

Letter to a Friend

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Dear Géza:

I must apologize for the lack of communication between us for such an extended period, but I am only partially responsible for this silence since you did not leave a forwarding address when you unexpectedly passed away on September 27, 1979. I have no doubt that wherever you are and whatever your present (pre)occupation, you will not miss the opportunity to pick up the current issue of *Journal of Approximation Theory*, and I bet it will tickle your heart when you realize that this issue and, in fact, three entire volumes are exclusively dedicated to you. You will be pleased by the list of the distinguished contributors which includes your former friends, students, and colleagues. We all miss you, and though we are not enthusiastically looking forward to seeing you, we will eventually get in touch with you.

Géza, do not try to deny it. You love this publicity. Of course, it would have been better if we had had this celebration during your lifetime, but you know the Hungarian proverb: it's better late than never.

If you recall, I first met you in Leningrad in 1970. I was a student attending your talk at the Approximation Theory Seminar in the Department of Mathematics of the Leningrad State University. I will never forget the moment when this overweight person, completely unaware of the existence of the surrounding world and seemingly blind (or rather mentally blindfolded), entered the lecture room. That was you, Géza, the prototype of an absent-minded professor as frequently featured in anecdotes and caricatures. As I found out later, my first impressions were absolutely accurate. Subsequently I became friends with your wife, Aniko, who frequently told me that if it were not for her, you would have had no human clothing or food and your everyday matters would have been left completely neglected. No, Géza, do not argue with me; it is an undeniable fact that without Aniko you would have been unable to survive. Just look at your miserable life between 1974 and 1978 when you were separated from her by five thousand miles of distance and even more red tape. Your meager existence during these years proved that you and everyday life were

not created for each other. When Aniko and the kids finally joined you in 1978, everything changed immediately for the better, and it is so tragic that you had only a little more than a year to be yourself again and to enjoy life to its fullest extent. Returning to our encounter, I presume there must have been an acute shortage of approximators in Hungary. Otherwise, I cannot explain why you so enthusiastically became interested in me and tried to bring me to the Mathematics Institute in Budapest after my graduation. Whatever the reasons were, this is how our friendship began and which was to change and influence the course of events for both of us.

Although I know a lot about the last nine years of your life, it was not effortless for me to find out what you had done and what had happened to you during the time before we met. Fortunately, I found a superb aid in Aniko, who made it possible for me to follow the thread of your life right from January 4, 1922, when you were born in Budapest. Now I know that your father, Frigyes Freud, was a screw manufacturer and your mother, née Renée Vajda, a painter. I was not surprised to learn that you did not excel in elementary school and, in fact, were a problem child. However, during your high school years you became interested in chess and mathematics, both of which remained at the center of your private universe for the rest of your life. In the former you acquired skills which included the ability to play blind chess and eventually led you to a rating of approximately two thousand. In mathematics you started with problem solving and some of your solutions were published in *Matematikai és Fizikai Lapok* (*Journal of Mathematics and Physics*) for which you were awarded a special prize in 1938. I also understand that upon graduation from high school in 1940 you received a first prize in a student competition in physics organized by the Hungarian Mathematical and Physical Society.

In 1940 you started to attend lectures at the P. Pázmány University (later renamed L. Eötvös University) in Budapest. As I have learned from you, it was L. Fejér and S. Szidon who exercised the greatest influence on your development during the first years of your college education. Together with A. Rényi, you took private lessons from the unemployed Szidon who suggested that you study Tauberian theorems and, in particular, the work of Hardy–Littlewood and Karamata. This subsequently led you to your first significant research achievements in 1951. However, the Second World War interrupted your peaceful activities, and whether you liked it or not, because of your Jewish origin the Hungarian fascists deported you in 1943 to a Jewish labor camp in Transylvania where you remained until 1945.

In 1945 you were ready to resume your studies in mathematics and physics, and for a short while you even entertained dreams of becoming a physicist. Your father insisted, however, that you should prepare for a respectable and honorable profession, and, thus, following fatherly advice (and/or indoctrination), you enrolled in the Technical University of

Budapest. Having majored in electrical engineering, you graduated with a master's degree in 1950. Between 1949 and 1952 you were a physics instructor, first at the Technical University and later at the Eötvös University. This was the time when you finally accumulated sufficient courage to follow your destiny and immerse yourself in mathematics, your father's objections notwithstanding. In 1952 you accepted a graduate fellowship at the newly formed Applied Mathematics Institute of the Hungarian Academy of Sciences. As we know well, your formal advisor was your childhood friend A. Rényi, but your research was mostly influenced by P. Erdős, L. Fejér, and P. Turán. You received your Ph.D. in 1954, and on the basis of your dissertation "Tauberian Theorems with Remainder Terms" you were awarded the same year the G. Grünwald Memorial Prize by the Bolyai Mathematical Society. In 1956 you submitted another dissertation to the Academy of Sciences for which you were awarded the degree "Doctor of Mathematical Sciences." This latter dissertation dealt with asymptotic expansions of orthogonal polynomials. The results contained therein have only recently been improved by Atti Máté, Vili Totik, and me. In 1959 you were awarded the Kossuth Prize by the Hungarian government, the highest recognition attainable there.

Except for a few visiting positions in other countries, you remained at the Institute (later renamed the Mathematics Research Institute) until 1974 when you left Hungary. Via Dublin, Montreal, and Austin, you finally arrived and settled in Columbus, Ohio, in 1976, having accepted a permanent position at The Ohio State University. As a matter of curiosity I point out that your professorship at Ohio State was the only tenured teaching position you have ever held.

You will probably agree with me if I describe you as an extraordinary person in any sense of the word and beyond. As an example, recall that when your eyes were operated on in 1972, you were totally blind for the duration of several months. This did not prevent you from doing research. You appointed me as your (unpaid) secretary and dictated two articles to me which subsequently became seminal papers in the theory of weighted polynomial approximation. As you know very well, you did not have the easiest personality to deal and live with, and our cooperation did not go smoothly. I bet you remember how we kept arguing and quarreling while adjusting our egos and personalities to each other. This eventually led to two joint papers. After your recuperation you kept me doing secretarial work which I of course resented but did not dare to protest, until one day you handed me a typed manuscript asking me to insert the formulas by hand (good old days!), and I found out that the main theorem had been proved by Dzijadyk back in the sixties. As a result, you never gave me clerical tasks again, and simultaneously you promoted me to the most trusted person in your universe.

I have no doubt that you will forgive me for what I am going to say now. I find it to be a sad irony of fate that your most productive period was the time spent in Hungary, and after 1974 when you sailed out in search of personal peace and happiness, your inner drive to create beautiful mathematics has steadily declined. As a matter of fact, you told me a few times that you were fully aware of what was happening to you. In contrast to this, at the height of your career you were such an intellectually overpowering and overdemanding juggernaut that very few of us dared to choose you as an advisor. Being intimidated by your high standards and intellectual capacities, most of us were reluctant to work with you. The satisfaction of having more students around you came only late in your life at The Ohio State University where, among others, Bill Goh, Hrushikesh Mhaskar, Stan Bonan, Radwan Al-Jarrah, Ruth Haddock, and Chung-der Liu surrounded you looking for your secret wishes and desires. Only the last one of these students succeeded in graduating before you left us.

I close my letter by begging you to relax. Now you have plenty of time at your disposal, certainly more than you ever had during your lifetime. Lean back in your armchair and enjoy yourself. Just remember that we have not forgotten you. Your mathematical heritage has been wisely invested and promising returns are already showing up.

Yours truly,

Paul

Paul Nevai

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