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**Edited by Diana Kormos Buchwald, Tilman Sauer, Ze'ev Rosenkranz, Josef Illy Imes
& Virginia Iris Holmes:**

The Collected Papers of Albert Einstein, Volume 10: The Berlin Years

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INTRODUCTION TO VOLUME 10

This volume, presenting 465 items of correspondence, is divided into two parts.

The first half of the volume presents 211 supplementary letters to the correspondence already published in Volumes 5, 8, and 9 for the period May 1909 through April 1920. Of these, 124 letters, most of them written by Albert Einstein, originate from the bequest of family correspondence deposited at the Albert Einstein Archives at the Hebrew University in Jerusalem by Margot Einstein (1899–1986), who stipulated that the material remain closed for twenty years after her death. Sixty-six letters for this period were obtained from the Heinrich Zangger manuscript collection of the Central Library in Zurich, where it was deposited by the estate of Gina Zangger (1911–2005). Twenty-one additional letters from other repositories are also included.

The second half of the volume presents 254 letters as full text from among a total of 614 extant correspondence items for the period May through December 1920. The editors have sought to present those letters that are representative and significant for understanding Einstein's work and life. Correspondence that is not presented as full text is abstracted and listed chronologically in the Calendar at the end of the volume.

The letters for the years 1909 through 1920 presented in the first half of this volume provide the reader with substantial new source material for the study of Einstein's personal life and the relationships with his closest family members and friends. With the exception of Einstein's early correspondence with Mileva Marić prior to their marriage in 1903, which was published in Volume 1 and contained a number of letters written by both of them, the subsequent family correspondence available until now has mainly comprised letters written by Einstein himself to Mileva Einstein-Marić and their two sons, Hans Albert and Eduard, in Zurich, and a small number of missives to Elsa Einstein, his cousin in Berlin, who became his second wife in 1919.

The current volume presents for the first time in this series letters written by Hans Albert and Eduard Einstein. It also includes for the first time since Volume 1 a number of letters written by Mileva Einstein-Marić. The largest group of letters

written by Einstein between April 1916 and October 1919, mainly in the form of postcards, is addressed to Elsa Einstein, from whom no letters are extant for these years, most likely because, as early as April 1912, Einstein had promised to “always destroy” Elsa’s letters (see Vol. 5, Doc. 389). The second largest group of newly available letters written by Einstein is addressed to Heinrich Zangger.

This supplementary correspondence with members of his families in Zurich and Berlin, as well as with Zangger, complements the family correspondence already published in previous volumes. Together, this material provides the reader with a much richer and fuller picture than we have had to date of Einstein’s personal life and the many hardships and deprivations Einstein and his family members faced during the years of World War I and its aftermath: illnesses, malnutrition, financial worries, separation, divorce, and remarriage.

In addition, the supplementary correspondence also includes nine letters written in 1909 and 1910 by Einstein to the mathematician Vladimir Varićak, with whom Einstein had a published dispute in 1910 on the reality of relativistic length contraction (*Einstein 1911f* [Vol. 3, Doc. 22]). Varićak was interested in an interpretation of relativity theory in terms of Lobachevsky’s geometry. The letters by Einstein deal with the problem of a relativistic definition of rigid bodies and its intricacies for non-uniform and rotational motion.

The family correspondence presented in the second half of this volume contains new information on Einstein’s personal life during the last eight months of 1920, such as his first vacation with his sons in southern Germany and his renewed attempts to move his Zurich family there. The few letters by Elsa Einstein reveal her own perspective on her relationship with Einstein.

The second half of the volume also offers insight into specific scientific issues that Einstein focused on during this period, his associations with fellow physicists in Europe (most notably in Germany and Holland) and, by degrees, also in the United States, and his lectures on the special and general theories of relativity within Germany and during his trips to Holland, Denmark, and Norway. The documents shed new light on the challenges Einstein faced as a result of his recently acquired celebrity status, and his subsequent entrance into the public arena, primarily through a series of increasingly acrimonious attacks directed at relativity. We learn of Einstein’s own reactions to these new aspects of his career, as well as those of his family members, his close circle of friends, his colleagues, and, for the first time on a larger scale, of the general public. They illustrate the evolving popular perceptions of science and the scientific community in Germany and beyond.

The successful completion of the intricate process of Einstein’s appointment as Special Professor at the University of Leyden led to his well-known inaugural lecture on “Ether and Relativity” in October 1920. The letters contained in the present

volume document in detail his sojourns in the Netherlands and the hospitality of many Dutch colleagues. But it is his connection with Paul Ehrenfest that emerges from the correspondence as one of the most significant and intimate bonds among all of Einstein's personal and scientific human ties during this period.

I

In the spring of 1914, Albert Einstein traveled from Zurich via Leyden to Berlin to take up his new position as a permanent member of the Prussian Academy of Sciences. By the summer of that year, Einstein and his wife, Mileva Einstein-Marić, had separated. Mileva returned to Switzerland with their two sons, Hans Albert and Eduard, the day before the outbreak of World War I. Einstein continued to remain in Berlin for almost two decades. During the years 1915–1920, he traveled to Switzerland five times: he visited his sons in the summer of 1915, in the spring of 1916—when he renewed his attempts to obtain a divorce from Mileva—, and the summer of 1917. In early 1919, he again traveled to Zurich, where the divorce from Mileva was finalized, and delivered a series of guest lectures on relativity at the university. In June 1919, Einstein married his cousin Elsa Einstein in Berlin, and soon thereafter visited with his sons and his terminally ill mother, Pauline, and lectured again in Zurich.

The supplementary correspondence in this volume presents 149 letters written by Einstein, mostly during the years 1916 through 1919, of which 67 addressed to Elsa Einstein, 55 to Heinrich Zangger, and the remaining 27 to other family members, friends, and colleagues. Einstein wrote to Elsa two series of letters and post-cards during his trips away from Berlin in 1917 and 1919. His letters to Zangger, who had become Einstein's intermediary in his dealings with the Einstein family now living in Zurich, are most numerous for 1917, a year during which Mileva Einstein-Marić was hospitalized for extended periods of time. The care of their sons and the attendant financial arrangements appear as Einstein's primary concerns in these letters.

Among the 61 supplementary incoming letters for the years 1915 through 1919, 29 were written by Hans Albert and Eduard Einstein—often jointly, and sometimes accompanying letters from Mileva—during the five years after their parents' separation, and 12 were sent by Mileva in 1918, the final year of the marriage. These letters complement the extant correspondence already published in previous volumes, which contained 32 letters to Mileva and 34 letters to the boys written by Einstein during this same period.

The supplementary family correspondence also documents the involvement in family matters of Einstein's sister, Maja Winteler-Einstein, of her husband, Paul

Winteler, as well as that of Einstein's old friend Michele Besso and his wife, Anna Besso-Winteler, Paul Winteler's sister. The Zangger, Winteler, and Besso families offered to assist, and were called upon to sustain, both Einstein and Mileva in the five-year separation that coincided with the years of World War I, and participated in decisions concerning the care of Einstein's sons.

Einstein and Elsa Löwenthal, née Einstein, were related as cousins on both their maternal and paternal sides, and had been involved romantically since 1912. Elsa had been a significant reason for Einstein's acceptance of the Berlin appointment.^[1] In 1916 they still maintained separate households—Einstein in his bachelor apartment in Wittelsbacherstrasse, and Elsa with her two daughters, Ilse and Margot, and her parents, Rudolf and Fanny Einstein, at Haberlandstrasse, both in southwest Berlin. The extant correspondence with the Einstein family in Berlin consists almost exclusively of the letters Einstein sent to them. Less than a handful of letters from Elsa Einstein are known from this period. As Einstein generally wrote to Elsa and her daughters during his sojourns away from Berlin, his almost daily missives resemble a travel diary in postcard form, dating from the spring of 1916 to the fall of 1920—although there are no letters extant for the year 1918.

The first group of postcards to Elsa Einstein published here stems from Einstein's trip to Switzerland in April 1916 to visit his sons, whom he had not seen since September 1915, and to go on a hiking tour with Hans Albert. During this visit, Mileva Einstein-Marić, from whom he had been separated for almost two years, apparently disputed that she had previously agreed to a divorce (Doc. 8, 210a).^{*} The next series of postcards to Elsa dates from Einstein's stay with the Ehrenfest family in Leyden in the fall of 1916. He related that he was impressed by the cultural atmosphere, and with the reception of relativity in the Netherlands (Docs. 8, 261b and 262b).

The letters from Hans Albert Einstein date from 1915, just before his eleventh birthday, to 1920. They range from comments on his young brother's comical mispronunciation of words and the retelling of Eduard's dream that their father was living with them, to reports on his piano playing of sonatas by Haydn and Mozart in 1915 and of the more complex works by Beethoven, Brahms, and Schubert in 1920 (Docs. 8, 69a and 69b, and Doc. 9, 288a). Hans Albert shared his love of craftsmanship with his father, by sending him a sketch of a model sailing ship he was carving out of wood (Doc. 8, 278a) and later discussing model trains and airplanes. The let-

^{*} Volume 8, Doc. 210a, published in the present volume. This abbreviated notation will be used in this Introduction in order to distinguish the supplementary correspondence items in the present volume from those published in previous volumes.

ters reveal the older son's perspective on weighty family matters, the demanding pressures and responsibilities thrust upon him at a young age, and his unwillingness to be a conduit between his estranged parents, urging Einstein to communicate directly with Mileva about vacation arrangements and financial issues (Doc. 8, 91a). During Mileva's several months-long stays in the sanatorium Theodosianum in Zurich, following a nervous breakdown in spring 1916, the sons were in the care of a housekeeper. By April 1917, Mileva's health had deteriorated again, and thirteen-year-old Hans Albert was taking care of her by himself. Money was hard to come by, given that Einstein's payment transfers to Switzerland were not always on time, due to a variety of reasons. By the end of the month, both Mileva and Eduard were hospitalized at the Bethanienheim hospital in Zurich—Mileva because of chronic nerve pressure on her spine, and Eduard because of an inflammation of the lungs. Hans Albert himself entered a hospital for a short period, and was then taken in by the Zangger family (Doc. 8, 330a).

In his letters to Heinrich Zangger published in Volumes 5 and 8, Einstein touched upon many topics of mutual interest, expressed personal sentiments and impressions, and often stressed the importance to him of their friendship.^[2] A professor of forensic medicine at the Swiss Federal Institute of Technology (ETH), Zangger had been instrumental in Einstein's appointment to a new chair of theoretical physics at the ETH in October 1911.^[3] Einstein had regularly corresponded with Zangger,^[4] mostly on scientific subjects. He had discussed the first Solvay Conference of 1911 and new directions his work was taking,^[5] as well as opinions on current research and on the qualifications of colleagues. He often asked for advice, and conveyed much gratitude for the sustained assistance Zangger offered to all members of Einstein's Zurich family over the years. With Einstein's move to Berlin and his separation from Einstein-Marić, Zangger increasingly took on the role of intermediary with his first family.^[6] Einstein often consulted him about his family's illnesses,^[7] wrote about the difficulties of the separation, and commented on Zangger's proposals that Einstein move back to Zurich.^[8]

The supplementary correspondence with Zangger in the present volume covers similar themes, but with a greater emphasis on personal matters, worries, and family crises, ranging from Einstein's feelings about Einstein-Marić, his sons, and their separation (Docs. 8, 41a, 96a, 159a, and 161a), to his contemplated second marriage (Doc. 8, 196a). The war, his opposition to it, and his sense of alienation from some of his academic colleagues in Berlin (Doc. 8, 45a) come to the fore, as do the difficulties of crossing international borders (Docs. 8, 118a, 232a, and 352a) and the widespread hunger, economic hardship, and rationing (Docs. 8, 237a, 247a, and 291a).

Scientific topics remained an important aspect of their exchanges in the following years, with Einstein reporting on progress in his work (e.g., Docs. 8, 41a, 144a, and 370d), and Zangger inviting Einstein to a conference he was organizing on the concept of probability (Doc. 8, 533a). In several letters, Einstein and Zangger shared their mutual dismay at the ravages of World War I (see, e.g., Docs. 8, 34a, 159a, and 261a). The letters also address Einstein's interventions on behalf of his friend Friedrich Adler, who was awaiting sentence in Vienna for the assassination of the Austro-Hungarian prime minister, Count Karl Stürgkh (Docs. 8, 326a and 330b). In August 1917, Einstein presented his vision for a postwar pacifist organization of nations (Doc. 8, 372a).

About twenty letters, mostly written by Einstein, address tentative plans for resolving the recurring crises in Einstein's Zurich family (e.g., Docs. 8, 276a, 332a, and 471a). The letters often touch upon the health problems of Einstein-Marić (e.g., Docs. 8, 242a, 250a, and 269a), of Einstein himself (Docs. 8, 287b, 299a, and 326a), of their son Eduard (Docs. 8, 352a, 361e, and 367b), or of all three of them (Docs. 8, 308a and 391a). This is true especially during the most difficult period in early 1917 when Einstein doubled up his lectures in Berlin and moved ahead his planned visit to Zurich. With Hans Albert, he planned to visit Eduard, who had been moved to the sanatorium Höchwald in Arosa (Doc. 8, 344a). In June 1917, Hans Albert, recounting his difficulties with Latin and calling himself a "Sauerkrautlateiner," reported that he had read his father's recently published popular work on the theory of relativity, and that he was looking forward to having the second, more difficult half of the book explained to him by his father when they meet (Doc. 8, 346a).

During this trip to Switzerland and southern Germany, begun at the end of June 1917, Einstein sent Elsa Einstein a series of twenty-eight postcards and one letter over a period of two months. While stopping over in Heilbronn to visit his mother, Einstein reported to Elsa that he was keeping to the prescribed dietary regime after his prolonged bout with gastric ailments. He repeatedly asked that Elsa join him on a vacation in southern Germany on his way back to Berlin, so that she might have some "freedom" from her roles as daughter and mother (Doc. 8, 370e).¹⁹¹ He relayed the pleasures of his stay in Lucerne with Hans Albert in the home of his sister, Maja, and her husband, Paul Winteler, whose lifestyle he praised and found "unutterably comfortable"—telling Elsa that they too should try to live in such a way, a recurring theme in his desire to leave Berlin and pursue a calmer existence (Doc. 8, 361a). After a meeting with Marcel Grossmann a year later, he wrote to Elsa that he was considering leaving Berlin and taking up a position at the University of Zurich. This announcement apparently upset Elsa, since soon thereafter Einstein reassured her that he was only contemplating such a possibility, and that they would remain in Berlin (Docs. 9, 72e, 74d, 77a, and 79a). But even in 1920, following the

anti-relativity attacks of that summer and his assurances to his colleagues that he would remain in Berlin, Einstein reiterated to Elsa his wish of purchasing a sailboat and a house away from Berlin, a city he found “nerve-wracking” (Doc. 149).

In the letters to Elsa of 1917, Einstein described Hans Albert, whom he had not seen since April 1916, as “a fellow one could only wish for,” despite his being on occasion “quite recalcitrant,” “clearly under [his] mother’s influence.” In Arosa, where he visited his younger son, who suffered from repeated illnesses, he was pleased to see how “splendid” Eduard looked, his complexion “as healthy as that of a peasant boy.” In Einstein’s opinion, their mother’s absence had a positive effect on both sons. He enjoyed their company and, despite the frequent illnesses, now reported that he did not believe there was anything seriously wrong with Eduard. He also reassured Elsa that “our gals” Ilse and Margot were no less dear to him (Docs. 8, 361b, 361c, 361d, and 361f).

Einstein’s own health problems, and the scarcity of appropriate food, were mitigated during the war years through the help of the Zangger and Winteler families, who sent him food packages (see Docs. 8, 291a, 297a, 357a, 661a, and 661b). His correspondence with his sister Maja Winteler-Einstein often revolved around the worsening of daily conditions not only in Germany, but in Switzerland as well (Docs. 8, 475b and 561b, and Doc. 9, 128a), the influenza epidemic (Doc. 8, 561a), the Swiss general strike (Docs. 8, 659a and 659b), various financial matters, such as their joint investment in the Schweizerische Auer-Aktien-Gesellschaft (Docs. 9, 96a, 206b, and 239a), and the care of their terminally ill mother, Pauline (Docs. 9, 96a, 128a, and 206a).

By January 1918, the Zurich family’s financial difficulties intensified due to the expenses for Eduard’s medical care in Arosa. Hans Albert requested that Einstein send the next quarterly payment to cover their costs earlier than planned, as the increasingly unfavorable Swiss-German currency exchange rate was affecting them adversely. A few weeks later, while expressing concern for Einstein, who had been bedridden from December 1917 until April 1918, Hans Albert also voiced indignation at his father’s accusation that Eduard was being “molycoddled.” He wrote that Einstein lacked a proper understanding of the family’s difficulties, and that he knew Heinrich Zangger, without whom they could not have coped, far better than he knew his own father (Docs. 8, 435a and 442a).

In February 1918, Mileva Einstein-Marić, in her first letter in this volume, reacted negatively to Einstein’s renewed attempt to obtain a divorce. A month later, she seemed prepared to accept his proposed terms, with the added provisions that her widow’s pension in the event of Einstein’s death be guaranteed, and that in the future he communicate and send payments to her directly, rather than through intermediaries. Her frail physical state, and the prolonged periods of time spent in hospitals and sanatoria—the worst of which had occurred between the summer of

1916 and the fall of 1917, added to the difficulty of arranging for the permanent care of the boys, but once her health improved in early 1918, Mileva made it clear that she would not agree to Einstein's proposal that Hans Albert be taken out of her care (Docs. 8, 461a, 475a, 482a, and 482b).

Einstein canceled an intended visit to Zurich and a walking tour with the children in the Alps in the summer of 1918. In his first letter to be published in this series, from June 1918, which accompanied a letter from Hans Albert, the almost eight-year-old Eduard expressed his disappointment that Einstein canceled his planned vacation with them. In subsequent correspondence, he reported on his readings, hobbies, and playmates, and his regret at having to miss a performance in a school play because of poor health (Docs. 8, 557c and 659c, and Doc. 9, 183a). Within a period of four months, Eduard had been afflicted twice with Spanish influenza (Docs. 8, 557a, 588a, and 646a). Hans Albert, too, wrote of his disappointment, and one month later explained that it was impossible for him to visit Einstein in Germany, as he was indispensable in the daily care of the family (Docs. 8, 557b and 588b).

By the end of June 1918, Einstein, Elsa, and her daughters left for a two-month stay at the seaside resort of Ahrenshoop on the Baltic Sea. During that period, Einstein discussed with Swiss colleagues a joint appointment with Zurich. Although Einstein declined, he accepted the invitation to give guest lectures of 5–6 weeks each, twice a year. During that summer, the administrative steps leading to a final divorce from Mileva took place in Zurich. An agreement was signed in June. At the end of August, Einstein sent a formal letter, admitting to an adulterous relationship, to their mutual friend Emil Zürcher Jr., who acted as Mileva's attorney. After the end of World War I, in late December 1918, Einstein gave a deposition in Berlin for the Zurich divorce court, and then traveled in early 1919 to Switzerland, where he delivered the first series of guest lectures and finalized his divorce on 14 February.

Four weeks after his marriage to Elsa Einstein on 2 June 1919, only a few days after the solar eclipse whose observation would confirm his general theory of relativity, Einstein embarked on a seven-week trip away from Berlin. He traveled to Switzerland to be with his terminally ill mother, spend time with his sons, and lecture on relativity in Zurich. In a series of twenty-three postcards to Elsa, Einstein recounts his weekly commute between Zurich and the sanatorium in Lucerne where Pauline Einstein was hospitalized, and his distress at "the thoughts of my mother's torments." But he derived "indescribable joy" from the company of Hans Albert, with whom he was engaged in the construction of an airplane model. Elsa, however, was displeased that Einstein had chosen to stay temporarily in "the

lioness's den," the Zurich apartment from which Mileva was absent (Docs. 9, 70b and 86a).

Upon his return to Berlin in mid-August 1919, Einstein gradually began to receive reports of the eclipse expedition mounted by British astronomers. By September, he knew that successful photographs had been taken, and was informed by Hendrik A. Lorentz that Arthur S. Eddington had obtained important confirmatory data. Immediately after publishing a note on the expedition's results, Einstein left on 18 October on a two-week trip to Holland, staying at the home of his close friends Paul and Tatiana Ehrenfest. On 23 October, he wrote to Elsa that Eddington had reported to Leyden physicists that the general theory of relativity had been verified, yet his delight was clouded by his mother's condition. He commiserated with Elsa about the difficult time that awaited her in light of the imminent transfer of Einstein's dying mother from Lucerne to Berlin (Docs. 9, 148b and 151a).

In October 1919, Einstein informed his Zurich family that they would have to move to southern Germany, since he found it financially impossible to continue to support them in Switzerland (Vol. 9, Doc. 135). Mileva rejected the demand, explaining that, given her unstable health, she would lack appropriate assistance in Germany. She also argued that Hans Albert should not interrupt his schooling, and that the only chance for an improvement in their financial situation would be afforded if Hans Albert were to become independent as soon as possible (Docs. 9, 148a and 183c). By early 1920, the Zurich family members were again dispersed, and their apartment was leased: Eduard was in a sanatorium in Aegeri because of a relapse of his pulmonary illness; Mileva visited her ailing parents in Novi Sad; and Hans Albert once again stayed with the Zangger family (Doc. 9, 240a).

In July 1920, by which time Mileva and the sons had returned to their Zurich apartment, Einstein proposed that he vacation with the boys in southern Germany in the autumn (Doc. 70). During this enjoyable sojourn in Benzingen in early October, Einstein gave expression to ambivalent feelings towards his sons: he wrote Elsa that the boys had "developed splendidly," yet also confessed that he could not see them as his "temporal continuation"; they had "large thick hands" and "in spite of all their intelligence," there was "something indefinably four-footed" about them (Doc. 179). Einstein renewed his attempts to move Mileva and the boys to Germany. In reaction, Hans Albert beseeched his father to forgo this plan and allow him to complete his schooling without interruption (Doc. 212), although Einstein continued to insist that Hans Albert could attend the "excellent" polytechnic school in Darmstadt (Doc. 232). In fact, during 1920, Einstein's financial situation was improving significantly, due both to substantial raises in his salary and the brisk sales of his publications on relativity (see Calendar).

II

The public events directed against relativity in Germany in the summer of 1920 constitute an important topic in Einstein's biography, as reflected in the correspondence covered by the second half of this volume. In August 1920, a lecture series was announced that would denounce Einstein as a fraud and a propagandist. A few weeks later, at the first postwar meeting of the Gesellschaft Deutscher Naturforscher und Ärzte (GDNÄ) in Bad Nauheim, he became embroiled in a standoff with the Nobel prize winning physicist Philipp Lenard on the merits of relativity theory.^[10] The public acclaim accorded Einstein, "a Jew with liberal international views," as he described himself (Vol. 7, Doc. 45), had begun to upset reactionary circles.

On 6 August, the right-wing publicist Paul Weyland, in an inflammatory article in the nationalist daily newspaper *Tägliche Rundschau*, accused Einstein of plagiarism and propaganda tactics, charges that had earlier been leveled against him by Ernst Gehrcke, a spectroscopist at the Physikalisch-Technische Reichsanstalt in Berlin.^[11] In a shrill and poorly concealed anti-Semitic tenor, Weyland described Einstein as having "a particular press, a particular congregation," that kept feeding pro-Einstein articles to the public. To a contemporary audience, the anti-Semitic insinuations must have been unmistakable. During the previous months, the widely circulating liberal *Berliner Tageblatt* had reported the 1919 solar eclipse results, and an article praised in hyperbolic prose the "highest truth, beyond Galileo and Newton, beyond Kant" unveiled by "an oracle from the depth of the skies." Issued by the Jewish publisher Rudolf Mosse, the paper was known in anti-Semitic circles as "das Judenblatt"—"the Jew paper"; the article's author, the journalist Alexander Moszkowski, a close acquaintance of Einstein, was the author of a book on Jewish jokes. Einstein himself had written a short note on the eclipse results in the highly visible science journal *Die Naturwissenschaften* (*Einstein 1919d* [Vol. 7, Doc. 23]), whose editor in chief, Arnold Berliner, was also Jewish. On 14 December 1919, the *Berliner Illustrierte Zeitung* had published a close-up portrait photo of Einstein across its front page. The caption read: "A new eminence in the history of the world: Albert Einstein, whose theories signify a complete revolution of our understanding of nature and whose insights equal in importance those of a Copernicus, Kepler and Newton." The journal was owned by the Ullstein publishing house, whose proprietors were also Jewish. Weyland ranted: if now "German science" closed ranks, acted against him, "and settled scores," Einstein would only have himself to blame.

In mid-August 1920, notices appeared in the right-wing newspapers *Der Tag* and *Tägliche Rundschau*, announcing twenty anti-relativity lectures. These were to

take place in the main concert hall (with a capacity of over 1,600) of the Berlin Philharmonic. On 24 August, Weyland and Gehrcke were the first speakers. In his critique of relativity, Weyland produced as proofs of his assertions a cascade of citations from the “Einstein-press.” In particular, he targeted the coverage of the eclipse results in *Die Naturwissenschaften* —“from this headquarters [of Einstein people], popular sentiment is roused”— and the comparisons with Copernicus, Kepler, and Newton in the *Berliner Tageblatt* and *Illustrierte Zeitung*. Einstein himself was to blame: a single word from him to this “press, which has excellent connections with his circles,” would have brought an end to the “wave of glorification and admiration.” According to Weyland, relativity was mere fad and fiction. In his lecture, Gehrcke also claimed that relativity was nothing but “hypnosis of the masses” (*Gehrcke 1920b*).

Einstein was present at the event. He responded to the campaign on 27 August with a polemical article in the *Berliner Tageblatt*. Not only Weyland, but also Gehrcke and Lenard, who had in private strongly supported Weyland’s efforts, were rebuked by his sharp pen (*Einstein 1920f* [Vol. 7, Doc. 45]; see also Doc. 148). Einstein also seriously contemplated leaving Berlin and Germany, particularly because he believed that Weyland had wide support in scientific circles (Doc. 134), and this, too, was aired in the press.

Following these events, Einstein received many letters of support. Outrage was expressed at the anti-Einstein campaign by correspondents from all walks of life: by Toni Schrodtt, who described herself as “just a middle-class wage-earning girl” (Doc. 121), and Elsa Countess von Schreinitz und Krain (Doc. 122); by Jews (Docs. 117, 136) and by priests (Doc. 124); by students and professors (Docs. 111, 112, 123). Ina Dickmann, a member of the audience at the Philharmonic, pleaded with Einstein not to leave Germany, particularly as the country found itself in such troubled times (Doc. 113).

Notable colleagues, such as Fritz Haber and Max Planck urged Einstein to remain in Berlin (Docs. 119 and 133). Prussia’s minister of education, the social democrat Konrad Haenisch, wrote a letter of support, which was published in the daily press (Doc. 135). A telegram arrived from a group of prominent cultural figures, including the theater director Max Reinhardt and the writer Stefan Zweig, who sent a personal letter as well three weeks later. The feminist and fellow member of the pacifist League of the New Fatherland, Minna Cauer, also expressed her support (Docs. 117, 151, and 152).

Paul Ehrenfest, his close friend, assured Einstein that, were he to decide to leave Germany, arrangements could be made to accommodate him with a full-time position in the Netherlands, yet he also conveyed that he viewed Einstein’s caustic reply in the *Berliner Tageblatt* as misguided (Docs. 114 and 127).

The president of the German Physical Society (DPG), the physicist Arnold Sommerfeld, twice wrote Einstein (Docs. 131 and 147). He asked Einstein not to “flee the flag,” arguing that Germany had treated Einstein better than he would have been treated elsewhere during the war. Sommerfeld initiated an attempt to mediate between Einstein and Lenard, an enterprise in which he was also motivated by his worries concerning tensions between the DPG’s Berlin members and some of those from outside the capital, in particular Johannes Stark, Wilhelm Wien, and Lenard. These two groups were expected to come head-to-head at the upcoming meeting of the GDNÄ in Bad Nauheim, as possible reforms of the DPG were to be discussed. Stark, Wien, and Lenard stood far to the right of the political spectrum and rejected the constitutional democracy of the Weimar Republic, whereas Einstein felt that in the new republic “his political wishes had come true.”^[12]

The letters he received also illustrate Einstein’s new status among Jews following his rise to fame. One letter writer specifically mentioned swastikas—which had been displayed at the Philharmonic—and anti-Semitism; another compared him to Baruch Spinoza and Moses Mendelssohn; were Einstein to move to Palestine, an artist promised to forge the gates of the planned Hebrew University in his honor; and the Zionist Association of Eastern Galicia informed him they were proud to “count him among the Jews” (Docs. 115, 118, 136, and 178).

Ten days after the first rumors of Einstein’s intention to leave Germany appeared in the press, we have the first evidence of Einstein’s replies in the aftermath of the affair. Haenisch was one of the first to receive a reply: Einstein had decided against leaving Berlin (Doc. 137). To Ehrenfest he expressed regret about his article, yet emphasized that “as a democrat” he had felt a need to inform the public of his opinion on the charges repeatedly leveled against him. On the other hand, Einstein by now also believed that “the anti-relativity company has pretty much collapsed” and jokingly remarked that he was not going to “flee the flag, as Sommerfeld puts it” (Doc. 139). It appeared that Weyland’s initiatives were not so widely supported in the scientific community, and only one more of the announced anti-relativity lectures was subsequently held.

In “My Response. On the Anti-Relativity Company” (*Einstein 1920f* [Vol. 7, Doc. 45]), Einstein had challenged the opponents of relativity to a debate at the GDNÄ meeting a month later. Well before the anti-relativity campaign had begun, Einstein had already proposed to the mathematicians Robert Fricke and Arthur Schoenflies to hold a general discussion on relativity at the conference, as an alternative to an invited lecture (Docs. 48 and 50). But now, many, including the editors of the German press, expected a sensational “Einstein debate.” Eventually, the brief fifteen-minute “duel,” or “cockfight” between Einstein and Lenard (Doc. 163), of which there is only an incomplete account (see Vol. 7, Doc. 46), was described by

newspapers as an objective exchange of arguments, where an “exemplary [...] calm” had prevailed. Nevertheless, tensions had been high, and the exchange strongly affected Elsa Einstein, who fell ill thereafter (Docs. 154 and 166).

Following these events, some among Einstein’s friends and colleagues came to fear the possible consequences of any further publicity of Einstein and his work. When in early October 1920 a book by Alexander Moszkowski, based on conversations with Einstein, was about to appear, Max and Hedwig Born vehemently urged Einstein to stop its publication. They argued that the book might spark a new negative campaign against Einstein, appearing to confirm Weyland’s charges of self-promotion. From her reading of Moszkowski’s other works, Hedwig Born expected the planned biography to be “told with Jewish impudence,” and was particularly fearful that such a work would provide fodder to those who accused Einstein of “self-publicity.” Max Born was even more alarmist than his wife: if the book were to be published, Einstein’s “Jewish ‘friends’ will have achieved what the anti-Semitic gang could not.” Evidently affected by the Borns’ concerns, while away in Holland, Einstein wrote to Elsa that the publication of the biography would be “catastrophic.” To his mind, this matter was “far worse” than the anti-relativity propaganda and lectures of that summer (Docs. 166, 174, 175, 180, 182–185, and 187). In the end, the book appeared with a disclaimer in its introduction, relieving Einstein of any responsibility for its contents (*Moszkowski 1921*).

Yet Einstein had formed his own opinions on the matters of anti-Semitism and the status of the Jewish community in Germany, arguing that neither assimilationism nor activism on the part of Jews would suffice to eradicate anti-Jewish sentiment among certain segments of the German public (see Vol. 7, Docs. 34, 35, and 37). When in September 1920 the Association for Combating Anti-Semitism offered him a place on their executive board, Einstein asked his step-daughter and secretary Ilse to reply that they should refrain from electing him to their board as he did not believe that “we Jews can contribute directly to combating anti-Semitism” (Doc. 150). And when in December 1920 the official Jewish community of Berlin asked him to pay long overdue congregational taxes, he informed them that he would not formally join the Jewish community: although he identified himself as Jewish, he was distanced from “traditional religious forms.” He was prepared, however, to make an annual contribution to a Jewish charity (Doc. 238).

Over a period of less than a year, Einstein acquired a celebrity status never before accorded a living scientist: after the initial public reception of general relativity and its wide press coverage in late 1919, Einstein faced attacks against his scientific work as well as his Jewish identity and leftist political views. The “Uproar in the Lecture Hall” in February (see Vol. 7, Doc. 33), the Berlin Philharmonic hall event in August, and the relativity debate in Bad Nauheim and the “Moszkowski affair”

in October 1920 placed him at the center of public and private controversies and occupied much of his energy. Although Swiss colleagues repeatedly tried to lure him back to Zurich (Doc. 192), and although Ehrenfest suggested the possibility of a full position in Leyden where Einstein always greatly enjoyed spending his time, he stayed in Berlin. While some correspondents, among them Sommerfeld, had appealed to a sense of patriotism (see also P. Havel, 28 August 1920, in Calendar), Einstein felt a responsibility to avoid the embarrassment and sense of betrayal that such a departure might provoke in his Berlin colleagues, whose support he greatly valued (Docs. 211, 239, and 245). And while Einstein himself played down the newspaper reports published abroad (see Doc. 239), German officials viewed these with some concern. The German envoy in London, Friedrich Sthamer, assessed that the British press's coverage of the "fierce attacks" against Einstein had made a very unfavorable impression, particularly since "Professor Einstein is at the moment for Germany a cultural factor of the first rank, as Einstein's name is known in the widest circles. We should not chase away from Germany such a man, with whom we can make real cultural propaganda."^[13]

The event at the Philharmonic came in the midst of other political turbulence. In the aftermath of the reactionary Kapp Putsch in mid-March 1920 and a wave of radical rightist violence, pacifists and others portrayed as "traitors" to Germany became targets of violence.^[14] In May, Einstein signed an appeal of German academics supporting a republican constitution, and in June he expressed again his international orientation and identity (see Docs. 3 and 56). In the first elections under the new constitution on 6 June 1920, the "Weimar coalition" was defeated, with heavy losses to the Social Democratic Party and especially the German Democratic Party, and political allegiances became increasingly polarized.^[15] During the summer of 1920, pacifist academics in Berlin were threatened and intimidated. Hellmut von Gerlach canceled a lecture and considered leaving Berlin because of threats against his life. Emil J. Gumbel was beaten and targeted for murder, and there were veiled assassination threats in the rightist press against Georg Nicolai, whom Einstein had earlier supported.^[16] As reflected in the present volume, nationalist and reactionary tendencies also pervaded academic life elsewhere, such as at the University of Rostock (Doc. 12) and at the University of Tübingen (Doc. 38).

Einstein's new fame led many organizations to seek his endorsement. In July 1920, he was approached by associations advocating peace, social justice, and international student exchanges (Docs. 73, 74, 86, 87, and 141), and in October and November, he intervened on behalf of József Kelen, a Hungarian engineer on trial after the defeat of the Hungarian Soviet Republic (Docs. 186, 194, 200, and 202).

III

Ever since Einstein's first visit to Leyden in 1911, his ties with its university had been special, at first because of the presence of the much-admired Hendrik Antoon Lorentz, and after 1912, because of Paul Ehrenfest, Lorentz's successor. Following their first meeting in Prague in 1912, Einstein and Ehrenfest developed a special and lasting bond, not only as physicists, but also, and perhaps in the first place, as kindred spirits.^[17] In their correspondence, they discussed myriad problems in physics, ranging from relativity theory to statistical physics and quantum theory, kept each other informed about recent experimental investigations, and discussed issues of foundational and philosophical concern. During his visits in Leyden, Einstein grew fond of the Ehrenfests' four children, played music with the family, and spent time with them at the nearby seaside.

But Einstein also enjoyed the company of other Leyden physicists. He engaged in long scientific discussions with Heike Kamerlingh Onnes, director of the cryogenic laboratory at Leyden, the only laboratory at the time capable of the liquefaction of helium. And Lorentz remained a close scientific colleague and fatherly friend, to whom Einstein also turned in matters of international reconciliation after World War I.

In 1919, Ehrenfest tried to associate Einstein with the University of Leyden in a more formal way as a full-time professor. Einstein, however, declined, on the grounds that he could not desert his Berlin colleagues, in particular Max Planck.^[18] Ehrenfest, Lorentz, and Kamerlingh Onnes then conceived a new plan: to create a special chair for Einstein, with minimal obligations. As Special Professor (*bijzonder hoogleeraar*) he should visit Leyden a few weeks every year to hold some lectures. In return, he would receive a generous annual salary of 2,000 guilders. The special chair would be created by the Leyden University Fund, an organization that sponsored activities at the university, such as public lectures, and that derived its income from contributions by students, alumni, and faculty.^[19]

Initially, their plan proceeded smoothly. At its meeting of 9 February 1920, the University Fund agreed with the proposal to create the special chair.^[20] Lorentz expected a decision within at most a few weeks, and preparations were made for Einstein to visit Leyden and deliver his inaugural lecture during the month of May. Einstein completed his lecture on "Ether and Relativity," an homage to Lorentz, and ensured that it would be printed well in advance. Indeed, the printed version of the lecture indicates that it was delivered on 5 May 1920 (Vol. 7, Doc. 38).^[21] But then difficulties arose.

On receipt of requests for the appointment's approval from the University Fund and Leyden's Board of Curators, the Minister of Education, Johannes Theodoor de

Visser, consulted his Board of Supervisors (Commissie van Toezicht), who raised reservations regarding the appointment of Einstein on the grounds of “his political principles.”^[22] They sent the minister an article from a Dutch daily newspaper that mentioned the recent student uproar during Einstein’s lecture at the University of Berlin.^[23] The article identified Einstein as favorably disposed toward the November Revolution, a democrat, and pacifist.^[24] De Visser then received from the Office of the Attorney General a notice stating that, “from the revolutionary side” a certain “Dr. Eisenstein” would be sent from Germany to the Netherlands, traveling with a false passport and with the intention of setting up a Bolshevik propaganda service.^[25] Included was a secret military memorandum of 18 June 1919, which stated that “Dr. Einstein (not Eisenstein) and Countess Olga von Hagen [...] have both lived in Brussels for about three years during the occupation of Belgium, where Dr. Einstein has repeatedly tried to provoke the revolution among the Belgians and Olga von Hagen often wrote under the pseudonym ‘The Red Countess.’ [...] Both persons are being closely watched and their departure for the Netherlands will certainly be promptly reported.”^[26]

The minister invited Cornelis van Vollenhoven, Secretary of the Leyden University Fund, and Nicolaas Charles de Gijsselaar, President-Curator of the University of Leyden and Mayor of Leyden, to a meeting on 26 March.^[27] After the meeting, Van Vollenhoven wrote to the minister on 27 March that there had been a case of mistaken identity: “Professor Einstein [...] is married to a little Jewess who has the same name as he does, does not consort with countesses, and has not lived or stayed in Brussels during the war.”^[28] Apparently, Einstein had been confused with Carl Einstein (1885–1940), art critic and associate of the Soldiers’ Council of November 1918 in Brussels for which he had organized a press service; Countess Aga von Hagen was his partner (Carl Einstein was not related to Albert Einstein).

A few weeks later, on 4 May, minister de Visser inquired of the Dutch Ministry of Foreign Affairs whether indeed this was a case of mistaken identity. He asked for a quick reply, given that Einstein was about to travel to the Netherlands, and the same day, the Ministry of Foreign Affairs forwarded the question by wire to its envoy in Berlin.^[29]

Impatient with the delays in Einstein’s appointment, Kamerlingh Onnes tried to speed up the process by intervening personally. On 10 May, he met with the Dutch Minister of Education and later that day gave an account of the February uproar in the lecture hall in Berlin. He was careful to point out that “Einstein [...] finds that communism is a stupidity.”^[30]

Despite the delays in his appointment, Einstein had nevertheless left Berlin on 6 May for Leyden, where he arrived a day later. It is from this trip that we have the only extant letters from Elsa Einstein to Einstein during the period covered by the

second half of this volume. The correspondence revolves around the two custom-made violins, one of which Einstein was bringing for Paul Ehrenfest. However, the violin was confiscated from Einstein by customs officials at the German-Dutch border. In light of this incident, Elsa chided Einstein as “a little fool, overly clever and so helplessly childish!” The violin was being “liberated” through Elsa’s and Margot’s efforts with the authorities in Berlin (Docs. 10, 20, and 30). From his postcards to Elsa, we learn that Einstein enjoyed Leyden, the company of the Ehrenfests, and the nearby seaside. He held a popular lecture on relativity, which he referred to as a “lecture for children” (Doc. 17). In reaction to the delay in his Leyden appointment, Elsa complained to him about his “socialist disposition.” Since, according to her, he is known as a “raging revolutionary” throughout Europe, she attributed the fact that he had not yet been awarded a Nobel Prize to his leftist tendencies, and urged him to “put an end to this foolish talk” (Doc. 10). She informed him that a “laundry basket full of letters” was awaiting him in Berlin, that “half the world” was buying his portrait by the German-Jewish artist Hermann Struck and sending it to him to request his autograph (Doc. 20). Elsa added that she had discussed with Fritz Haber “all business matters,” a reference to negotiations for an increase in Einstein’s salary (Doc. 30).

While the Leyden appointment was pending, another academic tie to the Netherlands had been formed. On 23 April 1920, the Royal Dutch Academy of Sciences had elected Einstein as a foreign member. The certificate, signed by Queen Wilhelmina, was issued on 19 May, and, while still in Leyden, Einstein accepted his election on the 24th (Doc. 29). Five days later, on 29 May 1920, Einstein was officially inducted during a session of the Amsterdam Academy. His presence in Amsterdam on that day, however, conflicted with earlier plans to attend a special conference of neo-Kantian philosophers in Halle on 29 May, organized by Hans Vaihinger, and devoted to a discussion of the philosophical implications of relativity theory. Vaihinger was promoting a version of neo-Kantian philosophy, dubbed “Philosophy of the As-If” (“Philosophie des Als-Ob”) after the title of Vaihinger’s chief work.^[31] Because Vaihinger’s approach dominated the proposed contributions, the Halle meeting came to be referred to as the “Als-Ob-Konferenz,” which was to coincide with the annual meeting of the Kant Society in Halle, the first since 1914. After initially agreeing to participate in the event, Einstein was warned by Paul Ehrenfest, Max Wertheimer, and Elsa Einstein that his presence would lend credibility to a controversial philosophical approach (Docs. 16 and 23).^[32] In the end, he decided not to attend the conference in Halle, as the “yakkety-yak makes [him] ill” (Doc. 19), stating his obligation to be present at the Dutch Academy session as an excuse (Doc. 41).

During Einstein's stay in Leyden, the Dutch Minister of Education received a report from the Ministry of Foreign Affairs on 22 May to the effect that, according to its Berlin envoy, Einstein's connection to "revolutionary circles" could not be confirmed.^[33] Four days later the minister proposed to the Council of Ministers that it allow the Leyden University Fund to create a special chair in physics.^[34] By the end of May, Einstein returned to Berlin without having delivered his inaugural lecture (Doc. 32).

On 15 June, the Council of State (*Raad van State*, the highest advisory organ of the government) gave its approval and asked the Queen to confirm the decision.^[35] The royal decree was issued on 24 June.^[36] Simultaneously, three curators were appointed to supervise the chair: Joannes A. F. Coebergh, notary; Rudolf J. H. Patijn, Secretary-General of the Ministry of Foreign Affairs; and Pieter Zeeman, Professor of Physics at the University of Amsterdam. However, it emerged that, because Einstein did not hold a Dutch doctoral degree, another special governmental permission was now needed. This necessitated yet another royal decree and another formal procedure. On 12 July, the Leyden University Fund appointed Einstein to the newly created special chair. Cornelis van Vollenhoven, supported by the Curators of the University of Leyden, initiated the new procedure to obtain governmental approval.^[37] The minister consulted once more with his Board of Supervisors, who consented to the appointment, provided that "all doubts have been eradicated regarding the identity of the appointed professor and Dr. Einstein, who was observed in the course of 1919 as decidedly dedicated to the communist principles."^[38] Included was a physical description of the "Communist Dr. Einstein." Finally, on 21 September 1920, seven months after the process had been initiated, Queen Wilhelmina confirmed Einstein's appointment.^[39] At last, the road was finally clear for Einstein to deliver his postponed inaugural lecture.

IV

In July 1920, Paul Ehrenfest first aired the idea of organizing a scientific meeting on various topics related to magnetism and the behavior of solids at low temperatures, and he "burned with impatience" (Doc. 83) at the prospect of discussing these matters later in the year, when Einstein would travel again to Leyden. In August, he informed Einstein that Pierre Weiss, of France, might also be present and expressed his surprise at Einstein's "theoretical optimism regarding the treatment of paramagnetism" (Doc. 99).

Einstein's extended trip in the fall of 1920 took him first to Kiel for a few days, where he gave a popular lecture on 15 September at the "Kiel Autumn Week for Arts and Sciences" and stayed at the home of German entrepreneur and philanthro-

pist Hermann Anschütz-Kaempfe. He then went to Bad Nauheim to attend the GDNÄ meeting, to Stuttgart for another popular lecture held on 28 September in support of the local observatory, and to Benzingen in southern Germany, where he spent a few days with his sons. Einstein arrived in Leyden on 21 October and finally presented his inaugural lecture on 25 October 1920.

Einstein's lecture took place in the midst of the week-long meeting that Ehrenfest organized under the auspices of the Institut International du Froid, devoted to discussions on paramagnetism at low temperatures. In addition to Einstein, Ehrenfest, Lorentz, and Kamerlingh Onnes, the participants included Johannes P. Kuenen, another Leyden physicist, as well as the French physicists Pierre Weiss and Paul Langevin. Referred to as "Magnet-Woche" in Ehrenfest's diaries, the meeting presented an opportunity to discuss cutting-edge problems of both experimental and theoretical condensed matter physics at low temperatures.

Notwithstanding the fact that Einstein delivered his "famous inaugural lecture" (Doc. 183) on the topic of general relativity, the Leyden physicists hoped that his appointment would bring Einstein closer to their own research on condensed matter physics in the low temperature regime. Indeed, with Einstein's professional ties to Leyden, Onnes had cherished the "finest hopes for a flowering of the cryogenic laboratory."^[40] And, in fact, during his visits in the Netherlands, Einstein would spend much time with Onnes discussing research (e.g., Doc. 9, 152a and Doc. 25) and attend experimental demonstrations in his laboratory (Doc. 9). Lorentz, too, had noticed Einstein's interest in solid state physics, and invited him to give a talk at the upcoming 1921 Solvay meeting on the current state of investigations on the gyromagnetic effect as a follow-up on Einstein's experiments performed with De Haas several years earlier (Doc. 49).

Although little is known about the details of the discussions during the "Magnet-Woche," since no formal minutes or reports are extant, we do know that the phenomenon of superconductivity was a topic of debate.^[41] Ehrenfest and Einstein discussed, in particular, the question as to whether superconductors would exhibit some kind of Hall effect. In a letter about which we only know through an excerpt by Ehrenfest and from a manuscript with calculations (Doc. 227 and Appendix), Einstein considered the Hall effect for a perfect conductor, and arrived at consequences that, in principle, would be amenable to experimental verification, even if not with the technological possibilities available to the Leyden laboratory at the time.

Einstein's considerations were based on a particular solution for Maxwell's equations, and were thus of a purely classical nature. The discussions of paramagnetism during the "Magnet-Woche" and in the correspondence with Ehrenfest often involved deliberations on the implications of the new quantum theory for

these experimental phenomena. Einstein, who was very much interested in recent advances in quantum theory, first met Niels Bohr in Berlin in April 1920, and afterwards reported to Ehrenfest that he was “just as much in love with [Bohr] as you are” (Doc. 6). They met again in June 1920, when Einstein gave a lecture on relativity in Copenhagen. A third personal meeting took place in December, when Bohr passed through Berlin to meet his wife, who was returning from Italy (Doc. 236).

V

The public interest in his theory of relativity absorbed much of Einstein’s energy in 1920. He received, and accepted, numerous invitations to give lectures, both technical and popular. He was repeatedly asked for accounts of his theories and, in response to a request by the British journal *Nature*, conveyed to him through his translator, Robert W. Lawson, began composing a brief historical account of the genesis of the theory of relativity (Vol. 7, Docs. 31, 50, and 53). His writings were in high demand and new editions were appearing rapidly both in Germany and abroad (see, e.g., correspondence with Barth, Springer, Vieweg publishing houses in Calendar).

Philosophers, too, started reflecting on the epistemological implications of relativity. As their correspondence shows, Einstein highly valued Moritz Schlick’s writings on his theory (see, e.g. Docs. 47 and 51). In May 1920, he agreed to read a manuscript by Ernst Cassirer (Doc. 11), which he returned, with marginal notes, commenting quite favorably on Cassirer’s account (Docs. 44, 58). In a postcard to Elsa, he wrote that reading Cassirer’s manuscript was “less amusing” than vacationing in Leyden (Doc. 19), but in a letter to Vaihinger recommended that Cassirer, who had written “a very interesting essay on the theory of relativity from the philosophical point of view,” might be asked to contribute an article on relativity that he himself could not write (Doc. 41).

In this volume, we find Einstein also devoting considerable time and effort to a discussion with a critic of relativity. Edouard Guillaume, one of Einstein’s old acquaintances from the patent office in Bern, rejected the theory because it did not retain the concept of a universal time. For Guillaume, time dilation was merely the consequence of the fact that different observers measure the same time with different units. He preferred to dispense with the axiom of the constancy of the speed of light rather than give up the notion of a universal time.

Guillaume’s objections to the theory of relativity were largely based on his failure to understand it. He refused to adopt any rigor in identifying precisely which quantity, measured by which observer, was involved in a given equation. Consequently, he found it easy to generate identities from the transformations available

to him in relativity theory, and he repeatedly insisted that one particular quantity, the “period” of a clock multiplied by the time it measured, was an invariant for any clock.

In their correspondence over the last six months of 1920, Einstein showed a great deal of patience in trying to unravel Guillaume's somewhat convoluted explanations of his relativity theory. Einstein's friend and former collaborator Marcel Grossmann was concerned with the respectful hearing that Guillaume was obtaining for his wrongheaded theorizing in Swiss scientific circles. Even Michele Besso appeared to give some credibility to Guillaume's arguments (Doc. 85). In addition, Guillaume's claim that the failure of solar astrophysicists to find any evidence for the existence of gravitational time dilation was a point in his favor undoubtedly struck a nerve with the supporters of relativity. When Guillaume published a letter describing his main claims in an English astronomy journal, he was rebutted in the same issue by no less a figure than Arthur S. Eddington.^[42] Grossmann wished Einstein to do the same in Switzerland, but Einstein proved reluctant to criticize Guillaume in public.

But there was simply no common ground upon which Einstein and Guillaume could debate. In the end, Einstein could do nothing but say to Guillaume “to do what you just cannot keep yourself from doing” (Doc. 250). He also provided Grossmann with the public statement he sought (Doc. 148). That statement asserted that Guillaume simply did not understand the theory. It seems to have been too harsh to print, and Grossmann published a milder, but still critical, note under his own name.^[43]

Meanwhile, the debate over the gravitational redshift proceeded among the astrophysicists. Although Einstein, in this volume, continued to be convinced that the work of Leonhard Grebe and Albert Bachem had shown the way forward in how the solar redshift data should be interpreted (Vol. 9, Docs. 25 and 57), in practice he accepted that further detailed studies by the astronomers were needed for a final decision. If Einstein's faith in the theory had ever been tested by the emphatic opposition of even such sympathetic solar astrophysicists as Willem Julius (Doc. 8), it was fully restored by the work of Grebe and Bachem. In this he differed from his colleagues, even from the most enthusiastic advocates of relativity theory, some of whom, such as Adriaan Fokker, were on the lookout for a more viable theory in relation to this test (Doc. 40). At the same time, Erwin Freundlich worked to replicate Grebe and Bachem's work, and funds were raised for the Einstein Tower Solar Observatory, where Freundlich would expand his research, even while Einstein entertained reservations about his efforts to observe the gravitational redshift in the spectra of fixed stars (Doc. 101).

In two scientific sidelights, Einstein continued his substantive assistance to his cousin Edith Einstein in completing a doctoral dissertation, under the supervision of Paul Epstein, on the theory of the radiometer (Docs. 38 and 42), and began his own study of the gravitational field of globular clusters (Doc. 231). His motivation for this was, most likely, that such a study would provide evidence for the existence of the cosmological constant, though this hope was dashed.

VI

In one of the last letters of the year 1920, Einstein responded to Ernest Pickworth Farrow, a botanist at Trinity College, Cambridge, who had heard rumors that Einstein was not happy in Berlin. Farrow had inquired unofficially whether Einstein might consider coming to Cambridge “if the finances could be arranged.” He also attached a (nonextant) Christmas card for Einstein’s amusement. In a draft in Ilse Einstein’s hand, dated 28 December, Einstein responded: “Your Christmas card is truly of exquisite humor and tickled me very much, the more so since I am just cramming English vocabulary, by the sweat of my brow, into my no longer youthful brain” (Doc. 245).

Einstein’s training in the English language, however, was motivated not by any academic or other ties to England; rather, he was preparing for a trip to the United States. Earlier in the year, Einstein had been contemplating a visit to Spain and the United States in 1921, was debating whom to take along, and had tentatively invited Ilse to accompany him (Docs. 162 and 165). On 15 December he had informed his sons, “during the summer I am probably going on a half-year-long lecture tour to North America” (Doc. 232).

Einstein had received invitations from several universities and academic institutions in the United States, among them Princeton University, the University of Wisconsin, and the National Academy of Sciences in Washington, D.C. Communication between Einstein and the various institutions and their representatives was difficult and involved frequent delays, exacerbated by Einstein’s absence from Berlin between 13 September and 7 November. In his negotiations with the American institutions, Einstein had hoped to “buy” his “financial freedom” by asking for considerable remuneration (Doc. 209). By the time he responded to Farrow, he may have been expecting his demands to be met. But just a few days earlier, Princeton’s president, John G. Hibben, had sent off a letter informing Einstein “that it will be impossible to consider the honorarium of \$15,000 which you request for your lectures” (Doc. 243).

Thus, for the time being, the planned “Dollar-Reise” (Doc. 244) was shelved. Nevertheless, his first visit to the New World would soon become the major event

of the year 1921 for Einstein. This trip would indeed be a fund-raising mission, although not for Einstein himself, but in support of the planned the Hebrew University of Jerusalem.^[44]

^[1]See Vol. 5, Introduction, p. xxxv.

^[2]Vol. 5, Docs. 305 and 366. For the friendship between Einstein and Zangger, see also *Medicus 1994* and *Medicus 1996*.

^[3]Vol. 5, Docs. 286, 291, and 297, and Vol. 4, Doc. 7.

^[4]Vol. 5, Docs. 263, 308, and 406.

^[5]Vol. 3, Introduction, p. xxviii and p. xxx, and, e.g., Vol. 5, Docs. 268, 330, and 344.

^[6]Vol. 8, Docs. 130, 342, and 473.

^[7]Vol. 8, Docs. 242, 309, and 412.

^[8]Vol. 8, Docs. 152, 597, 598, and 601.

^[9]For the complications in arranging for this vacation, see also, e.g., Docs. 8, 374a, and 377a.

^[10]See Vol. 7, the editorial note, “Einstein’s Encounters with German Anti-Relativists,” pp. 101–113.

^[11]For more on Weyland, see *Kleinert 1993* and *Goenner 1993*.

^[12]See Vol. 9, Doc. 103.

^[13]“Professor Einstein ist gerade im gegenwärtigen Augenblick für Deutschland ein Kulturfaktor ersten Ranges, da Einsteins Name in weitesten Kreisen bekannt ist. Wir sollten einen solchen Mann, mit dem wir wirkliche Kulturpropaganda treiben können, nicht aus Deutschland vertreiben.” Friedrich Sthamer to Auswärtiges Amt, 2 September 1920, GyBPAAA, R 64673.

^[14]Prominent among these was the murder of Hans Paasche, a former naval officer turned pacifist, in May 1920. Friedrich Wilhelm Förster, of the ethics faculty at the University of Munich, and Georg Friedrich Nicolai, of the medical faculty at the University of Berlin, were both fired. For Einstein’s public statement in defense of Nicolai, see Vol. 7, Doc. 32.

^[15]The votes for the Weimar coalition dropped to 11 million from 19 million in the previous elections, held in January 1919. Votes for parties on the right increased from 5.6 to 9.1 million, and for parties on the left from 2.1 to 5.3 million. On 4 August 1920, amnesty was granted to the participants in the Kapp Putsch who were not instigators or leaders. On 11 August 1920, when the Disarmament Law came into force, the Bavarian government refused to disarm the Bavarian Home Guards. See *Eyck 1962*, pp. 159–163, and 176; Doc. 9, 79a, note 7 in the present volume; Vol. 9, Introduction; and Vol. 9, Doc. 308, note 5.

^[16]See *Zuelzer 1982*, p. 293.

^[17]See *Klein 1970*, pp. 293–323.

^[18]Paul Ehrenfest to Einstein, 8 September 1919 (Vol. 9, Doc. 101), and Einstein to Paul Ehrenfest, 12 September 1919 (Vol. 9, Doc. 103).

^[19]Paul Ehrenfest to Einstein, 24 September 1919 (Vol. 9, Doc. 175); Hendrik Antoon Lorentz to Einstein, 16 January 1920 (Vol. 9, Doc. 264).

^[20]The next day, in order to obtain governmental approval in the form of a royal decree, the governing council (Universiteitsraad) of the Fund approached the Ministry of Education, as did the Board of Curators of the university shortly thereafter. See Vol. 9, Doc. 308; Universiteitsraad van het Leidsch Universiteitsfonds to Queen Wilhelmina, 10 February 1920, and Curatoren der Rijks-Universiteit te Leiden to Minister van Onderwijs, Kunsten en Wetenschappen, 21 February 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[21]See Doc. 30 and Paul Ehrenfest to Einstein, 13 April 1920 (Vol. 9, Doc. 373), and Springer publishing house to Einstein, 23 April 1920 (Vol. 9, Calendar). The lecture, *Einstein 1920j*, bears the date of 5 May 1920 on its title page.

^[22]“[...] zijne politieke beginselen”; Commissie van Toezicht to Minister of Education, 5 March 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[23]For the student uproar, see *Einstein 1920a* (Vol. 7, Doc. 33), and Einstein to Eduard Meyer, 14 February 1920 (Vol. 9, Doc. 315).

^[24]“Berlijnsch universiteitsleven,” *Nieuwe Courant*, 2 March 1920, Morning Edition.

^[25]“[...] van revolutionairen zijde”; Parket van den Procureur-Generaal to Minister of Education, 19 March 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[26]“Dr. Einstein (niet Eisenstein) en Gravin Olga von Hagen [...] hebben beiden gedurende de bezetting van België ongeveer 3 jaar te Brussel gewoond, waar dr. Einstein herhaaldelijk getracht heeft revolutie onder de Belgen te verwekken en Olga von Hagen veel schreef onder het pseudoniem “De roode Gravin.” [...] Beide personen worden scherp in het oog gehouden en hun vertrek naar Nederland zal zeker tijdig worden gemeld.” Opperwachtmeester, Detachements Commandant, 1e Div. Koninklijke Marine to Kapitein Districts-Commandant te Breda, 18 June 1919, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[27]Minister van Onderwijs, Kunsten en Wetenschappen to De Gijselaar and Van Vollenhoven, 22 March 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[28]“Professor Einstein [...] is getrouwd met een jodinetje die evenals hij heet, doet *niet* aan gravinnen, en heeft tijdens den oorlog *niet* in Brussel gewoond of vertoeft.” Van Vollenhoven to Minister van Onderwijs, Kunsten en Wetenschappen, 27 March 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[29]Minister van Onderwijs, Kunsten en Wetenschappen to Minister van Buitenlandse Zaken, 4 May 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[30]“Einstein [...] het communisme een domheid vindt”; Heike Kamerlingh Onnes to Minister van Onderwijs, Kunsten en Wetenschappen, 10 May 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[31]*Vaihinger 1918*.

^[32]For further discussion of the debates around the Als-Ob conference, see *Hentschel 1990*, sec. 3.4.2.

^[33]“revolutionaire kringen”; Ministerie van Buitenlandse Zaken to Minister van Onderwijs, Kunsten en Wetenschappen, 20 May 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[34]Minister to Raad van Ministers, 26 May 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[35]Raad van State to Queen Wilhelmina, 15 June 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[36]See *Staatsblad van het Koninkrijk der Nederlanden*, No. 315 (27 July 1920).

^[37]Cornelis van Vollenhoven to Einstein, 12 July 1920, in *Calendar. Curatoren der Rijks-Universiteit te Leiden to Minister van Onderwijs, Kunsten en Wetenschappen*, 31 July 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[38]“alle twijfel is opgeheven omtrent de identiteit van den benoemden hoogleraar met dr. Einstein, die in de loop van 1919 werd gesignaleerd, als beslist de communistische beginselen te zijn toegegaan”; Commissie van Toezicht to Minister van Onderwijs, Kunsten en Wetenschappen, 8 September 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[39]Queen Wilhelmina, draft of decree of confirmation of appointment of Albert Einstein as Professor of Physics in the chair created by the Leyden University Fund, 21 September 1920, Ne-Ar, Archief van het Ministerie van Onderwijs, Rectoren toegangsnummer 2.14.17 inventarisnummer 13.

^[40]Heike Kamerlingh Onnes to Einstein, 8 February 1920 (Vol. 9, Doc. 304).

^[41]See also the discussion in *Matricon and Waysand 2003*, chap. 3.

^[42]See *Guillaume 1920c* and *1920d*, and *Eddington 1920b*.

^[43]See *Grossmann 1920*.

^[44]*Rosenkranz 2005*, p. 304.