The biographical sketch

Zygmunt Zahorski

I was born on April 30 1914 in the Szubina village (near Kutno and Krośniewice). My father – Stanisław Zahorski, who had been a teacher in a local primary school, died on January 18 1921. Since the official flat had to be handed over to the successor, my family (mother and younger sister) was left with no home nor livelihood. Because of bureaucratic problems (there was no money to hire a lawyer) it took seven years to procure a widow's pension. My mother wasn't strong enough for a manual labor and didn't have any education for an clerical one. All savings disappeared in the then rapid devaluation. In these circumstances, till 1928 my mother used help of three out of four of her brothers. In the summer of 1923 and in years 1924–1926 she worked as a maid in the "Zameczek" estate near Chodcz.

I went to primary school in the years 1924–1929 in Chodcz, Krośniewice and Pułtusk. Since the beginning of schooling I noticed my passion and capacity for mathematics, which I learned by myself beyond the course of study. I even set some problems already, some of which I managed to solve. However, my "discoveries" were, in fact, long known facts, I obtained the first truly new result at the age of 23 on the last year of mathematical studies.

In September 1928 I passed the exam and was accepted to the fifth grade of a male humanistic junior high school in the name of Piotr Skarga in Pułtusk. At the time I lived with my mother's brother in his forester lodge in Popławy, 2 km away from Pułtusk. Then I moved to a lodgings in Pułtusk in 1931. I earned my keep by giving private lessons, since I was considered the best mathematician in the school.

In 1932 I finished the junior high school and in September of this year I passed with honors an entrance exam for the Mechanics Faculty of the Warsaw University of Technology. I intended to choose – after completing two years of studies – the most mathematicised, aerial section. There were only four people out of 190 accepted and 360 examinees, who passed the exam with honors. I chose the technical studies not because of the future salary, but because of my aversion towards being a high school teacher. However, exactly in 1932 the tuition on universities was significantly raised and the first year students did not have the right to get a payment deferment or to

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get a state scholarship. This way, not by raising the entrance exam requirements, the then authorities countered the "overproduction of intellectuals". The tuition on the first year on the technical university was 300 zł in two payments. Additionally the entrance exam fee was 40 zł. This amount of money was staggering for me. My mother's pension in that time was 80 zł at first, then was reduced, as children reached the age of 16, according to general crisis-economical reduction of salaries and pensions. At the end, in 1938 when my mother died, it was only 30 zł monthly. In that time my situation on the tutoring market was much worse than in junior high school in Pułtusk. I wasn't known in Warsaw and in the same time there were thousands of students intending to earn as tutors. Therefore during first and second year of studies I wasn't tutoring at all. My savings, 300 zł, was enough only for: the entrance exam fee, the first installment of the tuition and one month accommodation fee – 75 zł – in the ZNP[1] dormitory. I did not get the ZNP scholarship, 75 zł monthly, for staying in the dormitory (i.e. exemption from accommodation fee). My application for this scholarship was evaluated by the dormitory manager, jealous and adverse teacher of mine from primary school. Hence I pledged to this manager that I was going to stay without paying, since in my opinion the scholarship was due to me. The threat of throwing me out was not realistic, since the janitor would have to struggle with 32 friends of mine. Prohibited entry to the canteen wasn't a problem for me either, since waitresses gave extra food for me to my friends, who brought it to my room. The manager also didn't succeed in arranging an argument with me, for which he would have a witness, while the student – me – didn't. Such an incident would be an excuse for turning me out, by a judgment of a court of law. After a month of dramatic efforts to postpone the payment date of the second installment of the tuition and then a desperate search of the money required, I acquired the needed 160 zł from a one-off allowance from Kutno district authority office. This budget leavings of the district authority office saved me – a student who passed with honors the entrance exam – from being thrown out from studies because of not acquitting the tuition.

But to live – especially for free – in the ZNP dormitory during whole studies was not possible. Everyone had to move out for the summer break, including my protective friends, since during this time renovations were made and after vacation everyone had to apply for a room in the dormitory again. Opinion on applications, especially of the last year residents, was given by the manager. Therefore it was obviously useless to apply for a room there, moving again in my old room was not feasible. I started second year of studies with 20 zł in my pocket. Admittedly, my financial situation improved a little, since because of getting a lot of good and very good exam grades I was given a deferment of the tuition payment, i.e. 290 zł, date for "after studies", but still I had no livelihood. I didn't even get the partial scholarship: 60 zł monthly. In that time getting both these aids on Warsaw University of Technology was practically impossible, maybe there were some favored exceptions. Not only bursary clerks, but also the university authorities treated students as "intrusive flies", which had to be repelled, because, dreadfully, they had a whim to study despite having no money. Obviously, it was better to get half of scholarship than a tuition deferment, which a student would be able to pay, providing he was thrifty. I also applied for the city of Warsaw authority office scholarship, 75 zł monthly, but the date of consideration of these applications was not accordant with the beginning of an academic year. 20 zł,

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[1] Polish Teachers' Union, Polish: Związek Nauczycielstwa Polskiego (eds.).

which I had for the autumn exam session, I spent as follows: 10 zł for the rent, lodgings in a kitchen at some barber's flat, where the tea three times a day was included; the remaining 10 zł I destined for a plain bread to eat during the month. After one month the flat owner stated that in most cases the rent is 15 zł, but I didn't have even 10 zł. I decided I would live in a shelter for the homeless, on the Jagiellońska street in the Praga district. It was allowed to stay there from 9 pm. till 6 am., during the day the building had to stay empty. The homeless slept on raw wooden bunks, on some newspapers placed on the floor or directly on the floor – when all bunks were occupied; often even on the stairs leading from the ground floor to the first floor – when the cold drove them away from under the bridges or parks. This "living" in the dirt and perishing cold lasted about 6 weeks (in November and December 1933).

At the beginning of December 1933 Bratniak – a students' society self-help organization, granted me an accommodation scholarship in a small student house on the Ceglana street (the big student house on the Narutowicz square was taken away from Bratniak by the Ministry of Education) and eventually I started to live in bearable conditions. A little earlier I also got, from Bratniak too, a boarding scholarship – vouchers for lunches in a student canteen on the Koszykowa street. In that time I also got help from my ex-roommates from the dormitory and from Dr. J. Stawiński.

In February 1934 the Warsaw authority office informed me that I was granted a scholarship since September 1933, paid aback. I resigned then the accommodation and boarding scholarships. I could send a significant part of these money to my mother, who lived in Krośniewice. This scholarship had this particular disadvantage of being one-year; in the next year it was not anticipated in the city's budget and no student got it.

On the occasion, a piece of information about me, which appeared in the book "Czas przed burzą" ("A time before a storm"), Nasza Księgarnia, Warsaw 1973, pages 118, 163, 164, 170, 215, written by my older colleague from the Warsaw University of Technology, should be rectified. It's author is Dr. eng. S. Minorski. In this, partly humorist, book some facts are real, but the most important one, about the homeless shelter, was skipped by the author. He wrote it many years after the war, so apparently his memory failed him. Also, occasionally he mistakes me with other people, and significant part of the information is errant. The author's negative attitude to the great philosopher and exemplary man, Prof. T. Kotarbiński, is due to his subjective opinion, but the information about scholarships on the University of Warsaw, the unknown ground for the author, while known well for me – is totally false.

The author of this book died in June 1981 and it is unknown whether there will be further editions of this book, therefore I brought up the partial rectification mentioned above, since I don't have any other possibility to engage in polemics with the author's description.

I wasn't much interested in strictly technical subjects, such as machinery or molding, and there was too little of mathematics lectures, which I put interest in. Very little of algebra, complete lack of numbers theory and set theory, subjects indeed redundant for engineers.

Following my interests, in the autumn of 1934, when the new law let studying on two fields of study and with an approval from rectors, I signed for mathematics on the University of Warsaw. Already being a student of the University of Warsaw, I didn't leave the Mechanics faculty on the Warsaw University of Technology yet,

where I completed almost whole two years of studies, including three months of factory apprenticeship. On the University of Warsaw I came across completely different attitude of lecturers towards students. Professors Sierpiński, Mazurkiewicz, Kuratowski were great scientists, who supported people mathematically talented. Dean Mazurkiewicz, when I accosted him on the university yard, after his office hours, without any beadledom, as befits a true scholar, didn't send me away saying, that he receives students only during office hours and after making an appointment through his secretary, but on the spot he promised me, against first year students regulations, a full tuition deferment and partial scholarship, i.e. 60 zł monthly during the first year. After finishing the winter and summer 1935 exam sessions with very good grades, till the end of studies I got a full scholarship, 120 zł, and tuition deferment. As for one person, these conditions were downright luxurious, but they got worsen a little, because I was sending a half of the money to my mother. There were only two full scholarships on all four years on the whole faculty (mathematics, physics, astronomy, chemistry, biology and geography), in contrast, there was a lot of partial ones. The second scholarship was given to another student of mathematics, but not the one described by S. Minorski, because he was not a member of ONR[2], but of the Legion of the Young, a remedial organization, which was certainly a favorable circumstance, although not the only one. He was a capable mathematician, but out of my league. The most talented mathematician studying on that time on the university didn't need the scholarship, he was wealthy and didn't hasten with completing years of studies, what let him write papers with original results during first and second year.

Formally, the mathematical studies lasted four years, but in reality often longer. I finished it after 3 years and a half in 1938. At that time I studied on the Warsaw University of Technology in slow mode, but still completed – as I mentioned before – two first years, including the factory apprenticeship. I signed for the aerial section, passing some of the subjects on the third year of studies. It was a little more than so-called contractually half-diploma, officially – the first diploma exam, although there was no a separate exam. I did not intend to complete studies on the University of Technology, which I needed only to get a postponement of military service till 26 years of age, not only till 22, as on other universities. I did not avoid the military service, but I did not want it to interrupt my mathematical studies. In that time I changed my field of interest: not aerodynamics, hence also not partial differential equations, but real functions theory, a little of analytic functions theory (which excerpts were included in the aerial section program also) and trigonometric series became my main interest. In 1937, on Prof. Mazurkiewicz request, I published my first short paper, without original result, but with a new construction method of some function. Mazurkiewicz did it already, 22 years earlier, but his method was much more complicated. In the same year I got a new result, difficult and of a big importance, which was complemented in 1938. It was supposed to be my doctoral thesis supervised by Mazurkiewicz, and the completion of my PhD was planned for September 1939. Obviously, the war prevented finalizing these plans. After translating this paper to French and sending it to Bulletin de la Societé Mathématique de France in the summer of 1939, the French Mathematical Society (Soc. Math. de France) offered me to sign up, which I did, paying quite a low registration fee (11 zł). Undoubtedly I was removed from the list of members due to inability to send – during the war – the equally low membership

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[2] The National Radical Camp, Polish: Obóz Narodowo Radykalny (eds.).

fee. It is unknown if there is any trace of that signing up to Soc. Math. de France. The history of the mentioned manuscript was unlucky. Although the occupation in France was much milder than in Poland and scientific journals kept publishing, the manuscript was published in Bull. de la Soc. Math. de France only after the war in 1946. However earlier, in 1941, the paper was printed in Moscow, in Russian, even in an extended form.

In 1937 I started to work as an assistant of Dr. eng. S. Neumark, Dr. eng. J. Bonder and Dr. P. Szymański in the Aviation Cadet School (Technical group) in Warsaw, to theoretical mechanics, durability of materials and mathematics, with a little narrower program than on technical universities. I owed this job to Dr. Al. Wundheiler, an outstanding creator in differential geometry, whom Dr. Neumark wanted to employ as an assistant. Wundheiler conducted classes in mechanics on the University of Warsaw to Prof. Przeborowski's lecture, but he had no chances to get employed in an officer school due to "personal" reasons – which, in fact, concerned also Dr. Neumark, but he had worked for a long time already in the Institute of Aviation and in the army, also in the Institute of Aerodynamics in the University of Technology. However, both Neumark and Bonder, although "Zionists", were irreplaceable both as engineers and mathematicians. Wundheiler recommended me to Neumark, as his best student, whom he knew from theoretical mechanics classes. I worked in this school until its' evacuation to an unknown destination in 1939.

At the same time, in March 1939 all the postponements ended and I got a summons to appear on October 2nd, 1939, at the Officer Cadet School in Zambrów, to serve in the army.

On September 7 1939, when the Germans approached Warsaw and colonel Umiastowski on the radio appealed to men with military category A to leave Warsaw and go east, where they would be conscripted, I went east with Estera Steinbok, mathematics graduate. Commander of a local military unit in Siedlce, after I showed him the summons to the cadet school, refused to take me to the army, because I was untrained. Then, as refugees, we went to Brześć, where, seeing the heavy air-strike and the Germans approaching Wysokie Mazowieckie, we understood that, as for the moment, Poland had lost the war. We decided then to run away as close to the Soviet border as possible, so when the Germans would come and border units of KOP[3] would leave, we would cross the border and take refuge from the Germans in USSR.

On September 14 we were in Łuniniec, 60 km from the border, but crossing it was unnecessary, since on September 18 the Soviet army came in Łuniniec. Soon I went to Lviv where universities were open, Estera Steinbok temporarily stayed in Łuniniec.

In Lviv I became an assistant of St. Banach, on the Lviv University, and since the beginning of March 1941 an aspirant (together with my younger colleague MSc A. Alexiewicz, later a professor on the Adam Mickiewicz University in Poznań). There was a doctoral scholarship associated with the postgraduate studies. Banach agreed to accept as doctoral thesis the same treatise as Mazurkiewicz had, but there was still an unsettled by the Ministry in Kiev matter whether the Lviv University would have the right to confer the degree of doctor (candidate in the local terminology). There was a lot of refugees working on the Lviv University back then, to name some of

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[3] The Border Protection Corps, Polish: Korpus Ochrony Pogranicza (eds.).

them: Saks, Knaster, Marczewski[4], Wojdysławski and me, Prof. Orlicz from Poznań, Boy-Żeleński.

In November 1940 I married Estera Steinbok. During this period of time I dragged myself into research, I was very busy, I edited the finished papers and started writing new ones, so that they survive in the case of my death in war. The edited ones I sent to Moscow, Japan and Lviv – the last ones got lost, but after I rewrote them – after war – they got published in India and USA. New problems came partly from Banach and Mazur (but they did not concern functional analysis) and partly from myself. My concerns that the conflagration of war would reach Lviv one way or another turned out to be correct on June 30, 1941, when the Germans marched into Lviv. Further escape east was technically impossible since the first day of war, i.e. June 22. Also, another problem appeared: we had to move, because my wife figured in the registration book as a Jew, and for that time she used a fragile fake ID. Obviously, universities got closed (even for the Ukrainians), anyway not only I would not work at the Nazi university, but I could not even admit to having higher education, knowing that it prioritizes for a concentration camp. The nutrition conditions got worse, casual earnings, mostly from trade, were very small. In that situation my health worsened for the first time (tuberculosis). My son, born on August 25, 1941, died on September 27, the same year, because of inadequate nutrition. In March 1942 I came back to Warsaw and in May 1942 Dr. Stawiński referred me to a familiar technical director in the Philips factory, under the condition of concealment of higher education. The factory was confiscated by the Germans and it gave the so-called ausweis, which partly protected from transportation to Germany. It also provided a soup in the morning and for the lunch, which was quite awful, but sometimes with meat offals of worse quality than "nur fur Deutsche". Working there gave the opportunity to listen, without any risk, to the radio broadcasts from London and Moscow, which were prohibited under death penalty (according to, among others, posters hanging in factory halls), and sometimes by chance even from partisans short-wave radios. With the technical possibilities of those times it was impossible to ascertain what a person was listening to in headphones, and it was obligatory for a worker calibrating a device with a wavemeter to have headphones on. A person should only, when some German entered the hall, calmly leave a suspicious wave, disconnect an ordinary cable used as an internal antenna and connect a wavemeter cable laid 5 cm away. I established for my wife Estera a solid Aryan kennkarte using a real birth certificate of my sister, Helena Barbara Zahorska, who lived at that time inside of the so-called Reich. After the war my sister deemed it very dangerous, putting her and all the family, with whom she lived, in a risk of death. However, considering difficulties with Poles traveling from Reich to General Government, finding two Zahorski twins with both names identical was very much unlikely. In this time I also helped other Jews, sometimes unfamiliar children, the last not being risky. I didn't manage to ransom from the navy-blue police the wife of a remarkable Lviv mathematician, J. Schauder, who was shot on a street in Lviv[5]. Mrs Schauder came to hide in Warsaw then, but, like her husband, she could not stand staying at home all the time. Some children recognized her on the street and started shouting "Jew", most likely without awareness what that could cause, and then a navy-blue policeman arrested her. Another Jew who was hidden by the

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[4] Edward Szpilrajn used to hide first under the name Zawadzki, and Marczewski later on.

[5] I do not know exactly if it was maybe in Drohobycz. Supposedly he was denounced by a Ukrainian.

same woman, familiar with Estera, alarmed us. This hostess had some connection with one of the policemen, I was a link in a chain connecting her to Mrs Tarska, who was collecting money for the ransom. I preferred to avoid a direct contact with police circles, even Polish ones. But after collecting a required amount of money, the policemen raised it twice, and for the third time Mrs Schauder wasn't there anymore. During the next inspection of the police station the Gestapo agents took all taken Jews. Neither Mrs Tarska, nor the hostess, had any access to a gestapo agent. Since one should work very sluggishly in German factories, I had lots of time to write more articles. Although these papers got lost in the debris after the rebellion, nevertheless theirs abstracts (in a few copies, some given to other people, one I kept always with me) survived, what let me recreate them after the war. In 1942 and in 1943 I spend 2–3 months in a sanatorium in Rudka near Mińsk Mazowiecki, which was put up in a good standard as for the occupation time. There were 12 places funded for patients from the factory by its workers (by contribution). I had some acquaintances among partisans from AK[6] (a colleague from a high school class), and from AL[7] (Michał Tetmajer, whom I didn't know personally before the war, I met him only once on some social gathering) and I intended to join them. But my health condition wasn't good enough to spend long time in partisans terms: there was a setback of my health, which state at the end of 1943 was alarming. In January 1941 I was in a hospital, after a surgery in February my condition got worse, and in May it was completely hopeless. For the "pessimistic security" I counted for one month of life at most. It turned out, it was judgmental and not pessimistic enough: doctors gave me at most a few days. But they were wrong, there was a slow improvement, so in June I could even walk unassisted. Undoubtedly the food sent me by my cousin Janka Wł. from Siedlce was of much help, but mainly – it was some unexpected endurance, because other patients from "the waiting room to a mortuary", especially the ones getting much better food from the countryside and from families, all died. I stayed alive. During the occupation there were only two people who left this room alive: one of them was me, the other one (earlier) some sailor. A temporary health setback appeared later, during The Warsaw Uprising. However, in this hospital (on Nowogrodzka Street, Baby Jesus Hospital) almost from the beginning occupied by the Germans, the conditions were much better than in other districts. The Germans didn't murder the patients, nor the medical personnel, like in The Wolski Hospital, or in Leszno, where the ill who could walk were shot at the spot, and the bedridden were burned inside the building. Among the last ones was the father-in-law of Prof. Borsuk. Three weeks after the uprising the Social Council evacuated this hospital, as well as the ill, the wounded from the uprising and the elder from other hospitals and shelters, to a provisional hospital in the Medics House on Grzegórzecka street in Cracow. This place could be left only after getting an approval from gestapo. However, there was no guard duty in the hospital, so I made use of this "freedom". I found the Cracow mathematicians and during a secret gathering of a branch of Polish Mathematical Society I offered them my papers written during the war. Soon I got informed that the secret Polish Academy of Arts and Sciences would organize a food aid for me. The meat was provided by Prof. S. Turski, a former prisoner of the concentration camp of Sachsenhausen, an employee of a butchery at that time, after the war an organizer and the first rector

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[6] The Home Army, Polish: Armia Krajowa (eds.).

[7] The People's Army, Polish: Armia Ludowa (eds.).

of the Gdańsk University of Technology, later of the University of Wrocław, for some time a Director of a Department in a Ministry. In January 1945 the Germans intended to transport patients from the hospital on Grzegórzecka to the Auschwitz-Birkenau concentration camp, but they didn't manage to do it on time. Patients of this hospital, as well as many other people, were saved by an instant Soviet offensive, which started on January 12 in Sandomierz. After that the Germans only managed to shoot people held in prisons, and then they ran away not to get surrounded. On 18–19 January Cracow was conquered already, almost without any fight, after a far envelopment. My dietary intake improved and health got better, so in February 1945 I stood in front of a recruitment board. The doctor verified that a bandage on my ribs is not fake and then, without any question, he wrote me a dismissal. Since the opening of the Jagiellonian University I worked there as an assistant. In June 1945 I got a small apartment on Podwale street. On February 11, 1946, I finished my doctorate. I used a different paper than the one from before the war, and that one, significantly complemented, was a base for my postdoctoral degree, planned and prepared for October 15, 1947. A lack of time of one of the reviewers, Prof. Mazur, caused a delay and the postdoctoral colloquium was postponed to December 1947. Simultaneously, the Jagiellonian University applied for an appointment to an associate professor and employed me on a post of a deputy professor.

In October 1948 I got an appointment of an assistant professor and a transfer to University of Łódź. On March 3, 1949, Helena (Estera) Zahorska gave birth to a daughter Elżbieta. (She kept first name from the occupation kennkarte). In 1949 I got a Polish Mathematical Society award[8], as the twelfth of Polish mathematicians. These awards, three a year were given since 1946, were most appreciated, not because of the money, but the meaning of them. Only two mathematicians got it twice: H. Steinhous (during the lifetime) and M.Biernacki (the second one posthumously, but an application could be issued only during his lifetime). I got three Ministry awards, in 1948 (an award for the young, i.e. until 40 years of age), in 1962 (a II degree award for the research) and in 1984 for the overall work, in particular for my research and development of the young cadre. I omit here a few Rector awards in Łódź (and one in Gliwice) for research or didactic work. In 1954 the Council of Mathematics, Physics and Chemistry Faculty on University of Łódź unanimously came forward to promote me to a full professor, which I foiled by not filling a required form, because I did not feel worthy of this promotion yet. I accepted the promotion only in 1960, after solving a Kolmogorov problem (a proof of some hypothesis from 1926, which Kolmogorov published in 1927 without a proof or any details). This was in fact a worldwide result, since 1927 on the whole world many outstanding specialists of trigonometric series theory tried to solve it, unsuccessfully. I succeeded in May 1960, after three weeks of work. My earlier inconclusive efforts, since 1940 and even earlier, because since 1936, and intensively since 1942, on the Luzin hypothesis, were of some help with solving it. Almost exclusive and for sure the main goal of my life was the work on Luzin hypothesis, put in 1912. This hypothesis is a generalization of du Bois Reymond problem from 1876, and supposedly even of the Riemann problem, hence from before 1866. I worked on it until the reanimation in autumn 1980. Luzin hypothesis, also concerning trigonometric series theory, but even more difficult and older, had some aspects causing my ideas to be ineffectual. The same ideas turned out to be effective with the

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[8] The Stanisław Zaremba Prize (eds.).

Kolmogorov problem. In 1961 in a rush, before I drafted a final version, I announced the solution of the Luzin hypothesis in C.R. Paris Academy, and three weeks later, while writing a clean copy and a presentation for the seminar of Prof. Mazur in the Institute of Mathematics of the Polish Academy of Sciences, I noticed a mistake. Since the announcement had already been published, I rectified my mistake immediately – in a letter to Prof. A. Zygmund, a reviewer of this note (from C.R.) in a worldwide bibliographic journal Mathematical Reviews, but I couldn't fix the mistake until 1980, neither later.

This mistake, psychologically, had a huge impact on my faith in my own capability and from then on it was my greatest misfortune, obscuring, or rather absorbing even the calamities of war. Objectively, it is not that bad, Lebesgue himself announced in 1905 a false result, and the supposedly greatest mathematician of XX century, D. Hilbert, in 1925 "proved" the continuum hypothesis; the mistake was noticed right away by Kuratowski and von Neumann. By contrast, the Luzin hypothesis turned out to be true, what was proved correctly in 1966 by a Swedish mathematician Lennart Carleson (younger than me), who was later the president of the world Mathematical Union for a few years. Hence my mistake was only in the proof, but, whether it was true or not, was not down to me. Because, not going into details, the problem had two possible answers – yes or no.

In 1961 I was named by the district Front of National Unity for a district councillor in a District National Council (DRN), Łódź-Górna. I accepted this proposition hoping that I would be able to help people, because despite very little spare time (research took a lot of time), the then health and energy condition allowed some additional activity. I was against purely phraseological work and I thought that the best example is a specific work (including research). Working as a councillor was such a specific work for me. It turned out to be true, but only by a little bit.

I was a councillor and a member of Education Council in DRN Łódź-Górna in years 1961–1970, and a member of the DRN Presidium from 1965 to 1970, i.e. until relocation to Gliwice, two terms of office in total. In 1951–1953 and 1959–1961 I was a president of Łódź Branch of Polish Mathematical Society, in 1975–1977 a member of The Main Board of Polish Mathematical Society, and almost constantly a delegate to The General Assembly of Polish Mathematical Society.

On the University of Łódź I got The Tenth Anniversary of PRL[9] Medal and The Gold Cross of Merit in 1953–1954, and on July 22, 1968 (April 17, 1969, after name rectification) Knight's Cross Order of Polonia Restituta.

I got help with relocation to Gliwice from people now already deceased: prof. M. Mochnacki and doc. dr hab. W. Sobieszek, my former student from University of Łódź, working in Gliwice. Despite curing, completely only in 1964, the effects of war, my health was put in, even bigger, danger by a heart disease. Since 1955 light, mostly neurotic, later also physical, since 1976 serious, and since October 24, 1980 with reanimation. In 1977–1978 I tried to move to Białystok, for health and climate reasons. My efforts stay unsuccessful, I still live in Gliwice.

In 1966 my daughter Elżbieta finished III High School in Łódź and chose a field of study, which was not available in Łódź, and in the next year she passed, on my advice, the entrance exam for physics at the University of Warsaw, although she would

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[9] The Polish People's Republic, Polish: Polska Rzeczpospolita Ludowa – the official name of Poland from 1952 to 1989 (eds.).

prefer mathematics. I considered physics to be more important and interesting than mathematics, not only because of its technical applications, although I am a mathematician myself. Physics would also give a bigger variety of possible employment after studies. An attempt to study physics and mathematics at the same time was too time-consuming, so eventually, after completing two years of physics, despite mostly good grades, my daughter transferred to mathematics claiming that she had no ability for experiments and she finished studies in 1979.

In 1970 I got divorced and then married Janina Śladkowska, a docent on Silesian University of Technology, doing research in a very little known by me field of analytic functions. For the family and housing reasons I moved to Gliwice to work on the Silesian University of Technology – despite the atmosphere in Silesia is much more smoky and the climate is harmful to health. Janina Śladkowska-Zahorska gave birth to a son. Our son Jaś sincerely hates mathematics, maybe the revulsion was caused by his school. No one wants to force him into mathematics, constraint never results in interest. Admittedly, he has good grades in mathematics, but he is more interested in chemistry and electronics.

My daughter used to visit me in Gliwice quite often, and after finishing studies she lived at our place in Gliwice for eight months. Then she got a job on WSI in Radom. I also got an offer to transfer to Radom on grounds of the climate, but I did not want to make a rushed decision, and after figuring out the conditions there, in 1981, I decided to give up the move. In June 1982, during a one-month compulsory absence of my wife in Gliwice (I was in a cardiac sanatorium in Nałeczów at that time), my daughter took care of Jaś, taking him to an acquaintance hostess near Ciechocinek.

I have published papers in scientific journals in Poland, France, Japan, India, USA, USSR and Czechoslovakia, one script for initial years of study and one popular science article for readers with incomplete basic education and higher. The popular article came out not the best, because I did not have a chance to correct it before publishing – the revision was made by the editorial board of "Przekrój", who changed some elements ... for worse. Excluding from the set of papers the bibliography, reviews, problems set but not solved by the author, doublets (eg. announcement, abstract and then full paper) and translations, there are 17 research papers, one of them errant, one of really good quality, eight of average quality, others contributory.

There are eight PhD students of mine in Łódź and two in Gliwice. I have two distinguished students: prof. zw. dr hab. Jan Lipiński, for some time director of Institute of Mathematics in University of Gdańsk and prof. dr hab. Tadeusz Świątkowski, who admittedly made his doctorate in another department, but his best papers are from my field. The group of people working with this subject matter spreads wide outside Poland: there are, among others, the Czech, American, Romanian, Soviet mathematicians and others. From Poland one can name docents Filipczak and Walczyński and several students of prof. Lipiński, or prof. Świątkowski.

I participated in several international mathematical congresses, gathering from 4 to 6 thousands of mathematicians with different specializations, organized once in 4 years in various countries by mathematicians from the organizing country (chosen on the previous congress) and the International Mathematical Union. I went to Stockholm in 1962 and to Moscow in 1966 to the prime cost, in Moscow I got chosen by organizers for a chairman on the real functions session. I was marked out from the University of Łódź by the Ministry for a congress in Nice in 1970, but due to financial cuts

I couldn't take part in it. To congresses in 1978 in Helsinki and in 1983 in Warsaw I went at the expense of the Silesian University of Technology. I also took part and gave presentations on smaller foreign conferences in Prague in 1949, Berlin in 1960, Palermo on Sicily in 1976 and Varna (without a lecture, but with a problem during a discussion) in 1967.

Summary and conclusion of this biography

Obviously, my fascination for mathematics is not ambitious, this aspect could only be significant during school times, when one cares about grades – and even then not only. But a question arises: should this fascination be like a horse's blinders, which let you live good and pleasant – despite obstacles – life without more general reflection? For questions about the attitude of mathematics to general aims of humanity I answer shortly: from a human point of view the most important and astonishing creations of nature are the living organisms, especially the ones that "have a soul", i.e. seeing, feeling pain and pleasure and self aware, so animals. And among them the thinking animals – humans. Development of a human thought, even if genetically it is one of the means of obtaining livelihood conditions, since the moment when it became independent, it is important not only in utilitarian fields, but also selfless cognitive. Mathematics plays a secondary role in it, because it lets to learn about the most exterior, formal and trivial feature of reality – quantitative. Physics with chemistry, so as a matter of fact also with ultra-microscopic physics and biology, especially the one from electron microscope, are much more important, although, according to probably correct Kant's thesis, even they don't recognize "the essence of things". Both materialists and majority of philosophers think that mathematics and any science, logics even, arose as a consequence of observing the world and recognizes it to some extent. But, even assuming that mathematics is an absolute abstraction, "a pure creation of a free human spirit", it would be still connected to reality somehow, because human mind is a part of reality. But mathematics is a jejune part of reality, although it is not "cold" or "arid", as people blind for the beauty of mathematics say. In that case I value mathematics mainly from its artistic side, as the art for the sake of art. This phrase is erroneously formulated, since every art is for the people. The classical music (maybe without its moralizing and social content) is for a small amount of people, but there are some. There are probably more recipients of the art of mathematics, and there will be more of them as education improves. Demand for the art to be understandable for the masses is, in the case of mathematics, a nonsense. Mathematics should be then stopped at the level of fifth grade of primary school.

The art shouldn't lower itself to match the masses, but make the masses rise to match the art. Which masses should it be understandable for, thick-heads? Thick-heads is a name from the past, in the future there will be no thick-heads. "It is all about rising people to the heights of philosophy" – a sentence probably by Marks. I think that basic sciences for the recognition of the world, one of the main goals of humanity (against St. Staszic opinion, who considered science to be a luxury), aren't the exclusive goal. Applications are equally important, but not to produce needles or cars, although there are important too. These are:

1. in medicine, to extend people's lifespan to at least 150 years, with 5 years of senility, and in the future maybe without any limits;
2. tp incrise food production for the already over-populated world;
3. to invent engines with no exhaust fumes, depoison the water, earth and atmosphere, new energy sources, because there is not much of uranium in the world;
4. to create atmospheric and thermal conditions on other planets to colonize them with billions of people, who should live there permanently, additionally, what's easier, to invent effective, harmless, comfortable and cheap for mass production contraceptives.

Otherwise we will inevitably come to an automatic regulation of population by: hunger, fumes and sewage poisoning or nuclear war. Hence, the further existence of humanity depends on applied science. For applications against people, it is not the scientists fault that their discoveries were used for flagitious purposes. Despite that, the atomic bomb was for purpose as rightful, as fighting the Nazi genocides. In this matter, I can sign with both my hands the sentence by great English mathematician G.H. Hardy: "I'm happy, that none of my discoveries is useful to produce killing machines or subduing nations". It is because I don't have any results on applied mathematics, even for peaceful purposes. Maybe my basic lectures on analysis find some application in the work of engineers, whereas my monographic lectures were not applied. I'm not a specialist of any branch of applied mathematics. In my opinion there are very little such specialists in Poland, outside Wrocław and Warsaw. Didactic work is of secondary meaning for me, mostly for earnings. There are, admittedly, institutes with only research work, however they might be reduced, eg. for savings reasons, and, what is more important, although such institutes don't impose subjects, they require results. I agree with prof. Alexiewicz: "even if it was allowed not to give lectures at all, I would take at least two hours of lectures a week to have contact with other people, especially the youth". I share an opinion with the majority of professionals, that without doing research one can not give good lectures on higher mathematics. Of no help would be the so-called natural didactic talent – although it occurs – or long term routine, or degrees in general didactics. A non-scientist makes mistakes easily, even preparing lectures conscientiously, and then his didactic talent or knowledge from post doctoral didactic degree causes even more harm, because he would more effectively and convincingly teach those mistakes. As the result, even treated secondarily (but still soundly), lecture of a scientist is better than a routine lecture of lecturers of various kinds who just repeat commonplace thoughts. I did not prepare for the majority of my lectures – and that was good. A lecture without remembering all the details, but knowing the method – improvised – shows how mathematics is done, not only tells what's in it. A scientist, thanks to his experience, understands the method and the keynote and shows how to add the missing details. A routinist would never do that. But there are still more difficult lectures, which must be prepared in advance, they include also a lot of information to be memorized, which can't be reconstructed during a lecture: for you can spend five seconds at the blackboard cogitating, but to not say anything for half an hour would be a waste of time, especially considering an errant opinion of first years students (for what school is to blame) that a teacher knows everything. Work on universities includes also an administrative part, which I always hated: strange questionnaires often with incomprehensive questions about non-existing things, perforce taken out of blue, planning, reports, an in between –

short periods of time for research; troublesome and time-consuming management positions, which I avoided. In my opinion a scientist should not have any trace of lust for power, one of the worst and most harmful human features. Some people think that everyone has it: "who does not rule at home, rules at work, and who does not rule at work, is a home tyrant". It is not true, because a despot is aggravating both at home, and work, while a scientist doesn't have to be a despot. He doesn't have to rule neither at home, nor at work. It is sufficient for him to have power over the problems he solves, and this type of power is harmless for people, and over the minds of future readers of his papers.

In my opinion mathematics should have, and at some level in fact it does, ethical implications. A person that can think, should also be able to choose good. Independently from names – ostensibly disqualifying it – whether called compassion, or the herd instinct. It is clear, that not correct is the ethics of the strong proclaimed by Nietzsche – essentially approval of genocide – but the ethics of the poor. Freethinking humanitarianism, Christian love to one's neighbor, or socialist humanitarianism, not hatred.

Eventually I confirm absolutely – read in some paper of prof. A. Wakulicz – words of Kronecker, a great German algebraist: "mathematics teaches humbleness". It is known by every creative mathematician, who struggled for hours and years with enormously difficult problems, often surpassing a more or less talented mind. Facing difficulties you're nothing. This is what you can learn when fighting "where a difficult problem stood as a hard wall".

My scientific accomplishments were obtained through overcoming adversities: both impersonal, like poverty, illnesses, war, and caused by specific people. These adversities – additional, besides difficulty of the problems themselves – I divulge not to get compassion, which I don't want or need, but because of the rightful pride: three meters for a pole vault is far from the record, which is over 5,5 meter, but three meters with a backpack containing 25 kg of bricks is a super-record. Although I treat these matters in general not in terms of pride or modesty, I comply, among others, with a rule: "it is better to underrate, than to overrate yourself", the so-called security measures pessimism (not a non-committal one).

After the reanimation in 1980 I put aside for a indefinite period of time searching for a correct and simpler proof of Carleson theorem. Instead, for an entertainment, I gave attention to much older problem, according to the rule: everyone is allowed to try. But, in my opinion, there is almost no hope for solving it. In this case it would be a big overrating of my capabilities, even considering the sentence: "bite off more than one can chew". After all, the capabilities decrease with aging, and considering additionally my health condition and the number of years or weeks available, there are no chances. Therefore I do not reveal this problem. I will if, miraculously, I will solve it.

Afterword (of Editorial Board)

In 1987 the University of Łódź honored Professor Zygmunt Zahorski with the honoris causa doctorate. General Assembly of the Polish Mathematical Society, by the

decision on November 3rd, 1993, gave to Professor Zygmunt Zahorski the dignity of honorable member in appreciation for his outstanding achievements enriching mathematics.

Till the retirement, into which Professor went in 1984, he worked in the Institute of Mathematics at the Silesian University of Technology. Professor died, after serious illness, on 8 May 1998 in Gliwice where he is buried.

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Członek Europejskiego Towarzystwa Matematycznego

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