

# Letters to Solovine

ALBERT

Letters to Solovine 1906 – 1955

Albert Einstein



NEW YORK

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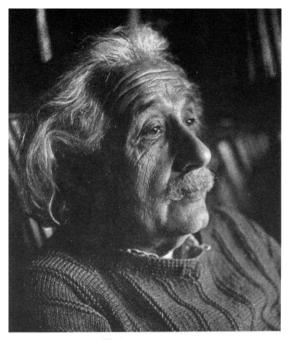
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A Biography of Albert Einstein



Missen lecter Solooice A. Einstein 46.

## Preface by Neil Berger

THE "AKADEMIE OLYMPIA" (known todav as the Olympia Academv) was formed in early 1902, soon after the Romanian student Maurice Solovine answered an advertisement that Albert Einstein placed in a Bern newspaper for private lessons in physics. Solovine wanted to be tutored in mathematics and physics, and Einstein needed money. This volume documents the lifelong friendship that developed from that meeting. The ten-page introduction by Solovine outlines the early history of the Olympia Academy and explains how Einstein lost a paving student and gained a philosophical partner. The Olympia Academy eventually included Einstein, Besso, Solovine, and the brothers Habicht, among others, It is all the more fascinating that this group held its time-consuming meetings during the period in which Einstein turned out many of his famous papers. Perhaps most important to relativity theory were the discussions that centered on Mach's critique of the Newtonian concepts of absolute space and time.

The correspondence documented here started when Solovine left the group in 1906, and continued until February 27, 1955, less than two months before Einstein's death.

These letters attest to the great importance that Einstein attached to this group and indicate obliquely how important Einstein's study of philosophy was to the development of his physics. In the letter dated April 3, 1953, slightly more than fifty years since its founding, Einstein created a touching ode to the Olympia Academy and sent it to Solovine. This was a result of receiving a card sent from Paris by Habicht and Solovine addressed to the president of the Olympia Academy.

Einstein's social life and obligations are well

documented here, as are his trials and tribulations with his ongoing work. There are letters where he expresses selfdoubt about his work, as well as others where he is enthusiastic about a new line of reasoning. Other letters comment about his family and the lives of his friends. As a famous person, Einstein felt it was his obligation to secure support for his friends, and he frequently comments upon payments and royalties and how he hopes to help them.

These letters to Solovine, Einstein's dear and close personal friend, paint a very human portrait of the greatest physicist of all time.

Neil Berger, Associate Professor Emeritus of Mathematics University of Illinois at Chicago October 2010

#### Introduction by Maurice Solovine

WHEN I WENT TO Berne as a student at the beginning of the century, I had not decided on the subjects that I wished to study. Since philosophy, though unworthy of the distinction today, still held claim to the study of the most exalted problems. I felt strongly inclined toward this subject, but simultaneously I had a burning desire to learn about concrete things, with the result that along with courses in Greek philosophy, literature and philology, I also studied mathematics, physics, and geology as well as a course in physiology in the Faculty of Medicine. By dint of hard work, I managed to acquire during the first year a body of knowledge which was far from enough to bring complete satisfaction but which allowed me to untangle the jumbled ideas that filled my head and to become aware of the paths and procedures through which the mind achieves positive results. My course in experimental physics had been absorbing, but the professor seemed to delight in speaking disdainfully of physical theories. He used to say that physical theories are more or less arbitrary constructions based on hypotheses and that the discovery of new facts undermines them and causes them to collapse, while facts which are carefully studied experimentally and shaped analytically stand as a definitive acquisition of physics and contribute to its continuous elaboration

But what I found most absorbing were these theories, for they gave me an overall view of nature and a firm basis for the study of philosophy, but I felt incapable of understanding them because of a deficiency in mathematics; still, I tried hard to grasp as much as I could. The discovery of radium caused considerable agitation since it was thought to reverse the principle of the conservation of energy.

Having bought a newspaper and started to walk down the streets of Berne one day during the Easter vacation of

1902. I came to a place which said that Albert Einstein, a former student of Zurich Polytechnical School, would teach physics for three francs an hour. I mused: "Perhaps this man could explain theoretical physics to me." I made my way to the house mentioned in the advertisement, walked up to the second floor and rang the bell. I heard a thunderous "Herein!" and soon saw Einstein appear. The hallway was dark and I was struck by the extraordinary radiance of his large eves. After I had gone inside his apartment and taken a seat. I told him that I was studying philosophy but wanted also to delve into physics so as to acquire a thorough understanding of nature. He confessed that he, too, had leaned toward philosophy when he was vounger, but that the vagueness and arbitrariness that characterizes philosophy had turned him away from it and that he now concentrated exclusively on physics. For two hours we talked on about all sorts of questions and felt that we shared the same ideas and a mutual attraction. As I started to take leave of him, he went along with me and we continued the discussion in the street for about half an hour and agreed to meet the following day.

When we saw each other again, we renewed our discussion of certain questions that we had broached the preceding evening and the physics lesson was completely forgotten.

And when I came to him on the third day, he told me, after we had talked for a while: "As a matter of fact, you don't have to be tutored in physics; our discussion of problems that stem from it is much more interesting. Just come to see me and I will be glad to talk with you." I went back many times, and the better I became acquainted with him, the stronger my attachment grew. I admired his singular insight and his surprising mastery of physical problems. He was not a brilliant orator and did not use striking imagery. He outlined his subjects in a slow, even tone but in a remarkably lucid manner. To make his abstract thought more easily understood he sometimes used examples drawn from common experiences. Einstein was a skilled mathematician but he often spoke out against the abuses of mathematics in the hands of physicists. "Physics," he would say, "is basically a concrete, intuitive science. Mathematics is only a means to express the laws that govern phenomena."

As we were talking one day, I asked him: "Don't you think that it would be a good idea for both of us to read one of some great thinker's works, and then discuss the problems dealt with in the work?" "That's an excellent idea," he answered. I suggested then that we read a scientific work by Karl Pearson and Einstein eagerly accepted. A few weeks later, Conrad Habicht, whom Einstein had known in Schaffhouse and who had come to Berne to finish his studies with a view to teaching mathematics in the lycée, took part in our discussions. Our dinners were models of frugality. The menu ordinarily consisted of one bologna sausage, a piece of Gruyére cheese, a fruit, a small container of honey and one or two cups of tea. But our joy was boundless. The words of Epicurus applied to us: "What a beautiful thing joyous poverty is!"

Einstein was a candidate for a license at the time I knew him and was impatiently awaiting appointment. He had to give private lessons in order to live, and pupils were not easy to find; rates were low. One day when we were discussing ways of earning a living, he told me that the easiest way would be to play the violin in the streets. My answer was that if he had really decided to do that, I would begin to learn the guitar and accompany him.

Our material status was certainly unenviable, but we shared an uncommon penchant for studying and explaining the most difficult problems of science and philosophy. Together we read, after Pearson, Mach's *Analysis of Sensations* and *Mechanics* which Einstein had browsed through previously, Mills' *Logic*, Hume's *Treatise on Human Nature*, Spinoza's *Ethics*, some of Helmholtz' memoirs and lectures, some chapters from André-Marie

Ampère's Essay on Philosophy, Reimann's On the Hypotheses Which Serve as a Basis for Geometry, some chapters from Avenarius' Critique of Pure Experience, Clifford's On the Nature of Things in Themselves, Dedekind's What Are Numbers?, Poincaré's Science and Hypothesis, which engrossed us and held us spellbound for weeks, and many other works. We also read literary works such as Sophocles' Antigone, Racine's Andromaque, Dickens' Christmas Tales, most of Don Quixote, etc. Our meetings were sometimes highlighted by Einstein's playing some musical selection on his violin.

Unfortunately, it is impossible for me to set down the long, animated discussions provoked by the works which we read together. We would read a page or half a page—sometimes only a sentence—and the discussion would continue for several days when the problem was important. I often met Einstein at noon as he left his desk and renewed the discussion of the previous evening: "You said..., but don't you think...?" Or: "I'd like to add to what I said yesterday...."

The end of the nineteenth century and the beginning of the twentieth witnessed the flowering of research on the bases and principles of the sciences. We devoted weeks to the discussion of David Hume's eminently penetrating criticism of conceptions of substance and causality. Book III of Mills' *Logic*, which deals with induction, also held our interest for a long time.

Einstein favored the genetic method in the examination of basic ideas. To explain those ideas, he would call upon what he had observed among children. He also talked about his own works from time to time, and this revealed a brilliant mind and great originality. In 1903 he published his remarkable work entitled *Theories der Grundlagen der Thermodynamik;* in 1904, his *Allgemeine molekulare Theorie der Wärme;* and in 1905, his admirable monograph entitled *Elektrodynamik bewegter Körper,* in which he outlined his theory of relativity. It is worth noting that no one except Max Planck has grasped the extraordinary significance of this work.

The extent to which Einstein could become absorbed in an interesting problem is suggested by our experience with caviar. In our strolls through the arcades of Berne we passed by a delicatessen where we saw, among other rare foods, some caviar on display. On seeing it, I remembered how much I had enjoyed it at home as a youth. It had been moderately priced there in Rumania, but in Berne it was too expensive for me to buy. This did not prevent me from extolling the merits of caviar in Einstein's presence. "Is it so good as all that?" he asked. "You just can't imagine how delicious it is," I answered. One day in February, I said to Habicht: "Let's plan a big surprise for Einstein. Let's serve him some caviar on his birthday, which comes on March 14." Whenever Einstein ate an unusual dish, he would become effusive and describe it in glowing terms. We were pleased by the thought of seeing him wax ecstatic and use the most far-fetched words to express his satisfaction. When March 14 came, we went to his apartment to dine together. I pretended that I was putting bologna sausages and the regular fare on the table: actually. I put the caviar in our three dishes, and then went over to speak with Einstein. That evening, he happened to start talking about Galileo's principle of inertia, and whenever he dealt with a problem, Einstein forgot completely about the earth and its joys and sorrows. When we sat down at the table. Einstein consumed bite after bite of caviar without saving anything about it, continuing his discussion of the principle of inertia. Habicht and I looked furtively at each other in amazement, and when Einstein had eaten all the caviar, I exclaimed: "Say, do you know what you have been eating?" "For goodness sake," he said, "it was that famous caviar." And after a minute of stunned silence, he added: "It doesn't matter. There's no point in serving the most exquisite delicacies to hicks; they can't appreciate them."

But we were still determined to have him enjoy caviar. A few days later we brought him a sizable portion of caviar, and to avoid having him treat it with shocking indifference, we intoned to the theme of the third movement of Beethoven's *Symphony in F*: "Now we are eating caviar..." While eating, Einstein remarked: "I admit that it's a fine dish, but you have to be an accomplished epicure like Solovine to make so much fuss over it."

What stamped our Academy, as we jokingly referred to our meetings every evening, was the burning desire to broaden and deepen our knowledge and our affection for each other. I followed these meetings with intense interest, and amazingly enough, Einstein was as intensely interested in them as I and would not allow me to be absent. The one time that I missed a meeting cost me dearly.

Berne was outstanding in that leading violinists, cellists and pianists who were touring Europe from East to West, North to South, or vice versa, always gave one or two recitals there. We always made it a point to attend some of the recitals. One day I saw from the billboard that the widely-acclaimed Czech Quartet was going to give a recital. The program was very interesting; they were to perform guartets by Beethoven, Smetana and Dvo?ák. On arriving at Einstein's place for our regular meeting that evening, I told him the good news and told him that I intended to reserve three seats. "It seems to me." he said. "that it's better to give up that idea and read Hume, who is extremely interesting." "Good," I assured him. "It's a date." But I passed by the recital hall on the day mentioned in the announcement and was so affected by the sight of the program that I went into the vestibule mechanically and asked the lady in charge of ticket sales if any seats for the evening were still available.

Glancing at the seating chart, she called out the available seats in the different categories. When she finally added that she still had two specials, that is, seats for those without much money, I lost my head and bought a ticket.

As our "academic" meeting was supposed to be held at my place that evening, I rushed home to prepare dinner. Knowing that they were fond of hard-boiled eggs, I added four to the meal and placed them on a dish which I covered with a white sheet of paper on which I had written: *Amicis carissimis ova dura et salutem* (hard eggs and a greeting to very dear friends).

I then advised the lady in charge of the lodging house to tell them that I begged them to excuse my absence, an urgent matter having obliged me to leave. When she told this story, they understood. They conscientiously ate everything on the table. Then, knowing how I detested tobacco in any form, they began to smoke like persons possessed, Einstein his pipe and Habicht his thick cigars. They put the butts and smoldering pipe dumpings into a saucer and dumped the table, chairs, dishes, forks, cups, teapot, sugar bowl and a number of books on the bed; finally, they pinned to the wall a sheet of paper on which they had written: *Amico carissimo fumum spissum et salutem* (thick smoke and a greeting to a very dear friend).

After attending a musical event, I usually stroll around for a little while mulling over what I have heard and memorizing the themes, variations, etc. That was what I did after the recital given by the Czech Quartet. I walked slowly through the streets until around one o'clock in the morning. When I returned home and opened the door to my room. I thought that I would suffocate because of the heavy tobacco smoke. I threw the window wide open and began to remove from the bed the heap that reached almost to the ceiling. When I finally went to bed, the pillows and draperies reeked so strongly of the horrid tobacco fumes that I could not close my eyes. It was almost dawn before I managed to go to sleep.

When I went to Einstein's place for dinner and our "academic" meeting the next evening, he took one look at me, frowned, and shouted: "Wretch! You dare miss a regular meeting and listen to violin playing? Barbarian! Boor! If you ever again indulge in such folly, you will be excluded and shamefully expelled from the Academy."

Since the previous meeting had not been held because of my absence, this evening's session lasted until one o'clock in the morning.

After Einstein received his license, he married Mileva Maric, a young Serbian girl whom he had met at the Polytechnical School where she was studying. This event occasioned no change in our meetings. Mileva, intelligent and reserved, listened attentively but never intervened in our discussions.

After our "academic" meetings during the summer, we sometimes went up on Gurten, a sprawling mountain located south of Berne, to see the sunrise. The sight of the twinkling stars made a strong impression on us and led to discussions of astronomical questions. We would reach the summit at dawn and marvel at the sun as it came slowly toward the horizon and finally appeared in all its splendor to bathe the Alps in a mystic rose. We would wait for the restaurant located there to open, drink dark coffee and start our downward trek, arriving at the foot of the mountain around nine o'clock, dead tired but very happy.

We also went on hikes to Thun, a town located some thirty kilometers from Berne. We would leave at six o'clock in the morning and reach Thun around noon. Our view of the Alps occasioned discussions of their formation and structure and of geological problems in general. After breakfast, we would stay on the banks of Lake Thun until evening and return to Berne by train.

Such was the full and interesting intellectual life that we led for more than three years. Smitten by the desire to assimilate the culture of France, which has always exerted a strong attraction on Rumanians, I left Einstein in November, 1906, to study at the University of Lyons. I was saddened by the thought of being far from him and denied the pleasure of being present at our incomparable

meetings, which ended with my departure and that of Habicht, who had left Berne several months before me. I have always been astounded by the fact that Einstein, crowned with renown and honors, still harbored nostalgic memories of our meetings.

I loved him and admired him profoundly for his basic goodness, his intellectual genius and his indomitable moral courage. In contrast to the lamentable vacillation that characterizes most so-called intellectuals, he fought tirelessly against injustice and evil. He will live in the memory of future generations not only as a scientific genius of exceptional stature but also as an epitome of moral greatness. His portrait is deeply etched in my mind and, strangely moved, I whisper these words of Epicurus:

Sweet is the memory of a departed friend.

M. Solovine

Leber Tolorine!

Joh denke oft un Fie und frage mich him und her, was fie wohl treiben migen, und wie Sie The Tage verbringen. Nun kommt woch in kleiner äusserer Aulass hinge pre dierer meiner Neugice und dechalt schreibe ich Thum. Tor einigen Tagen prosentintemis Tim hietiger Potentanwalt, den schlauf The aufmerksom gemacht hatte, in Tchriftstick, welches in in tadellouis Franjosisch übersetzt werden sollte, Naturlich matrick das Ding nicht au, da die Angelegenheit pressicite, Aba ich will Tie min doch fragen of Lie eine einigermassen zufilden. stellende Existenz gefunden haben. Wern nein, so haben Jie hier nach

wie vor sine gewisse Chance, in einen Patentbureau Beschaftigung, mit der zeit auch eine sichere Anetellung In finder . Schreiben Sie man bald, was Sie davon meinen. Unsycht es immer gut. Des filies ist schon ein recht stuttlicher, imper: timenter Sterl geworden, Min selbst gerat gegenwartig nicht gerade viel in wissenschaftlicher Bezichung, bald kom ich schon ins stationare und sterile Alter, we man riber readlutionare Gesimming der Shingen wehklagt... Meine Arbeiten finden viel Whirdigung und geben Aulass ju weiteren Untersuchungen. Saof. Hanck schrieb min neulich darüber.

Teh bin orhow wieder ungezoge, disomal meder ins Richcheufeld files, tenstr. 53. Test Sie fort and, ra

hehre ich privation mit keinen Menschen mehr. Nun haben sogar die Hernwey - Gespräche mit Besso aufgehort. von Habicht habe ich absolut nichts mehr gehört. You Threen guten Examer hate ich durch R. Besso mit grouen ter gringen vernommen. Toffentlich wird es Thursen some behaglichere materelle Existing contragen Jesen See herglich gegrüsst und schreiben Sie bald Threns A. Einstein. Mine Fran wie Hon Besso lassen freundlich gruissen.

Berne, Friday May 3, 1906

Dear Solovine,

<u>I often think of</u> you and wonder from time to time what you are doing and how you spend your days. I am writing you because of this and something else which has come up.

A few days ago a patent attorney to whom I had previously mentioned your name came to me with a document which was to be translated into flawless French. Naturally, I did not accept, for the matter was urgent. But I want to ask you if you are leading a satisfactory existence now. If not, here you still have a definite opportunity to find employment in the patent office and eventually work up to a good position. Write soon and let me know what you think of it.

All three of us are fine. The filius has already become a haughty, impertinent young chap. At the moment, I myself am not achieving many results from the scientific point of view, and soon I shall reach the stagnant and sterile age at which the revolutionary mentality of youth is deplored. My works are highly esteemed and are giving rise to further research. Professor Planck (Berlin) has written to me recently concerning this.

<u>I have again moved</u>, this time back to Kirchenfeld (Aegertenstr. 53). Since you have been gone, in my private life I have had nothing at all to do with anyone. Even my conversations with Besso on the way home have stopped, and I have heard absolutely nothing more from Habicht. I was pleased to learn from Besso that you successfully finished your examination. It is to be hoped that this will mean a more comfortable material existence for you.

My cordial regards to you and write soon to,

Yours,

A. Einstein

My wife and Mr. Besso send friendly greetings.

CARTE POSTALE KARTE - CARTOLINA Thoraten. Leka liere The Three Stel gun da ne

August 15, 1908

Dear Solo,

<u>I offer my heartfelt</u> congratulations on your position. You can not imagine how glad I am to know that you are getting along well.

My very best while vacationing.

Your

Einstein

Mileva and Bubi Einstein also send you cordial greetings.

Been Dommeretay. Licken Jola! Thre Ansreden and pour ungemein grazios ausgedriche aber darm wicht weniger faul Schlaflose Nachte lanen sich bei mis wahrecheinlich perchety durchfihren, wicht unudargent als die sallaflosen halber thadensenichte an dec ich mich wools mit. grossen Verginigen ainnere, Der Kurreden werden also micht anguramman, souderes coward Thre Zuraye mit aller Bestimmet. hest envartet. Haylache Green van Shren A Ginstein.

Berne, Thursday December 3, 1908

Dear Solo,

Your apologies, though very gracefully tendered, are still bad. Here we can probably spend sleepless nights no less magnificently than the sleepless academic half-nights which I fondly recall. Your excuses are not accepted, but your unqualified acceptance is awaited.

Cordial regards from

Your

A. Einstein

Bern 18 IIC 09

Leber Solovine!

Joh frente mish schr mit Threen freundlichen Gruss. Gestern kann ein junger Japaner Ju min, der nach Paris geht. Joh schichteihn por Thuren, in der Meduny , dais the genies Kergninge an Thun haben werdere. Ham how Le endlich much Bern! Lie glante gas wicht, wie oft ich an See denke und whe your sale fee wiederiche. Grissen Lie maine Schwester und Three Pauli bestens. Mit fremdschaftlichen gruss The A. Constein. Mine Fran und Bujo lessen anche bestens griesser.

Berne March 18, 1909

#### Dear Solovine,

<u>I was elated over</u> your friendly greeting. Yesterday a young Japanese who is going to Paris came to me. I sent him to you, thinking that you would certainly be glad to meet him. When will you ever come to Berne? You can never imagine how often I think of you and how glad I would be to see you. Cordial greetings from my sister and her Pauli.

With friendly regards

Your

A. Einstein

My wife and Bujo also send their best greetings.

tiber Solonine! Jole frem mere selve darang, dass wir in Taxis hermulungern. Henn may der verd. Vortray ulatt ware, den nic - houstbile dilter - französisch halten soll. 1400 den besten Grissen The question Hoforn. 116. Ziniele .

Hofstr. 116 Zurich [Spring, 1913]

Dear Solovine,

<u>I am very glad</u> that we shall be able to stroll around in Paris. If only I did not have to give this lecture which *—horribile dictu*—I must give in French.

> With best regards, Your

> > A. Einstein

#### Lieber Solovine!

Ich freue mich schr, dass Sie etwas über meine Theorie schreiben wollen. Ich selbst habe zusammenfassend nur ein kleines Büchlein geschrieben, das ich Ihnen hiemit zusende, sonst nur Originalabhandlungen, deren Separata leider vergriffen sind. An Büchern empfehle ich auch für den Ankauf der wissenschaftlichen Bibliotheken Weylt Raum, Zeit, Materie sowie Schlickt Raum und Zeit in der Gegenwärtigen Physik (beide bei Verlag Springer, Berlin), und ausserdem ein bei Teubner verlegtes Bändchen: Das Relativitätsprinzip, in dessen 3. nüchstens erscheinender Auflage die wichtigsten Originalabhandlungen über die allgemeine Relativitätsberie enthalten sind. Ihr Manuskript will ich gern durchlesen.

Mileva geht es gut; ich bin von ihr geschieden, die Kinder sind bei ihr in Zürich Gloriastr. 59. Albert hat sich prächtig entwickelt, der Kleine ist leider etwas kränklich.

Besso ist verschiedentlich in der Welt herungegondelt, er ist aber wieder am Patentamt in Bern. Paul Winteler und meine Schwester Leben immer noch vergnügt in Luzern.

Es freut mich sehr, dass ich bei dieser Gelegenheit wieder von Ihnen gehört habe; ich wünsche Ihnen glückliches Gelingen Ihres kleinen Unternehmens.

Beste guine von ahren A Binstein.

W 30 Berlin April 24, 1920

Dear Solovine,

<u>I am very glad to</u> learn that you intend to write something about my theory. I myself have prepared a summary which I am sending to you; aside from that, I have only the original drafts of essays that are, unfortunately, out of print. Books which I recommend for scientific libraries are Weyl's *Time, Space, Matter* and Schlick's *Space and Time in Physics Today* (both published by Springer, Berlin), along with another volume entitled *The Principle of Relativity* and published by Teubner; the third edition of the latter work. soon to appear, will contain the most important of the original essays on the general theory of relativity. I will be glad to read through your manuscript.

Mileva is in good health; I am separated from her; the children are with her in Zurich, Gloriastr. 59. Albert is quite robust; the little one is unfortunately rather sickly.

Besso has roamed through different countries of the world but is again at the Patent Office in Berne. Paul Winteler and my sister are still living happily in Lucerne.

I am very glad to have heard from you again on this occasion; I wish you success in your undertaking.

Best regards from your

A. Einstein

Inhalt und Methode die Televisitätetheorie beert wals terty der Manneng. falty heart in physickalization Infahrungethetrachen, auf die nie nich mindet, in mangen Karten chank On sieren ? In Joguna & go des seit dem Uterhins behannon Thesenste, dass Beneging over als relative Everymy wakenshould set, we de Rysik auf den Begreff des whaten Barryung gegründet. Die Partike hute orrangesetzt, des in sor Welt caren an aller any opichuster Barreyungeprotend a, mindich dangenigen der Teablithurs, Auf den Lichteilher wiren Benegungers hispuliaber aljetor ve begielen; der Lehteither "but withink or als eine Pakingerung des an fich latter Pagilles absolution Ruches " brisbing en hogentitter thistation of themate Baryingen do kayeelichen Olyekte vaf ihre bojoger werden, und a kinste in diesen physikalischen Eline von absolutes Theorynug" ection and and discuss They sift and die Mechanik guinder. Nachwhich de Bennichungen gescheitert weren, ter darch der whe any puficular, by is make des Trobler mugukelsen. Das A die Relativititatheoris in systematischen bleise. The setyte -getestat vorans, dass as physikalisch tworpugte Burgongs. tande in der Natur micht gebe mid fragtsmach den tolgerungen, whe and dream Varansetzenny begiglich der Naturgetet je gegorgen den kommen. Die Mchoole in Relativitistathere ist dagenigen der Themory. with anitysterind unclose; dean diese latytue Horemachaft at ansatults to als still President out to they ; the minere de the appendix dreffen sein, danist as unnaglish se in papetune mobile kontinieren?

"In artenistischer für die Elektrikitethere ist forme im-

The contents and method of the theory of relativity can. despite the variety of experimental physical facts on which the theory is based, be outlined in a few words. In contrast to the fact, known since ancient times, that movement is perceptible only as relative movement, physics was based on the notion of absolute movement. Optics had assumed that one state of movement. luminous ether, is distinct from all others. All movements of bodies were supposed to be related to the luminous ether, which was the incarnation of absolute motionlessness. If a fixed formal luminous ether filled everything in space, then the movements of bodies would be related to it and one could in this physical sense speak of "absolute movement" and ground mechanics on this notion. But after efforts to discover the privileged state of movement of this hypothetical luminous ether through physical experiments had failed, it seemed that the problem should be restated. That is what the theory of relativity did systematically. It assumed that there are no privileged physical states of movement and asked what consequences could be drawn from this supposition concerning the laws of nature. The method of the theory of relativity is analogous to the method of thermodynamics: for the latter is nothing more than the systematic answer to the question: how must the laws of nature be constructed in order to rule out the possibility of bringing about perpetual motion?

A further characteristic of the theory of relativity is an epistemological point of view. In physics no concept is necessary or justifiable on an *a priori* basis. A concept acquires a right to existence solely through its obvious and unequivocal place in a chain of events relating to physical experiences. That is why the theory of relativity rejects concepts of absolute simultaneity, absolute speed, absolute acceleration, etc.: they can have no unequivocal

link with experiences. Similarly, the notions of "plane," and "straight line," and the like, which form the basis of Euclidian geometry, had to be discarded. Every physical concept must be defined in such a way that it can be used to determine in principle whether or not it fits the concrete case. Gegen die Auffassung von der räumlich - unendlichen und für die Auffassung einer räumlich - geschlossenen Welt 15sst sich also folgendes ausführen:

 Vom Standpunkt der Relativitätstheorie ist die Bedingung der räumlichen Geschlossenheit viel einfacher als die der quasi-euklidischen Struktur entsprechenden Grenzbedingung im Unendlichen.

2) Der Gedanke Mache, dass die Trägheit auf Wechseleirkungen der Körper beruhe, ist in erster Näherung in den Gleichungen der Relativitätstheorie enthalten; aus ihnen folgt mälich, dass die Trägheit mindestens zum Teil auf Wechselwirkung der Kassen beruht. Es gewinnt dadurch der Mach'sche Gedanke sehr an Wahrecheinlichkeit, da die Annahme unbefriedigend ist, dass die Trägheit zum Teil auf Wechselwirkung, zum Teil auf selbständigen Qualitäten des Raumes beruhe. Dem Mech'schen Gedanken entspricht aber nur eine räumlich geschlossene (endliche) Welt, nicht eine quasi-euklidische, unendliche. Ueberhaupt ist es rkenntnistheoretisch befriedigender, wenn die mechanischen Eigenschaften des Raumes volletändig durch die Materie bestimst werden, was nur im Falle einer rKunlich geschlossenen Welt der Poll ist.

3) Eine unendliche Welt ist nur möglich, wenn die mittlere Dichte der Materie in der Welt verschwindet. Eine solche Annahme ist zwar logisch möglich, aber weniger wahrscheinlich als die Annahme, dass es eine endliche mittlere Dichte der Materie in der Welt gebe.

Against the concept of an infinite spatial world and in favor of a finite spatial world, this much can be said:

(1) From the point of view of the theory of relativity, it is much simpler to conceive of a finite spatial world than a quasi-Euclidian world bounded by infinite space.

(2) Mach's supposition that inertia depends on the reciprocal action of bodies is approximated in the equations of the theory of relativity; from these equations it follows that inertia depends, partly at least, on the reciprocal action of masses. Mach's supposition is therefore well founded, for it is hardly appropriate to suppose that inertia depends partly on reciprocal action and partly on the independent properties of space. But Mach's supposition calls for a finite spatial world, not a quasi-Euclidian infinite world. In short, from the epistemological point of view it is better to have the mechanical properties of space wholly determined by matter, and this obtains only if the world is spatially finite.

(3) An infinite world is possible only if the average density of its matter is lost. Such a supposition is logically possible, to be sure, but it is less probable than the supposition that the world's matter has an average finite density.

Bester Sauch for Thre fremellechen Michardete eyen The aber such date 10 % por Exemplan, die " There zugedacht habs? Were Ine daes micht 'un erweiken kommen, zo behalten Ide elufeel. dretter Teil des mer zukommenden Betrages den 20%). Jah site was This Aufras; wie go see if the son Mensetyne is generalit haben . Tels ver he Three also blendt noch ausdoschlich das setungsreelt und verspreche Three, dass ich in invence zur Ubractznung zur Virfragung stelle, It kommen auch mathematische Donge der trucht? Mit den Virtrag ben ich einverstanden. Der verd, X..... hat einfach mein brwit alecht, inden er - ohne midde på Trayen, Briefe usekt cumual darekt om mer stammeter, 2ma von cenus Bekennten von mer unt freugesticher. Sykert fewigsert worden waren, zu einen Konvort dokteste. Wenn Jae mar halfen primmen, duo Gelet an den Tranger zu stellen, envisen She in unen sehs grossen Daeust. Ine achalten bald she kledue thadendereck ubst Nachtery geer racting. Was missen The vou mar deuter, were Colchen Mist your afteractiony von mer kaligen-"agens weeds ich doch in thadende flague min Witcht erlanden daes than wintster market de Askation and trangosesch. to have day Tricle von X ..... Abuhaupt uselit geleser et also reschet, ob es was Tango;

Jale gabre you wicht your work Ausrika, soudown there is ener in Intorese de liouster, der file der Bildingeaustalter in Terusalin Tollars hotele missen, voles sich als Renominiabouge und Lockwogel dollar muss . Wenne wie einigenassen auswichselbar when, mittele ich I've gene on mining Statt gehen lassen , The andecerreits there ille, was ich mus kann, fier medere Stummerbridg, the esterall at yunder behandelt werden Joli glante storhaupt, dars no mus selve gut verstehen worden; wenn mir mis weeder trifen, Ich glanke might, dess men der viele unverseende Witheande die Seele gestimingt hat. To that mar leid, dass ich Theren webt and meda Brischlein pun Uhersolgen gegeben\_ hale. Abor we hatte ich is machine sollen? Wenn och yn Alfelning des gemeinen X .... irgend etwas The lesse way massedien, when a sold the man here her use ann 21. Hery won have abs in dutherdener Rea lassen we will doe tureden neg - marken Ties me for es gut finden. 20 grient Joe hughede Ohr 1. Counter.

March 8, 1921

Dear Solovine,

Thank you for the cheerful report. But are you collecting the 10% per copy which I had intended for you? If not, then simply keep for yourself one-third of the sum (20%) due me. I can tell by your question that you have been very conscientious about the translation. For that reason I am writing to offer you the exclusive translation right and promise always to place at your disposal whatever I decide to have translated into French. Just how do mathematical writings fit into the picture? I approve of the contract.

That abominable X... falsified my foreword by inserting letters—without my permission—which came, not directly

from me, but from an acquaintance of mine whom he had showered with French comeliness. You would be rendering me a great service if you could help me expose the blackguard publicly.<sup>\*</sup> Soon you will receive a short lecture and supplement to be translated. You may be surprised to learn that I have to ask the Academy for permission to have it translated. Perhaps those chauvinists will allow me to publish this nonsense in French.

I am not eager to go to America but am doing it solely in the interest of the Zionists, who must beg for dollars to build educational institutions in Jerusalem, and for whom I act as high priest and decoy. If we were at all interchangeable, I would gladly send you in my place. But I am really doing whatever I can for the brothers of my race who are treated so badly everywhere. I am sure that we would understand each other perfectly if we met again. I do not think that all this undeserved incense has blackened my soul. I regret that I failed to give you my little book to translate too. But how could I have done so? If I could do something to put that wretched X... in his place, I would not hesitate. Write me here. Perhaps it is still possible, before the trip. If necessary. I will have it forwarded. I am leaving here on March 21. Leave out the titles of the Levde lectures-iust do whatever you think best.

> Most cordial greetings, Your

> > A. Einstein

<u>\*</u>I have not read the book by X... and therefore do not know whether it has any merit.

16.11.21.

Liebor Islovine! (gauthies - Villars) Tole relivele Themen der Verdresy e metersvielanst gurick. Die Gelder bitte inte Horn Trof. Ehrenfest, With Raogen Str. Leiden po sender mit dem Kennach, dess sie fier mich bestimment sind. Dies geschiebt, weil ich wiel geld in tusland, ber. in Holland Branche, und is so an edufachater ist. She Irland. uss and der Akademse habe iller Ich wise schon an Lountag ab, sodars misk keine Theor Briefe much hier erreicht. In quei Monaten hoffe ich avieder dier zu sein. Henn ich wissenschaftliche Vorträge halte, so gesolisalet dies wahredienliche an der Timcelon - Universität,

die mode puerst aingeladen hat. Wern Sie mer wach Amerika schreiben rollen, av areielet mel. ein Brief un der Bouckhaus Tuchu Sib, New York. L. Jolovine! Jak bie and kin Vaturledudler und glanbe zuversicht look, dass die Tuden durch dal Kleinhest und Abbangsglast sher Tulistium-Kolonie vous Macht. Roller purickychalten worden. L. Jolovine, ide plandorte geren meter west Hunen, aber wele her gehet it were es dase und used Minuten selvenden, Tesen The instruciden herfiche gegrebret von Herein A. himtin.

March 16, 1921

Dear Solovine,

<u>I am returning the</u> signed contracts (Gauthier-Villars) to you. Please send the money to Professor Ehrenfest, Witte Rozenstr., Leyde, and indicate that it is for me. I am doing this because I need a considerable amount of money in other countries, especially in Holland and Switzerland, and this arrangement simplifies matters. I have the permission of the Academy. I am leaving this Sunday, with the result that none of your letters will reach me here. In two months I hope to be back here. If I give any lectures in science, it will probably be at Princeton University, where I was first invited. If you wish to send letters to me in America, please address them to the Kuhn Loeb Bank in New York.

Dear Solovine! Neither am I a flagwaver, and I believe firmly that the Jews, considering the smallness and dependency of their colony in Palestine, are not threatened by the folly of power.

Dear Solovine! I would like to talk longer with you, but I am like a hare at bay and must use the minutes sparingly. Meanwhile, I send you my cordial regards.

Your

19.1.1.

Lieber Yolowine! Restan Dank finden for trikel und Fleren breech kann also man met and fight in der Testung soloribir. Dies oustigst gegen meine yohailigten Tringipier mid gewohnheiten. New aufitufrage kin komte als mich inver, more as when you spirit ist, do into abunnagen abreise. Ubrigens haben The worde micht recht unitanden. Ich habe bein Vorword por dem X. geschrieben, wondern er hat es ye failselet, wobei to alladings water anderen singe hat bravire wir cale reality warm doeser Gachworhalt bekannt wiede. to quiest Jue bestens

March 19, 1921

Dear Solovine,

Many thanks for the splendid article and your proposal. But I myself can not write for a newspaper. That is against my most cherished principles and practices. I could express my opinion only if someone asked me a question, but that is now too late, for I am leaving the day after tomorrow. Besides, you misunderstood me. I wrote *no* foreword for X..., *but he committed a forgery*, using among other things, of course, some sentences from one of my letters. I would be pleased to have this circumstance known.

With warmest regards to you,

Your A. Einstein Berlin W. 30, den 14. I. 22 Haberlandstr. 5.

Lieber Solovine!

Viele Arbeit und der Horror gegen das Eucherschreiben machen es mir unmöglich, das Gewünschte zu schreiben. In Bälde bekommen Sie meine Princetoner Vorlesungen. Mit der Edition muss aber gewartet werden bis dieselben in Amerika erschienen sind. Bedingung für den Verleger : 20% des Verkaufepreises, davon bekommen Sie 5%, ich den Rest.

Mit herzlichen Grüssen

Ihr

A Ginstein.

J. J. True Hatminger schneiden Jis am bester englich , dannig nie seeht, dass tie es können. The uniesen ihr when much sayin ; dans the moch been deutrel much franzisisch körnen. Is minen ihr and regen, stass men alo jungs Mainen will beit preasure where is the stration procurry beforeten haten Tellethemester tofteeter in tunite almall enfordulich, must fairyt men agends highlet und werd going edupuelistyt.

Berlin January 14, 1922

Dear Solovine,

<u>Much work and the</u> horror of writing books make it impossible for me to write what you wish. Soon you will receive my Princeton lectures. They can not be published, however, until they have appeared in America. Terms to the publisher are 20% of the selling price, of which you will receive 5% and I the rest.

With cordial regards Your

A. Einstein

It would be better for you to write to Mrs. Untermayer in English to show her that you know the language. But you should also let her know that you understand German and French better. You should also tell her that, when we were youngsters, we stayed side by side for a long time and studied together. A firm approach is indispensable everywhere in America; otherwise one receives no pay and little esteem. Berlin W.30, den 14. März 1922 Haberlandstr. 5.

#### Lieber Solovine!

Auf frohes Wiedersehen in Paris! Ich komme dort am 27. oder 28. März an. Langevin besorgt mir einen Unterschlupf, den er Ihnen verraten wird, den ich Sie aber streng geheim zu halten bitte; denn auch so werden die Tage des Pariser Aufenthaltes sehr anstrengend werden.

An dem Vertragsentwurf von Gauthier-Villars habs ich zwei Aussetzungen:

 Der von mir mit b bezeichnete Absatz muss gestrichen werden, da ich ihm natürlich nur das Verlagsrecht für die französische Uebersetzung geben will.

2) Der mit a bezeichnete Absatz ist mir unverständlich.

Wir können die Angelegenheit vielleicht bei meiner Anwesenheit in Paris erledigen. Ich freue mich sehr auf unser Beisammensein, wenn nur mein Schnabel besser französisch gewetzt wäre.

> Mit freundlichen Grüssen Ihr A. Constein.

> > Berlin W. 30 Haberlandstr.5 March 14, 1922

Dear Solovine,

How glad I will be to see you again in Paris! I am to arrive on March 27 or 28. Langevin has made arrangements for a hideout, but I beg you to keep it a deep secret, for the days that I spend in Paris are going to be very trying.

Concerning the provisional contract with Gauthier-Villars, I have two reservations:

(1) The paragraph which I designated as b must be deleted since I am naturally giving him only the French

publishing rights.

(2) The paragraph marked *a* makes no sense to me.

Perhaps we can settle the matter during my stay in Paris.

I am very glad that we are going to be together. I only wish I had a better tongue for French.

With friendly regards Your

Jeeber Jolo Tele house in 28 thends mot dem eingigen in Betracht , Kommender Zuge an, ullenfalls un Morgen des? 9., wenn sich motorneys den Aurchluss vorpasse. Here alles more facture ab genimmelt dass wir etwas Zeit june beistieren heben This frakes Wiederschen

Berlin March 22, 1922

Dear Solo,

<u>I expect to arrive</u> the evening of the 28th on the only evening train or the morning of the 29th at the latest if I miss a connection along the way. I have already gotten rid of everything possible in order to have some time for living.

Looking forward to seeing you, I am

Yours

LT.IK. 22

Lily Jolovine!

Tal danks Themen haylist for die riberaudung des Dange, die sich in Preis Kingen gelessen habe. De ware morginsliche kye, aber verflucht anetrengend, sie stackers missimus well in den Muse. His fake sich much microssed yeachers, abos die Taikengen vonhalt in sich directions goed, with more more water. molars dery anye Unternalismen His men Tweeke wfillt hat. Die Koneletwen sind work mindes fatig. This worken sie aber abalters . Der Durcharty - Engens ist upograiste vorlaufen, es ist guit, loss ich de men. Ich unde Shum Hun Bright Bern Rotherhild, the ist mestingelen Litte. Refeatiliets meden who some the Det graden patringen meles in alter Poure Hil. Hagliche Gritere van Theren A. Entering

April 20, 1922

Dear Solovine,

Hearty thanks for having sent me the things that I left in Paris. Those days were unforgettable but devilishly tiring; my nerves still remind me of them. Here I have not yet seen anyone, but I am told that the newspapers did a good job, with the result that the aim of the operation was fully realized. The corrections have not been completed, but you will receive them. The initial operation was successful; it is good that I was there. I am sending you a letter for Baron Rothschild which I would like for you to give him. Let us hope that we may again spend a day together just as we used to in Berne.

> Cordial greetings Your

16.11.22.

Folm Joly!

Antes die Vortrige Die telen Abindungen needs its and Thicklin andringen, shows on Park also iten und endliele This Auther weadonaken. How and areght Parte suit dues subschentichen thad an Rathlenen. Feb wirshe unch immer gewarment, hade mein Kolleg aufgegeben mit bou offeriell abovercend, abor in Walulust doch how . Du Ande. semiliones ist sele gross File mellosen Chikanen die Interte werden letzten Gudes wienen die - Juden Treffen. Man playt iter gross chikanen gegen der Undustree, Terstornigen non Tabukationanlogen meter den Deckementel der militaischer Branchlarkeit. Highiche equines and viel Kagingen 24 1 Yemstin Du Tainlevi int interessont, abudus inter Relativitit geragte dingte with return halter lassen.

July 16, 1922

Dear Solovine,

Included herewith are the lectures. I shall make the minor changes in the book and correct the mistakes in spelling. I am glad that you are ready to take a trip to see your mother again at last. Here our daily lives have been nerve-racking since the shameful assassination of Rathenau. I am always on the alert; I have stopped my lectures and am officially absent, though I am actually here all the time. Anti-Semitism is strong. The endless chicanery of the Entente will fall upon the Jews again. There are complaints about numberless acts of chicanery against industry, the destruction of factories, under the pretext of military expediency.

> Cordial greetings and much happiness Your

A. Einstein

Painlevé is interesting, but it would be hard to defend what he has to say about relativity.

Springton . 1925.

Lila Idame!

In Tapen was as windervall . Fine Lebensform letindiges Interesse for alles, Konstein intellektuelle Naenstof he onten Instand - in ferner filk in sinem malerichen dame the Stammesturies in Polisium haden man seles gefallen, als Bananyals Arberton and als Burga Destand ist in Junger weig pustition . To wind en monalisales . Zentrous muder, abo banen grocen Tast des jodo schen Wilkes aufusturen kinnen Andres. suits her iste aber - buyengt, dass der Kolonisation selligen wind . Det freme mest, dans This Rese or wellgeling it deffendlich gibt olche, dass man demail gemethe deniber plander kamen Jakischen die die Suche om 9. V. Hern Kime to clarthater, Salle Scaltand, Madrid and relimen he seed in Zelantel duran par guess, Del hade Hadene Adresse meshty unde Thurse also day Konekters proceede. The draw genitte Kestik . It leven sets huckligt to well as subcoses. garmen the she premalect. Tob for and some valler hundelsen motor angetester, wel set go deeser Turdikation keen Patranen wiels late . Das hat wee grendscher aldum eingebragen, aber ich ben doch froh, es gethan on halen. Man annes sich son verligerun Untonetrunger fruhalten, and men He commenrelidies themen licken. Therefore had an arman Thread it Tel. Theories relevence Thick quarker son; Got under the segesher. Huglishe Great non Three A Sintin.

[Pentecost, 1923]

Dear Solovine,

It was wonderful in Japan. Genteel manners, a lively interest in everything, an artistic sense, intellectual honesty together with common sense. The brothers of our race in Palestine charmed me as farmers, as workers and as citizens. The country as a whole is not very fertile. It will become an ethical center but cannot accommodate a very large segment of the Jewish people. But I am convinced that colonization will be successful. I am glad that your trip was such a great success. Let us hope that we can talk about it at our ease one of these days. Send G.V.'s thing to Mr. Kuno Kochenthaler, Calle Lealtad, Madrid, and keep one-tenth for your services. Since I do not have Nordmann's address, I am returning the proof to you. Unfortunately, the criticism leveled at it is justified. He must set it straight. Give him my cordial greetings. I resigned from a commission of the League of Nations, for I no longer have any confidence in this institution. That provoked some animosity, but I am glad that I did it. One must shy away from deceptive undertakings, even when they bear a highsounding name. Bergson, in his book on the theory of relativity, made some serious blunders; may God forgive him.

> Affectionate regards from Your

Liaber Tolo!

Tie branchen. keine Korrektur zu sinden. Gantheder Vill. kann das geld einfuch an menn Balina Adresse senden (Haberlandstr. 5) Hayliche agrisse on Deinen · Cintein

August 26, 1924

Dear Solo,

You do not have to send the proofs to me. Gauthier-Villars can simply send me the money at my Berlin address (Haberlandstr. 5).

Cordial regards,

### 30.1.24,

Lehn Lowine!

Sie whatter des Heftehen ans den Kluss d. e. W. mud das . . . . .... Bush on A. M. por Past. Dames genny des Biographischen . 9- Interesse frer Philosophie was bei mis immer da, abor un schundis. Jas Inturesce for Naturnissenschaft beschränkte siste immer in der Hangetoache auf das Tringipielle, worans mein Them und mitulassen an bester ventendlich word. Jass isto av wering publiquest hake hingt mit am glichen Unstand Jusammen, inden die Lehurucht march dem Defacer des Tringipeellen Jus Tolys hatte, dass sie misste The auf offelylose Bernichungen vinaridt moreles . - Fie Alberbune - Comm. was tenso, als ich dashte, to dot doch Hoffing. dass so times wird met Emones Huyescher Guisse von Threin A Vintin

October 30, 1924

Dear Solovine,

You will receive by mail the brochure of Klass. d. ex. W.

and the book...by A.M. That should be enough biographical material. I was always interested in philosophy but only as a sideline. My interest in science was always essentially limited to the study of principles, which best explains my conduct in its entirety. That I have published so little is attributable to the same circumstance, for the burning desire to grasp principles has caused me to spend most of my time on fruitless endeavors. The commission of the League of Nations was better than I thought. There is still hope that things will be better in Europe.

Cordial greetings from Your

## 8. XI 29.

# Sector Tolo!

Ich will here site make mene Theores vortrayer, um 5th 30 in Just H. Poincare. Juga sende ich Ihnen det feiliegende Kaste. Sen Abend kinnten whi dame jusammen sein, man Los Zest haben. Holen Jee mich wach dawn Hortray. The Wiedersahen The Direction.

November 8, 1929

Dear Solo,

<u>Today I am giving</u> a lecture on my new theory at 5:30 at the H. Poincaré Institute. I am sending you the enclosed ticket. We can spend the evening together if you have the time.

Looking forward to seeing you again, I am

Your

Liebr Yolo! Joh habe De ngesucht n len, brotzden ich kenn noch 6 worde Te Lesen und daribe 3

December 28, 1929

Dear Solo,

<u>I have looked everywhere</u> for your Democritus but have not found it, though I recall having received it from you. Can you send it to me again? I will then read it immediately and write to you about it.

Affectionate regards

A. E.

4. 11. 30.

Liebo Solovine !

& hat in broken gedanut, bis ich Thren Tanatais firting yelesen hate, wil ich von eigener Ashest besesses wind and courst viel abychelten was. Tas alte Exemplar has seen its years interseen wieduzefunden. An meriten Trends hatte ich an These Linkitung . Dre Dusbelling des Regichung Temskrits ju simme Vorganger scheint und sehr gelungen zu sein. Mar verystens ist eine Laterne anfregassigen ( Kuchung tes starren Alsohrten mit dem formloven Lichonstrucion in Atom much Burgung. Revenderingenically and aiginal ist are Rehandling des Timesqueliketen Ribered, was a sich mit den Gesichtesim plagt. jole pothaltand an den Grundpedanken. Unter den moralischen Aphonismen sind einige wicklich gute, aby vieles merhanterdig spreachitzgerled ( Tanherden -Moral - Theorie ). Die Ubractzung scheint im Gaugen werklich gehingen zu sin, sowet ich es mit mehren mongellafter Franzisisch beur teilen kann. Bewendens-wert ist des ferte Glanke aus des physikke Kanzalstet, die auch un dem Willen des hanno saplens wielt Halt macht. To viel sel weeks, sot wat Tainoya winder ar reached and konsequent yoursen.

Mein Felltheorie maskt gute Fortschrätte. Cartan hat sehte durin gashetet. Joh sellet arbeite mit einem Methematiken (I. Mayer aus Kien), einem prichtiger Kal, der Langet erze Perforent hille, winne er micht Unde miter. Det denke most oft au die sehten tage der Reis, ben als derte forter mit merker orthälteinenseig unfeigen hierge Deiteng. Koftgen the site unter, wan die deuten, etage seh sigend etwes theme kann, was der wetwischen und essen ihrkunfelle gegelent om Derem

A. Zuntin

March 4, 1930

Dear Solovine,

<u>Ineeded some time</u> to read through your Democritus, for I was burdened down with my own work and disturbed by other things. The first copy turned up in the interval.

I was elated on reading your Introduction. It seems to me that you handled Democritus' relationship to his predecessors beautifully. To me at least it cast new light on one point: the reconciliation of the fixed absolute and formless change (atom and movement). Worthy of admiration in the original is the treatment of perceptible qualities. He goes to great lengths to defend his basic idea in his discussion of the sense of sight. A number of his moral aphorisms have real beauty, but many reek of philistine pettiness (ethical theory of herds of swine). The translation seems on the whole to be letter-perfect insofar as I can judge from my inadequate knowledge of French. Noteworthy is the firm belief in physical causality, which is not even stopped by the will of *Homo sapiens*. To my knowledge only Spinoza was so radical and so consistent.

My field theory is progressing smoothly. Cartan has done some good work in this area. I myself am working with a mathematician (W. Mayer of Vienna), a splendid fellow who would have been given a professorship long ago if he were not a Jew. I often think of the lovely Parisian days, but am satisfied with my relatively peaceful existence here. Do not hesitate to call on me if you think I can be of help in any way.

Cordial regards

Lieber Solovine!

Anbei das Vertragsexemplar mit herslichem Dank für Ihren Brief. Die kurse Darlegung über das kosmologische Problem hoffe ich bald su schreiben.

Bei dem Kongress in Genf werde ich nicht anwesend sein. Es genügt, wenn ich im Comité bin. Ich kann vom Schreibtisch aus mehr nützen als durch persönliche Beteiligung, sumal ich kein Redner bin.

> Herslich grüsst Sie Ihr A. Giurtin.

> > Caputh near Potsdam July 6, 1932

Dear Solovine,

<u>Herewith the contract with my sincere thanks for your</u> letter. Soon I hope to write the short treatise on the cosmological problem.

I shall not be present at the Geneva congress. It is enough for me to serve on a committee. I can be more useful at my desk than through direct participation, especially so in view of the fact that I am no orator.

> Cordial regards to you. Your

Caputh bel Poledam, den 29.15 32.

Lich yola '

Tie Schucks , Lie myceluldiger ! Jet hat das Ding doch ust proammer schwetzen mussen, neber viele sourtiges Plackerei und and wirklocher taket. Num when int is history klas heranogehournes. Hoffent. lach yefallt is Themen. Jet behalte mis aber on, das Ding später auste einer englischen Tublikation angewaleben, die ich schuldig bies seit nor Jahren .. Hefferblack yeht as There periodeste gut in dieses our skitten Welt, in der man die Helakrei nicht ausratten kann danke des Hucheles der "yebildeten" Haylich griest The The Landen Lie min das Manuskript little mach libusetyning questak.

Caputh near Potsdam September 29, 1932

Dear Solo,

You impatient scoundre!! I managed to tie the thing together only after putting myself to a great deal of trouble and going through much reshuffling and some real work. But now it is crystal clear. I hope you will like it. But I reserve the right to incorporate it later into an English publication that I have been promising for two years.

I hope that you, personally, are well in this topsy-turvy world in which the hypocrisy of "cultured people" makes it impossible to exterminate militarism.

Cordial greetings from

Your

A. Einstein

Please return the manuscript after you have made the translation.

Lieber Solovine!

Leider bin ich Ende Desember schon in Amerika, so dass wir uns hier nicht werden sehen können. Das Wörtchen "sogenanht" im Titel habe ich deswegen gesetzt, weil der Ausdruck "Kosmologisches Problem" keine gute Beseichnung des behandelnden Gegenstandes ist. Ich glaube, wir Endern den Titel um in "Ueber die Struktur des Reumes im Grossen". Hoffentlich finden Sie bald wieder Ihren frohen Mut, der immer so solid auf Resignation gegründet war.

> Herzlich grüsst Sie Ihr A. Coustein.

> > Caputh near Potsdam October 6, 1932

Dear Solovine,

By the end of December I shall be in America, unfortunately, so that we are not going to be able to see each other here. I inserted the word "so-called" into the expression "Cosmological Problem" because the title did not accurately characterize the subject dealt with. I believe that we can change the title to "On the Structure of Space in General." I hope that you will soon regain your usual good humor, which has always been solidly grounded on resignation.

> Cordial regards to you Your

Lieber Solovine!

Ich bin fest davon überzeugt, dass die ganze Sache bei Ihnen in wirklich guten Händen liegt und ermächtige Sie, alles ohne mich nach Ihrem Ermessen fertig zu machen. Die Exemplare schicken Sie am besten erst nächsten April an meine Caputher Adresse. In Amerika brauche ich sie nicht.

Sagen Sie Herrn Langevin nochmals meinen herslichsten Dank und drängen Sie ihn, dass er bald auf meinen Brief antwortet. Es handelt sich nämlich um eine internationale Vereinigung von zuverlässig pazifistisch eingestellten führenden Intellektuellen, welche versuchen sollen, als Gesamtheit durch die Presse politischen Einfluss in den Fragen der Abrüstung, Sicherheit etc. zu gewinnen. Langevin müsste die Seele einer solchen Gemeinschaft sein, weil er nicht nur guten Willen sondern auch viel politisches Verständnis hat.

> Herzlich grüsst Sie Ihr A Cimatein

> > Caputh near Potsdam November 20, 1932

Dear Solovine,

<u>I am firmly convinced</u> that with you the whole affair is in good hands, and I give you full authority to settle everything without me, using your own judgment. It would be best for you to send the copies to me next April at my Caputh address only. I do not need them in America.

Tell Langevin that I again thank him sincerely, and insist that he answer my letter soon. There is to be an international meeting of distinguished intellectuals who are staunch pacifists; their aim is to gain a voice as a body in the political press and exert their influence on questions of disarmament, security, etc. Langevin should be the soul of such a group, for he has not only good will but also keen political insight.

Cordial greetings, Your

Lo Con be Ostaves 23. IV. 33.

these fold !

Jack bins micht saya gekommen, Three Brief ush gety In buntionten, so highte as Bringe und Menselsen! Mine Augst int, dans diese Hars . und Gewalt - Yeuche web riberall unstruction werd. Dus komment wie eine Whenselowermany was unter much oben, his die ohere indieren, vereingstigt und - demonalisicat sind much auch In der Flut versinken . - Jet hat ums mehr mofersuren als verstandige Gedanken in meinem Him. Der Tenfel scheinst auf den grossen Hanfa! Jung von den Huring . Haffentlich scher wir mus dool simul, were as whiger un mist gooden ist. Timotweilen grinso Ja hugert The AZ Hern The juidinche and Tentrulland geflichtete thadenike schen, dans veranlasses Jes sie, sich mit mis in habindung you setyen. Del mishde mot in pras Trannelin variables, sine justiche clast. University for justicele Togenten und Trofessoren in Anisland ( Lugland? ins Leben you refame, men verigetues silve dringendsten Redidifiiren In entryrechen much aim that geistigen Tuflachet you schaffen.

Le Coq near Ostend April 23, 1933

Dear Solo,

<u>I could not manage</u> to answer your letter on time, so great was the stream of letters and men. I fear that this epidemic of hatred and violence will become widespread. It rises like a torrent until the upper layers are isolated, distressed, demoralized and engulfed by the flood. I now have more professorship than rational ideas in my head. The devil mocks the people!

Enough nonsense. Let us hope that we may still see each other one day when calmness has again enfolded me. In the meantime I send you my warmest regards.

Your

A. Einstein

If you see any Jewish academicians who are refugees from Germany, please have them get in touch with me. I would like to try with some friends to found a free university abroad (England?) for Jewish teachers and professors; it might at least meet their most pressing needs and create a sort of intellectual refuge. Lieber Solovine,

Mit Pfingsten ist es wieder nichts. Ich muss nämlich übermorgen nach Zürich zu meinem kranken Sohn und dann sofort nach Oxford (Christchurch College), wo ich bis etwa 20. Juni bleiben muss. Es ist wohl möglich, dass ich nachher nach Paris komme im Zusammenhang mit der Angelegenheit vom College de France. In diesem Palle sehen wir uns in Paris, andernfalls hoffentlich hier, wo ich den Sommer zu verbleiben gedenke. Trotz aller Aufregungen und Ablenkungen habe ich mit meinem wissenschaftlichen Freunde hier eine schöne Arbeit gemacht, über die ich glücklich bin.

> Herzlich grüsst Sie (in Eile) Ihr A. Zimstein .

> > Le Coq May 19, 1933

Dear Solovine,

Nothing again concerning the Pentecost project. As a matter of fact, I have to go to Zurich the day after tomorrow to see my ailing son and immediately thereafter to Oxford (Christ Church College) where I am to remain until about June 20. It is quite possible that I shall then come to Paris for the business of the Collège de France. In that case, we may see each other in Paris; otherwise, I hope it will be here, where I intend to spend the summer. Despite all the excitement and interruptions, I am happy because of the good work which I have done here with my scientist friend.

Warmest greetings to you (hastily), Your

Licha Solumine !

Jels hiffs, dans ist Flowen week die rituretyning unever Bledlerne me Trangester gunner ham. Has Infelt has going berests when franzisischen Kalegematernehmen des kelugenecket / gugesichent; was haben miss afin das Recht vorhelealten, den Uhusstyer seller In wohlen How Infeld hat dem Kiley herests This Herese gechicade Tas Bunch them and wale protends, dass ist Here Infeld, den ein Aprilan algorithaya works was, elver zestive see Libers-Thetale verschafter unste. Her hale de Jaske gusamme recht wiffelling angeachatet mit lundow Benickewichtyng des erkennstnischerebischen Gesichtsgemichtes. Hie udmilisch In Masho Zost in depustisch - materialistischer Standpunkt relactors damendate, we in more list in ather tracken post twentsach - miljekomistacher . Man arkland den turparale auf " Sufammy des Nates als objektiones Realstart als realitates Combiel, under more and die ist du Guntan - Theoretaken eine Tuyund market. Die Marschen rend ehen suggestabler als site Pferde, and sine Alose beharschit jeste Test, where stars die mediten den siekliensehenden Typammen mich mur zu sehen bekannen.

Vermo mus in des blosenschaft so whe, dance konte man sich mit einen verynigten Leckeln begnigen. Aber two prestrachen John ist is work viel diger, and des geht mus an den Heepen. Es sot so rehenselich. Jegenvirtig, dass nicht ein sugger Gestticht blieft Bisardige Warren auf oheer seels und firge Selbstandet and die andern, thusika bet nationlash, and what anders, aber alles karment spetter and langeamer. The paren weekt daher. Men mussgung sein und wash eburr fiden Telablone gemodelt, wenn man nicht orshungen well, Jeh merde allerdings als alter abgestempettes Kusenmeters med Hunionen book yershietzt; aber whoher Helly yeht meberher. We ashiste some more fort dearef los, autosticoft over admigen magemention junger Hollyn. Buchen kanne ish most, abor dee tobe to be that madgelescen. Und dam : for use ist and nicht shel. Hughert quint the He

1. 8

Princeton April 10, 1938 Dear Solovine,

I still hope to be able to entrust the translation of our book into French to you. Mr. Infeld has, it is true, already promised a French concern (Flammarion) the publication rights; but we reserved the right to choose the translator ourselves. Mr. Infeld has already given your address to the publisher. The book owes its existence to the fact that I was obliged to provide for Mr. Infeld, who was refused a fellowship. We worked out the subject very carefully together, giving particular attention to the epistemological point of view. In Mach's time a dogmatic materialistic point of view exerted a harmful influence over everything; in the same way today, the subjective and positivistic point of view exerts too strong an influence. The necessity of conceiving of nature as an objective reality is said to be superannuated prejudice while the quanta theoreticians are vaunted. Men are even more susceptible to suggestion than horses, and each period is dominated by a mood, with the result that most men fail to see the tyrant who rules over them

If this were true only of science, one could dismiss it with a smirk. But the same holds in politics and in our lives. Our times are so wretched that not one enlightened man is left. On the one hand are fools with evil intentions; on the other, a base egotism. Naturally, America is no different, everything coming here later and more slowly. You are not made for this situation. One must be young and cut to a pattern or die of hunger. To be sure, I am highly esteemed, like an old museum piece or curiosity, but such a dada is overlooked. I work earnestly always, supported by a few courageous colleagues. I can still think, but my capacity for work has slackened. And then: to be dead is not so bad after all.

> Warmest greetings, Your

A. E.

Nassau Point, Peconic Long Island, N.Y. den 27. Juni 1938

Lieber Solovine:

Ich glaube, es wäre vorteilhafter, wenn Sie mit Ihrer Mutter Platz tauschen könnten, wenigstens soweit Valutagründe in Betracht kommen. Die deutsche Uebersetzung ist von einem langweiligen Kollegen gemacht, dem wir dieselbe leider aus Mitleid übertrugen. Halten Sie sich also besser an den englischen Text, wie Sie selbst vorschlagen.

In der englischen Ausgabe ist bei den Ausführungen über die Lichtfortpflanzung leider eine unrichtige Behauptung über die Zeit des Sonnenunterganges. Es ist mir unbegreiflich, wie mein sonst so zuverlässiger Kollege das hat schreiben und wie ich es habe durchgehen lassen können. Es wird dort behauptet, dass im Augenblick der Beobachtung des Sonnenuntergange die Sonne in Wahrbeit schon sechs Minuten untergegangen sei. Dieser Irrtum entspringt einer geozentrischen Darstellung vom Standpunkt eines mit der Erde rotierenden Koordinatensystems. Leider kann ich die Stelle nicht finden, sie wird Ihnen aber schon auffallen. So kann ich im Moment nicht sagen, ob der Satz ohne Schaden weggelassen werden kann oder durch einen anderen zu ersetzen ist.- Die Curricula können Sie weglassen; Korrekturen brauchen Sie nicht zu schicken, ich habe volles Vertrauen auf Ihr Verständnis. Der Titel "Evolution de la Physique" scheint mir die Absicht nicht ganz wieder zu geben. Ich war auch mit dem gewählten englischen Titel eigentlich nicht ganz einverstanden. Der deutsche Titel scheint mir zutreffender, weil er das psychologische, bezw. subjektive Moment in den Vordergrund stellt. Das Wort "clew" bedeutet in der Detektivsprache einen entscheidenden Gesichtspunkt ("Spur"), der sur Aufhellung eines Verbrechens bezw. zu einer kausslen Verbindung der entdeckten empirischen Einzeltatsachen führt. Sie werden schon das richtige französische Wort wählen.- Es ist nicht richtig, dass ich nach Europa fahre. Ich bleibe hier den Sommer über in einem stillen Winkel und richte es überhaupt immer so ein, dass ich möglichst wenig mit Menschen zu tun habe. Wenn einer dies begreifen kann, dann sind Sie es.

Ich arbeite mit meinen jungen Leuten an einer überaus interessanten Theorie, mit der ich die gegenwärtige Wahrscheinlichkeits-Mystik und Abkehr vom Realitätsbegriff auf dem physikalischen Gebiete zu überwinden hoffe. Sprechen Sie aber nicht darüber, weil ich noch nicht weise, ob ich damit zu Ende komme.

> Herzlich grüsst Sie Ihr A. Sinstein

> > Nassau Point, Peconic Long Island, N.Y. June 27, 1938

<u>I believe it would</u> be to your advantage to exchange places with your mother. The German translation was made by an irksome colleague who owes our approval, alas, to pity. You should therefore concentrate your efforts, as you yourself suggest, on the English text.

In the English edition there is unfortunately, with respect to developments concerning the propagation of light, a misstatement of fact as to the time of the setting of the sun. I simply can not understand how my colleague, who can usually be relied on, could have written that or how I could have let it pass. The passage states that at the instant a sunset is observed, the setting has actually occurred six minutes earlier. This mistake springs from a geocentric description from the point of view of a system of coordinates that rotate with the earth. Unfortunately, I cannot find the passage, but you will certainly come across it. Thus I cannot say at the moment whether the sentence should be deleted or replaced by another. You may leave out the *curricula*: you need not send me the proofs; I have full confidence in you intelligence.

The Title Evolution de la Physique does not seem to me to express the intention exactly. Actually, I was not in complete agreement on the English title. The German title seems more apt to me, for it points up the psychological or subjective moment. The word "clue" as used in police jargon means a decisive point of view (trail) that leads to the solution of a crime or to a causal chain of isolated facts revealed by experience. The choice of the right French word is up to you. It is not true that I am leaving for Europe. I am staying here in a quiet corner during the summer and always struggling to have as little as possible to do with others. If anyone can understand this, it would have to be you.

I am working with my young people on an extremely interesting theory with which I hope to defeat modern proponents of mysticism and probability and their aversion to the notion of reality in the domain of physics. But say nothing about it, for I still do not know whether the end is in sight.

> Cordial greetings to you Your

Lieber Solovine:

Das von Ihnen geschilderte Unglück bezüglich der französischen Ausgabe des Buches mag ja gross sein. Ich denke aber, dass wir überaus glücklich sein müssen, wenn es das Schlimmste wäre, was gegenwärtig durch menschliche Schuld sich begibt. Wir wollen uns also mit Humor ins Unvermeidliche fügen.°

Es ist furchtbar, dass Frankreich Spanien und die Czecho-Slowackei verraten hat. Das Schlimmste daran ist, dass es sich bitter rächen wird.

In der wissenschaftlichen Arbeit bin ich auf eine wunderbare Arbeit gestossen, an der ich mit zwei jungen Kollegen mit grossem Eifer arbeite. Es besteht Hoffnung, auf diese Weise die mir unerträgliche statistische Grundlage der Physik zu überwinden. Es ist eine Erweiterung der allgemeinen Relativitätstheorie von grosser logischer Einfachheit.

Herzlich grüsst Sie

Ihr A "kinstein" \* Die Exemplare und ungekommen und achen schr haberte nur Ham lete beit finden wurde, min New Unseener geneuer nugwelen, wissen die Götter

December 23, 1938

Dear Solovine,

The misfortune which you describe concerning the French edition of the book is great. But I think that we should consider ourselves extremely fortunate if this were the worst that actually happens through human frailty. Let us then bow ungrudgingly to the inevitable.\*

France's betrayal of Spain and Czechoslovakia is frightful. The worst part is that the consequences will be deplorable.

In my scientific work I have come across a wonderful subject which I am studying enthusiastically with two young colleagues. It offers the possibility of destroying the statistical basis of physics, which I have always found intolerable. This extension of the general theory of relativity is of very great logical simplicity.

Warmest greetings to you, Your

A. Einstein

<u>\*</u>The copies arrived and look beautiful. Only the gods know when I shall find time to look more closely at the poor things.

## Lieber Solovine:

Ich habe mich sehr gefreut über Ihren Brief und warte ungeduldig darauf, Sie wiederzusehen, nachdem ich - offen gestanden - sehr besorgt um Sie gewesen war. Sie schreiben mir so höflich, wie wenn Sie nicht mit mir Schweine gehütet und sonat andere Sachen mit mir getrieben hätten, als wir noch beide jung waren. Ich hatte auch Nachricht von den Habichts, die Sie wahrscheinlich aus den Augen verloren haben werden.

Herzliche Grüsse an Sie und die Ihren und auf frohes Wiedersehen im Oktober

Ihr 1 Tainti

August 29, 1946

Dear Solovine,

I was very glad to receive your letter, and can hardly wait to see you again after having been seriously concerned over you, I must confess. You write to me so politely—as if you had never herded pigs with me and done other things with me when we were both still young. I have also heard from Habicht, whose whereabouts are probably unknown to you.

Wishing you and yours the very best and looking forward to our happy reunion in October, I am

Your

den 5. October 1946

## Lieber Solovine:

Ich freue mich sehr auf Sie und dass wir uns in dieser besten aller Welten noch einmal sehen und über alles mögliche disputieren können. Sie wohnen bei mir, erstens sowieso und zweitens weil gegenwärtig kein Zimmer hier zu haben ist. Also los!

> Ihr alter A. Einsten.

> > October 5, 1946

Dear Solovine,

<u>I am very happy</u> because of you and because we can see each other once again in this best of all possible worlds and talk about all possible things. You will live with me, first because you should and second because right now it is impossible to find a room here. So there!

> Same as ever, Your

Febr Jolovine:

Se when schon allers smother meter schebeletes genissen lebendig zu erhalten, wenn ar micht sonast genny Valering fands. Dens See haten was noted what w list und unofishalsal quelivitter. Deswon ja edut I muy chanteneressive Retakorates, and do She Unkel Same grindbuch van des Rickseste kommen lernten, inten The vor the Nake sabers, wie as mit den Porfalgtersmuspedagt - portioners west denen, die andere verfolgt habers , or seller listet and Manches and deser yetset much mached dance groves Tontachalter. Vous Toxe Langeorius hette ich schor orfalian. to max mis exine its declotten, in walnut Hilliger\_ and dels hostilizate to ist water , does alse Polistica since gathe anagement of haben, indere er wicht machande was mardere Motion you device ischauser, the obser as freewal waron . - " is ist not anallely, day The hereid will ar long same exhalt; into glande, day day die Kehrseste ihres Individualizances int, all menterretterlan functioning which aufhormance lasst. recons might auf des Brois mationales Establants. Bedanten The over mile make first dide pour Bisses, die war Theme sender differs , das block with mich on sche . Them type danks sale sets fire une mobilgemeinten und gewiss oachkundigen Raticle Bigs Jole meners also defin and you does ind mesers life muchest ohne you viel Size als reliested by eichouter Kanno, da sties mains singiger winksemes behanty ist. The hate where attragens heremagestellt, does in growing had deven dweek you wering bases beding & way we haden mich mit gaten Defoly wieder quech tyen arter ? Hil tunka). There Britan hade iste mast grossen Dukinesse gelesen Die hat in juda falls rester, dans Moral minut and eflander, d. la they law been gegrindet winder will that we inderendeterle A farming trifft genies in nets Addaming des Rochtige. The set fithe doch haspty, dars does toffarming you premiter sot, Mot den guten Handle not is mie mit dear queten egederlise. ... Man spirates tersty

kenn is aber eur gang unrollkommen ertiral erfassen. Tillet when men were die Doktrin aminunt , ist das ly linchergofs bel eine prokere Basis, desto netliger, je genanes men hansakt. Takes de geistrichten Sente wich doche micht emmal daniber beler werdeer komen, was das Weseer des Hitzes und des Hunors est, and worauf while starke Wikeny quindet. Mines Selwester goled as subjective yet, etco as est and abschudsage Bahn, and der es teine Tranch goft. Da stage int etwas attichen querest als die des meisten Altersyefdhaten. Jeh lau ihr Jegenmarting abendes der Kyrophlein von Kenglon vor, ehr going kostleches Herte. To was Teeffendes und Unverkilustelles haben mus griechen motunde gebracht. Is int bet, does We Tran Transmis impleden haben . The de gilt Himes achines Mart ; Neme is Dickaten requeste , winder me ils une Idelier in den Kopf schlager Jok plays mich schr wit oler kriftyson lover Falsifiguring ) motion glaisburger met methodes How Thenes . Was send aber went von comes Whowvierdang des mathematischen Talmais ; testen, to est in hartes Geselver ft, ye dans ein weltiges Mathematikes italaught der Comage micht aufbridigen widede. Mot dem Back ist is selen restet, wind ist for intergenget, does the as your konigstont haben. We doe flice Stells met den Ebanen -Hubergany still, wiss ich nicks. The menulatake Lower filest rich, wennes er as sime Japans entdeslet, alar morners it as non Knynetypes weynehmen (Brokens). Hat lety town Thispers de John despende in when Bilary sufferen Gree int much chen enterheaden als Positionen zu buskere, wenn In Schadues with there Mangelon veries salt 305. ( Dies our als Nickness ). " Then whe iste , dans see de . " " welestion .. " met Englich huber wollow, is lot tit into myen des duman Theless at an que ramper Madarahainstich ist is it des apateres inglittleen they also anch you with Turche dress . the gute for Si beale! The A Fintins .

April 9, 1947

Dear Solovine,

You alone would suffice to keep my bad conscience alive if it did not find ample nourishment elsewhere. For you have written me in such an amiable manner and in such detail at different times. You had an adventurous trip and were able to become acquainted with both sides of Uncle Sam; you had a good look at his cavalier treatment of persecuted people, or rather those whom others have persecuted; he is undertaking a number of things in this area and making great progress.

I had already learned of Langevin's death. He was one of my dearest acquaintances, a true saint, and talented besides. True, the politicians exploited his goodness since he was unable to ferret out the base motives which were so foreign to his nature. It is surprising that France is recovering so slowly; I believe that this is the reverse of her individualism, which does not allow responsible public opinion to come to light unless it serves the purpose of national pride. Never thank me again for whatever bits we have the right to send you; it confuses me too much. I thank your doctor profusely for his well intentioned and competent advice, but I must be careful in describing my health. without lving too much, as bad, for this is my only effective weapon. Besides, they have already discovered that it was due largely to a deficient diet; by enriching the diet, they were successful in restoring my good health. I read your Epicurus with intense interest. He is guite right in saying that ethics must not be based on belief, that is, on superstition. The eudemonic concept is certainly fitting. But I feel strongly that it is too primitive. Good acts are like good poetry. They are sensed easily but are only partially understood. Even if the doctrine is accepted, the feeling of goodness is a precarious basis, for the more closely one looks, the more nebulous it becomes. The most ingenious people have not succeeded in determining even the nature of the escape of mind and mood and the basis of their powerful effect. Subjectively my sister feels well, but she is going down a steep grade from which there is no return. Hers is a little steeper than that of most people of the same age. Currently I am reading Xenophon's Cyropaedia to her in the evening. It is an exquisite work. Something so fitting and so natural was realized only by the Greeks. It was very kind of you to have invited Mrs. Francois. Heine's beautiful line applies to her: "If it rained ducats, she would have only holes in her head." In Mr. Straus' company I am always bothered considerably by the verification (or refutation) of my equations. But we are far from having surmounted the mathematical difficulties. It is a hard matter, which even a real mathematician would not have the courage to attack. As for the book. I am convinced that you did a good job in correcting it. I do not know where the ridiculous passage about the sunset is. The reader enjoys discovering such a lapse, so why deprive him of his pleasure (Epicurus). Did the latter have a place for malicious pleasure on his balance sheet? According to him, it would definitely be considered as positive if the injury is not caused by men. (Here I am only kidding.) I surmise that you wish the English Evolution.... Sending the stupid thing is not worth the bother. It is probably not obtainable in the latest English editions

All the best you both!

Your

### Lieber Solovine:

Mir gehts rocht gut mit ein bischen auf und ab, und Majas Zustand ist auch befriedigend (den Umständen gemäss). Ich habe viel Freude gehabt an der Lekture Ihres Epicur. Dass der Mann im Grossen recht hat mit seiner Ethik ist wohl kaum zu bezweifeln. Andererseits scheint es mir doch nicht den Gegenstand zu erschöpfen, weil die als positiv empfundenen Werte bis zu einem gewissen Grade incomensurable sind und nicht so ohne weiteres addiert und subtrahiert werden können. Angenommen z.B. wir wären überzeugt, dass die Glücksumme bei den Ameisen günstiger liegt als bei den Menschen, wäre es dann vom ethischen Standpunkte aus richtig, wenn die Menschen den Ameisen das Feld Häumten? Jedenfalls ärgern Sie sich nicht über mich und meine Hartnückigkeit und seien Sie versichert, dass wir es in Bezug auf Hitze und Feuchtigkeit grossartig mit Euch aufnehmen können.

Mit meinem hauptsächlichen Problem plage ich mich unentwegt aber ohne entscheidenden Erfolg.

Mit herzlichen Grüssen von uns Allen an Sie und Ihre Frau

Ihr A. C. wite:

August 26, 1947

Dear Solovine,

Lam getting along well, with a few ups and downs, and so is Maja (all things considered). I was delighted to read your Epicurus. All in all, it would be hard to deny that the man's system of ethics is logical. Against this, it seems to me that he fails to exhaust his subject, for the values shown as positive are to some extent incommensurable and can not without further elaboration be added or subtracted. Suppose, for instance, that we are convinced that the cumulative happiness of ants is higher than that of men. Would it then be right from the ethical point of view for men to surrender to the ants? Regardless, do not lose your temper because of me and my stubbornness, and rest assured that as far as heat and humidity are concerned, we can offer you large-scale competition.

I torment myself bravely with my main problem but without obtaining any decisive result.

With cordial greetings from all of us to you and your wife.

Your

Lieber Lolo!

In liste got hat a scherte teleb Jernicht har angernennen, nue die ihn en fystagen haben. The gewicht bat et docker, werde die nur diesen Bariege scher ihr dettet nicht en doch diese gewichten nur diesen ihre gewichten ihre die scherterbede gewichtenheft nue der Alexanse jeues Minsteinielsenten: begit heren Augete gewichtet, der or deutgeset werder des minsteinielsenten ihre geiter heren worde schert werden konnte

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But many gold to ser year to get to fact water Solwest to liver nicht; church as appleter betrachter den tier aberete ser 2 km gold. Die bei ihr mein immens jeden Mand war - harte gann Diespeel die machanderigen Agemente, welche Belanden gegen beiseterches Ansicht onerheinigt, dess sich dete Balanden desse und suger min der Sonne bewegen. Die beste diese manden Agemaante der Sonne bewegen. Die beste diese manden Agemaante der Sonne bewegen. Die beste diese manden Agemaante der Sonne bewegen. Die beste der ander sonder Agemaante der Sonne bewegen. Die beste den manden and anfährenten der stakkters, Ber Ahmigen wachten an den starten beste deste son Son Son Sonne bewegen.

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The "Inglowdor soigen grown musics producter Alkahan eine har klimiticher Ressen timbert des sie ihnen michto progetrant hälle. Aber ihre Bettich gulannes int such Welle angestlemen. Bellewicht sand sie dies eingegen, die mich dam niendlicher haptelikeruns ohne Revoluti. fortig nachten Agiel Do wind als argentliche viel sie haat hand daren ihre handersche, des micht startikent ist werden auf Milmungender ungeweinen ist.

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November 25, 1948

Dear Solo,

The good Lord seems to have been very nonchalant about accepting your consignment, but the effect was still the same, as you see by this letter. He probably follows scrupulously the maxim of a governmental employee: There is no affair so pressing that it will become more pressing if laid aside for some time.

My friend Lowe spoke to me about you. From his account it is clear that aside from the above-mentioned God and some black marketeers, no one in France lives better. It is worth noting also that there are attempts to uphold "our" policy of bringing the Nazis back to power in Germany in order to use them against the wicked Russians. It is hard to believe that men learn so little from their toughest experiences. Following his suggestion, I sent Hadamard a telegram to support opposition to the policy. In it I said: "This world war would not have occurred if people had listened to the far-sighted Clemenceau." Let us hope that the intellectuals will achieve something.

At home, everything goes smoothly so far. My sister does not suffer, though, objectively, she sinks visibly. I always read to her in the evening—today, for instance, the odd arguments which Ptolemy advances against Aristarchus' opinion that the world rotates and even moves around the sun. I could not keep from thinking of certain arguments of present-day physicians: learned and subtle, but without insight. The examining of arguments in theoretical affairs is precisely a matter of intuition.

In my scientific activity, I am always hampered by the same mathematical difficulties, which make it impossible for me to confirm or refute my general relativist field theory, though I have a very competent young mathematician as collaborator. I shall never solve it; it will fall into oblivion and be discovered anew later. That has already happened to many problems.

Among the works that I have been reading to my sister in the evening are certain things from the philosophical writings of Aristotle. They were actually deceptive. If they had not been so obscure and so confusing, this kind of philosophy would not have held its own very long. But most men revere words that they can not understand and consider a writer whom they can understand to be superficial. That is a touching sign of modesty.

The English show a kind of cheap resentment which I would not have believed possible against our small Jewish tribe. But their internal politics really deserves praise. They are perhaps the only ones to end outmoded capitalism without a revolution. Objectively they are actually in a worse condition than France, which is neither overpopulated nor reduced to importing foodstuffs.

During these last months, one of Conrad Habicht's sons came here; he is a very clean-cut, well-built boy, who is also a mathematician. Once again I had news of the old man. We really had a wonderful time in Berne, when we were intent upon our studies in our happy "Academy," which was less childish than the respectable Academies that I became more intimately acquainted with later on.

One of the good sides of old age is in gaining the right perspective for viewing all things human. You certainly do not have to grow old for that.

Cordial greetings and wishes from

Your

A. E.

Lido Beach, Sarasota, Florida den 22. Februar 1949

Lieber Solovine,

Der von Ihnen erwähnte Briefwechsel mit einem Schulmädchen in Südafrika eignet sich nicht im Geringsten für Ihren Zweck. Es war darin hauptsächlich das Erstaunen ausgedrückt, dass ich nicht schon 300 Jahre tot wäre (Verwechelung mit Newton).

Ich bin hier für drei Wochen in Florida, von jetzt an nur noch 4 Tage. Die Operation war eine Bauchoperation gestützt auf eine nicht ganz zutreffende Vermutung. Ich habe mich gut erholt und die Operation ist nicht vergeblich gewesen, weil einige Verwachsungen korrigiert worden sind. Ich bin aber immer noch geschwächt; viel kann man in diesem Alter nicht mehr erwarten.

Mit herzlichen Grüssen an Sie und Ihre Frau

Thr A. Emperin

Lido Beach Sarasota, Florida Februrary 22, 1949

Dear Solovine,

The exchange of letters with a South African schoolgirl which you refer to was a dismal failure. The main outcome was astonishment at the news that I had not been dead for 300 years (confusion with Newton).

I am here in Florida for three weeks, with four more days to go. The operation was a stomach incision based on a conjecture which was not entirely correct. I have made a good recovery and the operation was not useless, because certain defects were corrected. But I am still weakened, for at this age one can no longer expect very much.

With cordial regards to you and your wife,

Your

Lieber Soloalue!

Jet him gaing quicked when Threes herglichen Breef, des so seles aboticht von den andere ung the gen Prisepar, die her drever makeligen Gelegenbert auf mich nicker your well wind . See willen as and no ver, dass ich mit stiller Befräckigung auf sen delans with gurisk soleans. Her as sot gang ander von due Note gerdien De ist kein engige Begriff, om dem the strying wire, dass a standhalter wind, and ich fills mich musicles , of sale relation of dem realter Hege time. Der Zitzenorsche aber sehen in min puglaste unen Hetjer und Reak trans, der wole selber soguragen shalett hat. In his allowings and Made and Kaynichty hast you whatfur , when day gofished der Elizalionglochkert how on inners. New - is keen woll wisher anders setus, new me krotoset and chilode set, and Hannon must Bescheddung halters excens in Glichgewicht, den Dussen Bonos langer gun Arty. the haten weises you recled suit dens, was doe "hot de Vefehrungen mit den Menseben sagen. He helmer kann ja unders, als of chen thurt. Das Schung beliete wo das Injale, das ende in grossen Rahmen abopielt. Dees Deminiscun des Hind Trichhaften. Anderska, Degland Russland must die Kleineren - hol die der Tenfel, und a wird to male Theme . In Boote, was Healt, and in near supposite Themake, de Kosf and Hoy an realities These baken and imander motichen, or will as her mus beiden int Jet tim mengicsig, was the with den Hersklit maanumen gebreaks helm. Tele denke mis, dess is in Fortgiver mid firsterer Goselle ganosen ist. to sot go relade, dass diere Rissenkerle mus durch when dicken Abel glachen weeders tommen. Alles Hongbeke, enorg Than Them

March 28, 1949

Dear Solovine,

<u>I was deeply moved</u> by your affectionate letter, which contrasts so sharply with the countless other letters that have reached me on this unhappy occasion. You imagine that I regard my life's work with calm satisfaction. But a close look yields a completely different picture. I am not convinced of the certainty of a simple concept, and I am uncertain as to whether I was even on the right track. In me my contemporaries see both a heretic and reactionary who has, so to speak, survived himself. That, to be sure, is a matter of fashion and short-sightedness, but the feeling of inadequacy comes from within. Well, it can not be otherwise when one has a critical mind and is honest, and mood and modesty keep us in balance in spite of external influences.

God knows how right you are in everything you say about human experience. But whatever is done justly cannot be done otherwise. What is most grievous is the social drama which is being played on the world stage. This domination of blind impulses. America, England, Russia and the smaller ones—may the devil take them, and he will.

The best that remains are some upright friends whose heads and hearts are in the right place and who understand each other, as we two do.

I am curious about the material you have assembled on Heraclitus. I think that he was a stubborn, melancholy man. It is a pity that these gigantic individuals can be seen only through a thick fog.

My very best, to you and your wife.

Yours,

25.I ST.

Xan Volonton'

Jac lunder There aswar dicken Bund processed of will soudyes darin tis mundlight sutemaries wird, and mine kliman Kontronnee noit des Fealekolleges. Bald mede able Olmen male die nue Kaflage mines Belolins sites office and daw talany, die we win pour Hickor in day Blotter in stake Readeline ary sugt hat, shook mitmand eners day Hurston des Ding on Guescht the hourse hat to ist underhaft dealling : Torshere auf torestimes ! -Annucleur, unde iste Thurson in eine paur blehen im Billelain mit pelogentisch intetandenen tupestin ete, whale see goden at rend. In underhave Briefmarker ( mit / myslichus) mounter then demoker set dates. Job hoffe, dass das Salere Du Poris auch file Nielo- profitiens allendhich estrophickor wird, und dass is Der und Desnes The put geht . Bei une ist en mich hefringerd, was des Privatlehan put gette van and state on Strand

January 25, 1950

Dear Solovine,

<u>I sent you a</u> thick volume thinking that certain things in it would probably interest you, among them my little quarrels with professional physicists. Soon I shall also send you the new edition of my book with the Appendix which produced so much excitement in the newspapers a few weeks ago even though no one, except the translator, had seen it. This is really amusing: laurels given out in advance! I shall also send you another book containing essays composed at odd intervals as soon as they are printed. It contains the odd exchange of letters between me and the (so-called) Russian academicians.

I hope that life in Paris is gradually becoming tolerable for the non-black marketeers, and that you are well, you and your wife. Our own private life is satisfactory.

Cordial greetings from

Your

### Lieber Solovine,

Anbei erhalten Sie die Bestätigung die an Gauthiers-Villars gegangen ist. Es wäre richtiger, wenn der Anhang gleich in der Form erschiene, die er in der gegenwärtig in Vorbereitung befindlichen vierten Auflage der Vorlesungen enthält. Die verallgemeinerte Gravitationstheorie ist darin von einem Ueberlegungsfehler befreit und auch sonst verbessert.

Nit dem von Ihnen vorgeschlagenen Titel für "Out of my later Years" bin ich einverstanden. Wenn Sie noch kein Exemplar dieses Buches von mir erhalten haben, schreiben Sie es mir bitte; ich werde Ihnen dann eines senden.

Mit der Frage der Statistik versus Determinismus ist es so: Vom Standpunkt der unmittelbaren Erfahrung gibt es keinen exacten Determinismus. In dieser Beziehung besteht volle Uebereinstimmung. Die Frage ist, ob die theoretische Beschreibung der Natur deterministisch sein soll oder nicht. Darüber hinaus besteht insbesondere die Frage, ob es überhaupt ein begriffliches Bild der Wirklichkeit (für den Einzelfall) gibt, das im Prinzip vollständig und frei ist von Statistik. Darüber allein bestehen Meinungsdifferenzen.

> Herzliche Grüsse Ihr A. Cinsten .

> > June 12, 1950

Dear Solovine,

Enclosed herewith is the confirmation sent to Gauthier-Villars. It would be more appropriate to have the Appendix appear in the same format as in the fourth edition of the Lectures, now in preparation. The theory of gravitation has had one mistake in logic deleted and has been corrected.

I agree with you about the title which you propose to substitute for *Out of My Later Years*. If you have not yet received from me a copy of my book, write to me, please, and I will send you one.

Concerning the question of Statistics against Determinism, this is the way it appears: From the point of view of immediate experience there is no such thing as exact determinism. Here there is no disagreement. The question is whether or not the theoretical description of nature must be deterministic. Beyond that, the question is whether or not there exists generally a conceptual image of reality (for the isolated case), an image which is in principle completely exempt from statistics. Only on this subject do opinions differ.

> With cordial regards Your

Lieber Solovine,

Ich erhielt Ihren Brief vom 30. Juni und bin mit all Ihren Vorschlägen einverstanden. Die Sache mit den Spektrallinien ist natürlich darauf zurückzuführen, dass ich mich um die Herausgabe der Aufsätze nicht gekümmert habe und dass die Herausgeber keine Ahnung von der Sache haben. Neugierig bin ich, inwiefern wir über die Religion verschiedener Meinung sein können. Ich kann mir nicht vorstellen, dass unsere Meinungen irgendwie wesentlich von einander abweichen. Wenn es os scheint habe ich mich wahrscheinlich schlecht ausgedrückt.

Mir persönnlich geht es recht befriedigend, aber meine Schwester ist sehr zurückgegangen, immerhin ohne sonderlich darunter zu leiden.

Die nächste Auflage des Anhanges ist immer noch dadurch verzögert, dass ich keinen völlig befriedigenden Beweis für die Kompatibilität der neuen Peldgleichungen gefunden habe. Daher die Verzögerung.

> Mit herzlichen Grüssen Ihr A.C.

> > July 10, 1950

Dear Solovine,

<u>I received your letter</u> of June 30 and agree to all your proposals. The matter of spectral rays is of course explained by the fact that I had nothing at all do with the publication of my essays and the publishers had no notion of the subject. I am curious to learn just how far our opinions on religion differ. I can not imagine how, basically, our opinions could be widely divergent. If that is the way it appears, I probably failed to express myself clearly.

Personally I am getting along well, though my sister has retrogressed, without suffering much, however.

The next edition of the Appendix is still being held up because I can find no completely satisfactory proof for the compatibility of the new field equations. Hence the delay.

With my cordial greetings, Your

A. E.

Lieber Solovine:

Vielen Dank für Ihren ausführlichen Brief vom 7 Dezember. Zu Ihren Pragen :

Die Militarisierung Deutschlands hat doch schon kurz nach 1848 eingesetzt, seit Preussen Einfluss gewann, wo die Militarisierung viel Alteren Datums ist. Ich glaube, das hundert Jahre die beste kurze Bezeichnung der Zeitdauer für den Prozes ist.-

Schluss des Aufsatzes über Kepler: Die Bemerkung soll den Leser auf diesen psychologischen und historischen interessanten Punkt aufmerksam machen. Kepler hat zwar die damals übliche Astrologie abgelehnt, aber doch dem Gedanken Ausdruck gegeben, dass die Möglichkeit siner vernunftigen Astrologie durchaus bestehe. Dies ist gar nicht so merkwürdig, well die Vermutung animistischer kausaler Zusammenhänge, wie sie dem Primitiven fast überall eigentümlich ist, nicht an sich unvernünfig ist, und von der Naturwissenschaft unter dem Druck der systematisch gewonnenen Erfahrungen nur allmählich verlassen wurde. Keplers Porschungen haben nattrich sehr zu diesem Prozess beigetragen, der sich in seinem eigenen Geist als ein harter innerer Kampf abgepielt hat.

Ihre Abneigung gegen den Gebrauch des Wortes "Religion", wenn es sich um eine emotionale seelische Einstellung handelt, die in Spinoza am deutlichsten hervortritt, kann ich sehr wohl begreifen. Ich habe keinen beseren Ausdruck als den Ausdruck "religios" für dieses Vertrauen in die vernünftige und der der menachlichen Vernunft wenigstens einigermassen zugüngliche Beschaffenheit der Realitüt. Wo dieses Gefühl fehlt, da artet Wissenschaft in geistlose Empirie aus. Es schert mich einen Teufel, wenn die Pfaffen daraus Kapital schlagen. Dagegen ist ohnehin kein Kraut gewachsen. Threr Kritik bezuglich Wissenschaft und Moral, bezw. Zielsetzung, kann ich mich incht anschliessen. Was wir Wissenschaft nennen hat ausschliesslich das Ziel, festzustellen was ist. Die Bestimmung darüber was <u>sein soll</u> ist etwas davon Unabhängiges, nicht auf methodischem Wege Erreichbares. Die Wissenschaft kann nur Sätze über Moral in logischen Susamenhang bringen und Mittel zur Verwirklichung moralischer Ziele liefern, aber die Zielsetzung selbst ist ausserhalb ihrer Domäne. Das ist wenigstens meine Ansicht. Wenn Sie aber nicht mit mir übereinstimmen, dann frage ich gehorsamst: wessen Blödsinn soll in diesem Buche Platz finden, meiner oder Ihrer?

Mit herzlichen Grüssen und Wünschen für 1951

Ihr A matin

January 1, 1951

Dear Solovine,

Many thanks for your detailed letter of December 7. Here are the answers to your questions:

The militarization of Germany came about shortly after 1848 following the rise of Prussia, where militarization had a much earlier beginning. I believe that one century is the best rough designation of the length of the process.

Conclusion of the article on Kepler: The remark will draw attention to this psychological and historically interesting point. Kepler did reject the astrology of his era but still promoted the idea that the existence of rational astrology is entirely possible. This is not so extraordinary, for the positing of causal animistic connections, which is almost always characteristic of primitive man, is not unreasonable in itself, and was given up only gradually by science under the pressure of systematically acquired data. Kepler's research doubtless contributed much to the process, which developed as a harsh inner struggle in his mind.

I can well understand your aversion to the use of the word "religion" when what is meant is an emotional or psychological attitude, which is most obvious in Spinoza. I have found no better expression than "religious" for confidence in the rational nature of reality insofar as it is accessible to human reason. Wherever this feeling is absent, science degenerates into uninspired empiricism. For all I care, the parsons can make capital of it. Anyway, nothing can be done about it.

Lean not concur in you opinion concerning science and ethics or the determination of aims. What we call science has the sole purpose of determining what *is*. The determining of what *ought to be* is unrelated to it and can not be accomplished methodically. Science can only arrange ethical propositions logically and furnish the means for the realization of ethical aims, but the determination of aims is beyond its scope. At least that is the way I see it. But if you do not agree with me, I respectfully ask, which imbecility should find a place in the book, yours or mine?

With cordial greetings and best wishes for 1951.

Your

Im deutschen Text habe ich damals "begrenzt" geschrieben in dem Sinne von "zu wenig allgemein verbreitet".

Mit den beiden Verlegern ist es fatal, weil Flammarion einen Vertrag hat, den ich aus Nachlässigkeit habe durchschlüpfen lassen (mein Freund und Mitarbeiter Infeld hat es damals besorgt), von dem es zweifelhaft ist, inwieweit es der Firma Flammarion Rechte auf dieses Buch gibt. Ich hoffe sehr, dass Sie die mühevolle Uebersetzung bezahlt bekommen haben. Wenn dies der Fall ist, dann liegt mir eigentlich nicht viel daran, dass das Buch erscheint.- Die Verlage mögen es untereinander ausmachen.

Das Leiden meiner Schwester ist natürlich in der Zwischenzeit welter vorgeschritten, ohne dass sie direkt darunter zu leiden hätte. Ich selber bin mit meinem Zustand zufrieden, wenn sich auch das Alter natürlich bemerkbar macht. Ich bin nämlich nicht aus einer langlebigen Femilie.

Die einheitliche Feldtheorie ist nun in sich abgeschlossen. Sie ist aber so schwer mathematisch anzuwenden, dass ich trotz aller aufgewendeten Mühe nicht imstande bin, sie irgendwie zu prüfen. Dieser Zustand wird wohl noch viele Jahre anhalten, zumal die Physiker für logisch-philosophische Argumente wenig Verständnis haben.

Mit herzlichen Grüssen Ihr A: Countain -

February 12, 1951

Dear Solovine,

In the German text I wrote "limited" in the sense of "not too common."

The editorial mix-up is unfortunate, for Flammarion is in possession of a contract which I negligently let slip through (my friend and collaborator Infeld is looking into it now); the extent to which Flammarion is entitled to publication rights is still in doubt. I hope that you have been paid for the translation, which was marked by so many difficulties. If so, publication matters little to me, to be truthful. Let the publishers arrange matters between themselves.

My sister's affliction has naturally become increasingly severe in the interval, but she does not suffer from it directly. I myself can not complain of my health, although the effects of old age are making themselves felt. I do not come from a long-lived family, as you know.

The unified field theory has been brought to a conclusion. But it is hard to use it mathematically for, in spite of all the trouble I have gone to, I am not able to verify it in any way. This state of affairs will last for many more years, mainly because physicists have no understanding of logical and philosophical arguments.

> Cordial regards, Your

Ich danke Ihnen herslich für Ihren lieben Brief und für das Euchlein von la Mettrie mit Ihrem interessanten Vorwort. Es wird einem nicht leicht zu realisieren, dass die Gebildeten des 18. Jahrhunderts das Euchlein revolutionär gefunden haben. Ich lese meiner Schwester jeden Abend ein Stück daraus vor. Sie würden lachen, wenn Sie meine gestammelten französischen Tönchen hören könnten. Was einem bei der Lekture auch wundert ist der blumige Rokoko-Stil, der von dem nüchternen Geist unserer Zeit so grell abeticht.

Ich denke mir manchmal, wie wohl der Solo die internationalen politischen Pfuschereien beurteilt. Wahrscheinlich sind wir sehr verschiedener Ansicht, weil jeder geneigt ist, gegen das was in seiner Nähe ist, am sauersten zu reagteren.

Bei uns geht es soweit gut, aber mit meiner Schwester ist es unterdessen welter abwErts gegangen. Sie kann kaum mehr ein verständliches Wort herausbringen, obwohl sie noch ganz gut denken kann.

> Herzlich grüsst Sie Ihr A. Cinstein.

> > March 23, 1951

Dear Solovine,

<u>I thank you sincerely</u> for your amiable letter and for the book by La Mettrie with your interesting Foreword. It is not easy to understand how cultured people of the 18th century found this book revolutionary. I read a part of it to my sister every evening. You would laugh if you could hear me stammer out the precious French sounds. The reader is also struck by the flowery rococo style, which contrasts so sharply with the heavy spirit of our time.

I sometimes wonder how Solo looks upon international political blunderings. Our outlook is probably different, for

each is inclined to react most bitterly against what is close at hand.

All is well with us, but my sister's condition has worsened in the inverval. She can scarcely pronounce an intelligible word, though her mind is still clear.

> Cordial regards to you Your

Ich sende Ihnen hiermit die Correctur zurück. Ich habe meine Bemerkungen deutsch geschrieben; wenn Sie es nicht verstehen, dann fragen Sie mich wieder. Ich merke übrigens, dass auch nach Berichtigungen der Appendix über Verallgemeiner te Gravitationstheorie ziemlich schwer zu verstehen ist. Es ist wichtiger, dass die Sache verständlich sei als dars sie möglicht früh erscheint.

Die Sache mit den Packeten tut mir sehr leid.Schillers "Ring des Folykrates" kam mir in den Sinn. Erkundigen Sie sich doch, ob die sogenannten "Care"-Packete ebenfalle mit hohem Zoll belegt sind. Diesen ganzen Segen habt Ihr dem Truman und seinen Helfern zu verdanken.

Wegen des Buches brauchen Sie sich keinen Kummer zu machen, nachdem Sie die Uebersetzung bezahlt bekommen haben. Ich habe keine Illusion, mit diesem Buche die Welt verbessern zu können und es ist mir wurst, wenn es erst später oder überhaupt nicht erscheint. Jedenfalls werde ich mich nicht hineinmischen. Sollte es doch zur Publikation kommen, können wir uns immer noch wegen des Bildes den Koof zerbrechen.

Die Sache wegen der Schrödinger Gleichung ist ganz in Ordnung. E ist eine Punktion von q und p allein. Die aus dem E fabrizierte Schrödinger Punktion psi hängt aber von der Zeit t ab.

Der La Mettrie ist interessant geschrieben, wenn auch die vielen Rokokoblumen uns dabei kurlos anmuten. Ich habe alles meiner Schwester vorgelesen. Schwer zu denken, dass die Zeitgenossen das als so aufreizend empfunden haben.

> Mit herzlichen Grüssen von uns allen Ihr A. Gruntain

> > March 29, 1951

Dear Solovine,

<u>I am sending the</u> correction herewith. I wrote my comments in German; if you do not understand them, write me again. I notice besides that even after the corrections the Appendix on the theory of gravitation is quite difficult to understand. It is more important for the subject to be intelligible than for the volume to appear as soon as possible. I am very sorry about the package mix-up. Schiller's "The Ring of Polycrates" comes to mind. Find out whether the so-called "Care" packages are subject to high duties too. You owe this whole blessing to Truman and his helpers.

There is no need for you to bother about the book after having been paid for the translation. I have no illusion of being able to better the world through this book, and it makes no difference to me whether the book appears later or not at all. In any case, I do not intend to be mixed up in it. If it is published, we can always bash our heads in over the portrait.

Schrödinger's equation is wholly in order. E is a function of q and p alone. But Schrödinger's function psi, formed from E, depends on the time t.

La Mettrie writes interestingly, though we were struck by his flowery rococo style. I read all of it to my sister. It is hard to understand how his contemporaries managed to find it so exciting.

With warmest greetings from all of us.

Your

Ich erhielt Ihre liebe Karte vom 16. Juli. Die zwei unschuldigen Druckfehler nehmen sich gegenüber den sonstigen Teufeleien der Menschen recht bescheiden aus.

Ich habe Ihnen die traurige Mitteilung zu machen, dass meine liebe Schwester schon vor vier Wochen durch einen sanfte Tod von ihrem grässlichen Leiden erlöst wurde. Eine plötzliche Verschlimmerung der Hirn-Arteriosklerose hatte einen leichten Fall zur Folge, der aber einen komplizierten Bruch des rechten Oberarms verursachte. Das hierdurch notwendig gewordene Stillliegen führte zu einer Lungenentzündung mit hohem Fieber und Bewusstlosigkeit, die den Tod nach etwa 10 Tagen herbeiführte. Bis zu diesem Unfall habe ich ihr allabendlich vorgelesen, zumal ihre geistige Kraft – abgesehen vom Gedächtnis für neue Eindrücke – kaum gelitten hatte. Ich bin sicher, Sie werden der guten Seele ein freundliches Andenken wahren.

Man plagt sich redlich, aber der prekäre Gott Spinozas hat es uns noch weit schwieriger gemacht als unsere Väter ahnten.

> Nit herzlichen Grüssen Ihr A. Wurteur

> > July 30, 1951

Dear Solovine,

<u>l received your delightful</u> card of July 16. The two innocent printing mistakes are insignificant in contrast with the diabolical machinations of men.

I must transmit to you the sad news that my dear sister was delivered from her horrible suffering by a gentle death four weeks ago. An acute aggravation of the arteriosclerosis of the brain was responsible for a slight fall resulting in a compound fracture of the right arm. This necessitated complete rest, which brought about an attack of pneumonia accompanied by a high fever and loss of consciousness. Death came in about ten days. Up until the accident, I used to read to her every evening, so long as her intellectual stamina— with the exception of remembrance of new impressions—was relatively unimpaired. I am sure that you will remember the good soul kindly.

We bear many afflictions unflinchingly, but Spinoza's precarious God has made our task more difficult than our forefathers suspected.

With cordial regards, Your

35.44.52.

Seter Solorine !

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March 30, 1952

Dear Solovoine,

As always, I was delighted by your last letter. As for the changes proposed by you, I am in complete agreement.

Carl Seelig is a good man. But he takes the task that he has undertaken far too seriously, alas, with the result that he bothers everyone. Tell him whatever you think best and pass over whatever you wish in silence. For it is not always good to be presented to the public nude—or rather neuter. Make your decisions but do not communicate them to me, for I do not wish to be mixed up, even indirectly, in this affair. I did of course answer a few positive requests.

Now I come to the most interesting point in your letter. You find it strange that I consider the comprehensibility of the world (to the extent that we are authorized to speak of such a comprehensibility) as a miracle or as an eternal mystery. Well, a priori one should expect a chaotic world which cannot be grasped by the mind in any way. One could (ves one should) expect the world to be subjected to law only to the extent that we order it through our intelligence. Ordering of this kind would be like the alphabetical ordering of the words of a language. By contrast, the kind of order created by Newton's theory of gravitation, for instance, is wholly different. Even if the axioms of the theory are proposed by man, the success of such a project presupposes a high degree of ordering of the objective world, and this could not be expected a priori. That is the "miracle" which is being constantly reinforced as our knowledge expands.

There lies the weakness of positivists and professional atheists who are elated because they feel that they have not only successfully rid the world of gods but "bared the miracles." Oddly enough, we must be satisfied to acknowledge the "miracle" without there being any legitimate way for us to approach it. I am forced to add that just to keep you from thinking that—weakened by age—I have fallen pray to the parsons.

All of us here are well, including Margot who, thanks to her operation, has developed more resistance. In the elaboration of the nonsymmetrical field theory I have found an important complement which determines the general equations of the field *a priori* just as the simple principle of relativity determined the equations of gravitation.

With warmest regards to you both.

Your

# A. E.

I do not intend to go to Europe again in order to avoid being the central figure in a monkey farce. Besides, everything today is so close to each of us that there is less justification than ever for chasing after it.

2. 8. 52

Fector Yola !

3- Steven Breef getter See more fits your Studies have des Refor. Die verte Sinde art mater stanles Kalenten androng and den Then for world pourment. Turner him talandele the enachlow. The peter gute Gritack for die Niclo- Enachbarker. howen, dans die Weltrequerony mixtrogichen und inspessione negeneelten sam het the als den jelgige trestand den tracelee. Hen dinke en die begunnigen den R. N. för die Elente in Konsee! Aug die nederen Jeste when staht der Gefals den villigen Delbotremine Thing de Mensichast, we Jacke, die fits and dock more gendet habers will a Juball will an and min destans des unavoris nocht (neum unche zigernd) pour Scheneline. Met day unsity with int is an even Sucher. Is vouvendet sich now loved she are my tiste", men the Muschen is mitheaft willen, mus ande une and Freachet in educane Tustand unertrig lister Unsicherkeit. Solahan hestand in Willing herbergefithere, sollte man met allen Fisten versuslices Dese Bunichung int mitgle ale, selfert in dem talk dass das The went encicled wind down we bet guins are grintinger englahreitscher Hickeng, indens sie sich gegen den determinen und unhough doollers National Anna mulet,

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May 7, 1952

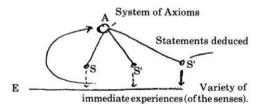
Dear Solovine,

In your letter you blame me for having committed two sins. First, for having taken an uncritical attitude regarding the plan for a world government. You always look upon it, not as undesirable, but as something that cannot be realized in the near future. You give good reasons to prove that it can not be realized. You might have added as still another good reason the fear that the world government would be more unbearable and especially more unjust that the present state of anarchy. Just think of the benefits brought to Korea by the United Nations! But on the other hand, humanity faces the danger of self-annihilation, something which should weigh down on us. For that reason we should withdraw (though hesitantly) the "undesirable." As for the "impossible," this much can be said: it becomes "possible" if men *seriously will* it, even if this is brought about solely by their fear of living in an unbearable state of insecurity. We must exert every effort to create this desire. The effort will be worthwhile even if the aim is not achieved, for it will certainly have some educational merit in that it will be directed against stupid, heinous nationalism.

You say that we should start by training the young people to examine historical events objectively. Only in this way could we hope to realize anything in politics. But this is a chicken-and-egg relationship or a vicious circle. The chicken is the political situation and the egg is rational training. Since the skein offers no loose end to enable us to unravel it, we simply have to make every possible attempt and not lose our courage.

But if every effort fails and men end by destroying themselves, the universe will not shed a single tear for them. It would still be good, however, if the book could at least appear first and be placed on sale.

As for the epistemological question, you completely misunderstood me; I probably expressed myself badly. I see the matter schematically in this way:



(1) The E's (immediate experiences) are our data.

(2) The axioms from which we draw our conclusions are indicated by A. Psychologically the A's depend on the E's. But there is no logical route leading from the E's to the A's, but only an intuitive connection (psychological), which is always "re-turning."

- (3) Logically, specific statements S, S', S" are deduced from A; these statements can lay claim to exactness.
- (4) The A's are connected to the E's (verification through experience). Closer examination shows that this procedure also belongs to the extralogical (intuitive) sphere, for the relation between the notions show up in S and the immediate experiences are not logical in nature.

But the relation between S's and E's is (pragmatically) much less certain than the relation between the A's and the E's. (Take the notion "dog" and the corresponding immediate experiences.) If such a relationship could not be set up with a high degree of certainty (though it may be beyond the reach of logic), logical machinery would have no value in the "comprehension of reality" (example: theology).

What this all boils down to is the eternally problematical connection between the world of ideas and that which can be experienced (immediate experiences of the senses).

The work for the de Broglie anniversary volume will be translated into French by scholars there. But its contents will be a heresy of the worst order for the people. I can not send it to you until it is printed.

We are all well, but my capacity for work has lessened perceptibly; even that has its good side.

Warmest regards to you.

Your

# A. E.

Seelig is a likeable man, to judge by his behavior and without knowing him personally.

Ich habe die englische Uebersetzung dieser kleinen Aufsütze, die in dem Buch gesammelt sind, lange nicht so ernst genommen, wie Sie bei Ihrer Uebersetzung. Ihr englischer Ausdruck für die Leiter der Elektrizität ist wahrscheinlich besser als der auf Seite 234 gegebene. Das Wort "report" auf Seite 111 meint "mitteilen". Es mag sein, dass der englische Ausdruck nicht adequat ist, ich denke aber, man versteht was gemeint ist.

Dem Dr. Lowe geht es ganz gut. Er ist gegenwärtig in Europa (Schweiz) und wird Sie sicher besuchen wenn er nach Paris kommt.

Sie durfen sich nicht beklagen über die Torheiten und Irrungen Ihrer Landsleute. Es wäre doch zu anmassend, wenn sie allen Anderen gegenüber eine Ausnahme bilden würden. Die Meinigen philosophieren schon Kräftig darüber, warum sie in Europa nicht so sonderlich beliebt sind. Alles wäre doch so possierlich, wenn man nicht selber dem Gesindel mit Haut und Haaren ausgeliefert wäre.

Was mich betrifft, habe ich eine Venenentzündung hinter mir, die sonst hauptsächlich bei schwangeren Frauen aufzutreten pflegt. Jetzt aber geht es uns Allen bis auf weiteres befriedigend.

Unsere Akademische "Olympia" ist durch den guten Seelig verherrlicht und der Unsterblichkeit zugeführt worden, wie sie es verdient. Unsere übermütigen Abende aber hat der Meister doch nicht wieder zum Leben erwecken können - leider.

Einstweilen herzliche Grüsse für Sie und Ihre Prau

Ihr

A Cinsten .

November 17, 1952

Dear Solovine,

<u>I did not take</u> the translation of the book of collected essays half so seriously as you. Your English expression for conductors of electricity is probably better than the one used on page 234. The word "report" on p. 111 means "communicate." It is possible that the English expression is not adequate, but I think that its meaning will be understood.

Dr. Lowe is fine. He is now in Europe (Switzerland) and

will certainly visit you when he is in Paris.

You must not complain about the imbecilities and mistakes of your compatriots. It would be too much to expect them to be an exception to all the others. Mine are getting a workout in philosophy by asking themselves why they are not especially loved in Europe. Everything would really be comical if we were not altogether at the mercy of the rabble.

I myself have just gotten rid of phlebitis, which normally shows up in pregnant women. Now we are all, until something new develops, in good health.

Our academic "Olympia" was glorified and escorted to immortality by good old Seelig, as it deserved to be. But the master could not bring our high-spirited evenings back to life—alas!

In the meantime warmest greetings to you and your wife.

Your

The die musterbliche Akademie Olympie.

In deinem kurgen aktiven Dasses hurt du in kindlicher Trende dich ergitzt an allen was plan and gerelies war. Dive Mitgliedle haten dich geschaffen, me sich inter device grassers, alten und aufgeblassuren Schweston having pe mechan. Whe selve site domit das Richtige getroffen habers, hat ich dur en langjethesze songfältige Beobachtungen voll In modeligen gelerat. Wher alle Mitglieder haben mes jum Mindesten als danchaft onversen. Here we ancer selion strong kedcholig sind, so straket doch work ctwas von deinene herteren mush belebender Licht auf museum unsamme Lebenspfud dem der bist nicht mit slucer all genorder und any woolsere wie whene ins trant gewachseine Galaduflange. Die gilt maire Trene und And Douglichket his your lityten hochgelcheten Schnaufer ! The number mer korsespondicroade Mitglied 4.2. Thisneeton 3. TE. 53,

To the immortal Olympia academy,

In your short active existence you took a childish delight in all that was clear and reasonable. Your members created you to amuse themselves at the expense of your big sisters who were older and puffed up with pride. I learned fully to appreciate just how far they had hit upon the true through careful observations lasting for many long years.

We three members, all of us at least remained steadfast.

Though somewhat decrepit, we still follow the solitary path of our life by your pure and inspiring light; for you did not grow old and shapeless along with your members like a plant that goes to seed.

To you I swear fidelity and devotion until my last learned breath! From one who hereafter will be only a corresponding member,

A. E.

Princeton, April 3, 1953

Vor allem danke ich Ihnen für die stilvolle Antwort auf meine akademische Botschaft. Diese Antwort hätte eine Zierde am Hofe Priedrich II. abgeben können.

Wenn Gauthier-Villars die drei erwähnten Publikationen in einem Bündchen versinigt neu herausgeben wollen, so habe ich dagegen nichts einzuwenden. Betreffend das populäre Büchlein habe ich auch nichts gegen eine Publikation. Ich mende Ihnen hier mein einziges Exemplar der ursprünglichen deutschen Ausgabe (um deren gelegentälche Rücksendung ich bitte). Zweitens sende ich Ihnen per Drucksache die letzterschienene Ausgabe, die eines Anhangs, den ich für die nächstens erschienede Neuauflage der englischen Ausgabe geschrieben habe, und zwar den ursprünglichen deutschen Text. Auch diesen bitte ich nach vollendetem Geschäft zurückzusenden, vorausgesetzt, dass diese Darlegung überhaupt Ihren Beifall finden.

An den Zeitungskritiken habe ich mich gebührend ergötzt. Ich war gerührt darüber, dass Sie mir eine derselben eigens abgeschrieben haben. In dem einen Artikel ist amüsanterweise dem Alter statt der Jugend das Gefühl der Vereinsamung als schmerzlich hervorgehoben.

> Mit herzlichen Grüssen Ihr H. Giustein.

> > April 23, 1953

Dear Solovine,

<u>First let me thank</u> you for your grandiloquent answer to my academic message. Your answer would have done honor to the court of Frederick II.

If Gauthier-Villars wants to put the three publications mentioned into one volume for republication, I have no objection. Nor am I opposed to the publication of the popular book. I am sending you my only copy of the original German edition (which I wish you would return as soon as you can). Second, I am sending you a press copy of the last edition, which contains some additions; and third, a copy of an Appendix which I wrote, in German of course, for the new English edition, which is to appear soon. Please return the German text after you have finished the translation, assuming, naturally, that you like this treatise.

I was duly pleased by the newspaper reports. I was deeply moved by your having taken the trouble to copy one of them for me. In one of the articles the sad feeling of loneliness is attributed, amusingly enough, to old age instead of to youth.

> With my cordial greetings Your

## 28.7. 53.

Lever Yolo!

Ten habe luchen mutanes, dass wir There in as Transing deptheres Examples menes alter Bitchlins geschicher huben . Jen hate therhauget teen Exemples mehr, sodars sele Here Verberennigen nicht voll whediger timmete. Dass Die merte tie Transen aborgen miller and denen die Kinder von geweerenligten Tack lokan her gigst worden, that win loved will a gen alliges Bild ist. Die namerkung wegen die Stage und dem Het, tom sch wiede felligen, de kannet mis diet darauf an, den lagificie nelsthafter Ramm and miglichet diskte and einfache (starre 12 year) Wester durch stores infehrings mitroig dimorolles for excitien, Resheld soll man anche keine optorchen Mattel huanyschen. Sovery genominen kann men ju allerdaugs das Geometrache nicht muchfikren auf stars" Kerne, draliga gunan gununer walt gilt - gaug abgenches won der Thateache, dass feite Hornerwest als mucht ist filler augusher winder displa. That dee turchance, dars die nor Accounty tent ton Keyne den Dange nicht heaterplanen ( dar tan Term actuarpen tom geten kann ) ist an well will you rechtfuliger. In kimmen elen Tregriffe nice and Balebbaren loginele warman that abgelistst readen. the for diskuletwische make wohl and hemisterche Tracke and wilches Vorgeless insamusalich. Mosal, Nen man you midet gigen der Vermunoft some pt, kennent men nichtenpt que michte,

alle ander, men trans teris Flows and here The oper lance duce. Remotying eines expecteded wicht dage gehördgen Greister.

The neve Anthrape des Breakers Maning of Relativity must des mense Beachestung der Konstigemeinerung der grootbe Trouthand made ich Thurse menden. To set not Flick ain Knowed and Thoose der Gamentfolder; aber ich wollte bene Ding kutter an ansperaturalte daring a test. Time Standaunto tink deductationen Theorie lat es. aber duckber vollkonnen ( Specsanchaston multing your Begatflem much Hypotherman 1. Door men alle des Tutreffer oder Nicht. Tutreffer w you night accordance have, light darren, dars were keine Mathooken hat, un the suy about of france if sumper course for home wintow notes - linearen factor projections atoms my my and a graft track -Laske crust go mehmen. To ist again doubber, der men is nie marcue The course of the second secon

May 28, 1953

Dear Solo,

<u>I had to laugh</u> on learning that we sent you such a sadly incomplete copy of my old book. I have no copy at all now, so that I could not fully appreciate your corrections. That you propose to saw for me the steps which conscientious teachers make their pupils run up and down is disconcerting, though the picture is amusing. I cannot approve of the remark on the subject of the pole in space. There I want to replace abstract and nebulous "space," as *directly and also as simply as possible* (fixed bodies), with something which has meaning, from the point of view of experience, and that is why one should not use an optical expedient.

Strictly speaking, one cannot reduce geometry to "fixed" bodies which, actually, do not exist—without taking into account the fact that fixed bodies should not be looked upon as being divisible ad infinitum. Similarly, the supposition that bodies used as standards do not influence objects (supposition which cannot be given a fixed meaning) is itself unjustified. Concepts can never be derived logically from experience and be above criticism.

But for didactic and also heuristic purposes such a procedure is inevitable. Moral: Unless one sins against logic, one generally gets nowhere; or, one cannot build a house or construct a bridge without using a scaffold which is really not one of its basic parts.

I am going to send you the new edition of the book Meaning of Relativity, which contains the new revision of the theory of gravitation. It is of course an attempt at a theory of the whole field; but I did not wish to give it such a pretentious title, for I am not yet sure that physical truth is at the bottom of it. But from the point of view of a deductive theory, it may be perfect (economy of independent notions and hypotheses). That no one can make a definite statement about its confirmation or non-confirmation results from the fact that there are no methods of affirming anything with respect to solutions that do not vield to the peculiarities of such a complicated non-linear system of equations. It is even possible that no one will ever know. Theories that have gradually developed around what can be observed. however, have led to an intolerable accumulation of independent suppositions. In his last popular book, de Broglie gave a very good description of the situation. I recently received the English edition; the French edition is certainly even better.

> Warmest wishes Your

> > A. E.

Es scheint, dass ich vergessen habe, im Drange der Korrespondenz, Ihren Brief vom 15. Juni zu beantworten. Ihre erste Prage kann ich dahin beantworten, dass in Bezug auf ein beschleunigtes System man nicht die Koordinaten so deuten kann, dass die Koordinaten-Differenzen gleich sind den mit Masstüben und Uhren gemessenen Längen bezw. Zeit-Differenzen. Dies kann man sich leicht an den Fällen klar machen, wo das Koordinatensystem gegenüber einem Inertialsystem gleichmässig translations-beschleunigt ist, oder gleichförmig rottert. Damit hängt es zusammen, dass gemäse er allgemeinen Relativitätstheorie das Gravitationsfeld zugleich ein Ausdruck ist für die metrische Struktur von Raum-Zeit.

Wenn die Riemann-Bedingung "satisfaite" ist, dann müssen auch die Gravitations-Gleichungen "satisfaite" sein. Mit anderen Worten, die Gleichungen des Gravitationsfeldes sind eine Speziallisierung der Riemann-Bedingung.

Das deutsche Manuscript des Aufsatzes können Sie behalten, solange Sie es brauchen. Mit Ihren redaktionellen Vorschlägen bin ich nätürlich einverstanden.

Es scheint mir, dass Sie nicht nur mein treuer Uebersetzer, sondern auch mein einziger, wirklich aufmerksamer Leser sind

# Mit herzlichen Grüssen Ihr A. Constant

P.S. Ich freue mich über das französische Volk, das nicht vergessen hat, seinen Grosskopfeten zu zeigen, wo Gott hockt (Streik).

August 15, 1953

Dear Solovine,

It seems that, under pressure of correspondence, I forgot to answer your letter of June 15. I can answer your first question by saying that, with respect to an accelerated system, the coordinates can not be interpreted in such a way as to make the differences in the coordinates equal the differences in length corresponding to differences in time as measured by rulers and clocks. This becomes clear in the cases where the system of coordinates is uniformly accelerated with respect a system of inertia, or rotates uniformly. That is why, in conformity with the theory of relativity, the field of gravitation is at the same time a term for the metrical structure of space-time.

When Riemann's condition is "satisfied," then the equations for gravitation must also be "satisfied." In other words, the equations for the field of gravitation are a specialization of Riemann's condition.

You may keep the German manuscript of the Memoir as long as you need it. Naturally, I agree with your proposals concerning revision.

It seems to me that you are not only my only faithful translator, but also my only truly observant reader.

With my cordial greetings Your

A. Einstein

P.S. I am glad that the French people have not neglected to show their thick-headed leaders where God sits.

Lieber Solo:

Bravo! Ich danke für Ihr tapferes Eintreten für meinen Geldbeutel. Nun können Sie mit Caesar sagen: Veni, Vidi, Vici!

Zu Ihrer ersten Frage: "Disparé" scheint mir eine zutreffende Uebersetzung des Ausdrucks "verlorengeht" zu sein. Die anderen Ausdrücke: " sich nicht eignet", nicht angebracht", sind sinnwidrig. "Nicht möglich ist" wäre nicht deutlich genug, es müsste wenigstens gesagt werden "nicht mehr möglich ist". "Verloren geht" scheint mir aber besser zu sein.

Ihre Bemerkungen zu dem Begriff "Physikalischer Inhalt", den Sie zutreffend mit "contenu physique" übersetst haber, erscheint mir zutreffend. Die Frage int nur, ob eine genauere Darlegung das Verständnis nicht eher erschwert als erleichtert. Einerseits nämlich ist die euklidische Geometrie offenbar der Ausdruck primitiver Erfahrungen mit Stäben, Schnüren und Lichtstrahlen. Anderserseits entsprechen diese Objekte nur ungenau den geometrischen Begriffen. Von der letzteren Tatsache habe ich eben an der von Ihnen erwähnten Stelle der Vereinfachung halber abgesehen. Ob diese Ungenauigkeiten durch die von ihr ersielten didaktischen Vorteile an der angegebenen Stelle gerechtfertigt sind, darüber kann man verschieden denken.

Auf Ihre Anfrage hin darf ich Ihnen sagen, dass es mir mit Rücksicht auf das vorgerückte Alter recht gut geht, ebenso Margot, wenn man ihre angeborene Schlemiligkeit in Rechnung zieht. Frl. Dukas geht es überhaupt gut ohne Einschränkung.

Indem ich hoffe, dass es sich bei Ihnen Beiden ebenso verhält bin ich mit herzlichen Grüssen

Ihr

A. 2

October 14, 1953

Dear Solovine,

Bravo! I thank you for your valiant intercession in favor of my pocketbook. Now you can say with Caesar: Veni, vidi, vici!

In answer to your first question: "Disappears" seems to me to be an exact translation of the expression verloren geht. The other expressions, sich nicht eignet and nicht angebracht, are contradictory. Nicht möglich ist would not be clear enough; it would have to be nicht mehr möglich ist. But verloren geht seems better to me.

Your remarks about the notion of *physikalischer Inhalt*, which you correctly translate as "physical content" seem conclusive to me. The only question that arises is whether a more detailed exposition would not make comprehension more difficult rather than easier. On the one hand, Euclidian geometry is manifestly the expression of primitive experiences with sticks, strings, and rays of light. On the other hand, these objects fail to correspond exactly to geometric concepts. For reasons of simplicity, I left out the last consideration in the place mentioned by you. Now, can this lack of precision be justified by the the didactic advantages gained in that passage? Opinions can be different on this point. I think it can.

In reply to you inquiry, I can state that, considering my advanced age, I am fine, as is Margot, considering her congenital bad luck. Miss Dukas is enjoying the best of health, with no reservations.

Hoping that the same holds true for both of you, I am with cordial greetings,

Your,

A. E.

Seta Solo

Is that were subracklissle laid, dass atme or hardselve Reparatur an Thnew gamachet worden muss. Da for hat sich bis Theren gemelder, wild or menticle ayothete. Ahr same Anytige ist offenter realore gage you. Viellicht hat der alte Lyrrgel die Adrese renocchielt. Die Korrekturen kanne dele selusor keurtedler, da ide den Zusammen hang micht kunder as kommute store hearen " dass die Elektratatik die dektrischen Hickneyes min in dem Talle sochting instiller, dass de cleke Trischer Massen regensition dens Transtaleystern in Riche and " Bed des enten des von Theme generenten Stillen it was aire & trackeriding work schwiesiger, Harro a sich un die Geometrie hundelt, ist , Inlast "oder Gehalt" ridetyer als , Hisping " , Dave as handelt wich micht une des geschichte soudere un des vou der Test mich Tabh dugige Weren da Jacke. Here heybochers Witnoche for die schmerglische Keperstur". Jassen Die mus bald massers, dass as gut yeyangen ist. Beste grance an Sie hande Ohn AZ.

November 25, 1953

Dear Solo,

Lam extremely sorry that you have had to go to so much trouble. Lowe sent a note to you, as he told me recently, but the notice obviously went astray. Perhaps the old carrier pigeon confused your address with another. It is hard for me to pass on the corrections since I do not know the context. This might be it:

"...that electrostatics correctly accounts for electrical effects only when the electrical masses are at rest with respect to a system of inertia."

As for the first passage mentioned by you, it is even more difficult for me to decide. In speaking of geometry, "content" or "capacity" are more correct than "origin," for the reference is not to the history but to the nature of the thing, which is independent of time.

My sincere apologies for the regrettable mistake. Let us know soon that everything is again in order.

My very best to both of you.

Your

A. E.

27.1.33.

Lichen Solorine !

He verdele statisfere Herterlitzing, 22 men meters Stewarter Homen Lity nitfacto machinett, hat encle ihre enfrantesten Stewarter 5-305 3. B. den diegen Komite zu Stafelesting für Refeje- Zakket Beeche Gelenenenen ihren here verden, dem Venerungen, und Tenerulau Beeche State and and statister wirder der die Venerungen, und Tenerulau Beeche State and and statister aus der Aligen Tuesterungen, und statister meter anderen prostatiene State der State ander aus ander tenerulau meter anderen prostatiene State ten mensen Dahne eine ander Anne Angemitele gelenst ein der Takter bestate ander ander ander Angemitele gelenst ein der State Takter beit aus ander ander Seite deren nur kanster an Stater Tene bestaten beitetel der deren nur kanster an Statere geschieften bestate Tener der deren nur kanster und Statere beseindung auch tener der deren nur her artikere geschieften bestaten Tener Meretan Mit unter Andersteren geschieften.

Senathere Sie wie dechalt ungehend, wie die Tablingenause Parten oppgen blung it auf einemal, ocher in gewiedischen Abstinater, und vor alleng siet gans die Betreg ist derech dem Hunge mirkliche generent siet. Die turgehelung aspelgt dann dusch der blancetensebelt die beisgen Konite a sie-Posio, andag Sie deutenlei Schenereiten elanist balm.

Lie hake gesone sine francisch achnors tradina "dantanden, ihn des ansel die Ersteichen Umot angebracht hat. Ahn den Kassen lingt wieder einigenmannen, man das Gehen ert etwas alle edugerertet an taget zählt die Jahre sichangt gewächer haft, des nurs ana anakannen. Jamulein hat die er socie alle Generation und Alleche Kahrenen in haltgemäinigung in Stande die Generation geschen gefinnetes (misch zumotrische Beltherie). Hanarech die er vorsingestien Stantening beisten wich wieder und thematuren geschen gesten wich wieder und thematuren geschen. Tagteente Galen an Thateaden, gesten. Regierert Galen an Stantenburg seiten. Heine Stanten Galen an Stateaten Missien. Heine die Allen auf den and Starten Alle Stateaten. Heine Sta

February 27, 1955

Dear Solovine,

The exorbitant price now attached to my life's work on

many occasions also has its more pleasant aspects. A certain sum of money, for instance, has been placed at the disposal of a committee set up here to help refugee scholars; this money is not subject to the same restrictions as other emergency funds but is spent at my discretion. I know that you are tormented by an eye ailment, very common at our age, which makes it difficult for you to work and which can be eliminated by an operation that is frequently performed. I can think of no more worthy use of the funds than to offer them to a man who like you, has grown pallid under the stress of constant intellectual labor, in order to preserve his capacity for work.

Write me about this by return mail. Tell me how the payments can best be made, in a lump sum or periodically, and above all, what sum, without any reservations, *can really be of help to you*. The payment will then be made in Paris by the sister institution of the local committee, and in this way there will be no confusion.

<u>I have just recovered</u> from a rather serious anemic condition, thanks to medical science. The old cart is again in running condition, but the head is a little rusty—the devil counts out the years conscientiously, we must admit.

I have finally managed to introduce another noteworthy improvement into the theory of the gravitational field (theory of the nonsymmetrical field). But not even these simplified equations can be verified by the facts as yet because of mathematical difficulties.

Warmest greetings to you and your wife.

Your

# A Biography of Albert Einstein

Albert Einstein (1879–1955) is among modern history's greatest and most influential minds. He authored more than 450 scholarly works during his lifetime, and his advancements in science—including the revolutionary Theory of Relativity and E=mc<sup>2</sup>, which described for the first time the relationship between an object's mass and its energy—have earned him renown as "the father of modern physics."

Born in Ulm, in southwest Germany, Einstein moved to Munich with his family as an infant. As a child, Einstein spoke so infrequently that his parents feared he had a learning disability. But despite difficulties with speech, he was consistently a top student and showed an early aptitude for mathematics and physics, which he later studied at the Swiss Federal Institute of Technology in Zurich after renouncing his German citizenship to avoid military service in 1896.

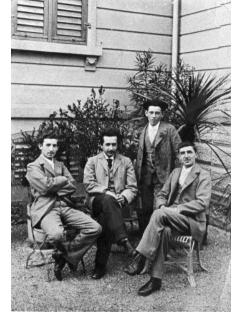
After graduation, Einstein married his college girlfriend, Mileva Marić, and they had three children. He attended the University of Zurich for his doctorate and worked at the patent office in Bern, a post he left in 1908 for a teaching position at the University of Bern, followed by a number of professorships throughout Europe that ultimately led him back to Germany in 1914. By this time, Einstein had already become recognized throughout the world for his groundbreaking papers on special relativity, the photoelectric effect, and the relationship between energy and matter. He won the Nobel Prize in Physics in 1921.

In 1933, Einstein escaped Nazi Germany and immigrated to the United States with his second wife, Elsa Löwenthal, whom he had married in 1919. He accepted a position at Princeton University in New Jersey, where he stayed for the remainder of his life. At Princeton, Einstein dedicated himself to finding a unified field theory and

played a key role in America's development of atomic weapons. He also campaigned for civil rights as a member of the NAACP and was an ardent supporter of Israel's Labor Zionist Movement.

Still, Einstein maintained a special affinity for his homeland. His connection to all things German and, in particular, to the scientific community in Berlin was probably the reason that throughout his years in America he so strongly valued his relationships with other Germanspeaking immigrants. He maintained a deep friendship with the founder of Philosophical Library, Dr. Dagobert D. Runes, who, like Einstein, was a humanist, a civil rights pioneer, and an admirer of Baruch Spinoza. Consequently, many of Albert Einstein's works were published by Philosophical Library.

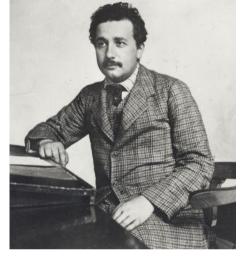
At the time of Einstein's death in 1955, he was universally recognized as one of history's most brilliant and important scientists.



Einstein with friends Marcel Grossmann, Eugen Grossmann, and Gustav Geissler in the garden of the Grossmann home in Thalwil, Switzerland, around 1899. Einstein's discussions with Marcel about elliptic geometry provided one of the sparks that led to Einstein's development of the General Theory of Relativity.



Einstein with his first wife, MIeva Marić, and their son Hans Albert, in 1904. Their second son, Eduard, would be born six years later.



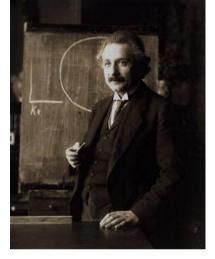
Atwenty-six-year-old Einstein during the time he was employed at the Bern patent office, in 1905.

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and more

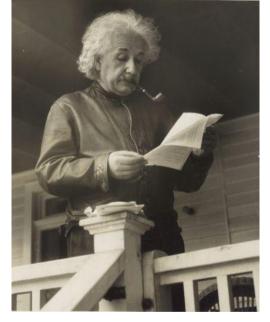
Paper silhouettes created by Einstein in 1919, the year of his marriage to his second wife, Elsa. The silhouettes depict, from left to right, himself, Elsa, and his stepdaughters llse and Margot.



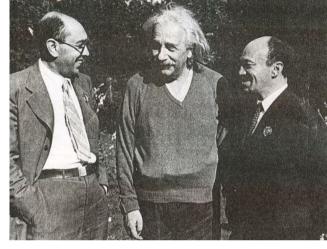
Einstein lecturing in Vienna, Austria, in January of 1921, the same year he won the Nobel Prize in Physics. 1921 also marked the year of Einstein's first visit to New York City, followed by weeks of lectures at some of the East Coast's most prestigious universities.



Einstein with Elsa in Mgdal, Israel, on February 12, 1923.



Einstein smoking a pipe on the porch of his home in Princeton, New Jersey, in 1938. He was a very ardent pipe smoker and treasured the ritual of selecting different tobaccos and preparing them to be smoked.



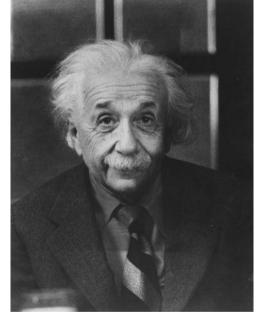
Einstein with his friends poet Itzik Feffer and actor Solomon Mikhoels, in 1943.



Einstein in his Princeton study on the day that he received his honorary degree from the Hebrew University of Jerusalem, in 1949.



Einstein receiving the honorary degree from Israel S. Wechsler while at his Princeton home in 1949.



Aportrait of Einstein at the Yeshiva University inauguration dinner for the Abert Einstein College of Medicine, at Princeton Inn on March 15, 1953. All rights reserved under International and Pan-American Copyright Conventions. By payment of the required fees, you have been granted the non-exclusive, non-transferable right to access and read the text of this ebook onscreen. No part of this text may be reproduced, transmitted, downloaded, decompiled, reverse engineered, or stored in or introduced into any information storage and retrieval system, in any form or by any means, whether electronic or mechanical, now known or hereinafter invented, without the express written permission of the publisher.

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cover design by Milan Bozic

ISBN: 978-1-4532-0487-0

This 2011 edition distributed by Open Road Integrated Media 180 Varick Street New York, NY 10014 www.openroadmedia.com

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