

Expanding the record on Einstein and peer review

A few comments come to mind in response to Daniel Kennefick's beautiful piece of scholarship on Einstein and peer review (PHYSICS TODAY, September 2005, page 43).

At the end of the 1936 Einstein-Rosen paper as it was finally published in the *Journal of the Franklin Institute*, there is the following note:

The second part of this paper was considerably altered by me after the departure of Mr. Rosen for Russia since we had originally interpreted our formula results erroneously. I wish to thank my colleague Professor Robertson for his friendly assistance in the clarification of the original error. I thank also Mr. Hoffmann for kind assistance in translation. A. Einstein

Dan Kennefick clearly knows this; he had sent me a copy of the article. By present American Physical Society ethical standards (see http://www.aps.org/statements/02_2.cfm), Howard Percy Robertson would have been entitled to coauthorship, since he had made a substantial contribution to the interpretation of the paper as it finally appeared. Of course, standards of the time were quite different from those we have today.

It is worth quoting the version of this story that appeared in Abraham Pais's admirable scientific biography,¹ which Kennefick also cites (his reference 2). In his notes on Einstein's collaborators, Pais includes the following about Nathan Rosen:

In the course of working on this last problem [cylindrical gravitational waves] Einstein believed for some time that he had shown

that the rigorous relativistic field equations do not allow for the existence of gravitational waves. After he found the mistake in the argument, the final manuscript was prepared and sent to the Physical Review [emphasis mine]. It was returned to him accompanied by a lengthy referee report in which clarifications were requested. Einstein was enraged and wrote to the editor that he objected to his paper being shown to colleagues prior to publication. The editor courteously replied that refereeing was a procedure generally applied to all papers submitted to his journal, adding that he regretted that Einstein may not have been aware of this custom. Einstein sent the paper to the *Journal of the Franklin Institute* and, apart from one brief note of rebuttal, never published in the *Physical Review* again.

This account clearly contradicts Kennefick's article on the timing and the details of the discovery of the error, and it contradicts Einstein's own note at the end of the 1936 paper. Of course, Rosen was in Russia while this was happening. It is likely that Robertson never revealed to Einstein his role as the referee, or Einstein might not have continued to boycott the *Physical Review*. And although he did not publish in that journal again, he did send several articles to *Reviews of Modern Physics*—under the same editor, John T. Tate—which also published, in 1949, an entire issue dedicated to Einstein on his 70th birthday.

Reference

1. A. Pais, "Subtle Is the Lord . . .": The Science and the Life of Albert Einstein, Oxford U. Press, New York (1982), p. 494.

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In his fascinating article "Einstein Versus the *Physical Review*," Daniel Kennefick notes that "the gravitational wave paper [1936] was Einstein's first encounter with the anonymous peer-review system practiced in American

journals at that time." Kennefick says two of Albert Einstein's previous *Physical Review* papers had not been refereed.

As a beginning graduate student at the University of Wisconsin, I was greatly pleased that my professor, Heinz Barschall, added my name as an author to a paper he submitted to the *Physical Review* in 1948; it was my first paper as an author. I had provided only minor assistance in taking the data and operating the accelerator we used in the experiment, and Heinz's generous gesture was important to me. With so little experience, I was not surprised that Heinz was quite annoyed when the paper was returned with a referee's comments, even though they were not unfavorable. He explained that the *Physical Review* had a regular policy of accepting papers from recognized physicists at well-known institutions without submission to a referee and that he never before had had a paper sent to a referee. That included a 1938 theoretical paper he had written with John Wheeler, which presented what was perhaps the first solid evidence of very strong spin-orbit forces in nuclei.¹

Editor John Tate's submission of the Einstein-Rosen paper to a referee might therefore have reasonably been seen by Einstein as unusual and even disrespectful. As a one-time editor myself (*Physical Review Letters*, 1978–84), I know that being correct, and even helpful, as Tate certainly was, does not defuse an author's objection to an editor's criticism.

Reference

1. H. Barschall, J. Wheeler, *Phys. Rev.* **58**, 682 (1938).

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Daniel Kennefick's interesting article states, "With Nathan Rosen, his first American assistant, Einstein published two more papers in the *Physical Review*: the famous 1935 paper by Einstein, Boris Podolsky, and Rosen (EPR) and a 1936 paper that introduced the concept of the Einstein-Rosen bridge, nowadays better known as a wormhole." To my knowledge, that information is not

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