## Did Albert Einstein steal the work on relativity from his wife?

Kirsten Hacker

PhD in Accelerator Physics, University of Hamburg (Graduated 2010)

Did Albert Einstein steal the work on relativity from his wife?

Well, yes, but she let him.

She was a good student and he struggled with languages and authority figures. They started their graduate program together and worked together throughout it. She was accepted into a program for further study and he was rejected. He wrote of how he couldn't make progress or concentrate without her [1–4].

"When I read Helmholtz for the first time, it seemed so odd that you were not at my side and today, this is not getting better. I find the work we do together very good, healing and also easier." **Renn and Schulmann**, Albert Einstein / Mileva Marić, The Love Letters, Princeton University Press, 1992. The Forgotten Life of Einstein's First Wife

Near the end of her studies, she got kicked out of her program when she became pregnant in 1901. She took her final examination for a second time after her pregnancy became urgent and she scored lower in all sections compared to her first attempt at the exam. She would've passed each time had it not been for a single professor who didn't think that women belonged in mathematics. He gave her half of the grade of every other student he had.

The baby didn't survive or was given up and they married in 1903.

In Albert's miracle year (1905), he published 5 groundbreaking papers, commented on 21 scientific articles, and submitted his thesis (which was on a topic closely related to Mileva's uncompleted thesis [1]), all while working 9 hours per day, 6 days per week at the patent office.

Leading up to the miracle year, Mileva was at home with no children, supposedly doing nothing more than keeping house. She had a baby in mid-1904 and 4/5 papers were completed before the summer of 1905. Women of her class would have a nurse to help with a baby for the first year, giving her ample time to work on the papers.

After they had finished one of their 1905 papers, Albert laid in bed for two weeks while she obsessed over the details before mailing it to the journal. **Peter Michelmore**, *Einstein*, *Profile of the Man*, Dodd, Mead & Company, 1962. <u>The Forgotten Life of Einstein's First Wife</u>

Their relatives reported that in the evenings, they would sit together until late at night discussing physics.

Albert would say at parties, "I need my wife, she solves all of my mathematical problems for me." **Desanka Trbuhović-Gjurić** *Mileva Marić Einstein: In Albert Einstein's shadow): in Serbian, 1969, German, 1982, and French, 1991.* The Forgotten Life of Einstein's First Wife

Later, in 1908, when he was gaining fame and asked to give lectures on the 1905 papers,

Eight pages of Albert's first lecture notes are in her handwriting. So is a letter drafted in 1910 in reply to Max Planck who had sought Albert's opinion. Both documents are kept in the Albert Einstein Archives (AEA) in Jerusalem. <u>The Forgotten Life of Einstein's First</u><u>Wife</u>

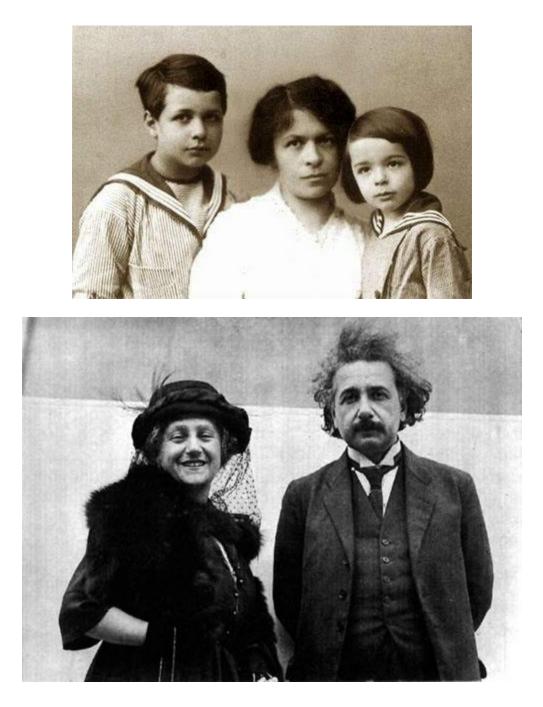
Prior to their marriage, they wrote to each other about their work on a capillary paper which was published under Einstein's name and he also wrote to her of "our work on relative motion", but she didn't want her name on the papers or patents because a woman's name would weaken their chances.

"We are but one stone," Mileva said, referring to their union. **Desanka Trbuhović-Gjurić** *Mileva Marić Einstein: In Albert Einstein's shadow): in Serbian, 1969, German, 1982, and French, 1991.* The Forgotten Life of Einstein's First Wife

This may have been an item of some debate early in their relationship, as evidenced by Joffe's description of an early version of their special relativity paper as authored by "Einstein-Marity", a combination of their names which would commonly be used by a woman. This should not be discounted because name hyphenation was only very rarely used by a man [1, 4].



He later turned into a total, pig-headed jerk to her [4, 5]. In 1914, with two small children at home, he left her for his ego-massaging, fame-loving cousin [the smiling lady below].



He completed general relativity in 1915 without Mileva, but it was a topic that he had struggled with for years until another physicist (Hilbert) derived the equations for which he had been aiming. Since the evidence shows that Mileva had helped Albert with his schoolwork, with writing his 1905 papers, and with writing his 1908–1910 lecture notes and correspondences, she might have helped him with 1912 versions of general relativity, a version which had laid the foundations and completed half of the derivation of the field equations. One can speculate that Mileva had left him with threads which he could not tie together until Hilbert helped him. Even then, he was greedy for credit and resented Hilbert's help, acting as though he had not actually helped him [6].

But Einstein was highly productive after that point, right? Not really. He got unearned credit for the Bose-Einstein condensate [7], wrote a wrong paper contradicting his prior claim that gravitational waves exist [8], and supported demonstrably wrong interpretations of cosmology and quantum

mechanics [9].

Although Einstein had a good intuition and a pleasantly pedestrian way of communicating things which reached a broad audience compared with similar, yet more abstruse works from contemporaries like Poincare or Hilbert, he was, in many respects, a lazy [10] poser [11] and a cousin-marrying, egomaniacal jerk [12]; he made lots of mistakes in his published work [13], his musical ability was exaggerated [14] and he wasn't able to speak a second language or write on a chalkboard properly [15], but he was good at persistently getting the help he needed to communicate the things he thought were important - even if his helpers didn't get much acknowledgment.

It is hard for some people to understand why his wife would be so self-sacrificing, forgoing fame and physics, but I get the sense that those people have never thought about the drawbacks of fame, felt like a perpetual outsider in their academic discipline, or borne the full responsibility of raising children. They also may have never been in love or willing to make themselves small in order to get a person to marry them.

One common argument against the Maric authorship thesis is that he wrote about physics to her and to his friends all of the time and she didn't. Firstly, in the collection of Einstein/Maric love letters, 43 are from Albert and 10 are from Mileva, suggesting that many of hers have gone missing [3]. Secondly, I would suggest that she had women friends who were not terribly interested in physics and that she had grown accustomed to men keeping her at arm's length in an academic setting. Einstein was the rare exception, and that was why she loved him. Several examples of what she wrote about her work to her friends and family are provided in [3] which have been regularly neglected or dismissed by Einstein cheerleaders who wish to see themselves in his heroism despite reported laziness, rejection of authority, and disorganization.

Some say he sprung from the skull of Athena. Think about your own head and the headache he gave.

-Kirsten Hacker

and <u>Did Albert Einstein steal the idea for the relativity theory? There are rumors that various scientists</u> <u>published the basic ideas of the relativity theory earlier and Einstein did not cite them at all in his</u> <u>publications. Is this true?</u> Hilbert has credit for the action equation, but Einstein claims credit for the field equations which were fully derived by late 1915 after discussions with and letters from Hilbert which Einstein discarded. <u>Kirsten Hacker's answer to How did Einstein arrive at his Equations for General relativity?</u>

[7] Bose, an Indian physicist, sent Einstein his paper. With Bose's permission, Einstein published the German translation and thereby got his name attached to the idea. Early access to the idea allowed him to expand upon it before others had a chance to evaluate it. <u>Satyendra Nath Bose - Wikipedia</u>

[8] When Einstein was working with an assistant named Rosen, he submitted a paper which claimed

<sup>[1]</sup> A 2015 academic work on the issue of authorship https://arxiv.org/ftp/arxiv/papers/1503/1503.08020.pdf

<sup>[2]</sup> A blog post with an extensive bibliography but a very defensive posture towards protecting the Einstein legend. <u>Mileva Maric: Einstein's Wife</u>[3] A 2016 blog post which draws from Serbian sources which were not typically available to the non-Serbian biographers. <u>The Forgotten Life of Einstein's First Wife</u>[4] A biography posted on a Berkley site <u>Mileva Maric Einstein</u>[5] A description of the agreements they made in their divorce <u>What were Albert Einstein's agreements with his wife</u>? Commentary on some newly released letters <u>Letters reveal relative truth of Einstein's family life</u>[6] <u>Relativity priority dispute - Wikipedia</u>

that gravitational waves couldn't exist (contradicting his earlier claim). It was rejected because of mistakes and he reacted with indignation. <u>Rodney Brooks's answer to What is the origin of gravitational waves?</u>

[9] He rejected Lemaitre's big bang explanation for the observed expansion of the universe on philosophical grounds <u>What is the cosmic egg?</u> and No local hidden variable theories are allowed by Bell's inequality. <u>The EPR Paradox and Bell's Inequality</u>

[10] As an aside, here is a nice description of his academic history in which Minkowski expressed surprise that Einstein had made anything of himself since he had been such a "lazy dog" with no interest in his mathematics class: <u>Alejandro Jenkins's answer to Is it true that Albert Einstein failed in mathematics many times during his school days?</u> Mileva had always been a good, highly motivated student <u>How smart was Albert Einstein's wife?</u>

[11] His wife's fingerprints on 4 of the 5 1905 papers are clear, but her role in the 1905 E=mc^2 paper is not. In this case, he pretty clearly lifted it from Umov 1873, Preston 1875, Poincaré 1900, de Pretto 1903, or Hasenöhrl 1904, some of whom published in the same journal as Einstein. The derivation in the paper was incorrect and he tried to get it right 5 more times throughout his life and never managed it. His 1907 views on plagiarism: "It appears to me, that even if the issue has already been solved by other authors, then despite that fact, since the issues of concern are here addressed from a new point of view, I am entitled to leave out a thoroughly pedantic survey of the literature" and "The secret to creativity is knowing how to hide your sources." On the de Pretto paper: Einstein's E=mc2 'was Italian's idea'

[12] He complained about his wife's jealousy and depression and, after divorcing her, had a hard time deciding whether to marry his cousin or her teenage daughter <u>Einstein in Love: Letters Illuminate</u> <u>Genius' Dark Side</u>[13] A book on Einstein's intellectual mistakes written by a physicist: <u>Einstein's</u> <u>Mistakes</u>[14] "...while playing violin in a quartet, Einstein repeatedly made wrong entrances during the rehearsal. The exasperated pianist, Artur Schnabel, eventually turned to him and said: 'For heaven's sake, Albert, can't you count?'' He "played like a lumberjack", says Denis Brian, somewhat harshly. <u>Albert Einstein: Sep 17</u>

is quite a contrast with the romantic picture painted in <u>How did Einstein's musical practice inform his</u> <u>scientific work?</u>

[14] In his school report cards, he received failing grades in English, French, Greek, and Latin and only gained admission to the University despite this after having failed his admission exam at 3 different schools: one in Munich and two in Switzerland [1]. He was asked to address a Jewish convention and could not speak any Yiddish. <u>Einstein Sorry He Can't Speak Yiddish with Greater Fluency</u>

We have this video in which an American professor shows a preserved blackboard from Einstein on which illegible scrawls are present. It was recounted that it was from the 1930s and he couldn't speak any English. As they toured him around the country like a rock star, he lectured in German and no one understood anything he was saying. <u>https://www.youtube.com/watch?v=KIwpGEvmgvs</u>

[15] To conclude with a laugh:

