



László Székelyhidi

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László Székelyhidi was born on 11 May 1952 in Budapest, Hungary. He completed his primary school studies in the western part of Hungary, in Mosonmagyaróvár and Hegyeshalom.

After primary school, he continued his studies at Temesvári Pelbárt Ferences Gimnázium (a Franciscan High School) in Esztergom. The years he spent there—as he would often tell us—had a decisive impact on his life. With some of his classmates, he established a band there playing beat music, which at the time was very popular in Hungary as well. His interest in mathematics also became deeper during his high school years. Based on these experiences, he had two ideas regarding his possible future career. One of them was to do something related to music: he was considering becoming an audio engineer.

The other option, which he actually decided for, was to become a mathematician. So he applied to Loránd Eötvös University in Budapest, to study to be a mathematician.

To be accepted at university, he had to pass an entrance exam, the written parts of which went pretty well (both in mathematics and physics). However—as we also often heard from him—the oral part was a shocking and lifelong experience for him. To understand the situation, we should recall that it was the time when socialism was in ‘full swing’ in Hungary. So, during the oral exam he hardly got any questions in mathematics or physics, but he was asked about his church going habits. An even more ‘important’ question (repeated several times) was why he was not a member of the Hungarian Young Communist League, the youth movement of the Hungarian Socialist Workers’ Party. Finally, feeling the ‘seriousness’ of the problem, he explained that, to the best of his knowledge, there was no organization by that name at his high school. Altogether, his entrance exam was unsuccessful—more precisely his application was rejected ‘due to lack of space’.

The story did not end here, since his application was redirected to some other institutions, among which only Lajos Kossuth University in Debrecen seemed to be suitable from a professional point of view. On the other hand, Debrecen was at the end of the world for him at the time, and he did not want to study there at all. (This comes as no wonder, even the German city of Passau, after crossing two national borders, is closer to his home towns Hegyeshalom and Mosonmagyaróvár, than Debrecen.) Finally, as Laci himself admits to it, it was mostly due to his father’s effective persuasion that he decided to study mathematics in Debrecen.

During his university years, he continued to play music and soon became a member of the university band—and with time basically of all the important bands at the institution. Shortly after beginning his studies, he started a relationship with one of his groupmates, Margit Lénárd, who later became his wife.

He also got more and more seriously involved in mathematics. In his second-year, his professor Zoltán Daróczy gave him a problem to solve, which he did, and his solution is presented in his first publication [1]. Under the supervision of Professor Daróczy, still as a student, he joined the famous and prestigious functional equations research group of the university. Although he had a very good relationship with many professors of the university, and he learned a lot from them, there is one other person he often mentions—besides Zoltán Daróczy—who had a great influence on him during his studies (and later): this was Jenő Erdős. He paid tribute to him and his work in his monograph [2].

He graduated with distinction in 1975. The picture below shows the moment he received his diploma from his supervisor, who was also Dean of the Faculty of Natural Sciences of Lajos Kossuth University that time.



László Székelyhidi receiving his diploma

After graduation, he started working at the Department of Analysis of Lajos Kossuth University headed by Zoltán Daróczy. He worked for this institution as a teaching assistant (lecturer) from 1975 to 1981, as an assistant professor from 1982 to 1988, and as an associate professor from 1988 to 1994. He defended his PhD dissertation with honor (*summa cum laude*) in 1978. He received his C.Sc. ('Candidate of Sciences') degree from the Hungarian Academy of Sciences in 1983, then his D.Sc. ('Doctor of Sciences'), also awarded by the Hungarian Academy of Sciences, in 1994.

He has been very active in research work since the beginning of his scientific career, published several papers and got invitations to various important international conferences from a young age.

He has held positions as professor and visiting professor at universities in four continents (the only two missing—at present—are Australia and Antarctica). He worked as a professor at Kuwait University, Kuwait from 1992 to 1995, at Janus Pannonius University, Pécs, Hungary from 1995 to 1996, at West Hungarian University, Sopron, Hungary from 2006 to 2009, and at the University of Debrecen from 1996 to 2015. He was visiting professor at the University of Louisville, Louisville, Kentucky, USA (2002), at Mississippi State University, USA (2002–2003), at Sultan Qaboos University, Oman (2003–2004), at the University of Botswana (2013–2017) and at Botswana International University of Science and Technology (2017–2018).

He has also won several international scholarships. He spent five months in Bern, Switzerland, with the support of the Swiss National Foundation in 1985, he stayed for 20 months in Hamburg, Germany, as a scholarship holder of the

Alexander von Humboldt Foundation starting in 1988, and he was supported by research scholarships at the University of Botswana, resp., Botswana International University of Science and Technology in 2016–2017, resp., 2017–2018.

His fruitful research activity has been recognized with numerous awards, among others, by Kátó Rényi Commemorative Prize of the János Bolyai Mathematical Society in 1974, by Géza Grünwald Commemorative Prize of the János Bolyai Mathematical Society, 1980 and by György Alexits Prize of the Hungarian Academy of Sciences, 1991. In 2006, he received the Academic Prize of the Hungarian Academy of Sciences for his achievements in the fields of spectral analysis and spectral synthesis and their applications.

His investigations are related to several fields, among others, to functional analytical methods in the theory of functional equations, functional equations on algebraic structures and hypergroups, stability theory, Fourier-analysis and, as it was mentioned above, spectral analysis and spectral synthesis. He published his results in his monographs [3–7], and about 180 scientific papers.

He has done effective and recognized teaching activities at several universities. Thanks to his personality, he easily developed a good and friendly relationship with his students. He also assisted and supported the scientific activity of several young researchers. According to the Mathematics Genealogy Project (available at <https://www.genealogy.math.ndsu.nodak.edu>), he was PhD advisor of György Gát, Ágota Orosz, László Vajday and the author of the present paper, Attila Gilányi.

It makes him very proud that both his sons have become mathematicians. His older son, László Jr. studied at St. John's College, University of Oxford and prepared and defended his PhD at the University of Leipzig, while his younger son, Gábor graduated from Trinity College, Cambridge University, and received his PhD at Imperial College London. László, Jr. worked for ETH Zürich and for the University of Bonn, he was Member and later Distinguished Visiting Professor at the School of Mathematics of the Institute for Advanced Study (IAS) in Princeton. Currently, he is professor at the University of Leipzig. Gábor was visiting professor—among others—at the Mathematics Department of Harvard University, he had positions at Columbia University, the University of Notre Dame, and now, he is professor at Northwestern University. It was a touching moment of the Workshop on Harmonic and Spectral Analysis dedicated to the 70th birthday of László Székelyhidi, when László, Jr. gave his online presentation from his office at IAS, the very office that used to be Albert Einstein's.

The main research fields of László, Jr. are partial differential equations, calculus of variations and hydrodynamics, Gábor is mainly interested in geometric analysis and complex differential geometry. Both of them are very successful and have won several awards. László Jr. won the Oberwolfach Prize in 2010, in 2018, he was awarded with the Gottfried Wilhelm Leibniz Prize (which is considered to be the most important research funding award in Germany), in

2019, he was elected a member of the German National Academy of Sciences Leopoldina, in 2022, he became an external member of the Hungarian Academy of Sciences. I remember how happy it made Laci to participate in the International Congress of Mathematicians held in Seoul in 2014, where both his sons were invited speakers.

Laci's hobby, which has accompanied him throughout his life, is playing music. As it was mentioned above, he already played in the beat band of his high school and, at the university, in several groups. The author of this paper can confirm that he also gave successful concerts as a teacher playing together with his friends at various student events at Lajos Kossuth University. Sometimes he played the synthesizer, other times the guitar, and he often sang in the band. He was also very popular 'on his own', playing the classical piano and singing several songs, among others, John Lennon's *Imagine*. Regarding his personal relationship with musical instruments, he often tells us that although he has tried everything else apart from playing the drums, nowadays, if for some reason he has the opportunity to make music together with old friends or other musicians, he prefers to pick up his favorite instrument, the bass guitar.

He still indulges in this hobby today. At university balls, he often joins the band for a few songs, and it also happens at scientific conferences or professional meetings, if an opportunity arises (e.g. at barbecue parties), he takes his guitar, starts to play and sing, and the participants join him with great joy. It came as a surprise to us, his friends, colleagues and students that his musical career recently (in fact, more than twelve years ago) took a new direction: he decided to become a cantor (church musician) and enrolled in the cantor training institution of the János Brenner Theological College in Győr. As a result of this decision and the related activities, his 'repertoire' has been significantly and spectacularly expanded with organ pieces by Johann Sebastian Bach and other composers.

It is often said that behind each great and successful man there stands a woman. I do not wish to open a discussion about the general truth of this statement here, however, it can be established that it is definitely true in the case of Laci. After his return from Kuwait, more than a quarter of a century ago, he tied his life to Katalin Mihály. Since then, Kati has been his companion, helper and support, in the classical and most beautiful sense of these words.

When I started writing this paper, I intended to conclude it with a quotation. At the very beginning, I had a specific idea, but later several others came to my mind from world famous scientists, philosophers, poets and writers, whose writings are worthy of You, Laci. Finally, I decided to go back to the original one. This is—in my opinion—strongly related to you, we have heard it several times played and sung by you, and, I think, you also like it very much. This is nothing else but a part of John Lennon's *Imagine*.

*Imagine all the people
Living life in peace
:
Imagine all the people
Sharing all the world
:
You may say I'm a dreamer
But I'm not the only one
I hope someday you'll join us
And the world will live as one*

Dear Laci, I wish you a lot of success and happiness in the future, and I hope that you will remain a dreamer forever.

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