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**Edited by Diana Kormos Buchwald, Tilman Sauer, Ze'ev Rosenkranz, Josef Illy  
& Virginia Iris Holmes: The Collected Papers of Albert Einstein, Volume 10:  
The Berlin Years (English translation of selected texts)**

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Vol. 5, 161a. To Vladimir Varićak<sup>[1]</sup>

Bern, 19 May 1909

[Not selected for translation.]

Vol. 5, 197a. To Vladimir Varićak

Zurich, 15 February 1910

[Not selected for translation.]

Vol. 5, 197b. To Vladimir Varićak

Bern [Zurich], 28 February 1909 [1910]<sup>[1]</sup>

[Not selected for translation.]

Vol. 5, 202a. To Vladimir Varićak

Zurich, 5 April 1910

[Not selected for translation.]

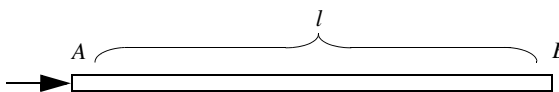
Vol. 5, 202b. To Vladimir Varićak

Zurich, 11 April 1910

Highly esteemed Colleague!

Your two letters have given me great joy, as has your interesting treatise on the transformation.<sup>[1]</sup> As regards the rotating rigid body, my view of the matter is about as follows.

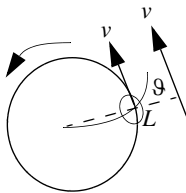
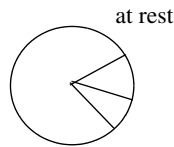
First of all, it cannot be excluded that the abstraction of the freely moving rigid body does not fit at all into the theory of relativity.<sup>[2]</sup> Take, e.g., the case that a rigid rod which at first hovers freely at rest in space suddenly receives a momentum during an infinitely short time. The end in  $B$  can experience a change in position, or acquire a velocity, as a consequence



of relativity.<sup>[2]</sup> Take, e.g., the case that a rigid rod which at first hovers freely at rest in space suddenly receives a momentum during an infinitely short time. The end in  $B$  can experience a change in position, or acquire a velocity, as a consequence

of this momentum at the earliest after a time period  $\frac{l}{c}$ , because otherwise superluminal signals would exist, with severe absurdities. Hence, the rod will either be deformed, or it will move, as a consequence of this momentum only after a certain time. Both consequences are so absurd (even the first assumption, if you think about it more closely). It rather seems to make more sense to do without the notion of a rigid body of finite size at all, especially if one only needs the infinitely small rigid body for the definition of space and time.

It seems that I have not yet explained to you clearly enough the core of the difficulty that in my opinion stands against the treatment of the rotating rigid body. First, we need to note that one is not obliged to deal with the problem of the *coming into being* of the rotation; here even worse difficulties lurk than in the case of uniform rotation. As regards the latter, it obviously does not suffice that radii and peripheral lines deform in the Lorentzian way. *This must moreover be valid for each material element of the rotating disc.* But satisfying this requirement seems to be impossible—this seems to have been proven in particular by Herglotz.<sup>[3]</sup>



I have laid out the issue to myself by means of the following consideration.<sup>[4]</sup> Let radii be drawn in a material disc at rest. These must, for the Lorentzian contraction to take place in a rotating disc, be deformed in the manner that you indicated, if the disc rotates, judged from the coordinate system  $K$  at rest. Hence about thus:

Consider now a small part of the rotating disc, that is enclosed in the line  $L$  in the figure. Here the radial line, as seen from  $K$ , forms the angle  $\vartheta$  with the peripheral line. Now one introduces a second coordinate system  $K'$  which also does not rotate, but whose origin moves with the velocity  $v$  (mean velocity of the particle under consideration). Judged from this system, the element under consideration does not have a translational velocity but only an angular velocity and an acceleration. It seems difficult to assume that, with respect to the coordinate system  $K'$ , the angle  $\vartheta'$  ( $\vartheta'$ ) should differ from  $90^\circ$ . At least one can see immediately that neither acceleration alone nor rotation can have such an effect. Perhaps you might succeed in finding an expression for  $\vartheta'$ , in which somehow the product of acceleration & angular velocity enters.

But for the time being it seems absurd to me to assume that the angle  $\vartheta'$  differs from  $90^\circ$ . But if  $\vartheta' = 90^\circ$ , then we also have  $\vartheta = 90^\circ$ . Then what Ehrenfest says is true, what is known to me already for years.<sup>[5]</sup>

That paper in the  $\langle$ Journal $\rangle$  Archive des Sciences ...<sup>[6]</sup> is of no interest for you. It is not a reprint of that paper in the Jahrbuch ...<sup>[7]</sup> but a kind of explicit exposition

of the epistemological foundations of the theory of relativity, to which I obligated myself by giving an uncautious promise. I did not do a good job with the thing by the way.<sup>[8]</sup>

With best greetings your devoted

A. Einstein

My wife sends best greetings, too.

## Vol. 5, 203a. To Vladimir Varičák

[Zurich, 23 April 1910]

[Not selected for translation.]

## Vol. 5, 235a. To [Otto Lehmann]<sup>[1]</sup>

Zurich, 1 December 1910

Highly esteemed Colleague,

First of all, many thanks for your kind letter, your paper, and above all for the papers you sent me earlier.<sup>[2]</sup> Now to your example!

1) Your consideration must still take into account that the lines of force emanating from a rod become denser as a result of the Lorentz contraction. The electric

field strength is thus increased by the ratio  $\frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$   $\left( = 1 + \frac{1}{2} \frac{v^2}{c^2} \right)$ , whereby the

electrostatic energy is increased by this ratio.

2) The relative lessening of the repulsion through electrodynamic forces that you observed has the value  $\frac{v^2}{c^2}$ ; it is therefore only halfway compensated by the increased repulsion mentioned under (1). The energy is therefore in fact (larger) smaller than if the rods were at rest.

3) This does not indicate a violation of the principle of relativity, however, because with moving rods one must distinguish between the force  $K$ , acting between them, from the standpoint a frame of reference not moving along with them, and the force  $K'$ , from the standpoint of a frame of reference moving along with the rods. If  $K'$  differed from the force between the rods at the same distance while they were at rest, there would be a contradiction with the principle of relativity. But the force  $K$  between the rods from the point of view of the non-moving system can

certainly differ from it; a priori it is not clear at all how  $K$  should be defined. If one defines the force on moving bodies by the relation between force and the magnitude of motion, it can be shown that

$$K = K' \sqrt{1 - \frac{v^2}{c^2}} \text{ must be true,}$$

just as it also results from your *special* example.

Thank you very much for your kind invitation to give a talk in Karlsruhe.<sup>[3]</sup> However, whenever possible I avoid giving talks before larger audiences.

With great respect, yours very sincerely,

A. Einstein.

## Vol. 5, 242a. To Heinrich Zangger<sup>[1]</sup>

[Zurich, 1 January 1911]

Dear Mr. Zangger,

Cordial New Year's greetings to you and your wife!<sup>[2]</sup> One doesn't write to a prolific writer the way you do to me. I carefully rechecked my calculations concerning the viscosity of suspensions<sup>[3]</sup> but deemed everything in order. I also requested Mr. Hopf to check it over.<sup>[4]</sup> Who knows whether Perrin didn't have some strong swelling of the particles (1.4-fold in diameter).<sup>[5]</sup> Bredig thinks it very well possible. He considers it very difficult to make well-defined suspensions.<sup>[6]</sup>

I believe I found a new kind of influence by a magnetic field on electrons, but the magnitude of the effect still needs to be calculated.<sup>[7]</sup> In radiation theory the evil spirit is constantly leading me around by the nose.<sup>[8]</sup> Did you eventually get the Tammann?<sup>[9]</sup> I looked for you everywhere before your departure but was unable to track you down.

I hope your stay will do you & your wife a lot of good. With cordial greetings, yours,

A. Einstein

Best regards & greetings from my wife.<sup>[10]</sup>

## Vol. 5, 255a. To Vladimir Varićak

Zurich, 24 February 1911

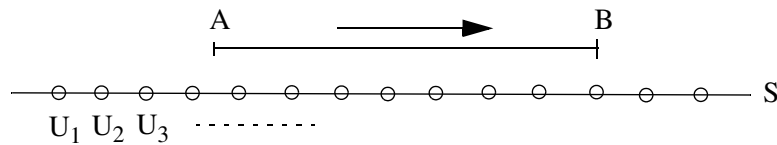
[Not selected for translation.]

## Vol. 5, 257a. To Vladimir Varićak

Zurich, 3 March 1911

Highly esteemed Colleague!

I thank you very much for your letter and the paper.<sup>[1]</sup> I have now read the beautiful study by Lewis and Tolman,<sup>[2]</sup> but I cannot understand how you can draw from this an (support) endorsement of your opinion. I want to justify my opposite opinion explicitly.<sup>[3]</sup>



Let  $S$  be a nonaccelerated frame of reference, in which there are clocks of the same kind at rest with it. Let these be synchronized, e.g. by means of light rays, so that they show the time of  $S$ . Let the rod  $AB$  be in uniform motion relative to  $S$ . Its “real” length, i.e., the length measured by itself, be  $l$ . Then it follows from the rel.

theory in the well-known way that its length with respect to  $S$  is  $l \sqrt{1 - \frac{v^2}{c^2}}$ . This

means: if one determines those clocks in  $S$ , which show the same state of hands, when the points  $A$  and  $B$  are passing by them, then the distance of these points measured in  $S$  is  $l \sqrt{1 - \frac{v^2}{c^2}}$ . The contraction is observable by measurement, hence

“real.” In order that you see that the contraction is not simply affected by the definition of simultaneity in  $S$ , i.e. of a purely conventional nature, I add: it is impossible, to reset the clocks in such a way, that even after this resetting the rod always has the length  $l$  with respect to  $S$ , if it has the velocity  $\pm v$  measured by means of the clocks. From this one can conclude with Ehrenfest that a rotation without *elastic* deformation is excluded in the theory of relativity, if you assume in addition that a transversal contraction does not take place.<sup>[4]</sup> One cannot ask whether one has to conceive of the contraction as a consequence of the modification of the molecular forces or as a kinematic consequence from the foundations of the theory of relativity.<sup>[5]</sup> Both points of view are justified side by side. The latter point of view corresponds roughly to the one of Boltzmann, who treats the dissociation of gases *in a molecular-theoretic manner*; this is completely justified, although one can derive the laws of dissociation from the second law without kinetics.<sup>[6]</sup> A (principal)

difference exists not with respect to the *result* but only with respect to the foundation, on which one grounds the consideration.

If you are going to publish your note, it is my duty to also express my own point of view publicly, because my silence might be interpreted as agreement, and because I believe that your note could create confusion. I therefore ask you to let me know whether you still want to publish it, and in which journal I should publish my response.<sup>[7]</sup>

With all high respect & and with best greetings your

A. Einstein

## Vol. 5, 267a. To Heinrich Zangger

Prague, Thursday [before 1 June 1911]<sup>[1]</sup>

Dear Mr. Zangger,

You are a splendid fellow to take up the telegraph administration matter so promptly. I am prepared to do whatever might make me useful in this affair. So use me as you see fit in this regard. I am mainly informed about the goings on in Chavan's office & am persuaded that things were done with a complete lack of circumspection and conscientiousness, so any state controls of the material delivered was quite illusory & the work by the office useless.<sup>[2]</sup> Good suggestions advanced on the part of Chavan always sailed straight into the wastepaper basket, and he personally was harassed and neutralized. All evidence points to lack of expertise on the part of Chavan's superiors, since Chavan saved everything in writing for fear that the facts might be distorted. It will be argued against me as an expert that I could not pass as being objective, owing to personal connections. But they will surely be allowed to interview me; I wouldn't hesitate to travel to Switzerland (from mid-July onward, when my vacation starts).<sup>[3]</sup> Your faint hints, which you give me in place of more precise information, only make me cross. That's not how one dangles bait. But I earnestly ask you please to visit me in Prague at Pentecost and be our guest.<sup>[4]</sup> Then I hope to worm the secrets out of you and, on the side, show you the wonderfully beautiful city, the city of these barbarians. The culture of these people really is backward. I haven't discovered any true scientific interest among my colleagues yet, only a kind of arrogance. I close in the hope of seeing you here very soon!

Cordial regards, yours,

Einstein.

## Vol. 5, 344. To Heinrich Zangger

Prague, 27 January [1912]<sup>[1]</sup>

[Not selected for translation.]

## Vol. 5, 349a. To Heinrich Zangger

[before February 1912]<sup>[1]</sup>

Dear Mr. Zangger,

You recently showed me a relation on heat of vaporization. Wasn't it  $\frac{D-pv}{v^{2/3}} =$  independent of temperature? If this isn't approximately right, then my thing on capillarity is rubbish.<sup>[2]</sup> Please jot down for me, if possible, where that article (I think it was in English) can be found. Do you remember what it was that I grumbled about? Youth ends quickly...

With cordial regards, yours,

Einstein.

## Vol. 5, 349b. To Robert Heller<sup>[1]</sup>

Prague, 1 February 1912

Dear Mr. Heller,

Your little card gave me great pleasure. In the summer I shall soon be breathing the free air of Zurich again! I am enormously happy & will *never* forget that I owe all this solely to my dear friend Zangger. What is bothering him?<sup>[2]</sup> I note from his letters that he is depressed.<sup>[3]</sup> How might one do him a little favor? He is surely very isolated and is being aggravated a lot. He will not be given due credit until he turns his back on Zurich sometime.<sup>[4]</sup>

I am glad that we shall soon be able to resume our relaxed relations again.<sup>[5]</sup> In the meantime, best regards from your

Einstein

Best regards also from my wife.

Hearty greetings to Mr. Zangger.

## Vol. 5, 374a. To Heinrich Zangger

Prague, 17 March [1912]

Dear Friend,

Don't be angry because I am writing so little. I am up to my ears in the problem of gravitation, so much so that I cannot gather the energy to write a letter. Aren't you familiar with this condition? I can hardly believe it! You are such an energetic fellow and did not indulge yourself that way. But the thing is going well; there is some light at the end of the tunnel.

It will be nice when we are both living on Zurich Hill. I can't come to Zurich before my move to look for an apartment.<sup>[1]</sup> When we come to Zurich we shall put our things in storage and stay in a guest house until we have found a suitable apartment. (*Nummen nüt gesprengt* [Look before you leap], as the Bernese say.)<sup>[2]</sup>

I am so sorry that you are still being irritated by the pack of physicians.<sup>[3]</sup> If only some of my indifference could rub off on you. Right now I am in the middle of an ugly dispute with Nernst, who is simultaneously very offended and shameless, mainly because I dare to raise doubts about his sacred heat theorem.<sup>[4]</sup> He wrote me, e.g., that he and his "highly talented" pupils were wondering about how superficial my last papers were and that as a senior colleague he would give me his fatherly advice etc. etc. I replied with the advice that he and his highly talented pupils need not waste their time on this stuff, but that I would write it anyway. At the beginning of April I am going to Berlin in order to discuss this matter scientifically with several people there, if possible also with Nernst (but only in the presence of third parties).<sup>[5]</sup> At the same time I shall be visiting an old uncle there.<sup>[6]</sup>

Cordial regards from your

Einstein

Best regards to your wife and to Heller, also best regards from my wife to you, your wife & Heller. I congratulate the latter very much on passing successfully his examination. I read it here in "Bohemia." Our colleague Ehrenfest was visiting me.<sup>[7]</sup> He is a highly intelligent theoretical physicist. He is submitting his Habilitation thesis at the Polytechnic. If Debye should leave, he would be an excellent staff member for the university.<sup>[8]</sup> I would most like to see him as my successor here. But his fanatical atheism makes this impossible.<sup>[9]</sup>

## Vol. 5, 439a. To Vladimir Varićak

[Zurich, 14 May 1913]

[Not selected for translation.]

## Vol. 8, 5a. From Heinrich Zangger

[between ca. 14 April and 1 July 1914]<sup>[1]</sup>

Dear friend Einstein,

[Text unintelligible]... Only when you were standing in Berlin as if in front of a cage... and Switzerland in summer is nice when Dahlem is broiling<sup>[2]</sup> [I thought [then] that you still have examinations to hold at the Poly<sup>[3]</sup> in July [and since it was July] I didn't want to do anything foolish and miss you by chance. I have finally obtained the proceedings of the [Prussian] Academy, it must be nice... for people who [...] [don't] like to read books like you and me.

You have not yet unlearned to apologize, if you don't write, but neither you nor I believe in an improvement.

Varicac<sup>[4]</sup> wanted to help the renters in the Hofstrasse, its seems that one battle follows another [there] But there was nothing to do.

They say Abraham will come to Zurich<sup>[5]</sup> [who will go] to Göttingen, Frankfurt, Debye?<sup>[6]</sup>

On the 1st of August you come to Zurich!

first because the Berliners will do something out of envy, if there are rays around the sun for your sake<sup>[7]</sup> [and] don't do it in the photographic [camera] because then it is better one can enjoy the short sleeves [...]

If you know when you are coming, please send a postcard a few days beforehand.

## Vol. 8, 16a. To Heinrich Zangger

[Berlin,] 27 June [1914]<sup>[1]</sup>

Dear friend Zangger,

You're furious about my unbelievable silence and scold me unjustifiably calling me a Berliner; but a Berliner always has his mouth open and he can manage a lot with that!<sup>[2]</sup> Whereas I have a semipathological inhibition toward writing, as generally with any action that requires any definite decision. That's how tiredness and age manifest themselves with me.

Life appeals to me very much here, I have to admit. The sheer amount of competence and glowing interest in science one finds here! I'm repeatedly fascinated by the colloquium and the phys. society.<sup>[3]</sup> And the people, you ask? They are basically the same as everywhere. In Zurich they feign republican probity, here military rigidity and discipline, but here, as there, they're governed by the same drives, and here, as there, only a few rise above raw instinct.

Despite being in Berlin, I am living in tolerable solitude. But here I have something that makes for a warmer life, namely, a woman whom I feel closely attached to, (namely) a cousin of roughly the same age. She was the main reason for my going to Berlin, you know.<sup>[4]</sup> Surely I told you so already at the time.

At the academy things vary, sometimes boring, sometimes highly interesting. People there are highly heterogeneous; everyone is one of its kind. Everything I used to think about Berlin people has vanished into thin air. One could think, no doubt influenced by political sentiments, that they are conceited imperialistic Berliners, who want to gobble up the world, know it all, etc. Such do exist, along with others, as everywhere. Only in matters open to change do local traits emerge: dutifulness, an almost mind-numbing need to follow the herd, authoritarianism, lack of taste, respect for acknowledged achievements.

My work is moving within a rather modest scope. Just now I'm writing about quantum theory and Nernst's theorem. There is still very much left of value in the latter, although it cannot be generally valid. The man struck lucky; he's mad at me because I'm not a silent worshipper.<sup>[5]</sup> The theory of gravitation encounters as much respect as it does suspicion.<sup>[6]</sup> Lorentz offered a detailed lecture on it.<sup>[7]</sup> The solar eclipse is being received by the astronomers with good weapons. I am absolutely convinced of the correctness of my theory. I haven't worked on it here yet, though I've recovered physically to do so, mainly through the solicitude of my relatives.<sup>[8]</sup> I was quite seriously worn out!

I'm happy that you have been able to resume your work again. If I can, I'll come to visit you in the summer. A bit of Berlin, as I have it, would do you good as well: no obligations and worries! I didn't understand your insinuation about Varicak.<sup>[9]</sup> He is—as far as I can judge, a good sort of fellow. He had a kind of relationship with my wife, which can't be held against either of them. It only made me feel my sense of isolation doubly painfully: I am all the more grateful now that fate has granted me the affection of a good woman after all.

Don't be angry at me anymore, but write me in comfort during a genuinely leisurely spare time, yours,

Einstein.

Best regards to Heller!

## Vol. 8, 34a. To Heinrich Zangger

[Berlin,] 24 August 1914

Dear friend Zangger,

My deepest condolences on the heavy loss you suffered. I knew your dear mother as an excellent mother.<sup>[1]</sup> I saw many a tear in her eye when you were so sick

and an indescribable joy on her face when you were slowly regaining your strength.<sup>[2]</sup> It never became clear to me where your refinement and sensitivity and your quick reflexes came from, besides the Germanic blood coursing through your veins.

What a horrific picture the world is now offering! Nowhere is there an island of culture where people have retained human feeling. Nothing but hate and a lust for power!<sup>[3]</sup> The question, where can justice be found? is becoming sheer mockery. One lives the life of a stranger on this planet, happy when one isn't done in for out-moded sentiments. I feel so strangely drawn to early Christianity and feel as acutely as never before how much nicer it is to be anvil than hammer. What galls me most is that now even the best talent is being forced into this senseless butchery and henchman's service. I have blind luck to thank that I was spared this.

I sit all day long peacefully at work in my lodgings. Yesterday I discovered a pretty method for deriving the fundamental formulas for the absolute differential calculus indispensable to gravitational theory.<sup>[4]</sup> My wife and my boys are in Zurich. In the future they will live apart from me, hard though it is for me to be without my boys. I could not stand the wife any longer. It is hardly conceivable to me now how I wasn't able to summon the moral energy to come to this decision.<sup>[5]</sup> In part it depended on the fact that my means could not have permitted living separately.

The observations of the solar eclipse have surely been suppressed by Russia's floggers, so I won't live to see the decisive results about the most important finding of my scientific wrestling.<sup>[6]</sup>

I hear that Debye will be Kleiner's successor. An invaluable acquisition for your university!<sup>[7]</sup> Abraham seems not to have made it to the Poly, mainly because of Weiss.<sup>[8]</sup> This will surely have grim repercussions. I fear that my success (ion) or in Zurich is not going to be chosen with sufficient expertise and objectivity.

Cordial regards from your

Einstein.

## Vol. 8, 41a. To Heinrich Zangger

[Berlin, after 27 December 1914]<sup>[1]</sup>

Dear friend Zangger,

Many thanks for your friendly lines. I almost came to see you to make arrangements about caring for a son of Planck's who was wounded and captured in France.<sup>[2]</sup> But he is now out of danger & on his way toward a recovery.

The world is like a madhouse now. What drives people to kill and maim each other so savagely?<sup>[3]</sup> I think, in the end, it is the sexual character of the male that

leads to such wild explosions from time to time, *if it's not prevented by careful organization*.<sup>[4]</sup> The special calamity of our times, however, is that bestial instincts together with existing tools are leading to veritable destruction. The real betterment of the masses moves so slowly ahead in relation to the rapid development of technology that there is now a disparity of the worst kind. We must therefore, in my opinion, strive toward a large-scale organization that acts toward individual states the way the latter act toward individual thieves. But the *bestia masculina* still resists this again one by one. That is how a completely dispassionate person like me can appear *lacking* to others. It's all the same to me. As long as I am left in peace, I calmly continue my work with the usual pleasure, without letting myself be infected by mass psychosis. What hurts me most bitterly, though, is that people like me are prevented by the force of circumstances from acting the way I do.

I have had the particularly good fortune of separating from my wife.<sup>[5]</sup> I know very well that, from the point of view of others, this looks like unparalleled brutality. But for me it was a question of survival; my nerves could not have withstood any longer the pressure that had been bearing down on me for years, which this barbaric character had been exerting on me. It is an act of defense in the fullest sense. You can imagine what a difficult decision it was to forgo watching my beloved boys grow up! For them it is better not to grow up in a home in which the father and mother confront each other like enemies. It is also beneficial for the development of their social awareness and habits if they grow up in socially relatively well-balanced Switzerland, where the teaching in schools is executed without ulterior motives.

Of late I have been working incessantly on gravitation and have now arrived at wonderful clarity about the interrelations. The matter is now so compelling that anyone really gaining profound insight must find it difficult to shake himself free from the spell of this construct. If all physical events are completely determined by other perceptible physical events, then the chosen path becomes a necessity.<sup>[6]</sup>

The philosophical quotes you relayed to me do not rouse an appetite for more. These fellows haven't the least feel for the narrow constraints of the terms they are fumbling around with. When I come and visit you sometime, let's take a closer look at one of them and tear it apart; it would be very interesting for me to experience such a thing with you, but not flaccid Bergson.<sup>[7]</sup>

The size of the city here gives occasion that one gets to know highly interesting people.<sup>[8]</sup> The advantage is that any given nature is empowered to the point that one can choose one's activities and the people that affect one.

Be embraced by your old friend,

Einstein.

Do write me again soon but slowly and leisurely, simplistically, and with *legible* writing. You know well I am a *nonmedical man*.

I live here very cozily all by myself in a comfortable small apartment;<sup>[9]</sup> the housekeeper tidies up. As soon as better times arrive, you must turn up in my den.

## Vol. 8, 45a. To Heinrich Zangger

[Berlin,] 11 January 1915

Dear friend Zangger,

Your letter and your postcard arrived. As a man with faith in society you are seeking to assuage the terrible suffering that people are now falling victim to, and are finding solace in action.<sup>[1]</sup> The likes of us, however, are so disgusted by the abundance of incomprehensible, puzzling, and unspeakable ugliness that we crawl even deeper inside our snail shell of contemplation. You probably received the paper on general relativity;<sup>[2]</sup> it is a successful end to my struggles in this area. Accept this booklet as a sign of amicable feelings, not as a presumption that you should immerse yourself in such ponderings! At the present time I am collaborating with de Haas (a young Dutch man, Lorentz's son-in-law) on a very interesting experimental matter about the nature of magnetism.<sup>[3]</sup> The issue in question is whether paramagnetism can really be attributed to revolving electrons; the goal is surely attainable. As soon as the analysis is completed, I'll send you an offprint. Here scientific life is almost at a standstill. Everyone is working and suffering for the state, in part voluntarily, in part involuntarily.<sup>[4]</sup> If only one could do something about it so that the former relatively harmonious conditions were reinstated! But in this state of agitation such lack of passion is offensive to those who are more deeply stuck in this affair.

Recently Edgar Meyer wrote and asked me to do something for him with regard to obtaining Kleiner's position in Zurich.<sup>[5]</sup> But I believe that I would rather harm than help his prospects if I put in a word for him without being asked. I tell you, though, that Meyer is an excellent physicist, who would be more useful to the university than most others. Couldn't you perhaps suggest that I be asked?

It's good that among the fine minds strikingly many are considered cripples by the state, especially among theoreticians. Debye, Born, and Laue were all deemed absolutely unfit.<sup>[6]</sup> The latter told me recently that he had insurmountable difficulties learning the rifle drills—a pretty illustration of the manifesto published by my colleagues, according to which “we owe our scientific prowess not least to our military education.”<sup>[7]</sup> In recent days I made the acquaintance of our colleague

Natanson from Cracow, a fine theoretical mind.<sup>[8]</sup> He is a Polish Jew and grew up in Russia, now 50 years of age. I quickly took a liking to him as I rarely do with people; blood runs thicker than water! Dear Zangger, make sure that no wimps are called to Zurich as physicists, either to the Polytechnic or to the university; once you have them, you never get rid of them. Take care that Keesom does not come to the Polytechnic as a theoretician;<sup>[9]</sup> he knows a lot, has original ideas to a certain degree, but cannot teach people how to think critically.

With cordial greetings and best wishes for the so sadly started 1915, your old  
Einstein.

## Vol. 8, 69a. From Hans Albert Einstein

[Zurich, before 4 April 1915]<sup>[1]</sup>

Dear Papa,

We got the postcard; I don't know what you meant to say by it, though. But I hope you were thinking: "Well, it would, admittedly, be nice, we'll see."<sup>[2]</sup> Imagine, Tete<sup>[3]</sup> can already multiply and divide, and I am doing gometetry (geometry),<sup>[4]</sup> as Tete says. Mama<sup>[5]</sup> assigns me problems; we have a little booklet; I could do the same with you then as well. But why haven't you written us anything lately? I just think: "At Easter<sup>[6]</sup> you're going to be here and we'll have a Papa again." Yours,

Adu!

## Vol. 8, 69b. From Hans Albert Einstein

[Zurich, before 4 April 1915]<sup>[1]</sup>

Dear Papa,

Today we told each other our dreams. Tete suddenly said:<sup>[2]</sup> "I dreamed that Papa was here!" Then I thought: "It really would be much nicer if you were with us." I can tinkle away on the piano much better now already; not long ago I played a Haydn and a Mozart sonata and some sonatinas.<sup>[3]</sup> In short, I could also play with you. The examination is approaching now; but at the same time, so is Easter.<sup>[4]</sup> Last Easter we were alone;<sup>[5]</sup> do we have to spend this Easter alone as well? If you were to write us that you are coming,<sup>[6]</sup> that would be the finest Easter bunny for us. We can live here quite well, you know, but if Mama<sup>[7]</sup> gets ill one day, I don't know what to do. Then we would have no one but the maid. Also for this reason it would be better if you were with us. Yours,

Adu.

## Vol. 8, 91a. From Hans Albert Einstein

[Zurich, 28 June 1915]

Dear Papa,

You should contact Mama<sup>[1]</sup> about such things, because I'm not the only one to decide here.<sup>[2]</sup> But if you're so unfriendly to her, I don't want to go with you either.<sup>[3]</sup> We have plans for a nice stay that I'd only give up very reluctantly. We are going at the beginning of July and are staying the whole vacation. It's very high up.<sup>[4]</sup> Yours,

A. Einstein.

## Vol. 8, 96a. To Heinrich Zangger

[Sellin,] 16 July 1915

My dear friend Zangger,

Your friendly lines greatly impressed me, not by their content but because I see what an active interest you are taking in my fate.<sup>[1]</sup> In the matter itself you are mistaken. My fine boy had been alienated from me for a few years already by my wife, who has a vengeful, ordinary disposition, but also is so sly that outsiders and particularly men are always deceived by her. If you only knew what I had to live through with her, you would hold it against me that I did not find the energy for so long to separate myself from her. The postcard I received from little Albert had been inspired, if not downright dictated, by her. It said: "As long as you aren't friendlier with Mama, I don't want to go with you. Anyway, we're going into the countryside in July and I don't want to give up that stay."<sup>[2]</sup> Where they wanted to go was not conveyed to me, not even the new address, which I only learned about from you. When I write to Albert, I get no response at all.

Under these circumstances it appeared as if I couldn't see the children at all if I came now to Zurich in July, as I was firmly resolved to do. So at the last minute I decided, while I was at Göttingen giving talks about the general theory of relativity,<sup>[3]</sup> to relax here in Sellin, where my cousin had rented lodgings with her children.<sup>[4]</sup> I'm going to stay here until August 1st, because I need that much rest. From the 1st of August I am ready to come to Zurich, even if my children are so incited against me that they don't want to have anything to do with me; then I'll come to see you again. Give me a time period between 1 August and 1 October; I will certainly come. I would surely have been there on the 15th of July if I hadn't been deterred by the ugly postcard.<sup>[5]</sup> I left the children to my wife; she shouldn't

fill them with animosity toward me, less for my sake than for the children's, whose moods are dampened by it.

In your reply please also write me what's wrong with my little boy.<sup>[6]</sup> I'm particularly fondly attached to him; he was still so sweet to me and innocent.

Do answer soon, your truly grateful

A. Einstein.

## Vol. 8, 122a. To Heinrich Zangger

[Eisenach, 24 September 1915]

Dear friend Zangger,

See over there the man of strong conviction, who always knew what he wanted and what he should do, the happy one!<sup>[1]</sup> I just saw his small work room, that picturesquely overlooks the countryside. It was the last stop on the romantic trip home.<sup>[2]</sup>

Best regards! Your

Einstein

## Vol. 8, 124a. To Heinrich Zangger

[Berlin, 4 October 1915]

Dear friend Zangger,

I wrote to my Albert in detail. I want to *arrange* somehow that he stay with me here in my apartment for a whole month each year. Only then can he be relieved of all that pressure.<sup>[1]</sup> During that time I will devote myself to him to a large degree.

I do remember the fact that *an* American wrote me. Unfortunately I forgot to reply to him. I don't even remember what he wanted from me. What can be done? Did you receive the very interesting printed piece I sent to you, I wonder? Probably not. It was a very conciliatory manifesto that I would gladly not begrudge Romain R.; the best people in the country sig[ned].<sup>[2]</sup> Recently I visited Planck.<sup>[3]</sup> Such a sincere affection between coworkers in science as between us is rare indeed. How is your book doing?<sup>[4]</sup> When are you coming? 8 days ago I was with Stodola. He made a wonderful invention.<sup>[5]</sup>

Cordial regards from your

Einstein.

P. S. If my wife wants something in writing, I would file for a divorce at court.

## Vol. 8, 144a. To Heinrich Zangger

[Berlin, 15 November 1915]

Dear friend Zangger,

I thank you heartily for the detailed news. I was silent because I have been laboring inhumanly, but also with magnificent success.<sup>[1]</sup> I modified the theory of gravitation, having realized that my earlier proofs had a gap. Now the thing has become very simple and easy to understand.<sup>[2]</sup> *I have now derived from the theory the hitherto unexplained anomalies of planetary motion.*<sup>[3]</sup> Imagine my joy! I shall be glad to come to Switzerland at the turn of the year in order to see my dear boy. I am writing him at the same time.<sup>[4]</sup> I am gratefully obliged to you more than I can say for your conciliatory mediation.

Warmest greetings from your

Einstein.

My wife wrote me recently about the children in a manner that appears genuine. I am going to try to arrange my meeting with my Albert directly with her.<sup>[5]</sup>

## Vol. 8, 154a. From Hans Albert Einstein

[before 30 November 1915]<sup>[1]</sup>

Dear Papa,

I'd like to answer you now:<sup>[2]</sup> I will come over New Year's, i.e., from the 31st to 2nd; I'm thinking of going on the Zugerberg.<sup>[3]</sup> I don't want to stay longer because Christmas is nicest at home. Besides, I got skis and would like to learn how to use them with my colleagues.

The ski equipment costs about 70 francs, and Mama<sup>[4]</sup> bought them for me on condition that you also contribute. I consider them a Christmas present.

I'm also thinking of taking the skis along to the Zugerberg, in case it has snow.

Yours,

Adu.

## Vol. 8, 159a. To Heinrich Zangger

[Berlin, before 4 December 1915]

Dear friend Zangger,

Just now I received the enclosed letter from my Albert, which upset me very much.<sup>[1]</sup> After this, it's better if I don't take the long trip at all rather than

experience new bitter disappointments. The boy's soul is being systematically poisoned to make sure that he doesn't trust me. Under these conditions, by attempting any approaches I harm the boy indirectly. Come, dear old friend, Lady Resignation, and sing me your familiar old song so that I can continue to spin quietly in my corner!

So we'll see each other again at Easter then. I have to attend a meeting of the Anti-War Council in Berne, the international council into which I let myself be elected.<sup>[2]</sup> In these times everyone must do whatever he can for the community as a whole, even if it is only slight and ineffectual.

Young Rohrer, who wrote his doctorate under you, sent me his dissertation. If he got the initial idea for the thesis from you, it is ugly of him not to breathe a word about it.<sup>[3]</sup> Currently I am also having quite a curious experiences with my dear colleagues. All but one of them is trying to poke holes in my discovery or to refute the matter, if only so very superficially; just one of them acknowledges it, insofar as he is seeking to "partake" in it, with great fanfare, after I had initiated him, with much effort, into the gist of the theory.<sup>[4]</sup> Astronomers, however, are behaving like an ants' nest that has been disturbed from its mindless humdrum by a walker's thoughtless misstep; they're biting away at the walker, without making the least impression on his shoes.<sup>[5]</sup> All of this is very droll without being unpleasant for me. If one is pressed into playing one's role as an actor in this farce, one is richly compensated for the pain and effort by being able to watch as a spectator the others' playacting.

As I read, Meyer has now become Kleiner's successor. I can't disapprove of the choice, despite the special argument we put forward against it. P[iccard]'s character appears to me in a somewhat tarnished light because of his unkind attitude toward his teacher and honest benefactor W[eiss], to whom he owes his knowledge and position.<sup>[6]</sup>

Heartfelt greetings, yours,

Einstein.

## Vol. 8, 161a. To Heinrich Zangger

[Berlin,] 9 December 1915

Dear friend Zangger,

Late yesterday your letter arrived, today the enclosed one from my wife.<sup>[1]</sup> This last letter, (which I am enclosing,) makes such a very convincing impression of

honest good will that I also consider it right if I yield to my feelings and travel there—despite all the earlier bad experiences. So I'm really going to try and go somewhere with Albert (Zugerberg), in order to spend a few days with him undisturbed.<sup>[2]</sup> Then, to my great joy, I'll see you and Besso again as well and if possible also look up Dr. Zürcher to thank him for his kindness.<sup>[3]</sup>

I am quite overworked from the extraordinary exertions of the last few months. But the success is glorious.<sup>[4]</sup> The interesting thing is that now the initial hypotheses I made with Grossmann are confirmed, and the most radical of theoretical requirements materialized.<sup>[5]</sup> At the time we lacked only a few relations of a formal nature, without which the link between the formulas and already known laws cannot be attained. The matter is beginning to sink into my colleagues' minds as well. In 10 or 20 years it will be a matter of course. . . .

It seems to me almost better if all of you don't speak with my Albert. He could become accustomed to falseness far too soon if he sees that certain feelings are expected of him. It was a big mistake of mine to be annoyed about his postcard.<sup>[6]</sup> Such a thing shouldn't happen to a reasonable man of my age. Being overworked is, however, connected with heightened irritability; that excuses it somewhat. The one-sidedness of the relationship between parents and children is, after all, a natural law; the harshness of this arrangement is in general only softened by careful training—see the (fourth?) commandment of the Old Testam[ent].

I'm eagerly awaiting our next cozy chat. Best regards, also to your wife and your little ones, yours,

Einstein.

## Vol. 8, 185a. To Wilhelm Wirtinger<sup>[1]</sup>

[Berlin, 26 January 1916]

To the Dean of the Philosophical Faculty of the Imperial and Royal University of Vienna

Highly Esteemed Sir,

Regarding your inquiry of 19 January 1916, I am informing you that I would take under very serious consideration an offer of a position at your university.<sup>[2]</sup>

With great respect,

A. Einstein  
Wittelsbacher St. 13  
Berlin-Wilmersdorf