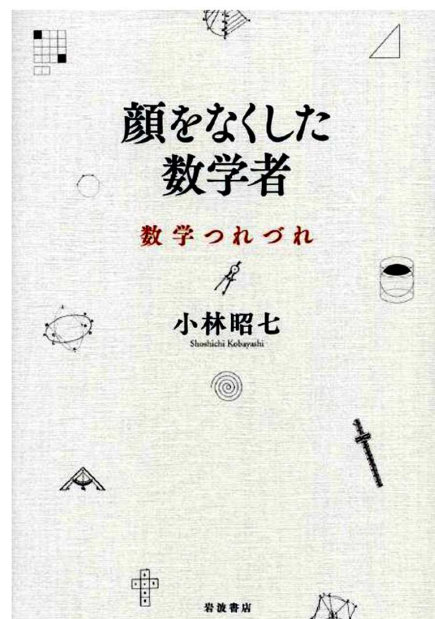


Selected Articles from  
Shoshichi Kobayashi<sup>1</sup>  
*Mathematicians Who Lost Their Faces:  
Essays in Idleness on Mathematics*

Translated by  
Hisashi Kobayashi<sup>2</sup>

The following is an English translation of selected articles from Shoshichi Kobayashi's essay book [1] (see right for its front cover) published in Japanese posthumously in July 2013. The complete table of contents can be found on his memorial website <sup>3</sup>



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**Two Mathematicians Who Lost Their Faces<sup>5</sup>**

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The man of the next episode is János Bolyai (1820-1860) of Hungary. He was a mathematician about a half century later than Legendre. He was born in Transylvania (which became a Romanian territory after World War II) of Hungary, and his father was the mathematician Falkas Bolyai. Because of the influence of his father, who devoted his entire life to his attempt to prove Euclid's parallel postulate (Postulate 5), from the Postulates 1 through 4. János also tackled this problem. After a while he found that the parallel postulate is independent of the other postulates, and published an article "The Science of Absolute Space (*Scientiam Spatii absolute veram Exhibens*)" as an appendix to his father's book, *Tentamen*, in 1832. The article came to be known by the title "Appendix."

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<sup>3</sup> <http://www.shoshichikobayashi.com/recent-publications/>

<sup>5</sup> [1] pp. 40-45. The original articles did not contain the portraits or photo cited in this translation.

In the mean time, Nikolai Lobachevsky (1792-1856) of Kazan University, Russia, published his article “On the Foundation of Geometry” in his university’s journal, the Kazan Messenger, in 1829-1830. Carl Friedrich Gauss (1777-1855) had been aware for a long time of the existence of geometry in which the fifth postulate does not hold, but refrained from publishing it for fear that he might be caught up in a controversy with Emanuel Kant (1724-1804) who denied the existence of any geometry other than Euclidean geometry. More details of the sequence of events can be found in “Mathematics in the 19<sup>th</sup> Century: Volume 2” edited by Kolmogorov and Yushkevich (translated into Japanese by Shoshichi Kobayashi and Hirotaka Fujimoto, Asakura Shoten Publisher, 2008). An exposition on non-Euclidean geometry can be found in my book (in Japanese), *From Euclidean Geometry to Modern Geometry*, (Nihon Hyoron-Sha, 1990).

Returning to Bolyai, in the January 2011 issue of the *Notices of American Mathematical Society*, the Hungarian mathematician Tamás Dénes published an article “Real Face of János Bolyai” [3] in which he said that there were two portraits of János Bolyai, but both were lost and that the portraits used in mathematical history books are fake, and may not even resemble János. One of his true portraits was lost as early as in 1837 according to some information sources, and the other portrait of him in a military uniform was torn up by János himself. Dénes says that an investigation by two Romanian mathematicians substantiates that no portraits of János Bolyai survived.

In 1960, the 100<sup>th</sup> jubilee of János Bolyai’s death, the Hungarian and Romanian governments both published commemorative stamps. The portraits of young Bolyai have thereafter been widely used as his true portraits. An explanation of the sequence of events is as follows.

A Hungarian painter Mór Adler (1826-1902) made a large portrait in 1864, but the name of the person depicted does not appear anywhere on the painting. But a portrait painter, Károly Lühnsdorf (1893-1958), who studied at the Hungarian Academy of Arts and created portraits of many famous individuals, drew a portrait entitled János Bolyai with a note stating that he drew Bolyai’s picture based on Adler’s original painting from life. Thus, Adler’s painting is now on the walls of the János Bolyai Mathematical Society, and the aforementioned stamps were designed based on it. However, Bolyai must have been 24 years old when Adler was born in 1826, and Bolyai must have been over 40 by the time Adler started his artistic career. Adler’s biographical data show that he traveled around Europe and finally returned to Hungary in 1848, when Bolyai was 46 years old. Furthermore by 1864 when the painting in question was made, Bolyai had already died. By any stretch of the imagination, it is impossible that Adler saw young Bolyai. Tamás Dénes, the author of the article in the *Notices of AMS* further investigated. He visited the town of Marosvásárhely, Bolyai’s birthplace and discovered that on the façade of the Culture Palace were the carved stone reliefs of six great men who contributed to the culture of Hungary in the nineteenth-century, and that the two figures (the third and fourth from the left) were Falkas and János Bolyai.<sup>10</sup>



<sup>10</sup> Figure caption: The authentic relief of Janos Bolyai. Source: [3]

The five men other than János Bolyai have also their portraits, and Tamás Dénes writes that their stone reliefs are readily recognizable from their portraits. Furthermore, Tamás Dénes learned from an historian that János Bolyai looked very much like General György Klapka, and János' son Dénes Bolyai (1837-1913) reportedly stated that he resembled his father. Tamás Dénes writes that he was fascinated by the fact that the János' relief looked so similar to the portraits of General Klapka and Dénes Bolyai. He concludes that the relief must surely resemble János Bolyai judging from the fact that many people who knew János, as well as Dénes Bolyai, must have been alive in the town in the 1911-1913 period when the Culture Palace was built.

## References

[1] Shoshichi Kobayashi, *Mathematicians Who Lost Their Faces: Essays on Mathematics in Idleness* (in Japanese), Iwanami Shoten Publisher, Tokyo, July 30, 2013.

[2] Peter Duren, Peter (December 2009). "Changing Faces: The Mistaken Portrait of Legendre". *Notices of the AMS* **56** (11): 1440–1443, 1455.  
<http://www.ams.org/notices/200911/200911-full-issue.pdf>

[3] Tamás Dénes (2011) "Real Face of Janos Bolyai," *Notices of the AMS*, **58** (1) : 41-52.  
<http://www.ams.org/notices/201101/rtx110100041p.pdf>