecture to explaining why the behavior of these students was totally unsupportable and not compatible with rational thinking. As a consequence, he was dismissed shortly after January 30, at a time when three "non-Aryan" colleagues, Gabor Szegö, Richard Brauer, and Werner Rogo-

[81] Pinl "Kollegen in einer dunklen Zeit II," *JDMV* 72 (1971), 190–193; H. Behnke, *Semesterberichte* (1978), 39–41; Kurt R. Biermann, *Die Mathematik und ihre Dozenten an der Berliner Universität, 1810–1933* (1988), esp. 209–211. Numerous anecdotes are attached to Remak's name.

[82] Material on Reidemeister below is from Pinl 1972 and an obituary by Rafael Artzy, *JDMV* 74 (1973): 96–104.

sinski, all were left in office (until after the law of April 7). Perhaps this early dismissal was fortunate for Reidemeister. Wilhelm Blaschke, his erstwhile mentor, and a "realist"[83] who got on well with the powers that were, made efforts to reverse his dismissal or to find him another job,[84] and in autumn 1934, he was Helmut Hasse's successor in Marburg. The intervening time he spent in Rome. After World War II, when Blaschke was dismissed by the Allies as a Nazi collaborator, Reidemeister would be asked by Blaschke to return the favor and help him get reinstated.[85] While at Marburg, Reidmeister apparently attempted to find ways to publish the work of Jewish mathematicians. He published philosophical as well as mathematical work, the former almost, but not quite, his only production after World War II, and he took a strong interest in mathematical education. He died in 1972. That Reidemeister might be considered "leftist" because he in fact advocated the usual academic norms is a significant sign of the times he lived in.

Just how unpolitical the academic atmosphere was in mathematics departments might also be inferred from the memories of visitors to them at the time. Saunders MacLane (born 1909) and Edward McShane (born 1904), who would both become prominent American mathematicians, were also both students at Göttingen in the early 1930s. MacLane recorded (around 1975) his impressions of German politics in 1931:[86]

> Things were always in disorder, but they [the Germans] accepted that. Different people, of course, had different views. My impression that first year was that probably Hitler shouldn't be taken too seriously. Politics in Germany seemed a great big mess. I distinctly remember buying a pamphlet that was labeled "The 27 Parties of Germany." There were 27 of them, and the NSDAP—the Nazi party—was just one.

From 1933, MacLane remembered the Reichstag fire (February 27) and the March 5, 1933, elections, after which he recalled all sorts of regulations, talk, and some unpleasantness, but largely suppressed his memory of the time. As for McShane, he remembers discussing politics with MacLane and the Göttingen *Privatdozenten* during the autumn and winter of 1932–33, and claims that though he and his wife spent New Year's Day 1933 in Berlin, they heard nothing of Nazi riots taking place there until they received newspaper clippings from worried relatives.[87] The attitudes of American student visitors might well

[83] Max Zorn's description of Blaschke in an interview, Mar. 18, 1991.

[84] For example, he collected signatures on a petition for Reidemeister's retention. For a copy of Blaschke's petition, and his request for signatures, see the personal papers of Hellmuth Kneser in the private possession of his son Martin Kneser, Blaschke to Kneser, June 18, 1933. These are hereafter cited as HK. I am indebted to Prof. Martin Kneser for permission to see and to copy some of these papers.

[85] According to an interview with Werner Burau (Jan. 31, 1988), Reidemeister helped Blaschke get fully reinstated. In fact, though, he argued for Blaschke's being pensioned off with a research contract. See below, chapter 8.

[86] Reid 1976: 130. One should also note that MacLane's "Hitler shouldn't be taken too seriously" was less than a year after Hitler's surprising success in the 1930 elections.

[87] Reid 1976: 130.