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# The Misread Einstein's Letter of 1953

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## Einstein's letter



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In 1953, in a letter answering J. S. Switzer's question of why modern science did not arise in China, Einstein gave two reasons: The lack of formal logical system (in Euclidean geometry) and the practice of scientific experiments. This letter has been widely quoted but in fact is misread by scholars and laypeople, alike. Here, we trace the origin of this letter, the background of the Stanford student J. S. Switzer, and explain why the letter was universally misread.

### A Shining Star

In 1905, at the age of 26, Albert Einstein (1879-1955) published his doctoral thesis, plus four reports, across three different fields (Brownian motion, the photoelectric effect, special relativity), and became a shining star in physics. But he became a world celebrity after making many newspaper headlines at the age of 40. It was 1919, eclipse observations confirmed the general theory of relativity he had proposed four years earlier (upper photo).

Since then, Einstein has had countless fans. In 1922, he won the 1921 Nobel Prize for the photoelectric effect, which made his fans doubly happy.

### Four Letters

In 1953, two years before Einstein's death at the age of 76, J. S. Switzer, a fan who lived in the Bay Area of California on the west coast of the United States, wrote Einstein a letter (letter **A**), asking why China had not developed modern science. (The content of the letter did not show up in online search.) Einstein, who lived in Princeton on the east coast at the time, was a good celebrity who personally wrote replies.

Einstein's native language is German. His English is OK, but not as good as his German.

Very probably the reply letter was written in German (letter **B**), then translated into English and typed by the secretary, which was read and signed by Einstein, the author. This signed English letter (letter **C**) was sent out to Switzer. Note:

1. The English letter publicly available (letter **D**; lower photo, right) is *not* Einstein's handwritten original letter (letter **B**) which is supposedly written in German. It is *not* even the signed English letter (letter **C**) that Switzer received, but only a typed copy of letter **C** (unsigned; there was no photocopier at the time).
2. Einstein's letter **B** (as well as **C** and **D**) is a *private* letter written by a celebrity to a fan, *not* a scholar's officially published

academic paper. Scholars are only fully responsible for officially published papers and for life.

#### First Paragraph of Letter D

Letter D has only two paragraphs. First paragraph:

Development of Western science has been based on two great achievements: the invention of the formal logical system (in euclidean geometry) by the Greek philosophers, and the discovery of the possibility to find out causal relationship by systematic experiment (Renaissance).

The “Western science” mentioned here refers to modern science, and “logical system” and “systematic experiment” refer to the two means used by Galileo to make breakthroughs in the study of *simple* physical systems. Einstein was right, but not comprehensively. The two means he refers to are necessary but *insufficient*—lacking *poetic* thinking (analogy, imagination, intuition). All innovations in simple systems, including Galileo’s and Einstein’s, used poetic thinking.

Einstein was a very poetic man (could play the violin). Look at how he came up with the special theory of relativity, which is not deduced by logical thinking alone, but first there is a kind of comparison, imagination, conjecture, new concepts *before* constructing equations. The same is true when it comes to general theory of relativity. Of course, he knew that poetic thinking is important. He did not mention it in letter D, just because replying to fans’ letters is impromptu, just like we reply to friends’ private chats on WhatsApp—not thoughtfully writing rigorous academic papers. And people who read it cannot and should not hold him to it 100%.

In fact, Einstein said in his book *The Evolution of Physics*, co-authored with Léopold Infeld:

The formulation of a problem is often more essential than its solution, which may be merely a matter of mathematical or experimental skill. To raise new questions, new possibilities, to regard old problems from a new angle requires *creative* imagination and marks real advances in science.

Here, “creative imagination” refers to poetic thinking.

Unfortunately, in response to the Needham Question, the first paragraph of letter D was used by many science historians to explain why modern science did not appear in China, and it was not answered correctly. (For the correct answer, see “Needham Question.”) This is not conducive to scholarship and, more importantly, is unfair to Einstein, the author of the letter.

#### Last Paragraph of Letter D

The second and last paragraph of letter D says:

In my opinion one has not to be astonished that the Chinese sages have not made *those* step. The astonishing thing is that *those* discoveries were made at all.

It is said that Joseph Needham (1900-1995) wrote the “those” in the second sentence of the last paragraph as “these.” It may be a transcription error, or it may be that he has read letter B and translated himself the German word into English. After all, the English of letter D is the work of the secretary who is not a physicist; she could translate it inaccurately (writing Euclidean as euclidean implies this possibility). At the same time, Einstein himself is unlikely to take the time to proofread such a letter in detail, I guess.

In the second sentence, “those discoveries” has two different interpretations by Chinese scholars:

1. It will be astonishing should the Chinese discover logical thinking and systematic experimentation.
2. It is astonishing that in spite of not discovering logical thinking and systematic experimentation, the (ancient) Chinese did make their own great scientific discoveries.

The correct answer does not depend on whether “those” or “these” appears in the second sentence. And by carefully reading letter D it seems that both interpretations 1 and 2 are incorrect. The correct interpretation is:

3. The astonishing thing is that those discoveries actually happened, through the effort of the ancient Greeks (formal logical thinking) and Galileo (systematic experimentation).

Yet, the answer may be more transparent if one can see letters A and B. This is not impossible because letters A and B should still be preserved in the Einstein archives, and interested and serious historians can go and look for them.

However, all these effort in interpreting Einstein's private letter, word by word, may not be worth it. For the Chinese, doing your own things well is most important. Whether Einstein praised it or not is not important.

### Conclusion

1. *Science* was first invented by Guanzi about 2,600 years ago, ahead of Thales (see "All things originate from water"). And traditional Chinese medicine is a science (see "Traditional Chinese medicine is a science"). So, science *did* exist in ancient China, as Joseph Needham asserted (see "The Needham Question"). It is just that *modern* science did not happen in China, as Einstein correctly explained in his letter.
2. However, historically and perhaps by accident, the Galileo breakthrough of modern science did happen in *simple* physical systems, in which logical thinking and systematic experiments are necessary but not sufficient. Poetic thinking is also required and could be more important. This was well recognized by Einstein but not pointed out in his letter, perhaps because the letter was written in a hurry.
3. After all, private letters are not published research papers. They can only be used as reference, not as evidence or support for serious academic arguments.
4. The ancient Chinese, like the ancient Greeks, did have poetic thinking, as demonstrated in *The Classic of Odes* (诗经) dating back 3,000 years. The reason that modern science was invented in Italy but not in China is because the Chinese picked the wrong topics to study—they picked *complex* systems—not because of lack of poetic thinking (see "The Needham Question" for more).

### Appendix: Looking for Mr. Switzer

According to Sue Lempert, former mayor of San Mateo, California, she bought the book *Science Since Babylon* by Derek J. de Solla Price, a professor at Yale University. She found in the References that there was such a letter from Einstein to San Mateo resident J. E. Switzer (Price misspells J. S. as J. E. in the book). Lempert was so excited that she set out to find Mr. Switzer. (Source: Sue Lempert, “Switzer mystery solved,” *Daily Journal*, Feb. 1, 2016, updated July 12, 2017.)

Lemert found four J. E. Switzer who reside in Vista, California and, of course, none of them could be the Mr. Switzer she wanted to find. Fortunately, savior Chris McGuire showed up in time. McGuire is an amateur historian and genealogist who finally brought the truth to the world.

### About Mr. Switzer

According to McGuire via Lempert:

US Army Colonel John Singleton Switzer Jr., born 1895 in Fort Leavenworth, Kansas and died 1970 in Orange County, California. He lived for a short time at 3412 Del Monte St. ... It was while he was getting his master's degree at Stanford University that he wrote Albert Einstein. The original letter Einstein sent eventually ended up in the possession of his Stanford Professor—Arthur F. Wright who later moved to Yale University. The Colonel never really appears to have set down roots too long being a career military man.

Wife no. 1: Edith Russell Switzer b. 1894 in Ann Arbor, Michigan and d. 1962 in Marin County, California. They were married in Washtenaw, Michigan in 1917. They had a daughter Ruth, born 1920 in Fort Benning, Georgia. Wife no. 2: Evelyn Wardall Knight, born 1907 in California and died 1982 in Orange County, California. They were married in Marin County, California in 1963.

Switzer served in both World War I and World War II and is buried in Golden Gate Cemetery in San Bruno.

### McGuire's Sleuth Work

According to Lempert, this is how McGuire found the clues:

I [McGuire] used various search engines and genealogy sites to do the research and cross referenced multiple search terms. The break came when I found that Arthur F. Wright had the original letter [letter C]—with this new name I found the Einstein Archive that listed J. S. Switzer, then I hit pay dirt on a Chinese website—here is link: <http://bbs.tianya.cn/post-free-2532845-109.shtml>; this is where I found an actual copy of the letter [letter E].

The rest of the info I found was through a basic genealogy search. I since found a few early school photos and a few other records ... John Jr. graduated in 1916 from the University of Michigan where he also competed on the varsity tennis team. It appears he also served as an associate professor at Cal Berkeley. He also wrote an ongoing article for the *Infantry Review* titled “The Champagne-Marne Defensive.” He appears to have lived a full life.

His father also John Singleton Switzer was a graduate of West Point and also was a colonel and is buried in Arlington National Cemetery.

### Letter E

McGuire obtained letter E from the site: <http://bbs.tianya.cn/post-free-2532845-109.shtml>. Here is letter E, as reported by Lempert who obtained it from McGuire:

Einstein  
112, Mercer St.  
Princeton, NJ. U.S.A.

April 23, 1953

Mr. J. S. Switzer  
3412 Del Monte  
San Mateo, California

Dear Sir: The development of Western Science has been based on two great achievements, the invention of the formal logical system



Lam, L. [2023]. *Humanities, Science, Scimat*. Singapore: World Scientific.

(in Euclidean geometry) by the Greek philosophers, and the discovery of the possibility of finding out causal relationships by systematic experiment (at the Renaissance). In my opinion one need not be astonished that the Chinese sages did not make these steps. The astonishing thing is that these discoveries were made at all.

SY

/s/ A. Einstein

Albert Einstein

Note that letter E has a few words different from letter D (lower photo, right), using “these” and not “those,” and “Euclidean” instead of “euclidean.” It seems that letter E was copied from somewhere (which could be Needham’s version), but definitely not from letter D.

### Story Roundup

After retiring from the military, J. S. Switzer studied for a master’s degree in history at Stanford University. He took Arthur F. Wright’s class and discussed Chinese science in class. This led Switzer to write a letter to Einstein (letter A) and received the famous reply (letter C). Then Wright moved to Yale University. There Dr. Price gave a series of talks in which he mentioned the Einstein reply Switzer received.

McGuire also mentioned that J. S. Switzer was in Fort Lewis in 1940 and was a neighbor of former President Dwight Eisenhower and his wife Mamie.