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THE MANUFACTURE AND SALE
OF
SAINT EINSTEIN

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11 HILBERT'S PROOFS PROVE HILBERT'S PRIORITY

In 1997, amid much fanfare, Leo Corry announced to the world that he had uncovered proof that Albert Einstein arrived at the generally covariant field equations of gravitation before David Hilbert. Leo Corry joined with Jürgen Renn and John Stachel and published an article in the journal Science arguing against Hilbert's priority. Their claims were largely based on a set of printer's proofs of David Hilbert's 20 November 1915 Göttingen lecture, which Corry had uncovered. However, in this 1997 article, "Belated Decision in the Hilbert-Einstein Priority Dispute," Corry, Renn and Stachel failed to disclose the fact that these printer's proofs were mutilated, and are missing a critical part. Full disclosure of the facts reveals that even in their mutilated state, these proofs prove that Hilbert had a generally covariant theory of gravitation before Einstein.

“Artistic proof is, like artistic anything else, simply a matter of selection. If you know what to put in and what to leave out you can prove anything you like, quite conclusively.”—ANTHONY BERKELEY COX²⁵⁸⁸

11.1 Introduction

David Hilbert presented the generally covariant field equations of gravitation of the general theory of relativity to the Göttingen Royal Academy of Sciences on 20 November 1915, five days before Albert Einstein presented them to the Royal Prussian Academy of Sciences. In 1978, a letter from Einstein to Hilbert dated 18 November 1915 surfaced, and it proved that Einstein learned these equations from an advanced copy of Hilbert's work, which Hilbert had sent to Einstein at Einstein's request.

11.2 Corry, Renn and Stachel's Baseless Historical Revisionism

In 1997, Leo Corry, of the Cohn Institute for the History and Philosophy of Science and Ideas, University of Tel-Aviv, announced to the world that he believed he had found conclusive proof that Albert Einstein must have arrived at the generally covariant field equations of general relativity before David Hilbert. Corry based this extraordinary claim on a set of printer's proofs of Hilbert's 20 November 1915 paper "The Foundations of Physics," which Corry had "brought to light" having found them in Hilbert's *Nachlaß* in the Göttingen archives.²⁵⁸⁹ These printer's proofs of Hilbert's paper are dated with a printer's stamp of 6 December 1915 and do not *today* contain the explicit field equations of gravitation of the general theory of relativity containing the trace term which appeared in the published version of Hilbert's work. However, the proofs do, even in their present mutilated condition, contain generally covariant field equations of gravitation, which renders Corry, Renn and Stachel's argument pointless.

In 1997, Corry teamed up with Jürgen Renn, Director of the Max Planck Institute

for the History of Science, Berlin; and John Stachel, an early editor of Einstein's *Collected Papers* and currently Director of the Center for Einstein Studies at Boston University. Corry, Renn and John Stachel together published an article in the widely read, multidisciplinary journal *Science*²⁵⁹⁰ declaring that Hilbert had conceded Einstein's priority, and that Hilbert had not arrived at a generally covariant form of the field equations of gravitation as of 6 December 1915, and deduced them only after Einstein had submitted his presentation on 25 November 1915. This article has since been relied upon by others to deny Hilbert's priority.²⁵⁹¹ The story received vast press coverage,²⁵⁹² and some of these news reports stated that Hilbert had plagiarized Einstein's equations.

When I read this 1997 article "Belated Decision in the Hilbert-Einstein Priority Dispute" in *Science* I considered it to be in poor taste and illogical, in that it was sensationalistic and the conclusions it contained did not follow from the premises it stated. The article contradicted a well-established fact, acknowledged by Einstein himself. I chose not to mention the article in my recent book *Albert Einstein: The Incurable Plagiarist*.²⁵⁹³

After I published said book in 2002, which twice states that Einstein plagiarized Hilbert's equations, I began to receive letters of encouragement from physicists around the world. Prof. Friedwardt Winterberg, theoretical physicist at the University of Nevada, Reno, after reading my book requested a copy of the proofs. He informed me that the printer's proofs of Hilbert's paper, upon which Corry, Renn and Stachel had relied, were in an incomplete set, which had been mutilated at some point in its history in a way which removed the very equations the *Science* article claimed were missing from Hilbert's formulation, which renders Corry, Renn and Stachel's argument baseless as well as pointless.

Prof. Winterberg submitted a paper to *Science* refuting the claims of Corry, Renn and Stachel, which *Science* rejected. Prof. Winterberg then submitted a later version of his paper to the *Zeitschrift für Naturforschung*, which was published in October of 2004.²⁵⁹⁴ I published an article in *The Canberra Times* in September of 2002 in which I pointed out that Hilbert was first to deduce the equations and that Einstein plagiarized them with irrational arguments.²⁵⁹⁵ I argued in internet forums for many years prior to the publication of *Albert Einstein: The Incurable Plagiarist* that Einstein plagiarized Hilbert's work and I publicly called for a forensic investigation of the proofs. When I learned of the mutilation, I spread the word across the world. I informed John Stachel that I intended to publish on the proofs, and he published a negative review of my book *Albert Einstein: The Incurable Plagiarist*, which failed to mention our correspondence and which contained numerous errors, to which I responded in *Infinite Energy* in 2003.²⁵⁹⁶ In my response I repeatedly pointed out that the facts clearly prove that Einstein plagiarized Hilbert's equations.

I explained Prof. Winterberg's arguments in a book I published in 2003 *Anticipations of Einstein in the General Theory of Relativity*. I also proved in several ways in this book that Einstein must have plagiarized Hilbert's equations and could not have arrived at them independently, which arguments will here be repeated. I tried to convince Prof. Winterberg of this fact and in 2005 he came to agree with me and submitted a paper to *Zeitschrift für Naturforschung* which explained my proofs

of Einstein's plagiarism and which presented Prof. Winterberg's insight that Einstein fudged his equations in his 18 November 1915 paper on Mercury to derive the doubled Newtonian prediction of a light ray grazing the limb of the Sun.

The fact that Hilbert's proofs were mutilated came as a surprise to me, because in their four-page article in *Science* disputing Hilbert's well-established priority, Corry, Renn and Stachel failed to mention the fact that the printer's proofs were incomplete, mutilated at some point in their history, and were missing the very section where the equations they claimed Hilbert did not know would originally have been found. While it is true that the printer's proofs do not today contain the express final form of the field equations of gravitation expressing the trace term, it is also true that the missing mutilated section had room for them, and it is a fact that someone at some point in their history had physically cut out a crucial section of the proofs—no one knows who did the cutting, or when, or why the document was mutilated. We do know that Corry, Renn and Stachel elected to not mention the mutilation in their 1997 article in *Science*. The remainder of the proofs are republished in my book *Anticipations of Einstein in the General Theory of Relativity* as Appendix C; and a facsimile of mutilated page 8 appears in Prof. Winterberg's October, 2004, article for the *Zeitschrift für Naturforschung*.

In 1998, Dr. Tilman Sauer, of the Institut für Wissenschaftsgeschichte Georg-August-Universität Göttingen, proved that even in their mutilated state these proofs prove that Hilbert had a generally covariant theory of gravitation before Einstein, and still contain generally covariant field equations of gravitation. Dr. Sauer published his findings in the *Archive for History of Exact Sciences* in an article entitled, "The Relativity of Discovery: Hilbert's First Note on the Foundations of Physics."²⁵⁹⁷ In 2004, Professors A. A. Logunov (former Vice-President of the Russian Academy of Sciences and currently Director of the Institute for High Energy Physics in Moscow), V. A. Petrov and M. A. Mestvirishvili also published an important paper discrediting the views of Corry, Renn and Stachel.²⁵⁹⁸

Corry, Renn and Stachel acknowledged in their 1997 article in *Science* that the fact that Hilbert anticipated Einstein was the "commonly accepted view" "presently accepted[. . .] among physicists and historians of science[.]" They excitedly proclaimed in their article in *Science*, "Detailed analysis[. . .] of these proofs[. . .] enabled us to construct an account[. . .] that radically differs from the standard view[.]" but failed to mention that their radical revisionism was based on an incomplete document, which had been mutilated at some point in its history removing the very part which likely contained that which they claimed was missing from Hilbert's formulation.

John Stachel informed me that he has since made mention of the mutilation in a work he coauthored with Jürgen Renn, "Hilbert's Foundation of Physics: From a Theory of Everything to a Constituent of General Relativity," Preprint 118 of the Max-Planck-Institut für Wissenschaftsgeschichte, (1999), which also disputes Hilbert's priority. This preprint notes the mutilation in at least three separate places, unlike the *Science* article, which failed to mention it even once. It appears that this comparatively obscure preprint, and the public disclosure that the printer's proofs were mutilated, have not met with anywhere near as much publicity as the *Science*

article's "Belated Decision" that "Detailed analysis[...] of these proofs[. . .] enabled us to construct an account[. . .] that radically differs from the standard view[.]"

The preprint article by Renn and Stachel appeared only after the 1998 article by Dr. Tilman Sauer, which raised the issue of the mutilation of the proofs and formally proved that Hilbert did demonstrate a generally covariant theory of gravitation in the printer's proofs, as is clear even in the remainder of the mutilated proofs. Renn and Stachel refer to Dr. Sauer's paper in their 1999 article. One would have hoped that Dr. Sauer's article would have been sufficient to end Renn and Stachel's attempts to deny Hilbert's priority based on the mutilated proofs, which efforts should never have begun.

In addition to Renn and Stachel's subsequent 1999 article disputing Hilbert's priority, Vladimir Pavlovich Vizgin, of the S. I. Vavilov Institute of Natural Sciences and Technology, Moscow, published an article as recently as 2001 in the *Uspekhi Fizicheskikh Nauk*, which denies Hilbert's well-established priority.²⁵⁹⁹ Vizgin takes up a good deal of space in his article to thank those who prompted him to write it and supplied him with a copy of the printer's proofs. Vizgin refers many times to Dr. Sauer's paper, but does not mention the mutilation of the printer's proofs, or Dr. Sauer's arguments which vindicate Hilbert. Vizgin's paper has since been discredited by Professors A. A. Logunov, V. A. Petrov and M. A. Mestvirishvili.²⁶⁰⁰

Though Dr. Sauer proved Hilbert's priority, he mistakenly believed that Einstein could not have copied Hilbert's results, and Dr. Sauer's vague and arbitrary arguments regarding Einstein's plagiarism do not follow from his premises. There is no evidence or circumstance which would preclude Einstein's plagiarism. On the contrary, the evidence and the circumstances surrounding Einstein's publication of the generally covariant field equations of gravitation containing the trace term on 25 November 1915 prove beyond any reasonable doubt that Einstein plagiarized them from David Hilbert. Jürgen Renn, himself, once admitted,

"I had personally come to the conclusion that Einstein plagiarized Hilbert[.] [The] conclusion is almost unavoidable, that Einstein must have copied from Hilbert."²⁶⁰¹

The Ottawa Citizen, 14 November 1997, Final Edition, page A13, reported in an article entitled "Einstein's Rival was Relatively Late with Solution: Investigation Removes Stigma of Plagiarism from Scientist's Milestone Theory" with the byline Roger Highfield, *The Daily Telegraph*,

"Mr. Renn said yesterday that at first he feared Einstein had stolen Hilbert's ideas. But this discovery marks 'one of the very rare cases that one has a smoking gun' to clear Einstein's name, he said."

Corry, Renn and Stachel together wrote in their article in *Science*,

"[. . .]the arguments by which Einstein is exculpated are rather weak[.]"²⁶⁰²

It is odd that a set of mutilated printer's proofs caused Renn & Co. to reverse such strongly held beliefs. It is stranger still that they failed to mention the mutilation in their sensationalistic article in *Science* in 1997.

In the very first line of their 1999 preprint article, Renn and Stachel again made clear that they sought to overturn a well-established fact,

“Hilbert is commonly seen as having publicly presented the derivation of the field equations of general relativity five days before Einstein on 20 November 1915 — after only half a year's work on the subject in contrast to Einstein's eight years of hardship from 1907 to 1915.”

The authors boast of their radically revisionist viewpoint and quote from the renowned expert on general relativity Kip Thorne to show us how well-established is the fact they would have us disavow. Thorne wrote, in agreement with the accepted view of the history,

“Remarkably, Einstein was not the first to discover the correct form of the law of warpage[. . . .] Recognition for the first discovery must go to Hilbert.”²⁶⁰³

11.3 Historical Background and the Correspondence

By late 1915, Albert Einstein had engaged in an on-again, off-again struggle for many years to express the inertial and gravitational mass equivalence principle, which he learned from Max Planck,²⁶⁰⁴ in a generally covariant form of gravitational field equations. Einstein was unable to arrive at a solution. He solicited help from Ernst Mach, Marcel Grossmann, and others, but to no avail.

The problem seemed almost insurmountable. Meanwhile, the illustrious mathematician David Hilbert was after an all-encompassing axiomatic theory of physics, which would bring mathematical inference to a fundamental end.²⁶⁰⁵ Einstein turned to Hilbert to solve the seemingly unsolvable. Employing his axiomatic approach, David Hilbert deduced the generally covariant field equations of gravitation of the general theory of relativity by 13 November 1915, and arrived at them before Albert Einstein. Hilbert probably had deduced these equations in early October of 1915.²⁶⁰⁶ We know that as late as 18 November 1915, Einstein was still publishing unsuccessful attempts at a general theory of relativity, which depended upon his erroneous field equations of gravitation.²⁶⁰⁷

On 13 November 1915, Hilbert wrote to Einstein and informed Einstein that he, Hilbert, had solved the problem,

“But since you are so interested, I would like to lay out my th[eory] in very complete detail on the coming Tuesday[. . . .] I find it ideally beautiful[. . . .] As far as I understand your new pap[er], the solution giv[en] by you is entirely different from mine[. . . .]”²⁶⁰⁸

On 15 November 1915, Einstein solicited a copy of Hilbert's work, before it appeared in final printed form,

“Your analysis interests me tremendously[. . .] If possible, please send me a correction proof of your study to mitigate my impatience.”²⁶⁰⁹

Hilbert, trusting Einstein, sent him a copy of his manuscript, sometime prior to 18 November 1915. Einstein wrote a letter to Hilbert on 18 November 1915, acknowledging that he had received Hilbert's manuscript and echoed Hilbert's line expressing hesitation about his understanding of the other's work. Einstein claimed in this letter that he had independently arrived at Hilbert's solution, when he had not, and we know that he had not, because the papers Einstein submitted in this period missed the mark. Einstein erroneously claimed,

“The system you furnished agrees—as far as I can see—exactly with what I found in the last few weeks and have presented to the Academy.”²⁶¹⁰

Hermann Weyl wrote in his book *Space-Time-Matter*,

“In the first paper in which Einstein set up the gravitational equations without following on from Hamilton's Principle, the term $-\frac{1}{2} \delta_i^k \mathbf{T}$ was missing on the right-hand side; he recognised only later that it is required as a result of the energy-momentum-theorem.”²⁶¹¹

Tilman Sauer noted that Hilbert objected to Weyl's book, because Weyl failed to explicitly acknowledge Hilbert's priority, as had Gustav Herglotz. Sauer notes that Herglotz responded to an objection by Hilbert that Herglotz had not acknowledged Hilbert's priority. Herglotz wrote,

“It is true that I should have specifically referred to the fact that the Tensor $K_{\mu\nu} - \frac{1}{2} g_{\mu\nu} K$ appeared for the very first time in your ‘Foundations [of Physics]’ as the natural consequence of the variation of $\int K \sqrt{g} d\omega$.”

“Ich hätte freilich auf das erstmalige natürliche Auftreten des Tensors $K_{\mu\nu} - \frac{1}{2} g_{\mu\nu} K$ als Variation von $\int K \sqrt{g} d\omega$ in Ihren ‘Grundlagen’ besonders hinweisen sollen.”²⁶¹²

Sauer adds,

“And in a draft of a letter to Weyl, dated 22 April 1918, written after he had read the proofs of the first edition of Weyl's ‘Raum-Zeit-Materie’ Hilbert also objected to being slighted in Weyl's exposition. In this letter again ‘in

particular the use of the Riemannian curvature [scalar] in the Hamiltonian integral' ('insbesondere die Verwendung der Riemannschen Krümmung unter dem Hamiltonschen Integral') was claimed as one of his original contributions. SUB Cod. Ms. Hilbert 457/17."²⁶¹³

Dr. Tilman Sauer informs us that,

"Hilbert, in his first communication, introduced gravitational field equations which are derived from a variational principle and which are generally covariant. Thus, in contrast to Einstein's *Entwurf* theory and in contrast to Einstein's first November communication, he did not write down gravitational field equations of restricted covariance, and, in contrast to Einstein's second November communication, Hilbert did formulate the generally covariant field equations in terms of a variational principle."²⁶¹⁴

Einstein was furious. He wanted desperately to distinguish himself as progressing beyond the limitations of the special theory of relativity, which was then commonly referred to as the "Lorentz-Einstein theory."²⁶¹⁵ Albert Einstein sought to characterize the general theory of relativity as his achievement. But this dream was destroyed. Hilbert had succeeded where Einstein and his industrious collaborators Marcel Grossmann and Erwin Freundlich had not. Einstein posed the problem to Hilbert, and Hilbert solved it. Hilbert was overly generous in referencing Einstein's work, to the exclusion of many of Einstein's predecessors, but Hilbert did not take credit for this work unto himself.

Hilbert presented his equations,

$$[\sqrt{g} K]_{\mu\nu} = \sqrt{g} \left(K_{\mu\nu} - \frac{1}{2} K g_{\mu\nu} \right),$$

containing the needed trace term missing in all of Einstein's work until 25 November 1915, to the Göttingen Royal Academy of Sciences on 20 November 1915.²⁶¹⁶ Einstein rushed to plagiarize Hilbert's equations in a paper submitted to the Berlin Royal Prussian Academy of Sciences on 25 November 1915,²⁶¹⁷ with an inductive analysis of Hilbert's synthesis.²⁶¹⁸ Both the "bottom up" axiomatic method of Hilbert, and the "top down" inductive "principle theory" method of Einstein resulted in the same field equations. Einstein's equations are stated in the following terms:

$$G_{im} = -\kappa \left(T_{im} - \frac{1}{2} g_{im} T \right),$$

and are fully equivalent to Hilbert's prior work. Einstein does not deduce this equation in his 25 November 1915 paper, but simply copies it from Hilbert's work, then provides examples to show that it works.

David Hilbert's former lecture assistant Max Born wrote to Hilbert on 23

November 1915 and acknowledged Hilbert's priority for the generally covariant field equations of gravitation of the general theory of relativity.²⁶¹⁹ Born refers to the equations as Hilbert's and states that Einstein's work was subsequent to Hilbert's and less general, and that Einstein acknowledged that he was using Hilbert's solution. Einstein could not lie to Born as easily as he lied to Zangger, because Born knew from the lecture notes Dr. Baade had sent Erwin Freundlich that Hilbert had the equations before Einstein. Born's letter is further proof that Einstein copied from Hilbert. The letter also evinces that Freundlich was the real source of the papers on gravitation and Mercury attributed to Einstein in November of 1915 and of Einstein's famous review of the general theory of relativity published in *Annalen der Physik* in 1916—Einstein lacked the skills needed to have written it.

Einstein claimed that he was going to solve the problem in the same way that Hilbert already had, therefore he must first have seen Hilbert's solution. Einstein published his 25 November 1915 paper two days after Born sent his letter in the knowledge that Hilbert had publicly delivered the correct equations before him, but Einstein did not mention Hilbert in his paper. Born obviously knew that Hilbert was first to the equations and Einstein was copying from him, though it was a primitive attempt.

Note that Einstein must have discussed Hilbert's correct and novel equations with Born, which differed from those of all of Einstein's papers published before 23 November 1915, because Born states that his knowledge of the new equations Einstein intended to use was derived from discussions with Einstein and only from discussions, not from the 18 November 1915 paper which he had read, and Born was intent to read everything published on the subject. On the day Einstein submitted his Mercury paper on 18 November 1915, or perhaps even later, the editor of the reports in which the paper was published noted on page 803 that Einstein held to his obsolete equations. On this date Einstein received Hilbert's correct equations, which he subsequently copied. He could not have arrived at the equations independently of Hilbert, because he had Hilbert's correct equations on hand before adopting them.

When discussing the question with Born, Einstein had just adopted Hilbert's solution and had no written theory such that Born could only know of Einstein's plagiarism from discussions with him and with Freundlich. Einstein's mathematical skills were comparatively poor. The strong emphasis on astronomical observations was demonstrably Freundlich's influence. While Hilbert more aggressively pursued the microscopic world, Freundlich more aggressively pursued the macroscopic world, but the solution to the gravitational problem was Hilbert's, not Einstein's nor Freundlich's.

Einstein and Freundlich's inability to ever deduce the relevant equations with the trace term is further proof that they plagiarized Hilbert's paper and lacked even the creative intelligence²⁶²⁰ needed to induce a complete theory around Hilbert's results. Einstein was disappointed by Freundlich's inability to provide him with a synthetic theory he could assert as if his own. Again, Einstein never succeeded in publishing a paper in which he derived the gravitational field equations of the general theory of relativity. He was always forced to simply copy Hilbert's equations outright in their final form without a derivation and then provide examples that they worked to solve

known problems. This is further proof that neither Einstein nor Freundlich could have independently arrived at the equations before Hilbert, because even after having the equations handed to them, they were unable to derive them, and they could not have independently arrived at the equations without first deriving them. Hilbert, on the other hand, provides a complete proof of how he derived the equations in a logical deduction which proceeded from fundamental axioms.

Prof. Jagdish Mehra wrote,

“In his third and fourth communications on this subject, Lorentz derived the Hilbert-Einstein field equations, in particular Equation (37), by a variation of the gravitational potential for the two cases, namely the $T_{\mu\nu}$ being due to the electromagnetic or the mechanical part respectively. Altogether Lorentz had produced a complete proof of the equivalence of Einstein’s inductive and Hilbert’s deductive methods, treating all the delicate points clearly and in detail.”²⁶²¹

Hans Reichenbach accused Einstein of simply *guessing* the solution to the problem of generally covariant field equations of gravitation.²⁶²² However, there was no need for Einstein to have guessed at the equations, because Einstein had the benefit of Hilbert’s correct solution on 18 November 1915, before presenting it as if his own on 25 November 1915.

On 26 November 1915, Einstein wrote to Heinrich Zangger and unfairly smeared Hilbert. Einstein even plagiarized Hilbert’s description of the theory as “ideally beautiful,” while smearing Hilbert,

“The theory is beautiful beyond comparison. However, only *one* colleague has really understood it, and he is seeking to ‘partake’ in it (Abraham’s expression) in a clever way. In my personal experience I have hardly come to know the wretchedness of mankind better than as a result of this theory and everything connected to it.”²⁶²³

This letter is further proof that Einstein plagiarized Hilbert’s work; in that Einstein, on 26 November 1915, averred that Hilbert really understood the theory Einstein presented on 25 November 1915 and sought to appropriate it. The only evidence Einstein had for this statement was Hilbert’s manuscript, which Einstein had received by 18 November 1915, and Dr. Baade’s lecture notes from Hilbert’s presentation of his theory. Given the bizarre hypothesis of Corry, Renn and Stachel, that Hilbert revised his 20 November 1915 manuscript to match Einstein’s 25 November 1915 presentation, Hilbert would have to have become aware of the equations in Einstein’s presentation of 25 November 1915, rewritten his work, and have presented it to Einstein on or before 26 November 1915.

It would not have been physically possible for Hilbert to have learned the equations from Einstein’s 25 November 1915 paper, and then rewritten his, Hilbert’s, paper to match Einstein’s, and then to have sent Einstein this hypothetical revised paper, and for Einstein to have then received this hypothetical manuscript, all within

24 hours. And what would it have profited Hilbert to have sent Einstein this fictitious plagiarized work? As Radhakrishnan Srinivasan has eloquently argued, the alternative scenario is the irrational assertion (given the completely unfounded allegation of Corry, Renn and Stachel that Hilbert changed course after coming to know Einstein's alleged innovation) that Einstein accused Hilbert of plagiarism, *before it had supposedly occurred*.

In Corry, Renn and Stachel's revisionist account, one must choose between the impossible and the irrational, while excluding the obvious. Their 1997 article would have us make this Hobson's choice without the knowledge that Hilbert's proofs were mutilated—without the knowledge that they have no basis for their bizarre revisionism.

Corry, Renn and Stachel attempt to make much of Einstein's 18 November 1915 letter to Hilbert. They claim that this letter was a sharp reaction against Hilbert.

Despite Corry, Renn and Stachel's obfuscation, this alleged reaction by Einstein would have been for Hilbert's claiming originality for deducing the generally covariant field equations of gravitation, before Einstein, as claimed by Hilbert in his paper. However, Corry, Renn and Stachel aver that Hilbert had not yet deduced these equations. Their argument, when brought into agreement with the known facts, is self-contradictory. In addition, Einstein's letter, in contradiction to Corry, Renn and Stachel's claim of bitter arguer, is ostensibly friendly, though Einstein's assertion that he had developed the exact same result as Hilbert was evidently an intentional falsehood—Einstein coyly tried to deceive Hilbert into believing he had been anticipated, when he had not—and Hilbert responded to Einstein's lies and contradicted them. If Einstein had hoped that he could dissuade Hilbert from publishing Hilbert's results, Einstein was mistaken.

"Einstein's" theory is really the melding of Ernst Mach's ideas with those of Marcel Grossmann, as completed by David Hilbert, and then transcribed by Erwin Freundlich and stamped with Einstein's name. Einstein and Grossmann together published A. Einstein and M. Grossmann, *Entwurf einer verallgemeinerten Relativitätstheorie und einer Theorie der Gravitation. I. Physikalischer Teil, von Albert Einstein; II. Mathematischer Teil, von Marcel Grossmann*, B. G. Teubner, Leipzig, (1913); reprinted in *Zeitschrift für Mathematik und Physik*, Volume 62, (1914), pp. 225-259 and "Kovarianzeigenschaften der Feldgleichungen der auf die verallgemeinerte Relativitätstheorie gegründeten Gravitationstheorie", *Zeitschrift für Mathematik und Physik*, Volume 63, (1914), pp. 215-225. In 1913 and 1914, Einstein repeatedly credited Mach as the source of Einstein's contribution to what Einstein repeatedly and expressly called the "Einstein-Grossmann theory",²⁶²⁴ and Einstein expressly stated again and again that this theory was a collaboration between him and Grossmann.

It is important to note that Einstein credits Marcel Grossmann with participating in the development of the field equations in Einstein's 18 November 1915 letter to Hilbert and in Einstein's review article for the *Annalen der Physik* in 1916,²⁶²⁵ but Einstein demeaned his close friend and teacher Marcel Grossmann and relegated Grossmann to the status of a lackey in a letter to Arnold Sommerfeld dated 15 July 1915,²⁶²⁶ and Einstein makes no mention of Grossmann, Besso, Hilbert or Freundlich

in Einstein's 25 November 1915 paper. Therefore, we have several proven examples of Einstein's appropriation of his trusting colleagues' work in this one 25 November 1915 paper. In Einstein's 1916 article on general relativity for the *Annalen der Physik*, Einstein gives Hilbert a minor reference, and gives Grossmann only a token mention in the introduction, which introduction is missing in the English reprint of this article in the book *The Principle of Relativity*.²⁶²⁷

The facts, examined without bias and in the full light of day, are consistent and clear. On 18 November 1915, Einstein, by lying to him, attempted to dissuade Hilbert from publishing Hilbert's generally covariant theory of gravitation. Hilbert was not dissuaded and presented his work on 20 November 1915. Einstein plagiarized Hilbert's work on 25 November 1915, and then immediately instigated a smear campaign against Hilbert in a 26 November 1915 letter to Heinrich Zangger.

In this period of his life, Einstein had unnecessarily brought enormous pressures upon himself and in this period of his life, Albert Einstein viciously betrayed the trust of many of those who were closest to him. In the same letter to Zangger, Albert Einstein unfairly smears Mileva Einstein-Marity, his first wife, in the next paragraph after unfairly smearing David Hilbert.

In one letter, Albert Einstein blamed Mileva Einstein-Marity for the problems Albert had created with their children and Einstein accused Hilbert of the plagiarism *Einstein* had committed. In one paper, Albert Einstein sought to appropriate the contributions of his friends Marcel Grossmann and Erwin Freundlich, and the man who had trusted in him and who had solved a problem he had long sought to solve, David Hilbert.

Hilbert resented Einstein's plagiarism. Einstein wrote to Hilbert on 20 December 1915 and stated,

“There has been a certain ill-feeling between us[.]”²⁶²⁸

Hilbert would have had no grounds for hostility towards Einstein, unless Einstein had plagiarized his work. Einstein resented Hilbert for daring to publish the results Einstein could not achieve without knowledge of Hilbert's solution.

Einstein failed to mention that he was adopting Hilbert's work, until 1916, when Hilbert forced Einstein to publicly acknowledge Hilbert's priority. Einstein referred his readers to Hilbert's 20 November 1915 paper in Einstein's 1916 review article on the general theory of relativity “Die Grundlage der allgemeinen Relativitätstheorie” for *Annalen der Physik*, Series 4, Volume 49, Number 7, pages 769-822, at 810,

“Sie liefern die Gleichungen des materiellen Vorganges vollständig, wenn letzterer durch vier voneinander unabhängige Differentialgleichungen charakterisierbar ist. [Footnote: Vgl. hierüber D. Hilbert, Nachr. d. K. Gesellsch. d. Wiss. zu Göttingen, Math.-phys. Klasse. p. 3. 1915.]”

Prof. Jagdish Mehra, who greatly admires Einstein, wrote in this context that Einstein was less than fair when referencing Hilbert's work,

“Hilbert, in retrospect, could not have been satisfied by this weak reference to his work. In a sense, Einstein had ‘appropriated’ Hilbert’s contribution to the gravitational field equations as a march of his own ideas—or so it would seem from the reading of his 1916 *Ann. d. Phys.* paper on the foundations of general relativity.”²⁶²⁹

Hilbert wrote in the published version of his 1915 lecture in defense of his priority,

“It appears to me that the differential equations of gravitation arrived at in [my] way are in agreement with those of Einstein in his subsequent papers setting forth the broad theory of general relativity[.]”²⁶³⁰

As Prof. Mehra has noted, Hilbert again declared his priority in 1924. Hilbert wrote,

“Einstein [. . .] in his last publications ultimately returns directly to the equations of my theory.”²⁶³¹

As was already mentioned, Tilman Sauer has shown that David Hilbert asked Hermann Weyl and Gustav Herglotz to recognize his priority.

Albert Einstein, himself, repeatedly, though somewhat resentfully, acknowledged Hilbert’s priority in 1916,²⁶³² though Einstein had given no one else their due credit in 1915,

“The general theory of relativity has recently been given in a particularly clear form by H. A. Lorentz and D. Hilbert, [*Footnote:* Four papers by Lorentz in the Publications of the Koninkl. Akad. van Wetensch. te Amsterdam, 1915 and 1916; D. Hilbert, *Göttinger Nachr.*, 1915, Part 3.] who have deduced its equations from one single principle of variation. The same thing will be done in the present paper. But my purpose here is to present the fundamental connexions in as perspicuous a manner as possible, and in as general terms as is permissible from the point of view of the general theory of relativity. In particular we shall make as few specializing assumptions as possible, in marked contrast to Hilbert’s treatment of the subject. On the other hand, in antithesis to my own most recent treatment of the subject, there is to be complete liberty in the choice of the system of co-ordinates.”²⁶³³

In 1919, Einstein again simply asserted Hilbert’s equations without a derivation in a fallacy of *Petito Principii* without a deductive synthesis and in full knowledge of Hilbert’s work, and again acknowledged David Hilbert’s priority,

“In spite of the beauty of the formal structure of this theory, as erected by Mie, Hilbert, and Weyl, its physical results have hitherto been unsatisfactory. [***] So far the general theory of relativity has made no change in this state

of the question. If we for the moment disregard the additional cosmological term, the field equations take the form

$$\mathbf{G}_{\mu\nu} - \frac{1}{2} g_{\mu\nu} \mathbf{G} = -\kappa \mathbf{T}_{\mu\nu} \quad . \quad . \quad . \quad (1)$$

where $\mathbf{G}_{\mu\nu}$ denotes the contracted Riemann tensor of curvature, \mathbf{G} the scalar of curvature formed by repeated contraction, and $\mathbf{T}_{\mu\nu}$ the energy-tensor of 'matter.' The assumption that the $\mathbf{T}_{\mu\nu}$ do *not* depend on the derivatives of the $\mathbf{G}_{\mu\nu}$ is in keeping with the historical development of these equations. For these quantities are, of course, the energy components in the sense of the special theory of relativity, in which variable $g_{\mu\nu}$ do not occur. The second term on the left-hand side of the equation is so chosen that the divergence of the left-hand side of (1) vanishes identically, so that taking the divergence of (1), we obtain the equation

$$\frac{\partial \mathbf{T}_{\mu}^{\sigma}}{\partial x_{\sigma}} + \frac{1}{2} g_{\mu}^{\sigma\tau} \mathbf{T}_{\sigma\tau} = 0 \quad . \quad . \quad . \quad (2)$$

which in the limiting case of the special theory of relativity gives the complete equations of conservation

$$\frac{\partial \mathbf{T}_{\mu\nu}}{\partial x_{\nu}} = 0.$$

Therein lies the physical foundation for the second term of the left-hand side of (1). It is by no means settled *a priori* that a limiting transition of this kind has any possible meaning. [***] Thus if we hold to $\left[\mathbf{G}_{\mu\nu} - \frac{1}{2} g_{\mu\nu} \mathbf{G} = -\kappa \mathbf{T}_{\mu\nu} \right]$ we are driven on to the path of Mie's theory.

[Footnote: Cf. D. Hilbert, Göttinger Nachr., 20 Nov., 1915.]”²⁶³⁴

Emil Wiechert,²⁶³⁵ Gustav Mie,²⁶³⁶ Felix Klein,²⁶³⁷ Hermann Weyl,²⁶³⁸ Wolfgang Pauli,²⁶³⁹ Friedrich Kottler,²⁶⁴⁰ Sir Joseph Larmor,²⁶⁴¹ Sir William Cecil Dampier,²⁶⁴² Sir Edmund Whittaker,²⁶⁴³ and many others, have acknowledged Hilbert's work of 20 November 1915, with most acknowledging that Hilbert was first to the equations. In 1974, Jagdish Mehra presented the most comprehensive treatment of the subject ever published.²⁶⁴⁴ Prof. Mehra's thoroughly documented treatise was met with great enthusiasm and it prompted a sudden surge of research into the origins of the general theory of relativity.

Damning evidence against Einstein appeared in 1978²⁶⁴⁵ in the form of Einstein's 18 November 1915 letter to Hilbert acknowledging receipt of Hilbert's manuscript,

before Einstein's 25 November 1915 presentation. This letter proves Einstein's plagiarism; in that Einstein could not have arrived at the equations independently of Hilbert, in spite of the fact that Einstein did not credit Hilbert with providing the solution in Einstein's presentation of 25 November 1915. Max Born's letter to David Hilbert has provided yet more proof of Einstein's plagiarism—as have the printer's proofs.

11.4 Hilbert's Proofs Prove Hilbert's Priority

Even though Corry's claims that Einstein anticipated Hilbert are clearly untenable, Corry's discovery is not without some redeeming historical value. Corry correctly notes that Hilbert changed his final published work from the version printed in the proofs. Prof. Winterberg believes this was done in cooperation with Felix Klein in an effort to render Hilbert's paper clearer. This in no way casts doubt on Hilbert's priority.

It is my opinion that the proofs are of secondary importance to the fact that Klein, Born, Hilbert and Einstein each acknowledged that Hilbert was first to the covariant equations. They are, after all, printer's proofs which were rejected, and printer's proofs are often inaccurate representations of the author's work. An entire block of text and/or equations may have been missed or misrepresented by the typesetter.

Beyond that, the proofs are in a mutilated and incomplete condition. The burden of proof lies with the radical revisionists Corry, Renn and Stachel, and in the full light of day, we see that they have no evidence to support their absurd claim.

In marked contrast to Corry, Renn and Stachel's baseless revisionism, Dr. Tilman Sauer and Prof. Friedwardt Winterberg have set forth compelling arguments, which demonstrate that even in their mutilated state the proofs prove that Hilbert had a generally covariant theory of gravitation *and these incomplete proofs do present, even in their mutilated state, generally covariant field equations of gravitation.*

Dr. Sauer wrote,

“Hilbert, in his communication, introduced gravitational field equations which are derived from a variational principle and which are generally covariant. Thus, in contrast to Einstein's *Entwurf* theory and in contrast to Einstein's first November communication, he did not write down gravitational field equations of restricted covariance, and, in contrast to Einstein's second November communication, Hilbert did formulate the generally covariant field equations in terms of a variational principle.”²⁶⁴⁶

However, Dr. Sauer also states,

“In the proofs, the field equations are not explicitly specified.”²⁶⁴⁷

Prof. Winterberg argues that they were present—before the proofs were defaced by some unknown person.

The upper portion of page 8 of the printer's proofs is missing about twenty-five

percent of the text block which was original to it. As a result, several lines of the original text are missing from the top of the page and at least two equations, numbered equations (14) and (17), are known to be missing. About twenty text lines worth of material in total has been obliterated, including about ten lines from the top of page 8. It appears that it was this material the person who defaced the proofs intended to remove, because the wandering cut splits a line on page 7, but is an even break on page 8.

Sauer, Winterberg, Renn and Stachel agree that this missing section of the proofs contained equation (17), which they believe was,

$$H = K + L.$$

This equation appears in the published version of Hilbert's lecture as equation (20). Prof. Winterberg has noted that on page 404, the published paper proceeds from this equation as follows:

“Es bleibt noch übrig, bei der Annahme

$$(20) \quad H = K + L,$$

direkt zu zeigen, wie die oben aufgestellten verallgemeinerten Maxwell'schen Gleichungen (5) eine Folge der Gravitationsgleichungen (4) in dem oben angegebenen Sinne sind.

Unter Verwendung der vorhin eingeführten Bezeichnungsweise für die Variationsableitungen bezüglich der $g^{\mu\nu}$ erhalten die Gravitationsgleichungen wegen (20) die Gestalt

$$(21) \quad [\sqrt{\epsilon} \mathcal{R}]_{\mu\nu} + \frac{\partial \sqrt{\epsilon} v}{\partial \epsilon^{\mu\nu}} = \eta \zeta$$

Das erste Glied linker Hand wird

$$[\sqrt{g} K]_{\mu\nu} = \sqrt{g} \left(K_{\mu\nu} - \frac{1}{2} K g_{\mu\nu} \right).$$

Therefore, Prof. Winterberg contends, the missing section of the proofs contained the unnumbered equation of the variational derivative with the trace term,

$$[\sqrt{g} K]_{\mu\nu} = \sqrt{g} \left(K_{\mu\nu} - \frac{1}{2} K g_{\mu\nu} \right),$$

which Prof. Winterberg notes appeared in the published version following the equation $H = K + L$ and equation (21):

$$[\sqrt{g} K]_{\mu\nu} + \frac{\partial\sqrt{g} L}{\partial g^{\mu\nu}} = 0.$$

Prof. Winterberg also holds that, even if we assume the proofs did not originally include the unnumbered equation for the variational derivative,

$$[\sqrt{g} K]_{\mu\nu} = \sqrt{g} \left(K_{\mu\nu} - \frac{1}{2} K g_{\mu\nu} \right),$$

it is still certain that Hilbert had arrived at the generally covariant field equations of gravitation. Prof. Winterberg states that one need only express, “the variational derivative of the Lagrangian $H = K + L$ in Hilbert’s variational principle,

$$\delta \int H \sqrt{g} d\tau = 0,$$

where, apart from the surface terms which vanish at ∞ ,

$$\delta \int K \sqrt{g} d\tau = \int \left(K_{\mu\nu} - \frac{1}{2} K g_{\mu\nu} \right) \delta g^{\mu\nu} \sqrt{g} d\tau. ”^{2648}$$

Winterberg further observes that the printer’s proofs, at equation (26), give an abbreviated statement of the field equations of gravitation,

$$[\sqrt{g} K]_{\mu\nu} + \frac{\partial\sqrt{g} L}{\partial g^{\mu\nu}} = 0,$$

which, according to Prof. Winterberg, is identical to the equation,

$$K_{\mu\nu} - \frac{1}{2} K g_{\mu\nu} = \text{const. } T_{\mu\nu}.$$

It is interesting to note that Hilbert changed a key phrase in the published paper, which appeared after Einstein had plagiarized Hilbert’s equations, from: “in dem von Einstein geforderten Sinne” or, “in the sense requested by Einstein” in the proofs at page 13, to: “in dem von Einstein dargelegten Sinne” or, “in the sense stated by Einstein” in the published paper at page 407, which indicates that it was Einstein who adopted Hilbert’s solution, without an attribution.

11.5 A Question of Character

The difference in character between David Hilbert and Albert Einstein can be

summed up by their respective attitudes towards women (in Einstein's case, *disrespectful*). Hilbert championed women's rights and fought hard for Emmy Noether's acceptance as a *Privatdozent* at Göttingen. When it was objected that if Noether became a *Privatdozent* she might one day enter the University's Senate, Hilbert famously responded that the sex of a candidate was not an issue, for, after all, "the Senate is not a bath house!"

Albert Einstein was a misogynist. Einstein stated,

"We men are deplorable, dependent creatures. But compared with these women, every one of us is king, for he stands more or less on his own two feet, not constantly waiting for something outside of himself to cling to. They, however, always wait for someone to come along who will use them as he sees fit. If this does not happen, they simply fall to pieces."²⁶⁴⁹

Albert Einstein believed,

"where you females are concerned, your production centre is not situated in the brain."²⁶⁵⁰

and,

"Women are there to cook and nothing else."²⁶⁵¹

Peter A. Bucky wrote in his book *The Private Albert Einstein*,

"[Einstein] once told one of his female students that women are not gifted as theoretical physicists and that he would never allow a daughter of his to study physics. [***] [Einstein] once wrote in a letter to a friend, a Dr. Muesham in Haifa, that his definition of a good wife was someone who stood somewhere between a pig and a chronic cleaner."²⁶⁵²

There are allegations that Albert Einstein may have beaten his first wife Mileva Marić and their children.²⁶⁵³ Einstein's son, Hans Albert Einstein, stated, "Oh, he beat me up, just like anyone else would do."²⁶⁵⁴ Einstein cruelly abandoned Marić during her pregnancy with their first child Lieserl. The fate of this poor child, who vanished from the record early in life, is to this day a mystery.²⁶⁵⁵

Brutality was nothing new to Albert Einstein. As a child, Albert Einstein physically abused his sister Maja, and attacked his violin instructor. Maja Winteler-Einstein wrote in her biography of Albert,

"The usually calm small boy had inherited from grandfather Koch a tendency toward violent temper tantrums. At such moments his face would turn completely yellow, the tip of his nose snow-white, and he was no longer in control of himself. On one such occasion he grabbed a chair and struck at his teacher, who was so frightened that she ran away terrified and was never seen

again. Another time he threw a large bowling ball at his little sister's head; a third time he used a child's hoe to knock a hole in her head."²⁶⁵⁶

There are many accounts which portray Einstein as incontinent. According to some accounts, Einstein was perhaps even a foul-mouthed²⁶⁵⁷ syphilitic, who likely contracted the disease from his many encounters with prostitutes.²⁶⁵⁸ Albert Einstein was, by his own admission on 23 December 1918, an incestuous adulterer at the time he plagiarized Hilbert's work.

Einstein stated,

"It is correct that I committed adultery. I have been living together with my cousin, Elsa Einstein, divorced Löwenthal, for about 4 1/2 years and have been continuing these intimate relations since then."²⁶⁵⁹

Albert Einstein was a blood relative with his second wife Elsa Einstein through both his mother *and* his father.²⁶⁶⁰ Einstein even felt that he had the option to choose between a marriage with his cousin Elsa, or one of her young daughters, whom he aggressively pursued, much to her disgust.²⁶⁶¹ Dismayed, Ilse Einstein wrote to Georg Nicolai about Albert Einstein's sexual advances toward her,

"I have never wished nor felt the least desire to be close to [Albert Einstein] physically. This is otherwise in his case—recently at least.—He himself even admitted to me once how difficult it is for him to keep himself in check."²⁶⁶²

Albert Einstein was perhaps dissuaded from his perverse wish to marry Ilse Einstein by his uncle Rudolf Einstein's (Rudolf Einstein was Elsa Einstein's father and Ilse Einstein's grandfather, as well as Albert Einstein's uncle and father-in-law) dowry of 100,000 Marks, which Albert Einstein accepted when he married his cousin Ilse—Albert continued to have access to Ilse.²⁶⁶³ Dennis Overbye tells the story of Ilse Einstein's letter to Georg Nicolai of 22 May 1918 in which she complains of Albert Einstein's sexual advances towards her. Albert Einstein was conducting an incestuous and adulterous relationship with her mother, his cousin, Elsa Einstein at the time. Overbye states that Wolf Zuelzer preserved the letter,

"despite pressure from Margot Einstein, Helen Dukas, and lawyers representing the Einstein estate to surrender it or destroy it. The tale, an example of the difficulties scholars have faced in telling the Einstein story, is preserved in Zuelzer's correspondence in the American Heritage archive at the University of Wyoming."²⁶⁶⁴

Marrying Ilse enabled Einstein to have her and her daughters. Einstein referred to his wife and cousin Elsa Einstein, and her two daughters, as his "small harem". Einstein wrote to Max Born, in an undated letter thought to have been written sometime between 24 June 1918 and 2 August 1918,

“We are well, and the small harem eat well and are thriving.”²⁶⁶⁵

Philipp Frank wrote,

“Einstein’s wife Elsa died in 1936. [***] Of Einstein’s two stepdaughters, one died after leaving Germany; the other, Margot, a talented sculptress, was divorced from her husband and now lives mostly with Einstein in Princeton.”²⁶⁶⁶

Even this might not have been enough for Einstein. There are reasons to believe he had an affair with Elsa’s sister, Paula, another of Albert Einstein’s cousins.²⁶⁶⁷ Einstein’s son, Hans Albert Einstein, believed that his father was having an affair with his father’s secretary Helen Dukas.²⁶⁶⁸ After decades of disingenuous hype promoting Einstein as an angelic figure, it is necessary to show that he was not only capable of plagiarism, but that we know for a fact that he committed far worse moral offenses—Albert Einstein’s plagiarism is among the least of his *many* psychopathic sins. Einstein attempted to blame his psychopathic personality on an old professor from Munich he once visited after becoming a professor himself. The professor could not remember Einstein. Einstein told Peter A. Bucky,

“For some reason, this made me realize that I was on my own, so to speak—fully independent in respect to everybody—and I felt after that that I owed no obligation to any individual.”²⁶⁶⁹

Albert Einstein told Peter A. Bucky,

“I was, as a matter of fact, the only Jewish child in the school. This actually worked to my advantage, since it made it easier for me to isolate myself from the rest of the class and find that comfort in solitude that I so cherished.”²⁶⁷⁰

It is helpful to know Einstein’s habits. Einstein clearly plagiarized the special theory of relativity, as well as many important aspects of the general theory of relativity from Henri Poincaré and Hendrik Antoon Lorentz. In fact, Einstein evinced a career-long pattern of plagiarism, and has often been accused of appropriating the work of others, accusations he most often tried to avoid, and never refuted.²⁶⁷¹ For example, in 1916, when Gehrcke²⁶⁷² effectively accused Einstein of plagiarizing Gerber’s formula for the perihelion motion of Mercury, Einstein wrote to Willy Wien,

“[. . .] I am not going to respond to Gehrcke’s tasteless and superficial attacks, because any informed reader can do this himself.”²⁶⁷³

Einstein had quite a reputation as a plagiarist throughout his career. Einstein’s plagiarism became an international scandal in the early 1920’s.

11.6 A Question of Ability

David Hilbert is remembered as one of the most brilliant mathematical minds in all of history. He did not *guess* at the generally covariant field equations of gravitation. Unlike Einstein, Hilbert did *not* inductively fabricate by *Petitio Principii* the derivation of these equations from the known result. Hilbert deduced the generally covariant field equations of gravitation from a variational principle in an axiomatic synthesis.

McCrea wrote in 1933,

“GENERAL RELATIVITY

This theory has never been placed on an axiomatic basis. Einstein himself in his original development⁹ of it explicitly refrained from any attempt to do so (and his followers have remained loyal to his example!) The first stage of the theory is to represent space-time by means of a four-dimensional Riemannian space. (This gives at once as a pragmatic reason for the absence of an axiomatic development the great difficulty of formulating axioms for differential geometry.¹⁰ Any system of axioms for general relativity would have to include ones corresponding to those of the differential geometry of Riemannian space). This is usually treated as a generalisation of the result that the consequences of the theory of special relativity may be represented by means of Minkowski geometry, the generalisation being guided by the Principle of Equivalence and the Principle of Covariance.¹¹ Or use may be made of the arguments, extended to four dimensions, which Riemann himself gave for regarding what is now known as Riemannian geometry as a natural extension of euclidean geometry and for its possible applications in physics.¹² But either way we get only plausibility arguments which lead to the attitude, Let us try what consequences follow from assuming that the geometry of space-time may be a general Riemannian geometry instead of Minkowski geometry. That this step is a very tentative one is shown by the immense amount of research to which a further analysis of it can lead.¹³ In particular the usual developments do not at this stage enter into the problem of what a system of coordinates in space-time means in terms of possible observations by an observer belonging to it. The whole thing is in fact an example of *hypothesis suggested by mathematical form*, a feature which is not present in any purely deductive theory, of which we say a little more later on.”²⁶⁷⁴

Albert Einstein was not a mathematically minded person. Albert Einstein stated, “I am not a mathematician.”²⁶⁷⁵ Einstein also famously stated,

“Since the mathematicians have attacked the relativity theory, I myself no longer understand it anymore.”²⁶⁷⁶

Einstein's son-in-law, Rudolf Kayser (a. k. a. Anton Reiser) records that, while Einstein was studying,

“He showed very little love for [the] study [of mathematics], which seemed to him rather limitless in relation to other sciences. No one could stir him to visit the mathematical seminars.”²⁶⁷⁷

While still a child, Einstein’s parents and teachers suspected that he was mentally retarded.²⁶⁷⁸ Numerous eyewitnesses (literally) described Albert Einstein’s vacant childlike eyes and childlike behavior and naïveté.²⁶⁷⁹ For example, when Einstein arrived in America in 1921, *The New York Times*, (3 April 1921), described Einstein on the front page:

“Under a high, broad forehead are large and luminous eyes, almost childlike in their simplicity and unworldliness.”

Charles Nordmann, who chauffeured Einstein around France, sarcastically described him as a vacant-eyed simian clod.²⁶⁸⁰ Nordmann sarcastically ranked Einstein with Newton, Des Cartes or *Henri Poincaré*—from whom Einstein had copied the principle of relativity.²⁶⁸¹ Like Rabelais and Voltaire before him, Nordmann lavished sarcastic praise on the new hero and derided him in ways which would elude the unsophisticated, but which were clear to those knowledgeable of the facts. Nordmann was careful not to be too blunt, for he wished to advocate the theory of relativity, and it was politically expedient for him to ride on Einstein’s coat tails, but Nordmann never failed to get his digs in. Charles Nordmann wrote,

“Einstein is big (he is about 1 m 76), with large shoulders and the back only very slightly bent. His head, the head where the world of science has been re-created, immediately attracts and fixes the attention. His skull is clearly, and to an extraordinary degree, brachycephalic, great in breadth and receding towards the nape of the neck without exceeding the vertical. Here is an illustration which brings to nought the old assurances of the phrenologists and of certain biologists, according to which genius is the prerogative of the dolichocephales. The skull of Einstein reminds me, above all else, of that of Renan, who was also a brachycephale. As with Renan the forehead is huge; its breadth exceptional, its spherical form striking one more than its height. A few horizontal folds cross this moving face which is sometimes cut, at moments of concentration or thought, by two deep vertical furrows which raise his eyebrows.

His complexion is smooth, unpolished, of a certain duskiness, bright. A small moustache, dark and very short, decorates a sensual mouth, very red, fairly large, whose corners gradually rise in a smooth and permanent smile. The nose, of simple shape, is slightly aquiline.

Under his eyebrows, whose lines seem to converge towards the middle of his forehead, appear two very deep eyes whose grave and melancholy expression contrast with the smile of this pagan mouth. The expression is usually distant, as though fixed on infinity, at times slightly clouded over. This gives his general expression a touch of inspiration and of sadness which

accentuates once again the creases produced by reflection and which, almost linking with his eyelids, lengthen his eyes, as though with a touch of *kohl*. Very black hair, flecked with silver, unkempt, falls in curls towards the nape of his neck and his ears, after having been brought straight up, like a frozen wave, above his forehead.

Above all, the impression is one of disconcerting youth, strongly romantic, and at certain moments evoking in me the irrepressible idea of a young Beethoven, on which meditation had already left its mark, and who had once been beautiful. And then, suddenly, laughter breaks out and one sees a student. Thus appeared to us the man who has plumbed with his mind, deeper than any before him, the astonishing depths of the mysterious universe."²⁶⁸²

Albert Einstein would often simply agree with whomever he had last spoken,²⁶⁸³ and it is likely that he was little more than a mere parrot. Upon meeting with colleagues, he would often grill them for information on their theories, seemingly soaking it all in to repeat it later as if the ideas were his own.

Certain anecdotal accounts paint Einstein in a bad light. Upon refusing to brush his teeth, Einstein allegedly proclaimed that, "pigs' bristles can drill through diamond, so how should my teeth stand up to them?"²⁶⁸⁴ Explaining why he didn't wear a hat in the rain, he asserted that hair dries faster than hats, and irritably asserted that such was obvious. It apparently eluded him that the objective was, in the first place, to keep the hair dry. Explaining why he didn't wear socks, Einstein commented, "When I was young I found out that the big toe always ends up by making a hole in the sock. So I stopped wearing socks"²⁶⁸⁵ and "What use are socks? They only produce holes."²⁶⁸⁶ Felix Klein told Wolfgang Pauli that Einstein wrote to him that Klein's paper²⁶⁸⁷ delighted him like a child given a bar of chocolate by his mommy.²⁶⁸⁸ *The New York Times* reported on 6 November 1927 on page 22 that Einstein forgot his bags in the waiting room when boarding a train in Gare de l'Est. *The New York Times* reported on 13 July 1924 on page 22 in an article entitled, "Einstein Counted Wrong", that Einstein counted the change a street car conductor had given him:

"After counting it hurriedly, Einstein insisted that the conductor had made a mistake. The latter recounted the change deliberately, explaining to Herr Einstein that it was correct, and then turned to the next passenger with a shrug of his shoulders and the remark:

'His arithmetic is weak.'"

Einstein's private physician Prof. Janos Plesch wrote,

"Einstein never took any exercise beyond a short walk when he felt like it (which wasn't often, because he has no sense of direction, and therefore would seldom venture far afield), and whatever he got sailing his boat, though that was sometimes quite arduous—not the sailing exactly, but the

rowing home of the heavy yacht in the evening calm when there wasn't a breath of air to stretch the sails."²⁶⁸⁹

Peter A. Bucky recounted many such anecdotes and told how Einstein had decided to live in one room as opposed to four so that the next time he lost a button from his shirt it would be easier to find.²⁶⁹⁰

Einstein was taken in by a con man named Otto Reiman, who convinced Einstein that he could describe a person after blindly touching a sample of his or her handwriting.²⁶⁹¹ Many physicists including Albert Einstein, A. E. Dolbear and Sir Oliver Lodge, believed in telepathy; but Einstein was perhaps the only one to find proof of it in the fact that we humans do not have skins as thick as an elephant's hide.²⁶⁹² Albert Einstein was taken in by the psychic Roman Ostoja and attended a séance with Upton Sinclair.²⁶⁹³ Einstein wrote a preface for the Thomas edition of Upton Sinclair's book on telepathy, *Mental Radio*,²⁶⁹⁴ in which Einstein—"the greatest mind in the world"²⁶⁹⁵—asked that psychologists seriously consider Sinclair's findings.

Elsa Einstein was Albert Einstein's second wife and his cousin and they were related by blood through both her mother and father. The inbred Einsteins were as arrogant as they were ridiculous. Denis Brian wrote in his book *Einstein: A Life*,

"The Sinclairs arranged for Einstein to meet some of their distinguished writer friends for dinner at the exclusive Town House in Los Angeles. When Einstein arrived, he somehow missed the cloakroom and appeared in the dining room wearing a 'humble' black overcoat and a much-worn hat. In what might have been a scene from a Chaplin film, he removed his overcoat, 'folded it neatly, and laid it on the floor in a vacant corner and set the hat on top of it. Then he was ready to meet the literary elite of Southern California.' There was even something Chaplinesque in the way Einstein flirted with the attractive women, while Elsa—"my old lady" he called her—was at his elbow.

Elsa confirmed Mrs. Sinclair's view of her as a dutiful and utterly devoted German hausfrau during a discussion about God. Einstein had stated his belief in God, but not a personal God—a distinction which Mrs. Sinclair didn't get. She replied, 'Surely the personality of God must include all other personalities.' Afterwards, Elsa gently admonished Mrs. Sinclair for arguing with Albert, adding, 'You know, my husband has the greatest mind in the world.' 'Yes, I know,' said Mrs. Sinclair, 'but surely he doesn't know everything!'"²⁶⁹⁶

Though Roman Ostoja was unable to conjure up a ghost for Albert Einstein, the media were able to put the American public into a trance-like state of adulation. Brian continued,

"Back in his gift-strewn cottage Einstein found tangible evidence that 'America was prepared to go mad over him.' A millionairess gave Caltech

\$10,000 for the privilege of meeting him.”²⁶⁹⁷

Peter Micheltore tells a story of how Einstein dropped his saliva saturated cigar butt into the dust, then unashamedly picked up the gritty stub and shoved it back into his mouth defiantly declaring, “I don’t care a straw for germs.”²⁶⁹⁸ R. S. Shankland records that Einstein,

“apparently put his cigarette into his coat pocket, and as we took off our coats he had a small conflagration in his.”²⁶⁹⁹

Einstein wasn’t too handy around the house,²⁷⁰⁰ and seemingly had a difficult time conceptualizing geometric problems. In a joke perhaps first told of Ampère, it was said that Einstein insisted that two holes be bored through his front door, one larger than the other, so that both the large cat, *and the small cat*, could pass through the door.²⁷⁰¹ This anecdote is significant, because it is a historical indication of the low esteem in which some of the people who had met Einstein held his intelligence.

After meeting Einstein, Max von Laue found it difficult to believe that Einstein had written the 1905 paper,

“[T]he young man who met me made such an unexpected impression on me, that I did not believe him to be capable of being the father of the theory of relativity.”

“[D]er junge Mann, der mir entgegen kam, machte mir einen so unerwarteten Eindruck, daß ich nicht glaubte, er könne der Vater der Relativitätstheorie sein.”²⁷⁰²

Minkowski, who had been Einstein’s professor, found it difficult to believe that “lazy” Einstein had written the 1905 paper. Minkowski did not think Einstein capable of it.²⁷⁰³ Minkowski thought that Einstein was a poor mathematician.²⁷⁰⁴ According to both Heaviside and Born, Minkowski anticipated Einstein.²⁷⁰⁵ Max Born wrote in his autobiography,

“I went to Cologne, met Minkowski and heard his celebrated lecture ‘Space and Time’, delivered on 21 September 1908. Outside the circle of physicists and mathematicians, Minkowski’s contribution to relativity is hardly known. Yet it is upon his work that the imposing structures of modern field theories have been built. He discovered the formal equivalence of the three space coordinates and the time variable, and developed the transformation theory in this four-dimensional universe. He told me later that it came to him as a great shock when Einstein published his paper in which the equivalence of the different local times of observers moving relative to each other was pronounced; for he had reached the same conclusions independently but did not publish them because he wished first to work out the mathematical structure in all its splendour. He never made a priority claim and always gave

Einstein his full share in the great discovery. After having heard Minkowski speak about his ideas, my mind was made up at once. I would go to Göttingen and to help him in his work.”²⁷⁰⁶

On 2 February 1920, Albert Einstein wrote a letter to Paul Ehrenfest, in which Einstein made obvious blunders in his arithmetic,

“I have received the 10000 marks.^[1] The accounting now looks like this: 16500 marks is what the grand piano costs, 239 marks is the cost of packing, delivery to the train station, and export permit. Remainder is 111 marks,^[2] which is consequently being applied toward the violins.^[3]”²⁷⁰⁷

Ehrenfests response to Einstein of 8 February 1920 is telling and hints that he knew that Einstein was incompetent beyond mere questions of finances,

“We had a great laugh today about your brilliant miscalculation. You write the following, verbatim:

‘I have received the 10000 marks. The acct. looks like this: 16500 marks is what the grand piano costs, 239 marks is the cost of packing, delivery —. Remainder is 111 marks, which is consequently being applied toward the violins’^[4] —

God said, ‘Let Einstein be’ and all was skew!—A nice non-Euclidity in the series of numbers!!—After this exercise, I understand perfectly why destitution [*Dallessicität*] is your normal state!^[5]”²⁷⁰⁸

Abraham Pais tells a revealing story of one of Einstein’s blunders.²⁷⁰⁹ Einstein, himself, described his goals, strengths and limitations as follows in an essay dated 18 September 1896,

“They are, most of all, my individual inclination for abstract and mathematical thinking, lack of imagination and of practical sense.”²⁷¹⁰

Einstein later found himself in deeper waters and wrote to Paul Hertz on 22 August 1915,

“You do not have the faintest idea what I had to go through as a mathematical ignoramus before coming into this harbor.”²⁷¹¹

Albert Einstein wrote to Felix Klein, on 26 March 1917, and confessed that,

“As I have never done non-Euclidean geometry, the more obvious elliptic geometry had escaped me when I was writing my last paper.”²⁷¹²

Einstein often tried to justify his enormous difficulties in school²⁷¹³ and his ignorance by admitting that he had thought mathematics unimportant and thought

that formulas and facts need not be memorized because one can simply look them up in text books.²⁷¹⁴

Dr. Tilman Sauer stated,

“[Hilbert] would soon [. . .] pinpoint flaws in Einstein’s rather pedestrian way of dealing with the mathematics of his gravitation theory.”²⁷¹⁵

It is well-established that Einstein had relied upon collaborators to accomplish the mathematical work for which he would sometimes take sole credit. Einstein admitted to Peter A. Bucky that he relied upon experts to do his mathematical work,

“[E]ven after I became well-known I many times made use of experts to assist me in complicated calculations in order to prove certain physics problems. Also, I have always strongly believed that one should not burden his mind with formulae when one can go to a textbook and look them up. I have done that, too, on many occasions.”²⁷¹⁶

At this point in his career, Einstein had already collaborated with Mileva Marić, Jacob Laub, Walter Ritz, Ludwig Hopf, Otto Stern, Marcel Grossmann, Michele Besso, Adriaan Fokker, and Wander de Haas. He had copied the formulae of Lorentz, Poincaré, Gerber, and countless others, without attribution. On 3 April 1921, *The New York Times* quoted Chaim Weizmann,

“When [Einstein] was called ‘a poet in science’ the definition was a good one. He seems more an intuitive physicist, however. He is not an experimental physicist, and although he is able to detect fallacies in the conceptions of physical science, he must turn his general outlines of theory over to some one else to work out.”²⁷¹⁷

Einstein told Leopold Infeld, “I am really more of a philosopher than a physicist.”²⁷¹⁸ Not only did Einstein not offer to include Grossmann and Hilbert in Einstein’s 25 November 1915 paper, Einstein attempted to discourage Hilbert from publishing the generally covariant field equations of gravitation, which Hilbert had deduced by 13 November 1915 and probably had in early October of 1915.

Einstein hid from the many accusations that his theory was metaphysical nonsense—an inconsistent jumble of fallacies of *Petitio Principii*—nothing but an excuse to plagiarize. A meeting was arranged to discuss Vaihinger’s theory of fictions in 1920. Einstein pledged that he would attend this meeting. Knowing that Einstein would be devoured in a debate over his mathematical fictions, which confused induction with deduction, Wertheimer and Ehrenfest helped Einstein fabricate an excuse to miss the meeting he had agreed to attend. Einstein was proven a liar.²⁷¹⁹ Einstein also hid from many other criticisms, and Einstein refused to answer T. J. J. See’s many charges of plagiarism,²⁷²⁰ and refused to debate Arvid Reuter Dahl or to answer his many charges of plagiarism.²⁷²¹ Einstein hid from the French Academy of Sciences.²⁷²² Einstein hid from Cardinal O’Connell.²⁷²³ Einstein

hid from Dayton C. Miller's falsification of the special theory of relativity.²⁷²⁴ Einstein hid from Cartmel.²⁷²⁵ Miller hammered Einstein in the press over the course of many years. *The New York Times Index* lists several articles in which Miller's and William B. Cartmels' falsifications of the special theory of relativity are discussed. Einstein and Lorentz were very worried by Miller's results and could not find fault with them.²⁷²⁶ Einstein told R. S. Shankland not to perform an experiment which might falsify the special theory of relativity,

“[Einstein] again said that more experiments were not necessary, and results such as Synge might find would be ‘irrelevant.’ [Einstein] told me not to do any experiments of this kind.”²⁷²⁷

Einstein knew that he was caught at the Arbeitsgemeinschaft deutscher Naturforscher meeting in the Berlin Philharmonic, and wanted to run away from Germany. Einstein desired to hide from the Bad Nauheim debate, in which he had threatened to devour his opponents,²⁷²⁸ then Einstein—after being talked into appearing and after much hype promoting the event which attracted thousands of visitors—then Einstein, when losing the debate, ran away during the lunch break and again wanted to run away from Germany. Einstein prospered from hype and had no legitimacy as a supposed “genius”. The press rescued him again and again, while he hid. Einstein was unable to defend his theories in the light of strict scrutiny.

11.7 Conclusion

Since the printer's proofs were mutilated at some point in their history in a way which removed critical material relevant to Hilbert's formulation of the generally covariant field equations of gravitation; and since Einstein acknowledged receipt of Hilbert's manuscript containing Hilbert's results, before Einstein presented them as if his own and attempted to discourage Hilbert from publishing Hilbert's work; it is clear that the “Belated Decision” is that Einstein plagiarized Hilbert's work, as is apparent even in the mutilated printer's proofs of Hilbert's paper. Jürgen Renn was quoted in *The Washington Post*, on 14 November 1997, as having said,

“I had personally come to the conclusion that Einstein plagiarized Hilbert[.] [***] [The] conclusion is almost unavoidable, that Einstein must have copied from Hilbert.”²⁷²⁹

The Ottawa Citizen, 14 November 1997, Final Edition, page A13, reported in an article entitled “Einstein's Rival was Relatively Late with Solution: Investigation Removes Stigma of Plagiarism from Scientist's Milestone Theory” with the byline Roger Highfield, *The Daily Telegraph*,

“Mr. Renn said yesterday that at first he feared Einstein had stolen Hilbert's ideas. But this discovery marks ‘one of the very rare cases that one has a smoking gun’ to clear Einstein's name, he said.”

The “smoking gun” was firing blanks. Now that the smoke has cleared, I borrow a line from Corry, Renn and Stachel’s 1997 article in the journal *Science*, “the arguments by which Einstein is exculpated are rather weak[.]” Since the proofs are in a mutilated condition and lack the critical section of Hilbert’s work which originally contained his generally covariant field equations of gravitation, and further since the remainder of the proofs prove that Hilbert had the generally covariant equations of gravitation of the general theory of relativity before Einstein—easily derived trace term or no—Corry, Renn and Stachel’s arguments are not only weak, they are both baseless and pointless.

- 2582.** P. Spiller, *Die Urkraft des Weltalls nach ihrem Wesen und Wirken auf allen Naturgebieten*, Stuhr'schen Buchhandlung, Berlin, (1876), p. 132.
- 2583.** H. A. Lorentz, *Collected Papers*, Volume 5, Martinus Nijhoff, (1937), pp. 3-4; reprint of *Versuch einer Theorie der Electricischen und optischen Erscheinungen in bewegten Körpern*, E. J. Brill, Leiden, (1895); unaltered reprint by B. G. Teubner, Leipzig, (1906).
- 2584.** H. Schubert, "The Fourth Dimension. Mathematical and Spiritual", *The Monist*, Volume 3, Number 3, (April, 1893), pp. 402-449, at 413-414; reprinted in *Mathematic Essays and Recreations*, Open Court, Chicago, (1898), pp. 64-111, at 75-76; English translation by T. J. McCormack of *Mathematische Mussestunden: Eine Sammlung von Geduldspielen, Kunststücken und Unterhaltungsaufgaben mathematischer Natur*, various editions/publishers.
- 2585.** H. Schubert, "The Fourth Dimension. Mathematical and Spiritual", *The Monist*, Volume 3, Number 3, (April, 1893), pp. 402-449, at 449; reprinted in *Mathematic Essays and Recreations*, Open Court, Chicago, (1898), pp. 64-111, at 111; English translation by T. J. McCormack of *Mathematische Mussestunden: Eine Sammlung von Geduldspielen, Kunststücken und Unterhaltungsaufgaben mathematischer Natur*, various editions/publishers.
- 2586.** E. Wölffing, "Die vierte Dimension", *Die Umschau*, Volume 1, Number 18, (1897), pp. 309-314, at 312.
- 2587.** Archbishop Tillotson, *Sermons*, Fourth Edition, Volume 6, Sermon 6, Chiswell, London, (1704), pp. 156-157.
- 2588.** Quoted in C. L. Poor, "What Einstein Really Did", *Scribner's Magazine*, Volume 88, (July-December 1930), pp. 527-538, at 527. Poor was very much aware of the fact that Einstein would plagiarize known formulas by irrationally asserting known empirical facts as if *a priori* first principles and then pretend to "deduce"—through induction—the hypotheses and equations of his predecessors, to then deduce the same known empirical facts as conclusions from the hypotheses and equations he had taken from others without acknowledgment, in a fallacy of *Petitio Principii*. Charles Lane Poor quoted Anthony Berkeley (a. k. a. A. B. Cox, a. k. a. Francis Iles) in the context of Einstein's fabricated and vague inductions by fallacy of *Petitio Principii*, artfully posing as deductions. Poor also accused Einstein and his coterie of making too hasty of universal generalizations of specific terrestrial phenomena.
- 2589.** Hilbert's proofs are contained in the file: Cod. Ms. D. Hilbert 634, Niedersächsische Staats- und Universitätsbibliothek Göttingen. The complete proofs are transcribed in: C. J. Bjerknes, *Anticipations of Einstein in the General Theory of Relativity*, XTX Inc., Downers Grove, Illinois, (2003), pp. 224-248. Facsimiles of the mutilated pages 7 and 8, and page 11 of the proofs are published in: F. Winterberg, "On 'Belated Decision in the Hilbert-Einstein Priority Dispute', published by L. Corry, J. Renn, and J. Stachel", *Zeitschrift für Naturforschung A*, Volume 59a, Number 10, (October, 2004), pp. 715-719, at 716-718.
- 2590.** L. Corry, J. Renn, and J. Stachel, "Belated Decision in the Hilbert-Einstein Priority Dispute", *Science*, Volume 278, (14 November 1997), pp. 1270-1273.
- 2591.** *See:* V. P. Vizgin, "On the Discovery of the Gravitational Field Equations by Einstein and Hilbert: New Materials", *Uspekhi Fizicheskikh Nauk*, Volume 44, Number 12, (2001), pp. 1283-1298. *See also:* D. E. Rowe, "Einstein Meets Hilbert: At the Crossroads of Physics and Mathematics", *Physics in Perspective*, Volume 3, Number 4, (November, 2001), pp. 379-424. *See also:* D. Overbye, *Einstein in Love: A Scientific Romance*, Viking, New York, (2000), pp. 294-295. *See also:* R. Schulmann, *et al.*, Editors, *The Collected Papers of Albert Einstein*, Volume 8, Part A, Princeton University Press, (1998), p. *liv*, note 20; p. 196, note 3; pp. 222-223, note 2. **and** M. Janssen, *et al.*, Editors, *The Collected Papers of Albert*

Einstein, Volume 7, Princeton University Press, (2002), p. 139, note 4.

2592. The *Associated Press* covered the story: “Study Confirms Einstein Originated Theory of Relativity”, (18 November 1997); **and** “Study Settles Einstein Theories”, (18 November 1997). **See also:** C. Suplee, “Researchers Definitively Rule Einstein Did Not Plagiarize Relativity Theory”, *The Washington Post*, (14 November 1997), p. A24. **See also:** *Daily Mail*, London, (14 November 1997), p. 37. **See also:** “Einstein Cleared of Stealing His Greatest Discovery”, *The Record*, Kitchner-Waterloo, Ontario, (14 November 1997), p. A11. **See also:** “Research Shows Einstein didn’t Steal Ideas for Theory”, *Calgary Herald*, (14 November 1997), p. A7. **See also:** “Einstein’s Rival was Relatively Late with Solution: Investigation Removes Stigma of Plagiarism from Scientist’s Milestone Theory”, *The Ottawa Citizen*, (14 November 1997), p. A13; Byline Roger Highfield, *The Daily Telegraph*. **See also:** “Albert Einstein”, *Chicago Sun-Times*, (16 November 1997), p. 44. **See also:** “Asides”, *Pittsburgh Post-Gazette*, (16 November 1997), Editorial Section, p. C-2. **See also:** W. J. Broad, “Findings Back Einstein In a Plagiarism Dispute”, *The New York Times*, (18 November 1997), p. F2. **See also:** “Einstein”, Television Broadcast WFSB-TV Eyewitness News, (18 November 1997, 5:00-5:30 PM Eastern Time). **See also:** “Albert Einstein”, Radio Broadcast WMAQ-AM All News, (18 November 1997, 3:00-4:00 PM). **See also:** “After All This Space-Time, Einstein is Cleared of Plagiarism”, *Canadian Business and Current Affairs: Globe & Mail Metro Edition*, (22 November 1997). **See also:** “Somewhere, Einstein must be Smiling”, *St. Petersburg Times*, (23 November 1997), Perspective, Editorials Section, p. 2D. **See also:** “Einstein Weathers the Gale”, *Rocky Mountain News*, (22 November 1997), Editorial Section F, p. 69A. **See also:** “Einsteins Ehrenrettung: Physiker ist alleiniger Vater der allgemeinen Relativitaetstheorie”, *Sueddeutsche Zeitung*, (27 November 1997). **See also:** “After Decades of Doubt, Experts Give Einstein His Due, Relatively Speaking: His Theory Came First, Journal Says”, *Star Tribune*, Minneapolis, (28 November 1997), p. 29.A. **See also:** “Einstein Cleared”, *The Jerusalem Post*, (30 November 1997), p. 10. **See also:** “Einstein did not Plagiarize Hilbert’s Relativity Theory, Study Concludes”, *St. Louis Dispatch*, (7 December 1997), p. A.11. **See also:** “Searching for Math’s Holy Grail: The Misadventures of Those Who Tackled—and Finally Solved—”, *The San Francisco Chronicle*, (7 December 1997), Sunday Review Section, p. 5. **See also:** “Einstein und Hilbert”, *Neue Zuercher Zeitung*, (12 December 1997), Briefe and die NZZ Section, p. 71. **See also:** R. Scharf, “Allgemeine Relativitaetstheorie nicht von Hilbert beendet Historische Klarstellung”, *Frankfurter Allgemeine Zeitung*, (14 January 1998).

2593. C. J. Bjerknes, *Albert Einstein : The Incurable Plagiarist*, XTX Inc., Downers Grove, Illinois, (2002).

2594. F. Winterberg, “On ‘Belated Decision in the Hilbert-Einstein Priority Dispute’, published by L. Corry, J. Renn, and J. Stachel”, *Zeitschrift für Naturforschung A*, Volume 59a, Number 10, (October, 2004), pp. 715-719.

2595. C. J. Bjerknes, “A Theory of Einstein the Irrational Plagiarist”, *The Canberra Times*, (19 September 2002).

2596. *Infinite Energy Magazine*, Volume 8, Number 49, (May/June, 2003), pp. 65-68.

2597. T. Sauer, “The Relativity of Discovery: Hilbert’s First Note on the Foundations of Physics”, *Archive for History of Exact Sciences*, Volume 53, Number 6, (1999), pp. 529-575.

2598. *English:* A. A. Logunov, M. A. Mestvirishvili and V. A. Petrov, “How Were the Hilbert-Einstein Equations Discovered?” *Physics-USpekhi*, Volume 47, Number 6, (June, 2004), pp. 607-621. *Russian:* A. A. Logunov, M. A. Mestvirishvili and V. A. Petrov, “How were the Hilbert-Einstein equations discovered?” *Uspekhi Fizicheskikh Nauk*, Volume 174, Number 6, (2004), pp. 663-678.

- 2599.** V. P. Vizgin, “On the discovery of the gravitational field equations by Einstein and Hilbert: new materials”, *Uspekhi Fizicheskikh Nauk*, Volume 44, Number 12, (2001), pp. 1283-1298.
- 2600.** *English:* A. A. Logunov, M. A. Mestvirishvili and V. A. Petrov, “How Were the Hilbert-Einstein Equations Discovered?” *Physics-Uspekhi*, Volume 47, Number 6, (June, 2004), pp. 607-621. *Russian:* A. A. Logunov, M. A. Mestvirishvili and V. A. Petrov, “How were the Hilbert-Einstein equations discovered?” *Uspekhi Fizicheskikh Nauk*, Volume 174, Number 6, (2004), pp. 663-678.
- 2601.** C. Suplee, “Researchers Definitively Rule Einstein Did Not Plagiarize Relativity Theory”, *The Washington Post*, (14 November 1997), p. A24.
- 2602.** L. Corry, J. Renn and J. Stachel, “Belated Decision in the Hilbert-Einstein Priority Dispute”, *Science*, Volume 278, (14 November 1997), pp. 1270-1273, at 1271.
- 2603.** A redacted quote from: J. Renn and J. Stachel’s quotation of Thorne’s words, “Hilbert’s Foundation of Physics: From a Theory of Everything to a Constituent of General Relativity”, Preprint 118, Max-Planck-Institut für Wissenschaftsgeschichte, (1999), p. 1. The authors cite: K. S. Thorne, *Black Holes and Time Warps: Einstein's Outrageous Legacy*, W. W. Norton, New York, London, (1994), p. 117.
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- 2607.** A. Einstein, “Zur allgemeinen Relativitätstheorie (Nachtrag)”, *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin der physikalisch-mathematischen Classe*, (1915), pp. 799-801; which was submitted on 11 November 1915 and was published on 18 November 1915. This article is reprinted in *The Collected Papers of Albert Einstein*, Volume 6, Document 22. A. Einstein, “Erklärung der Perihelbewegung des Merkur aus der allgemeinen Relativitätstheorie”, *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin, Sitzung der physikalisch-mathematischen Classe*, (1915), pp. 803, 831-839; pp. 831-839 are reproduced in *The Collected Papers of Albert Einstein*, Volume 6, Document 24; English translation by B. Doyle, “Explanation of the Perihelion Motion of Mercury from the General Theory of Relativity”, *A Source Book in Astronomy and Astrophysics, 1900-1975*, Harvard University Press, (1979), which is reproduced in *The Collected Papers*.
- 2608.** Hilbert to Einstein, A. M. Hentschel translator, *The Collected Papers of Albert Einstein*, Volume 8, Document 140, Princeton University Press, (1998), p. 144. In conformity with the original German text, I have replaced “handsome” with “beautiful”.
- 2609.** Einstein to Hilbert, A. M. Hentschel translator, *The Collected Papers of Albert Einstein*, Volume 8, Document 144, Princeton University Press, (1998), pp. 146-147.
- 2610.** Einstein to Hilbert, A. M. Hentschel translator, *The Collected Papers of Albert Einstein*, Volume 8, Document 148, Princeton University Press, (1998), p. 148.
- 2611.** H. Weyl, *Space-Time-Matter*, Dover, New York, (1952), p. 239.

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2617. A. Einstein, “Die Feldgleichungen der Gravitation”, *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin der physikalisch-mathematischen Classe*, (1915), pp. 844-847; reprinted in *The Collected Papers of Albert Einstein*, Volume 6, Document 25. This was submitted 25 November 1915 and was published 2 December 1915.

2618. In the republication of Felix Klein's "Zu Hilberts erster Note über die Grundlagen der Physik", *Nachrichten von der Königlichen Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-physikalische Klasse*, (1917), pp. 469-482; in F. Klein, *Gesammelte mathematische Abhandlungen*, Volume 1, Chapter 31, Springer, Berlin, (1921), pp. 553-567, at 566; a notation points out that it was Hilbert who *deduced* the field equations in a *scientific synthesis*, before Einstein, while Einstein simply asserted them (in a fallacy of *Petitio Principii* posing as an *inductive analysis*). Einstein, himself, acknowledged that Hilbert provided the *deductive synthesis*, which produced the equations, in Einstein's 1916 paper on Hamilton's principle.

2619. Letter from M. Born to D. Hilbert of 23 November 1915, Niedersächsische Staats- und Universitätsbibliothek Göttingen, Cod. Ms. D. Hilbert 40 A: Nr. 11; the relevant part of which is reproduced in D. Wuensch, „zwei wirkliche Kerle“: *Neues zur Entdeckung der Gravitationsgleichungen der Allgemeinen Relativitätstheorie durch Albert Einstein und David Hilbert*, Termessos, Göttingen, (2005), pp. 73-74.

2620. See: Letter from A. Einstein to A. Sommerfeld of 2 February 1916, *The Collected Papers of Albert Einstein*, Volume 8, Document 186, Princeton University Press, (1998).

2621. J. Mehra, *Einstein, Hilbert, and the Theory of Gravitation*, D. Reidel Publishing Company, Dordrecht, Holland, Boston, (1974), p. 44. H. A. Lorentz, "Over Einstein's Theorie der Zwaartekracht. I, II, & III", *Koninklijke Akademie van Wetenschappen te Amsterdam, Wis- en Natuurkundige Afdeeling, Verslagen van de Gewone Vergaderingen*, Volume 24, (1916), pp. 1389-1402, 1759-1774; Volume 25, (1916), pp. 468-486; English translation, "On Einstein's Theory of Gravitation. I, II & III", *Proceedings of the Royal Academy of Sciences at Amsterdam*, Volume 19, (1917), pp. 1341-1354, 1354-1369; Volume 20, (1917), pp. 2-19, 20; reprinted in *Collected Papers*, Volume 5, M. Nijhoff, The Hague, (1934-39), pp. 246-313.

2622. H. Reichenbach, *The Philosophy of Space & Time*, Dover, New York, (1958), pp. 254-255.

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2625. A. Einstein, "Die Grundlage der allgemeinen Relativitätstheorie", *Annalen der Physik*, Series 4, Volume 49, Number 7, (1916), pp. 769-822, at 810. Reprinted *The Collected Papers of Albert Einstein*, Volume 6, Document 30.

2626. A. Einstein to A. Sommerfeld, *The Collected Papers of Albert Einstein*, Volume 8, Part A, Document 96. It is not within the scope of this paper to thoroughly investigate the role of Grossmann and the tragedy of Einstein's betrayal of his trust. There is already extensive literature on this subject.

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2628. A. Einstein, English translation by A. M. Hentschel, *The Collected Papers of Albert Einstein*, Volume 8, Document 167, (1998), p. 163.

2629. J. Mehra, *Einstein, Hilbert, and the Theory of Gravitation*, D. Reidel Publishing Company, Dordrecht, Holland, Boston, (1974), p. 84.

2630. D. Hilbert, “Die Grundlagen der Physik, (Erste Mitteilung.) Vorgelegt in der Sitzung vom 20. November 1915.”, *Nachrichten von der Königlichen Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-physikalische Klasse*, (1915), pp. 395-407, at 405.

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