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Short stories

Our emigration from the USSR

I write this in 2020. We came to Israel in 1973. Many years have passed since then, and I forgot almost everything about it. But some events that were part of this story were so dramatic and difficult that I still remember them vividly.

On the emotional level it all began with the Six-Day War in 1967. We became proud of Israel and ourselves. But it was not possible even to think about leaving for Israel from Chernogolovka, a restricted (“closed”) academic town where we lived at that time.

Various events had an emotional impact on us. But the strongest impetus was external. My cousin, an Israeli-born Uri Shafir, suddenly came to see us as part of a very large group of academics from the US. There was a story behind it. He was part of the group, but the Soviet authorities struck his name from the list and refused to grant him an entrance visa. In response, the entire group, more than 100 people, announced that in this case they would not go as well. So he actually got a visa and was even allowed to travel from Moscow to Odessa to visit his relatives (that is, my family). We saw each other in Odessa and

flew back to Moscow together. The details of his visit are not really important, but the man simply amazed us. He was so laidback and free as opposed to us, bow-backed people who used to keep our heads down. I suddenly felt that I too can be proud and free, and from that very minute that was what I wanted most of all.

Let me digress for a moment. Many years later, sometime in mid- or late 1990s, a mathematician Mark Krasnoselsky, a man of my father's age, visited Israel. Once I accompanied him to his home from the university. Before we parted he said, "You know, I am so impressed with your freedom and lack of inhibition. This is amazing, and I am so happy to see these qualities in you". I then remembered Uri. The metamorphosis was successful.

Let me go back to Uri's visit in 1970/71. After he left, my thoughts about emigration became more realistic. However, the problem of our residence in Chernogolovka remained. Besides, we had other, maybe even more serious barriers. A famous professor of physics Mark Azbel, who was my friend at that time, used to say, "Vitali, how can you even think about emigrating? They will never let you go. They will let me leave in five years, but they will never let you leave. What are you doing to your

family?” True, it was a huge problem, and I needed an impulse that would allow me to overcome this psychological barrier.

It came in the summer of 1972. Actually, there were even two such impulses. The first one was the murder of the Israeli sportsmen during the Munich Olympics, which was a complete shock to us. The second one was the introduction of the “education fee” for those who wanted to leave. The fee was enormous. I couldn’t imagine who may have so much money if he or she worked within the law (actually, many apparently had). Therefore, I reached a conclusion that there is an agreement between Jewish organizations and the Soviet authorities on “selling” Russian Jews. So, we immediately filed a request to emigrate.

Even this first step of filing a request was far from trivial. Among the documents that one was supposed to enclose to the request, there was a so called “certificate of character” from the place of work. In other words, you had to inform your employers that you were about to emigrate. This might lead to immediate sanctions. You could have been fired and left without means. Alternatively, they could simply refuse to provide you with a certificate and leave you without a document that was required to get an emigration permit.

I managed to avoid this (the Levich family, who was already well known among the refuseniks, helped me with that). I collected the rest of the documents and sent them as a registered mail to the Chairman of the Supreme Soviet of the USSR (I believe that at that time it was Nikolai Podgorny). Not many people dared to do this because officially you were supposed to file an emigration request according to your place of residence. Chernogolovka was located in Noginsk district and therefore the request needed to be filed in Noginsk. A month or two after I sent the letter to Podgorny, I was notified that I needed to come to a relevant government office in Noginsk. And so I did. A uniformed man with the rank of colonel received me in the office. He had my documents with him. He said, "You probably understand what I would do to you if it was up to me. But the Chairman, Comrade Podgorny, wants me to accept your documents. And that I will do". The formal stage of filing the request was behind me.

We spent the next 8-9 months waiting. This was a new period in our life. It was nothing like we were used to before or after. On the one hand, danger lay everywhere, in our every step. On the other hand, we were almost free people. We let ourselves behave in a way that we never did before. For example, I began wearing a golden Magen David pin on my

jacket (reminiscent of the Holocaust-time yellow badge). As was customary at that time, the institute where I worked organized a protest rally against me. Many people gathered in a huge hall. Among them were numerous personal friends. However, they did not come to support me. None of them dared to utter a single word in my defence. They simply wanted to see what would happen to me. I remember this heated and tense meeting, but not its details. However, the outcome was quite interesting. I felt that I won. Apparently, not only I felt that way, because it was the last such meeting in the institutes that belonged to the Academy of Sciences. I actually spared people who followed me this humiliation.

Another example: in our town there was a great theatre with hundreds of seats. I think that it could accommodate all town residents at the same time. And, of course, because of my case, a lecture about Israel and Zionism was scheduled to take place in the theatre. The idea was to criticize Israel in the harshest possible terms. No one expected me to come, but that was what I did. Before the lecture began I strolled around the lobby. The bosses who were also present there greeted me politely and reservedly, and I was unobtrusively shown to the guest lecturer. In other words, the “circus” suddenly was not exactly what they anticipated it to be. The lecture that followed was quite low-key

and did not contain any criticism. The lecturer received many hand-written questions, and since no one could be sure that I was not the one who wrote them, some of them were much more daring than one could expect (by the way, I didn't write any of them). I am sure that I scored another point on that day. In fact, there were other such points too, but I will continue with my story.

Of course, none of these things brought us any closer to the coveted emigration permit. In fact, one day we were summoned to the OVIR (a government agency in charge of emigration permits) and were told that we were banned from emigrating for life. We were in shock, although we did expect it. There were Jews who waited all the time in the building lobby and got constant updates about what was going on and sent this information to the West. We told them that we got a refusal, and on that evening a word was supposed to be sent to the West: the Milmans are now refuseniks.

Luda and I headed back to Chernogolovka. First we took an underground train, then a bus. The bus ride lasted for 45 minutes. These 45 minutes were the most important time, because while we rode home I understood what we needed to do to achieve our goal. The first thing that I did when we arrived home was to call Moscow and ask not to notify anyone in the

West that we got a refusal because now it could actually harm our cause.

What I understood during the bus ride was that in the extremely bureaucratic Soviet society, any information was transmitted from one organization to another using a special form. Therefore, there must be a form that my institute needed to fill out and send to the OVIR in reply to their query as to whether I used my security clearance. All of us in the institute had high level security clearance, but any instance of its actual use was recorded. So the main question now was what the code of this form was.

And here I had an unbelievable luck (not for the first time in my life). On the bus that we took back to Chernogolovka I saw the man who headed the relevant department (the so called "Department No. 1") of another institute (the second largest institute in our town). This institute was headed by an Armenian, Yuri Osipyan (he was actually half-Jewish and we knew that). Head of Department No. 1 in this institute was also an Armenian. I knew him personally and thought that he was a nice guy. The significance of him being an Armenian was in that Armenians were quite sympathetic to the Jewish emigration from Soviet Union. The bus was almost empty: not many people travelled in the middle of the day. The man sat in the back of the bus. I left

Luda and took a seat in the back near him. There was no one there except for the two of us. I tried to look as innocent as I could, as someone who is simply bored and just wants to make conversation, and asked him if there was a special form about the use of the security clearance. The man grinned and replied, “I know why you ask this. There is such a form and I will give you its code. Moreover, if you ask for it they will have to oblige and give it to you. But if sometime somewhere you will say that I told you that, I will destroy you”.

That was it! Now I had a mighty weapon. We came back home and I waited for a couple of days so that it would be impossible to connect the request with the bus ride. Then I came to Department No. 1 in our institute and innocuously asked to give me the document with such and such code. There was confusion. The man with whom I spoke asked me to wait and ran to his boss. Everyone knew who I was. My family was the only family in our town that filed a request to emigrate to Israel. After some time the man came back and said in an exquisitely polite manner: “We got a request for this form from the OVIR, and we sent them a reply. Please do not ask us for the form again, but we will notify you when we sent a reply and what we wrote in it”. It was enough for me. It was a complete victory, at least in the current round.

The reply of course stated that I had never used my security clearance. It could not be otherwise, because if they let me use the security clearance that meant that they failed to detect an enemy and failed their duty. Therefore, they wrote that I never used the security clearance. Of course, I might have used it at some point; frankly, I don't remember.

Now it was possible to appeal the refusal. Maybe after a month or two I was summoned for the review of my appeal. The man in charge was the head of the OVIR for Moscow region, a two-star general. Once again, I was incredibly lucky. My good friend, a physics professor Moshe Gitterman was called there for the same hour (later, he was able to leave for Israel and was a professor at the Bar-Ilan University). He arrived at the OVIR earlier than I and entered the general's office before me.

The door to the office was ajar and the shouting and general commotion reached the corridor. The general kept telling him that he had a security clearance and therefore was not allowed to leave the country. Gitterman shouted back that he was never privy to any state secrets. After some time he left and I went in. I was very calm and commiserated with the general about the previous visitor's behaviour. The general almost felt that I was on his side and calmed down. "So, what do you need?" he asked me. I explained to him my business and he saw

that it was the same as Gitterman's. The general once again became quite nervous and said that it was not possible to let me go if I had a security clearance. I immediately agreed: of course, it is not possible to let me go, if in fact (I took a pause) I ever used it. But, on day such and such, my institute sent you form number such and such that clearly states that I never used my security clearance. The general was taken aback and began touching various files on his desk. "I don't see this letter here". It was obvious that he was nervous. This is ok, I said, you will surely find it later. The general's spirits rose, "Of course, of course. And you will surely get a permit, if you never used it" (it was clear that he still did not believe that such letter existed).

That was it! Now I could go home. I had now certain rights; I could demand things and have discussions. I thought that we still had a long way ahead of us, but I was wrong. After several months we received an emigration permit. I called the OVIR to find out about my brother, Pierre Milman, who independently filed his own emigration request around the same time, and got a nervous answer, "You can take him with you".

There were numerous other amusing adventures before we actually left the country, but I am not in the mood to recall all of them.

However, our very exit contained one element that I was unable to figure out, and I would like to tell about it here. We were in the airport with my parents who came to see us off. Two men, who in my understanding were KGB officers, checked all papers that I asked to take with me. Of course, as a scientist I had with me numerous printed copies of academic papers that were presented to me by the authors. It was a very common and natural thing in Russia. While my luggage was being inspected, these two men took me to a separate room with the suitcase that contained these printed copies. They were surprised to see the dedications on the papers and asked me who I was. Upon hearing my reply (a Doctor of Science from Chernogolovka), both said, “We don’t believe you, no way that you received an emigration permit”. One of them picked up a phone at the distant end of the room and called someone. Once again, I was lucky (really lucky, as it became apparent later). After a brief chat, he came back and told the second officer: “That’s enough”. We went back to the hall, where they continued inspecting Luda’s luggage. I was still quite worried. Some of the items that I took with me were not allowed, and I was afraid that they knew about them and were simply waiting. But the inspection was soon over and we proceeded to the 2nd floor that at that time housed the border control desks.

I handed my papers to a border control policeman. He looked at them and said, "They are not valid". I was horrified, but the man was actually right. An exit visa was in effect for 30 days after I signed that I received it. But I did not sign the papers on the day that I received them. We were supposed to pay 1,000 roubles as an exit fee. The amount equalled Luda's total annual salary, or my 6 month salary. We of course did not have this kind of money, and needed time to raise it. Therefore, I did not sign the papers and they let me come and sign them when I saw that I was able to raise the necessary funds. But I forgot! Suddenly, one of the KGB escorts, the one that spoke on the phone, came up to the border policeman and said to him, "Let them through". But the policeman refused. They represented two separate agencies.

When this happened we were in the entrance to a small corridor. There was a phone some 10 meters away from us. My KGB escort went over to the phone, called someone and then said to the border policeman, "Come over here and pick up the phone". The policeman closed the entrance and went to the phone. He listened for several seconds and then let us through.

That was it. We were out of Russia. Whom did the KGB officer call? Obviously, it was someone who was above both him and the border police. It remains a mystery. Later, I discussed

this with Israeli authorities. They came up with a theory about that, but it is another story altogether.

Afterword.

1. I already mentioned Prof. Osipyan, who was the director of one of Chernogolovka institutes during my time there. Later, he made a brilliant career and was Gorbachev's science adviser. Very soon after the establishment of diplomatic relations between Israel and Russia he came to Israel (probably, as an official guest of the government). We met in the university and had an amusing chat. He told me that only one year before he was able to open Chernogolovka to guests from abroad. Of course, a research center needs to welcome foreign colleagues, but Chernogolovka was a closed town. He laughed and said, "You, Vitali, were my best argument in favor of opening the town to foreigners during all these years. I would tell the bosses: Look, what kind of secrets do you think we still have if Milman has been in Israel for so long?" We both burst into laughter.
2. We were the first family to request to emigrate from this restricted closed city. Many eyes watched us then. I mean all those people who wanted to leave as well. Our success

inspired many of them. Numerous scientists from Chernogolovka eventually emigrated. The story of our struggle was well known, but I am still quite amazed how well in fact it was known. Many years later, in mid-1990s, a physicist from Moscow (who at that time, I believe, was already based in Mexico) came to visit us in Tel Aviv. I did not know him personally, but he was a friend of one of my closest friends, Vladimir Matsaev. We had lunch together and all the time I felt that he was looking at me very closely. During the lunch he was unable to contain himself any longer and said, "I am so glad to finally meet you – you were a legend to us in Russia". And he added many pleasant things. A similar story happened to me in 1990s in Columbus, Ohio, at my friend Vitali Bergelson's house. He had another guest for dinner, which also paid me various compliments and said that they used to talk about me in Russia. I am really quite embarrassed to repeat here what he said about me.

Miracles

(those things happened; I don't know which of them should be taken seriously).

I will begin with two amazing stories from my wife Luda's childhood

Ball Lightning

When Luda was 11 years old she lived in a small one-story house with her mother and an elder sister. Her other sisters and brothers already left home.

The house was n-shaped (it was quite long, but the roof was low). A tin rain gutter ran below the roof so that the rain water would fall from the roof to the ground in one spot. Once, during a hot night, her mother put folding beds in front of the windows in the courtyard inside the n-shape, and all of them went to sleep there. Suddenly, they saw a fire ball flying in their direction. Mother screamed: "Down everyone, lie on the ground", and the children did as she told them. The fire ball reached the house, "sat" on the gutter and began rolling along it between the edges of the roof. It rolled back and forth several times, and then jumped up and hit a huge oak tree that stood on the other side of the house, at the distance of about 5 meters. The oak split into two and burned in the spot where the lightning hit it. The gutter was left crumpled and had black burn holes all over it.

Many years later, when we already were married, our physicist friends asked me to write this story down. There are very few accounts of encountering ball lightning.



LUDA (1959)

My next story is quite mysterious.

A Gypsy's Prophecy

When Luda was 14 or 15 years old, a poor gypsy woman used to drop by Luda's mother's house. The kind woman gave her some food and they talked. One day, Luda's mother asked her to tell Luda's fortune. I don't know whether she actually meant it or was just joking. The gypsy woman refused. She explained that she did not actually know anything about it and always lied to her clients. But, she said, there was another woman in their camp who actually knew how to tell fortunes. She promised to bring her to Luda's house.

This woman told Luda various things that actually came true. For example, she told her that her husband's name would

begin with the letter “V” (of course, it may not actually mean anything, because Luda might specifically look for a husband with such a name). She also predicted that Luda would have three children. But the most amazing thing was that she told her that her husband would take her to Israel. At that time, Luda did not even know what Israel was. It was just one or two years after Stalin’s death. On the other hand, it is quite possible that this prophecy helped Luda to put herself together and help us immigrate to Israel when it actually became possible (15 years later). It was a very difficult decision.

The next two stories happened to me.

A Monastery in Spain

In 1976 I travelled to Europe for a series of academic conferences. There were two of us: my friend Mark Karpovsky and I. We had a joint presentation at the first conference, and two weeks later each of us was supposed to attend a different conference. We decided to rent a car and spend these two weeks travelling in Europe. Our journey began in the Netherlands, from where we headed to Spain via Paris.

At that time, Mark was still a new driver and wasn’t especially good at driving even automatic cars, let alone manual, and therefore I had to drive us all the time. We had to cover 500 and more km per day and I was very tired. Mark was in charge of our route and sightseeing plans. Once we were in Spain we visited a famous monastery (it lay on our route). Mark told me that the monastery was known for miracles that happen to people when they came

there. Make a wish, he said, and maybe it will come true. I did not believe in this nonsense, but my foot hurt very badly in the heel area and I had difficulty walking. So, as we were just entering the gates of the monastery, I made a wish that my heel stop hurting.

We spent several hours walking around the monastery. I remember that it was interesting, but can't recall anything that we saw there. When we were exiting the compound, I suddenly thought about my foot: it did not hurt at all! And it did not bother me for the rest of our journey!

IHES, 1984-1985

In October 1984 our entire family decamped to Paris, or actually to one of its suburbs, Bures-sur-Yvette. I was on a sabbatical in IHES, together with Jean Bourgain and Gilles Pisier, while Misha Gromov was a permanent fellow in the IHEC. It was very important to me that this year would be successful.

On the day of Yom Kippur, when according to the Jewish religion, one's fate is decided for the year to come, I stayed in bed for a long time and prayed for this year to be successful. It was very important to me and I was afraid that I would not be able to achieve anything. But what happened later during this year was beyond my wildest hopes and dreams. It was the most successful year of my life.

By the end of the year, a good friend of mine, a physicist, who was passing through Paris, called me. He asked me how I was doing. I replied that during the year I climbed not only one step higher than the step that I stood on before, but one step higher than the step that I dreamed of.

Below is one more story that may belong to the realm of miracles. It happened to me and Luda together.

But I must precede it with an introduction. I read somewhere a legend that God does not want people to witness miracles. Therefore, if a miracle happened before human eyes, God will turn it into a law of nature.

1,001 Buddhas Temple

My wife and I travelled to Kyoto. It is an amazing city with unbelievable art monuments. Among other sites, we visited the 1,001 Buddhas Temple.

Imagine a long hangar. It has three entrances: on its right side, in the middle and on its left side. The temple has 1,000 human-size Buddha statues, and one statue that is twice the human height. We entered the temple from the right side, and walked along rows of statues. Before the central entrance, there are several rows that together feature 500 human-size Buddhas.

In front of the central entrance, there is the huge Buddha that is twice the human size. On his left side, there are once again several rows of 500 smaller statues. We reached the Big Buddha. It is a wonderful statue that depicts him smiling. We continued walking past it without taking our eyes off the statue. Suddenly, a woman entered the temple through the central entrance. She was crying. She kneeled and began praying. It was quite clear that some unimaginable tragedy befell her. The woman was on our left side, so we had to bypass her. When we did so, we saw that Buddha was crying!

Just a minute before he was smiling! And now, there was a tear rolling down his cheek. My wife and I did not say a word to each other. We exchanged glances: we both felt goose bumps and shivered.

I thought: "This cannot happen. Someone behind the statue pours water into Buddha's eye when he sees that a sad visitor came". We ran down the hall along the rest of the statues to come from behind and look at the big statue. But it was quite clear that no one could do what I was assuming: there simply was not enough space inside the statue or near it.

We came back. I decided that I would not leave until I understood what was going on there. So we once more studied the Big Buddha. And then I realized something! This amazing statue that was placed on a small podium was smiling when you looked at it from the right side, had a serious look when you looked at it from the center, and was crying when you were on its left side.

It happened during the International Mathematical Congress. When we came back to the hotel we saw many good friends. All of them already visited the temple. I was busy with various things at the congress and visited famous museums later than they did. I told them what we saw. No one recalled the tear! Some of them were incredulous and went to the temple for the second time. When they came back they confirmed that they saw the tear.

I remembered the legend that I mentioned in the beginning of this story.

Vitali Milman, 30 years after.

We are in Japan

We came to Japan in the summer of 1990 to take part in a congress of mathematicians.

It so happened that we saw almost nothing there and did not have an opportunity to travel in the country because I was urgently summoned back to Israel. I needed to go to Moscow and Leningrad in Russia. During this time, the relations between the two countries were in the process of being restored, but the official diplomatic ties had not been renewed as yet. Actually, the official renewal of the diplomatic relations was announced just as we arrived in Moscow. So, Ludmila and I came back from Japan and after 12 hours flew to Moscow. We received our entrance visas late at night in Vienna. This an interesting story in itself.

But now I would like to write about Japan. I am coming back to our short stay in the country. I already told a story about the 1,001 Buddhas temple in the essay about miracles. Now I will add two more anecdotes.

A Blessing

My stay in Kyoto, where the congress took place, was extremely busy, and not just with mathematics. Numerous Soviet mathematicians that took part in the Congress wanted to talk to me about a possibility of their employment in Israel. Everyone felt that it was the right time to emigrate. At the same time, no one knew for how long this window of opportunity would exist, and everyone was in a hurry.

Therefore, we were able to see wonderful Kyoto monuments either very early in the morning, or very late at night.

And so, one early morning we went to see another monastery. I think it was the largest active monastery in the city and probably in the entire country. Several-story buildings stood there in rows, like in the housing projects that were built all over Soviet Union in 1960s. Actually, it was a residential compound and not a place for tourists. In a courtyard adjacent to a small temple there was a Japanese garden. It was obvious that the place was intended for prayers, and not for showing off wealth. I will explain now what a “Japanese garden” means: stones were arranged on a loose ground (or, maybe it was sand). The stones were in a variety of shapes and sizes and were supposed to depict various objects. I must confess that my imagination was not up to the task. However, I was already familiar with the Japanese “stone gardens”. We looked around and made for the exit. Actually, it was nothing to look at in this monastery.

We were walking towards the exit in a “real” garden, when a man passed us. He walked quite briskly. I thought that he was about 50-55 years old. When he was passing us, he stopped and asked: “How do you like MY temple?” He pronounced the word “my” in such a way that it became immediately clear that nobody there was above him! We thought that maybe he even was the top authority of his religion. “It is wonderful”, I answered. “Are you on a honeymoon?” he asked. “Not at all, we have grandchildren together”, I reacted. “But you look very happy”, continued the man. I found an immediate answer: “Everyone looks happy in your temple”. He looked surprised for a moment, and then smiled. He found a worthy adversary in this exchange. Then he asked seriously: “Have you been to my garden?” I

answered in the affirmative. “And how did you like my turtle?” I quickly visualized all stones in the garden, but was unable to decide which one of them looked like a turtle. I think that the man did not understand my hesitation and thought that I did not really like it. He said: “Yes, it still needs some improvement. But we are working on it for 400 years. It is almost ready”. I succeeded not to look surprised and just agreed. The man then parted with us by saying, “I bless you in your travels in MY country”. Once again, the word “my” was uttered in such a way that it left no doubt that the country was indeed his country.

(By the way, yes, 400 years, not 40)

A (knighting?) ceremony

On our way back we spent a day and a half in Tokyo. We were allowed to send our luggage home directly from the airport and travelled to the hotel. Our flight was scheduled late at night on the next day, and we had an entire day in Tokyo. Of course, we wanted to spend it seeing art, primarily works by Hokusai. In the hotel we made sure that the museum was open and headed to the opposite end of the city.

But, unfortunately (or, maybe, fortunately) the museum had a monthly cleaning day and was closed. We were quite upset and decided to take a walk in a large park that was adjacent to the museum. And there we witnessed a ceremony that looked very important. Maybe, it was a ceremony where they conferred samurai titles or something similar. The ceremony took place in the open air. We were not peeping, but there were very few spectators. At the entrance to some structure there were several men wearing something that looked like traditional Japanese

clothes, who faced us. 30-40 meters away from them, there was a row of 40-45 people who stood with their backs to us. They were half bent and looked almost dejected. The MC gave a brief speech, and then the last man in the row approached him. The MC said something, put an object (maybe, it was a sword?) on the man's shoulder, and the man straightened up. He now held his head high and there was no trace of any weakness or dejected look. This new proud man would then join another row that was forming in front of our eyes, roughly at the same distance where the MC stood. The new forming row faced us, and the people there looked completely different than before. Such a metamorphosis was amazing. We were so fascinated with this complete change that we could not leave the place.

(I apologize for a sketchy description of the ceremony. We were amazed with the metamorphosis that happened to these men and that is what we remember from it).

Events and Observations (With political coloring)

EGYPT - ISRAEL relations.

Many years ago, I think for more than 30 years, a friend of mine and a wonderful mathematician Misha Shubin visited Israel. He had been working in Boston for a long time and was a guest at the Weizmann Institute in Israel for several months. At the end of this period, he visited Egypt and flew straight home from there

to Boston with a plane change in Israel. One of his former students in Boston was an Egyptian who returned to Egypt and was at that time a professor of mathematics (I leave his place of work anonymous because Misha was very afraid to harm him). I am going to tell now that Misha was so struck that when he was at the airport for a transfer from Egypt to Boston, he called me to tell this. Perhaps later he published this story. But then he was afraid to do it.

So, Misha stopped for a few days in the house of his Egyptian friend (I will call him, for definiteness, Nasser). Nasser was already married and had 2 children who attended school with tuition in English. Nasser was going to visit America with them. Nasser's wife asked Misha how he flew to Egypt, and he replied:

“through Israel, I flew through Tel Aviv“. She was extremely surprised, even shocked. “But such a country does not exist!” she said. And then a discussion began about whether Israel exists. Misha explained to me that nothing worked, it was impossible to prove. In school books on geography there was not a single word, not a single hint of Israel. For example, Misha tried to find what is written in school textbooks about the “October War”, as the war Yom Kipur is called in Egypt (October 1973).

The school textbook said that Egypt was attacked by an aggressor who was destroyed in a heroic victory over him. (I was already in Israel at that time and I remember well the air raid siren at 1:50 a.m., from which the war began with Egypt's attack on Israel). And not a single word in the textbook was about peace with Israel (or with anyone else, as they would call the “aggressor”). Misha did not succeed; she still did not believe in our existence.

This story has confirmation, as well as one interesting continuation.

In 1999, I had to dine with the US Ambassador to Israel. The number of guests in his house was small, somewhere around 15-20. We sat almost close by, through one person, so the conversation was varied and very personal. Many interesting things have been discussed, but my interest in this story is about Egypt.

This ambassador to Israel arrived directly from Egypt and before us was the US ambassador to Egypt. So naturally I told him this story. His reaction was: "Yes, I know, and I wrote it to our State department a few times. They answered me - "Don't react, ignore ". There is no mentioning Israel on any Egypt map."

So, the story was confirmed at the highest level. I understand that such a story does not look possible in the days of the Internet and television. But do not be naive, everything in such countries is under control.

The facts of the past - they are facts!

And now an interesting continuation.

A few years ago, the People's Revolution changed Egypt. I mean the days when Egyptian President Mubarak was overthrown and left his office. Muslim brothers came to power in Egypt. In the early days of this Revolution, millions of people filled the squares and streets of Cairo. They burned various things including the flags of the United States, but NOT the flag of Israel! The coverage of this fact by Israeli commentators was anecdotal: "They don't hate us anymore, they don't burn our flag!" I apologize, ignorant people. They simply did not know that we exist. (Later they already burned our flags).

At the beginning, you journalists did not tell us the truth about the Egyptians' relationship with us, because you dreamed of peace and wanted to talk well about the Peace Agreement with Egypt. And after several generations, you, journalists, no longer

understood the facts, obvious facts and interpreted them incorrectly. You ignored the past, and therefore did not understand the present.

The facts of the past must be known - they are facts!

March 16, 2020

Comments. About 20-25 years after arriving in Israel, during one very heated political discussion, I suddenly realized that we did not agree on the facts. But this is our past, and we must know it. However, most so-called politics is our ignorance! People are ignorant; they do not know the facts. I once heard a wonderful aphorism: “the future is known; we do not know the past.”

Learn the facts!

But how can we, ordinary normal people and non-politicians, know relatively recent facts if journalists do not publish them and do not remind us of them, if they do not correspond to their own point of view, their dreams of the future, which often have nothing in common with a realistic future? Journalists, media, are obliged to study the facts and publish them!

A little bit about our people.

(Three facts about us)

1. I am a man of right-wing views in understanding Israeli reality. Although in other situations I considered himself a liberal. In America, I would be a conservative. But there are people whom I just don't know where to place them politically.

About 2 years after arriving in Israel, I was invited to talk on the radio, which was supposed to be played on the Rosh Hashanah

(Jewish New Year) holiday. In an discussion attended by only 3 people, including me, and it lasted a long time, almost an hour.

One of the guests was a very famous rabbi in Israel, Shmuel Avidor Hacoheh. He was a liberal and even allowed to hold his sermons on Friday night (but of course they were recorded before Friday). The conversation was boring and uninteresting, and I do not remember anything from it. However, something that this rabbi was saying aroused my surprise and misunderstanding. Of course, my Hebrew was not yet good enough. Going out into the street, I told him: "it's not always possible to be a light unto the nations (that is, light for non-Jews). Sometimes you need to protect yourself, protect your children, your family. For example, the Nazis killed a third of our people, a third of all Jewish children." He replied: "if we cannot be the light for the gentiles, then let us all be killed. It's better for everyone to die."

I did not answer, I did not want to answer. All my life, looking at my children and grandchildren, I remember this third. I turned and went in the opposite direction.

Which political wing should this rabbi belong to?

I am sure he is not alone, there are many such people. Of course, they do not say it so openly and in such a language. But I remind you that the head was given to us to explain what our stomach wants (and also hide what it wants).

2. And here is another "fact" on the same topic. What I will tell about now, I did not find in the documents myself, but I was informed by two different people, each of whom I trust very much. (Therefore, since I did not see these documents, I put the word fact in "...").

What percentage of Jews voted for Hitler at 32 and 33? You will not find this data on Google. Why? It's inconvenient to even

pronounce it. Hitler wrote Mein Kampf 10 years earlier, everything was known, but more than a third of all Jews voted for Hitler! (The exact numbers as they told me were 36% and 38%.) He won election not by a large margin of votes, and these Jewish votes helped him.

We'll never know, what the Jews thought, when they were being led away to death. In the nineties, the exact same one-third of the Jews, our Israelis voted for Arafat's arrival in Israel with his entire army.

3. The previous story reminded me of one episode from the first intifada.

In fact, before the beginning, just before the beginning of this first intifada. I came across it quite by accident 10 years later. Nobody talked about it at the time when it happened. About 10 years later, there was a conversation on television with one guy about his fate. And he said that he was in a group of soldiers who discovered two killed Israelis, young Israelis, a man and a woman, near the Cremisan monastery. It was a very good monastery, which produced wonderful wine, and my wife and I bought it there. It was a famous murder. I remembered about him.

But this guy said that the young people who were shot were lying with documents in their hands that they were members of the organization Shalom Now. It was at that time an organization that supported the Palestinians more than any other, it was an absolutely pro-Palestinian Jewish organization. Today there are even more pro-Palestinian organizations, but then there was none. They, this young couple, showed these documents to their murderers, apparently in order to explain that they support them, the Arabs, they are their friends. But nothing helped.

Remember this. Facts are facts, they need to be known.

Justice and judicial system

I want to tell a story that will show that we sometimes do not understand at all what it, our judicial system, means.

Once I had to be a judge. It was the internal court of the party to which I belonged then, Thiya. There were three of us, the chairman was a real, professional judge. I was still young, it was somewhere in the mid-eighties, and this judge was already not at all young and a very nice person.

He gave me a lecture on how to be a judge. "Forget everything you know; only what the witnesses say is your knowledge during the trial. For example, you just entered a room from a bright street, because it's day time. A witness comes after you. You ask how on the street? and he replies: "It's dark," and you record that the witness came from a dark street, now this is your knowledge."

I remember this for my whole life. We are now undergoing trials of ministers and the prime minister. And when lawyers and judges discuss these processes, I feel and see that they are not talking about justice and facts, but only about testimonies without analyzing their conformity to life around. People around do not understand what they are talking about, because the logic of the so-called judges is unknown to them, but if they were known, they would be amazed, and everything would become incomprehensible. Because you can't understand that it can be light outside when the judge reads that it was dark.

Stories "with wine".

How we drank wine costing many hundreds, or maybe a thousand dollars.

Half a year after our emigration to Israel, in the winter of 73/74, a large delegation from San Diego and his mayor came to Israel. They brought a lot of different gifts for different levels of objects and people. For example, some rare animal as a gift to the Tel Aviv Zoo (which later turned into a Ramat Gan safari). For reasons unknown to me, they decided to see a new emigrant from the Soviet Union and selected me. I joked that they chose to see a new, rare animal. I was ordered by the university, where I was already a professor, to wait for a delegation for lunch at exactly 12 in our VIP. I've come. Tables were set for 20-30 people. They were almost not late and the crowd entered after 5 minutes. The mayor saw me, the only one in the hall, walked over, shook his hand, and sat next to me. He handed me a bottle of white wine as a present. Fools are lucky, but I still did not know that I was a fool. I, an emigrant from Russia, flickered the thought of why he is giving me wine, which I can buy at a supermarket nearby. But the mayor was a good politician. He immediately felt my reaction, leaned towards me and quietly said: "we brought only two such bottles, and the second for the President of Israel." I still did not understand, the fool, but I was already smart enough to show my incredible joy and amazement. Then something was said a little bit, but the mayor understood how little I understand English, and after eating about fifteen minutes, they got up, offered me to eat whatever left, saying goodbye very warmly.

I was no longer so hungry to eat up for 30 people. Nevertheless, six months have already passed since arriving from Russia.

Arriving home, we laughed with my wife and put the bottle in the refrigerator, forgetting about it. But in the evening, three of our friends came to us, the most magnificent violinist Dora Schwarzberg with her husband and another new emigrant,

biologist. We lived in the hostel for the new arrivals, and they lived in the same type of hostel in Jerusalem and on business came to Tel Aviv. We did not expect them. "Great," I cried out, "we just received a present a bottle of wine." And we opened the bottle. A bouquet of absolutely fantastic smell spread across the room. Luda and I still remember it 47 years later. Now I understood everything, and of course immediately became wiser (I already said that fools are lucky). We poured small glasses for all five of us. However, we already refused to add what was left in the bottle and left it to us for later. The taste matched the smell. He must not be forgotten. We kept an empty bottle for a long time, to someday find out what kind of wine it was and how much it could cost. But two years later we moved to our first apartment and it was lost.

Years passed and we became very well acquainted with Bill Johnson. He is considered a great wine specialist in our circles. I told him about this wine, and his reaction was that it was one of special selection wine that San Diego is famous for, and it could cost up to \$ 1,000 or more.

So, sometimes it's good to be a fool. Would be it known to me, I would never dare to open it, and I would not know what the smell and taste of this miracle could be.

But the story of this wine does not end there. Many years later, I found out that one of the mathematicians of the Technion was the son of our President at that time. He changed his last name, and therefore I did not know this. But upon learning this, I immediately turned to him with a request to find out the name of this wine from my father. The answer was sad. The former president of Israel sometimes did not even recognize his son.

Many more years have passed. In Cleveland, one of my friends and co-authors, Stanislav Szarek, is a Pole by birth, but a professor in Cleveland for decades. We call him Stachek. His

second wife Margaret-Mary comes from a very wealthy family, and also a professor, but linguistics. I knew her many years before the story that I will tell now. Precisely because she was very rich, I wanted to know if she had tasted the wine of the level that Luda and I drank, and I told her this story with the mayor of San Diego. She perked up and asked what year it was. I replied. "I knew this mayor very well," said Margaret-Mary. "My dad was his personal lawyer, and often flew to him from New York to San Diego. He sometimes took me with him, and I sat on his lap. I was still very young." "Then connect me with him, ask what wine he gave me," I asked, terribly pleased. "Late," said Margaret-Mary, "He died a few months ago." (no luck, no luck; but maybe I got smarter?).

This is almost the end of the story, but not quite a bit yet.

In 2002, we spent 2 months of Shabaton in Wellington, New Zealand at the invitation of Vladimir Pestov.

Of course, we traveled a bit, and drove along the South Island. We had a very difficult day, and we spent the night somewhere in a very deserted place. Nothing but a hotel with a restaurant. At dinner, Luda decided to take a glass of white wine, but I didn't even want this from fatigue. Luda tasted the wine and, amazed, said, "smell it and try it." The aroma was close to that miracle of white wine that I wrote about. and the taste was wonderful too. Of course I took a glass for me, too, and we wrote down the name: "Ata Rangi Sauvignon Blanc Martinborough". Briefly Ata Rangi, which means "morning sky". (By the way, the dinner matched the wine and was wonderful too)

Returning to Wellington, we immediately went to the liquor store to buy this wine. It was plentiful and cheap, especially compared to its incredible quality. We talked about it to all the members of the department that we met. Upon returning to Israel, I really wanted to go to New Zealand again, and not to a small extent,

to drink this wine again. And two years later we went. I organized there a joint conference New Zealand - Israel Mathematical Societies. By the way, it was very successful, and a lot of Israeli mathematicians went there. However, "our" wine was not in any Wellington store. They explained to us that Winery, which produces it, is very small, and recently this wine was bought up.

One young member of the department (and a former student of Pestov) decided to take us to the wine production center, the town of Martinborough. It is about 250 km from Wellington. He explained that they feel guilty. I introduced them to this wine, and they buy it, but I no longer get it. And we went to Martinborough. On the main street there was a huge wine sale center from all the Wineries of the area. But our wine was not there either. We were offered something "like" it, but not it. Then we went to this little Winery. It was already close. Behind its gates was a tiny kiosk with all the wines that were produced here. Everything was there except, you guessed it, Ata Rangi. We were suggested to drive up, already inside Winery, to the production site of Ata Rangi. And we drove up. There was not a single person inside. On the table was one sealed bottle of Ata Rangi. At least we could already see it. We began to call someone, walked around. Finally, after a long time, one man approached. We explained to him that we came to buy this wine on purpose. "We do not sell it here" - was the answer - "but you can open and drink this bottle. We only allow to try it here." Of course, we did it, but left home without wine.

So, share too positive knowledge carefully. It may not be enough for you later.

**How a seller did not want to sell me a
bottle of a very good wine.**

In the early eighties I was on a scientific visit to Paris. This was by no means the first time. I was alone and already had some money to bring my wife a bottle of very good wine. She understands this and loves good wine. Since I still did not completely understand and distinguish the names of the wines, I asked my friend Gilles Pisier to help me choose the right bottle. We went with him to a special store on Monge where he was known. I do not speak or understand French. However, I realized that some strange conversation was taking place between the seller and Gilles. In doing so, Gilles laughed. When we finally got the bottle and went out, I asked Gilles what was going on. Gilles explained, laughing, that the seller did not want to sell me good wine. "He doesn't understand anything in wines; I'm sorry to spend such a good bottle on him." And then the seller asked Gilles to explain to me how to drink good wine. Let it stand a couple of days after arrival, so that the wine would "quiet". And when it would be opened, be sure to let it stand open for an hour, or maybe two. So that it will "breathe".

The seller loved his job very much, and did not want to sell good wine to the ignorant. As a result ignoramus also learned something.

Chinon.

Once, on a very stuffy evening, the three of us had lunch, Gilles Pisier, Michel Talagrand and I. Gilles ordered red wine, which was brought to us with ice. It surprised me. By that time I already knew that red wine should be warm rather than cold. But Gilles explained that this particular red wine should be drunk cold and served with ice. The evening was too hot and this wine is just right. So I became acquainted with the wine Chinon of the Valley of Loire.

A few years later I spent a semester in Berkeley. Having once arrived at a restaurant with someone and trying to find a suitable

wine, I noticed Chinon on the list. All the wines were terribly expensive, and I did not know them. And suddenly a familiar wine and surprisingly cheap. The Americans did not know the Loire wine under the name Chinon, and therefore it was worth it accordingly. They brought a bottle of Chinon, of course warm. I asked to bring ice and put it in ice. "Red wines should be drunk warm," the waiter began to explain. "Not this," I replied. He was surprised at my ignorance, but he brought ice. A couple of weeks have passed. and again with someone I was in this restaurant. I ordered Chinon again. The waiter was different, but the wine was brought with ice! Learned. After a couple of weeks, I again brought some guest there too. (I was in charge of the program, and therefore often had to invite new guests to dinner). Everything repeated, but the wine was already much more expensive, more than doubled. They learned this too. (Again, do not demonstrate excess knowledge. You will have to pay for it).

Dinner at IAS (Princeton).

We have been to Princeton, IAS many times. The institute has a very good dining-restaurant. It serves lunch daily, and you can also have breakfast (which I, however, never had). But besides this, it worked as a restaurant for dinner twice a week. The cooks there are always wonderful. The restaurant does not work for profit, and in order to arrive in the evening, you must make an appointment in advance. The chef understood very well in French wines. They were bought in large quantities in advance, and were well and properly stored. Over the years, wine prices did not rise, and we checked that some wines that could be bought in stores cost more there than in a restaurant. However, not everyone could come to this restaurant, only guests (visitors) of long periods, or invited by them (paid not in cash, but on their card at the institute).

This was preparatory information. And now our story with wines.

In 2008, Luda and I visited Princeton. Jean Bourgain invited Luda and me to dinner at the institute's restaurant. That year I received a big prize in Israel and we agreed with Luda that I could spend up to 5% of this prize on pure (and even irrational) pleasure. My dream was to try red wine of the same quality that we once tasted white wine. I was ready to spend more than \$1,000 on such a bottle. (So up to 5% was still very far). Jean understood in wines and loved good wines. So I asked him to choose something very good (at my expense). But the restaurant did not have more expensive than 200 - 300 dollars. Jean believed that it should have cost two to three times more expensive outside the institute. They just bought it at the institute 20-30 years ago, or maybe earlier, and continue to sell it at the same price. (Yes, and which of the professors will be able to spend such money on wine ?). I have to say that it was really a leap in taste. We have never drunk such red wine before. Unfortunately, I can't restore its name. However, something else happened. We spoke with Luda in Russian. And the woman serving us turned out to be from Russia, and was happy to speak Russian with us. She was the chef's wife, and, breaking the rules, received permission from him to sell us two take-out bottles of wine, of another, but of the same quality. We drank it with Jean later at our house in Princeton.

Afterword. I once visited a restaurant in New York, where they gave a book of wines to the menu. For each wine name there were about two pages of different types of this wine. Only one or two of them cost around \$ 200, and the rest are between \$ 1,000 and \$ 20,000. So what taste does the best red wines taste, I can't imagine even close. But we still tried the intermediate layer.

How the Israeli Army drank (nostalgia).

The Miluim I am going to describe happened in 1981. Miluim is an Israeli concept for our military service, when we are called for short periods. Usually for exercises. That time we left for two - two and a half days in the Jordanian valley. I was the driver of the commandcar of the commander of our company. At that time there was still no modern Highway, and the road from Tel Aviv to Jerusalem passed near Latrun Monastery. The commander ordered everyone to continue to drive, but me turn into Latrun. It was a monastery of the Silence (under the control of the French church), and was well known because of the very good wine that they produced. But there was also cognac and other drinks. I stopped the car at the entrance, and the commander with two officers went inside, leaving me outside to guard the car. "Let's buy a drink," he said, "in the open air at night" (I thought it was great!). After some time, they returned with one bottle wrapped in paper. (One of us four? - I thought. Maybe cognac?). We arrived at the place of spending the night, lit a small fire and made a blanket. A few more officers approached. I think we were already 8-10 people. They opened the bottle. It was a white wine. (Interesting, I thought, one bottle at all). Spilled to all. There is still a bit left in the bottle (very interesting !, I thought). The bottle with the rest of the wine was put on a blanket on the ground, open (it could fall and the wine would spill! I thought scared). We drank, ate and went the usual conversations of slightly drunk people (from what drunk ?!). I eagerly looked at the rest of the wine in the bottle. The weather and atmosphere were very consistent with wine, but curiosity about how this would end was stronger than the desire to finish it. As a result, the bottle really fell, the remains spilled, and no one noticed. So, this how the Israeli army drank in the 80s.

Short afterword: everything changed after the nineties, after the arrival of the millionth Russian emigrants.

However, I would like to tell more about this miluim, already without wine. For two and a half days I was awake; I was driving all the time. Of course, sometimes they stood, for 15 - 30 minutes. So it was possible to leave for a couple of minutes. And then we drove back through Jerusalem to Tel Aviv. When driving through the mountains, I felt that the car was somehow wobbling too much. I asked the commander, I am driving at a speed of only 60-80, and the car is not stable. He laughed: "it's miles, Vitali" (that is, 100 - 130 km). Good endurance, he knew, but was silent. He also wanted to come home sooner.

Short afterword: Subsequently, when I overtake military vehicles on the roads, I try to do this as quickly as possible; You can't know how many hours the driver of that vehicle didn't sleep.
JUNE, 2020

Unusual and rare natural phenomena

that I had chance to observe.

Perseid Meteor Shower

I spent my school years in Odessa. In the summer we always went to the dacha, to the twelfth station of the Big Fountain. From the sea was, I think, around five hundred meters. In the evenings it was completely dark, and it was a pleasure to watch the night sky. And when any heavenly events were expected, it was possible to come to the sea. And then a huge endless space of dark starry sky opened up to the horizon. I often observed meteor showers there. Especially on the night of August 12-13, the Perseid meteor shower. I read that the first mention of this meteor shower dates back to 36 AD. However, the official discoverer recorded the Belgian meteorologist Adolf Kettle. He

reported about it in August 1835. The intensity of it that I observed was extreme. All the time, luminous stripes cut through the sky. But one meteorite fall I cannot forget. It happened over the sea. At the beginning, an ordinary but bright trace. And then it seemed to stumble upon a wall, and began to fall vertically down irregularly. It was a bit like a flat stone jumping when we flatly throw it at a quiet sea. The stone bounces several times, hitting the water before plunging forever. That's how the meteorite fell about until it went out, not reaching the water or horizon.

St. Elmo's Lights (St. Elmo's fire).

Once I was traveling by train from Moscow to Baku. The temperature difference in Moscow and Baku was huge. In Baku it was +20, and in Moscow I remember lower than -10. Somewhere in Ukraine was the line after which the weather changed. The Incredible Thunderstorm was around. Lightning flashed without ceasing. We drove through the fields, and everywhere poles, sticks or fences stuck out. And every thing sticking out of the earth shone. "Fire" came out of its end. I understand that it emitted an electric charge, electrons emitted. And the light sparkled. From Wikipedia:

"such lights arise at large [tensions electric field](#) in [atmosphere](#). They form at times when [the electric field](#) in the atmosphere near the tip reaches a value of the order of 500 V / m and above, which most often happens during [thunderstorms](#)." I have seen this phenomenon the only time in my life.

Comet West, 1976



This is a miracle of nature I have personally observed. As often happened, I was lucky with a miluim. I remind you that miluim is a draft in the army in Israel for a short time, usually for training. At that time, I was called to be a driver during exercises in the Negev desert. So, for several nights I did not sleep, but I drove a car or sat next to it. I did not know that a comet is visible in the sky of Israel before the morning. As my friend the astronomer, Prof. Elia Leibowitz explained to me, a few years before that, they, astronomers, had a lot of problems. Some expected comet was propagated in all programs and newspapers, and when it appeared it was visible only through telescopes. So before the appearance of this comet, everyone was silent. Also, they noticed it in 1975 for the first time. Its period of revolution around the Sun is estimated at several hundred thousand years. But it turned out to be the brightest comet of this year and many years around. I did not expect to see anything and suddenly, in the morning I saw a comet, a real miracle. It began to be visible before dawn, and disappeared when it became very light. I read that its brightness was so great that sometimes it was seen in daylight. The name of this comet is Comet West (1976), and sometimes they attribute it to the year 1975. Astronomers saw

it already this year. By the way, the word Comet is ancient Greek and means “hairy, shaggy.”



As you can see, it has a very bent tail and bifurcated, even a little “tattered”. That is, three tails; one is thick and large, well-visible but smaller departs from it, and then a tiny third. It was very clear in the sky, but not so clear in the photographs. And maybe the photos were taken at another time. I took them from the Internet (thanks to the Internet).

Total Solar Eclipse (2017)

We were fortunate to observe a Total Solar Eclipse on August 21, 2017. It was in Columbia-Missouri. I just had a lecture at the math department. The talk was on August 22nd, and it was the Colloquium of the Department. Of course, this was not an accident. I have agreed on this for a year already.



We were in a hotel in the city center, but did not think that it was significant. In fact, it was slightly significant. When the sun went down, the city turned on the night lights (isn't it funny? The city was full of tourists who came to watch the total eclipse. On this day its population tripled, and they turned on city lights, and these 2.5 minutes of eclipse were not dark. As soon as the eclipse was over, the city lighting was turned off by the authorities). So it was not dark. But I don't think it influenced us, because I was completely at a loss, clutching at different photo devices to take pictures. Some of them refused to photograph because of the darkness, But others took photographs. In the photo above, you see my photo with a very rarely observed effect: three reddish dots. None of my friends who have watched Eclipse and photographed it have this effect. For a long time I did not know what it was, and thought it was the prominences of the sun (Solar prominence). Of course, if there was only one reddish point, then it would be the sun close to this edge of the moon. But three points, torn apart, not connected, cannot be the Sun. Only when I sent this photo to my friend, professor of mathematics Hermann Koenig, did he explain everything to me. He is very interested in astronomy, and knows more about it than some astronomers with whom I discussed this. It turned out that red pearls at the beginning or at the end of a total eclipse are

called Bailey beads by the name of an English astronomer in the 19th century who first observed them. (At first he was a businessman, and after becoming rich, he turned to astronomy.) He explained their origin.



On the moon there are deep and very long breaks, going kilometers canyons. The red dots in my photo indicate the sun's rays entering this Canyon, when for us the sun is still beyond the horizon. In another photo just above, we already see the Sun's rays as bright white spots that also pass through similar canyons, and the whole Sun is still covered by the Moon. I borrowed these two above photos from american astronomer at NASA, Fred Espenak. He made them during a total solar eclipse on March 29, 2006 (see Mr. eclipse.com). In his photograph on the left we also see prominences, and the photograph on the right gives a picture of the sun crown in 2006. A very good photo of the eclipse crown on August 21, 2017, is below. I received it from my friend Hermann Koenig, who was observing this eclipse at another point.



From Hermann Koenig; August 21, 2017

glasses, we observed the disappearance of the Sun. At first there was a tiny sickle, which gradually turned into a small interval, which in turn decreased to a point. But all this time it was absolutely light. Even one point of the Sun was enough. Maybe like in the early evening. And I will describe my feelings before the start of a complete eclipse. In special suddenly this point closed, and the sky immediately turned black. I already explained that the city lit city lights, and therefore it was light on the street, unfortunately. Honestly, I was at a loss at that moment, and began to foolishly ask where the sun is, where the eclipse is. but it was above me, I just could not believe it, this is the Sun closed by the Moon. Then I grabbed the apparatus and began to feverishly take pictures. Some did not want to, it was dark for them. It was only 2,5 minutes, too little to think, and to enjoy the visible. I want to see all this again, and not take pictures, just watch.

Northern Lights (Aurora)



I don't think we need to talk a lot about the Northern Lights. They need to be shown. But I'll say a little bit. The main color of the radiance is green, and this, I think, is well known. It happens red. I have not read it can be blue. But once it seemed to be on that cruise to the North of Norway in March, 2019, on which we saw the Northern Lights. It just flashed for me. But one person who photographed it, showed me this blue light. We had

lunch when this radiance began, and we did not have time to run out onto the deck to see it when it was strong.

In fact, the color in the photographs is stronger than in life. The fact is that even very bright auroras are actually very weak. Just in absolute darkness, they really sparkle. In order to photograph them, the shutter speed is taken long, and therefore a lot of photons get on the film (or in the computer), and this enhances the color. And our eye perceives each photon individually.

But there is a more serious problem than amplification of light. Look at the photo, which also has a red color. This picture was written out before our eyes. It was as if a pencil were walking through the sky and drawing it. And the pencil was sharp and clear. Some hieroglyph was painted in the sky. It was more than

amazing. And in the photo you see a blurry picture, not clear and crisp. You do not feel the letter, the character. This happens for the same reason, slow shutter speed. The air fluctuates slightly and blurs the pattern. It helps me to remember how it was, but for you, who see only a photograph, the feeling is wrong. But still remarkably beautiful.

White mushroom record holder.



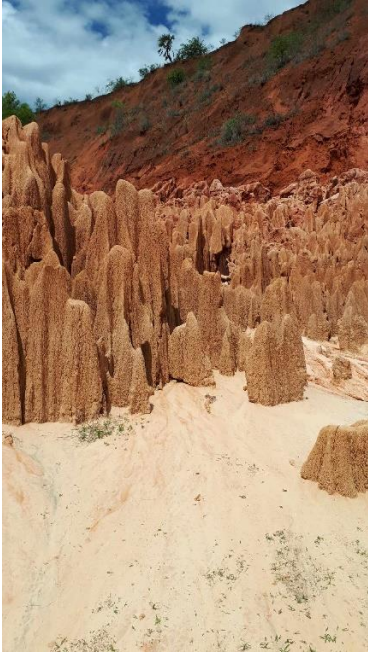
Here is such an incredible white mushroom we saw in Australia. We drove from Canberra to the ocean. We were driven by car by our Israeli-Australian friend, Shahar Mendelson. In the beginning, along the highway about 100 kilometers towards Sydney, and then on a small road turned to the sea. And at full speed of the car, I noticed something, and I thought it was a mushroom sculpture. But we stopped and returned to look at it. And it turned out to be a real mushroom. Comparing the sizes of him in the photograph with the sizes of Luda's legs, it should have been more than half a meter in diameter. We have never seen or heard anything like and close to this, that this can happen. If it would be three times smaller, we would cut it and take it home for lunch. But we decided not to touch this

miraculous judo. By the way, it was solid and very good. Nothing hurt him.

TSINGY of Madagascar

Tsingy is a completely unusual structure that exists only in Madagascar but in many places of Madagascar. Translated, this word means "impossible to pass." They represent a stone "forest", peaks of limestone sharp as a razor. There are two types of Tsingy, red and gray. We saw only the red Tsingy. It was an excursion from a cruise ship during a one-day stay in Madagascar. They were deep below the valley. It was so difficult to go down, walk between them and go upstairs (for me at my age 80), that at some minute I was not sure that I would return. It's hard to look at my photo after returning. I will not show it. But Tsingy will show. We are very pleased that we saw it.





Mauritius

We spent 5 days on the island of Mauritius (in the Indian Ocean, east of Madagascar). For relaxation, it was a place like in paradise, of course, if you know where to stay. As for unusual phenomena, there is also one and a half.

Firstly, it is a colored Earth. The place is called “7colors of the Earth”. And really, see for yourself



In a relatively small area, the Earth shimmers with a huge number of colors. It is very unusual. I have not heard of another such place.

I will add to this what I called a half. It's about huge loci. I think in diameter a lot more than a meter. They are located in the Botanical Garden in a place diametrically opposite the colored earth. It is claimed that they are the largest in the world. I don't know, but it's beautiful



Vitali Milman, June 2020

David Milman (1913 – 1982)

My father, and a great mathematician.



David Milman, portrait by Jan Rauchwerger

This essay is not a biography. This is a collection of stories and legends about my father. He was naïve, and he was in love with Math. As we shall see, these two of his qualities saved his life and determined it in the most difficult years of the Stalin's period.

David Milman's name is carved in history of mathematics through the Krein-Milman theorem (1939-1940), which is being a topic of study for Math students at the universities and is known to every mathematician-scientist. He started the branch of functional analysis that studies purely geometric properties of infinite-dimensional spaces. He himself or together with his co-authors introduced the concept of normal structures in connection with the study of fixed points in non-compact situations, the concept of an index of an operator in general normed spaces, first noticed that the isometric geometry of an

infinite-dimensional space can determine its global topological properties, and so on. One interesting story from my life shows how this was perceived in the 60s.

It was the year of 60/61, the year of my graduation from the university. Once, a university friend of mine told me: "My sister's husband is a mathematician, and when I asked him what he was doing, he replied that he was a "milmanist"." The meaning of this, of course, was that he continued and developed Milman's mathematics. The name of this mathematician was Misha (Michael) Kadets (the most famous Soviet mathematician involved in the geometry of normed spaces at that time).

I will further talk about David Milman's life and try not to touch Math.

David was born in a family of very religious Jews, in the Jewish village of Chechelnyk in the Vinnitsa region of Ukraine. His maternal grandfather was the famous rabbi of a large area. He was a descendant of the historical figure and rabbi known by pseudonym "SheLah Hakadosh", Rabbi Isaiah Halevi Horowitz, by Hebrew calendar 5318 (?) - 5390; (born in Prague, 1555 - Died, March 24, 1630, Safed, buried: tomb of Maimonides in Tiberias). Also known as The Sheloh.

This great-grandfather of ours, Rabbi, was a very famous and respected man in Chechelnyk. And very brave. My father's early childhood was a period of pogroms going all over Ukraine. My father told me how he remembers one pogrom. Still quite small, he was somewhere between 3 and 5 years old, he remembers himself with other people in the basement. Through a tiny window somewhere from above you can see a walking crowd, thugs. They lead his grandfather, this Rabbi. He himself went out to them to negotiate, how much the Jews of the town should pay to stop the pogrom. And they agreed. The pogrom was stopped.

When we emigrated to Israel in 1973, I and my brother Pierre (Petya), we visited our relatives, cousin Amnon, who were moshavniks (that is, farmers) and lived in Kfar Vitkin. A lot of families from Chechelnik lived there. And, so, many came to look at the great-grandchildren of that Rabbi, that is, at us.

My father stopped following religion at a very young age. He only remembered and told me that his grandfather, the Rabbi, told him during his bar mitzvah (traditional coming of age Jewish procedure for the 13 years old boys): “Remember, David, you are the twelfth generation from Rabbi The Sheloh.” Only, when we arrived to Israel, at a meeting with relatives, who lived here all their lives, did my father recall this and tell the children of his brother, Hilik Milman and Ami Milet. He did not know, who was that person, but my cousins, who were born in Israel, knew and found in the encyclopedia. So, we and they learned something new about our past. We visited Rabbi The Sheloh’s grave in Tiberias about 20 years later. It is in the park next to the grave of Rambam. There are several more graves of very famous people, but only on the grave of our ancestor, in between the stones of the grave, there were notes inserted into each gap, just like it is in the famous wailing wall. Religious people believed that this grave helps. Not any other, including Rambam’s grave, had a single note. I will quote from several sources the main stages of his career. Here's one from Wikipedia:

“in 1606 he was appointed Rabbi of [Frankfurt](#). In 1614, after serving as rabbi in prominent cities in [Europe](#), he left following the [Fettmilch Uprising](#) and assumed the prestigious position of chief rabbi of [Prague](#). ” “In 1621 he moved to [Israel](#), was appointed rabbi of the [Ashkenazi community](#) in Jerusalem. ” “In 1625, he was kidnapped and imprisoned by the [Pasha](#) (Ibn Faruh) and held for ransom. After 1626, Horowitz moved to [Safed](#), erstwhile home of Kabbalah, and later died in [Tiberias](#) on March 24, 1630 ([Nisan](#) 11, 5390 on the [Hebrew calendar](#)). ” His

most important work Shenei Luhot HaBerit (meaning: [Two Tablets](#) of the Covenant, abbreviated Shelah). The work had had a profound influence on Jewish life - notably, on the early Hasidic movement, including the [Baal Shem Tov](#); [Shneur Zalman of Liadi](#). " His children held the positions of chief rabbis in 3 central cities of Europe, in my memory Prague, Dresden and Vienna. Then one of the grandchildren moved to Ukraine and there was the chief rabbi of a large area, from which our family left. Some legends claim that he was a direct descendant of King David, and I often heard allusions to this from my father's mother, my grandmother Sarah.

My father did not speak Russian until 11 years old. People spoke Yiddish around him, but he read literature in Hebrew. I was amazed when I learned that he began to speak Russian from the age of 11, because his Russian was pure and he had "absolute literacy" (comes from "абсолютная грамотность", there is such notion in Russian). Around his 14 (between 1925-1928) he studied at a special school with an emphasis on chemical study. His school mate all these years was Israel Gelfand – they were attending one and the same class. Gelfand and my father were almost of the same age (my father was six months older), and Gelfand's parents sent his son to Chechel'nik to study; he lived with my father's parents. They shared one room, and were friends. Subsequently, each of them spoke very positively about the other. Each was impressed by the mathematical talent of the other. Here's something funny related to that period. There were surfacing rumors (and maybe they, still, surface) that eating more, than two, eggs a day is very harmful. Allegedly, among other, this could have negative effect on memory. So, my father laughed and said that young Gelfand ate up to 14 (!!!) eggs every day. However, my father himself respected the rule of eating per day no more, than two. Yet, Gelfand was known for his fantastic memory even over his 90.

Although they studied at a chemistry school, they both loved mathematics, they studied it themselves and dreamed of becoming mathematicians. Finally, a decision was made and they parted. Gelfand went to Moscow, and studied with Kolmogorov. My father, however, did not have right to study the usual way. He was considered the son of wealthy relatives, and had to work (the truth was completely different, but it was of no any interest back then, and I will, anyway, omit it). He moved to Odessa, worked in the sea port, as a docker, doing, also, other ancillary work, while at the same time studying at the evening faculty of the university. These were arranged, specifically for workers.

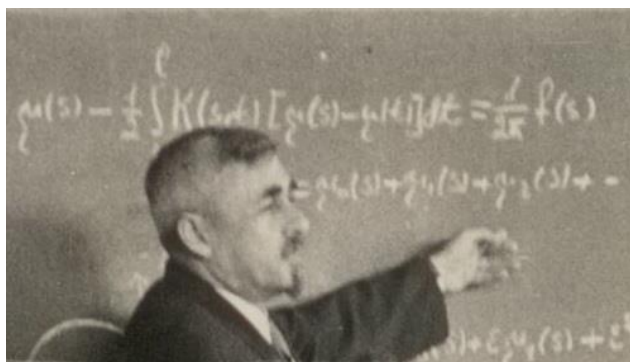
(Here's one funny story from his life of that time. One of his jobs was at a factory for the production of sweets and chocolates, again, something like a loader. He had never before tasted chocolate in his life, and he really wanted to. But chocolate was in a separate wing, closed and guarded. One worker took pity on David and led him to that department. However, he warned that in there one is allowed to eat as much of chocolate as he/she wants, but no one was allowed to take anything out of there. David ate so much that he never ate chocolate again.)

Hard physical work every day, followed by evening studies, exhausted David so much that, as a result, he got sick with tuberculosis. Because of this, later in year 41 he was declined serving army, where he tried very hard to get, as a volunteer, as war with Nazi Germany started. But we are still in the thirties. New branch of Mathematics, functional analysis, had been introduced at that time, and Mark Krein led a group of remarkable young mathematicians in Odessa, and led a scientific seminar on the topic. After graduation our father wanted to enter graduate school with the supervision of Krein. But an anonymous denunciation came that David came from a wealthy family, and he was not admitted. So, Krein

recommended him to Naum Akhiezer in Kharkov, and David secretly left for Kharkov, and entered graduate school with supervision of Akhiezer.



Mark Krein , 1907-1989



Naum Akhiezer (1901- 1980)

When 20 years later I studied in Kharkov, Akhiezer told me many stories about my father. Among others, that he was the one, who introduced functional analysis to Kharkov. It was not known to Kharkov's mathematicians of that time at all, and David's enthusiasm for the field had proven to be very contagious. However, a year later, an anonymous letter about David reached Kharkov too. And he was expelled. He never discovered, who was so keenly against him.

And here comes the most interesting, and I may say mystical moment in the life of my father. He decided to write a letter to Stalin, asking him for a permission to study mathematics.

There was such a phenomenon at the time, a "letter to Stalin." Of course, 99%, and, maybe, more, of those who wrote such letters disappeared forever. But for a tiny percentage of such letters there had come positive answers, and these people, these lucky ones, had their problems resolved. The people of the new state had to be shown that Stalin takes care of them ("The Father of the people"). Dad never told us about this letter

himself. I think he was shy about this step. He was not married back then, but our mother knew about it, and we know from her what was written there. Not word to word, but he asked for the right to study, he wrote that mathematics is the only thing in life that he can and wants to do. And that he would better die, if he is not given an opportunity. Such was an approximate motive of his writing in that letter. Incredible naivety, for it was around the sadly famous 1937! But, as it is clear from the fact that I exist, it had a positive outcome. Our father was summoned to some place, probably KGB, and announced that Stalin allowed him to study. All restrictions were removed. I will later elaborate on this permission and its consequences. I think decades later it, still, served us, as a talisman in our lives.

In connection to this story, there was one historical event that has just crossed my mind. In 1825 there was an attempt at an aristocratic coup in Russia, the so-called “Decembrists”. Tsar brutally dealt with them, but he ordered not to touch Chaadaev, known for his great sympathies for this group. “He is naive to insanity,” said the tsar, “such a person is not dangerous” (of course, I do not quote, this is just the meaning of what the king said). And I think that the contemporary for Dad’s time tsar thought the same thing, seeing his father’s letter. (I think that Stalin sanctioned all his positive responses; they at least had to be personally approved).

Anyway, the problems were over, my father entered graduate school with supervision by Krein, and defended his thesis in 1939.

Many different funny stories went around Odessa about my father. He was this notorious in minds of regular people type of scientists-mathematicians, a little out of this world. Father, personally confirmed all these stories to us. It was our mother, Nema Tsudikova, a physicist, who was in our family a very practical and business woman. Family life rested on her.

One of the very funny and at the same time real and meaningful stories goes as this. David Milman taught a course on probability theory. It was the first lecture, I think. He explained to students what is an event with a probability of 0. "This is an event that cannot happen. For example, it is impossible for me to stretch my leg, stamp and cause an explosion." And he extended his leg, stamped and there was an explosion. Yes, yes, from under his feet, he caused an explosion. Of course, there was a shock, bewilderment, and then a burst of general laughter. The investigation showed that before that lecture there was a chemistry lesson in that classroom, and some tiny drop of nitroglycerin rolled into a tiny pit of the floor. And our father stamped his foot exactly upon this hole! (Hard to believe.)

Here are a few more, just funny, stories that are, indeed, of a notorious kind for a mathematician, a scientist not of this world. Once he was discussing mathematics with one of his peer friends (this was, possibly, Rutman) and suddenly he became very worried, began to look around and run around. "What happened?" Rutman asked. "Where is Vitaliy?" [it was me; he was looking for me] - my father almost shouted excitedly. "He's in your arms," Rutman answered. And another story in the same style. Father was walking with someone and discussing Math. After some time he asked his interlocutor if he seemed to him to be lame today. "Of course," was the answer, "because you walk with one foot on the road and the other along the sidewalk."

I think that will do for now. Maybe below I will add something that we have already observed ourselves.



David and Nema with their son Vitali, 1940; the only photo of our father and mother made before Germany attacked the Soviet Union during the 2nd World War.

From entering graduate school in Odessa and up until the war life seemed to be treating well David Milman's family.

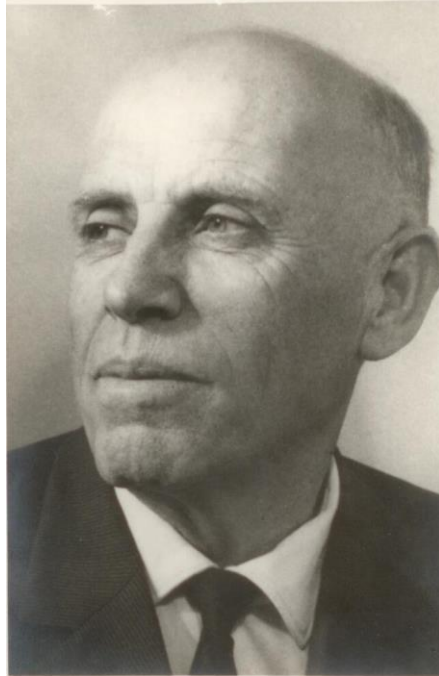
Then came summer of 1941, the War. My father wasn't taken to serve in military because of tuberculosis. Followed an urgent evacuation, escape to Asia. I described this and some facts that I remember a little in my "Today I am 70", last part, "Galloping regarding my childhood, and how I became a mathematician." I will not repeat this and will turn to some stories after the war.

The war was not over yet, it was 1944. My father worked at the Institute of Communications and headed the department of mathematics there. Time was terribly difficult. Of course, we lived in a communal apartment, that is, some strangers occupied some rooms in this apartment. But that was the standard of the time. We had 3 rooms, we lived with my father's mother. The ceiling was broken in the largest room and the sky was visible. Some kind of war bomb. It was the last, the third floor. Everything had to be repaired. And the salary was enough only for food. Of course, everyone worked. But I don't understand how my Dad's family got through, how they fixed this apartment. My father was a man of honor. His students' parents had been offering that they

fix the apartment and many other things (in short, they had been offering him bribes). But under no circumstances my father would even allow them to approach him. Here's an example. Our glass in the windows was of the worst possible quality, almost green in color, light penetrated poorly through them. And one day, suddenly, good glass had been brought into our apartment. It is not known from whom. David Milman pushed out the man, who brought in the glass, ordering him to have it returned to where it came from.

But we did get through all of this, we survived. The following are the stories of a different kind.

. I have not, yet, described the family my father came from. He had two brothers and two sisters. One of the brothers, Vladimir, was younger, than him. Before the war he lived with his mother, my grandmother, but during the war he was mobilized and killed in the battles. Another brother, Ben Zion, older, than him, and two older sisters (Leah and Judit) left at the very beginning of the twenties to Israel. They wrote letters to their mother (my grandmother). Of course, correspondence between David and them was impossible, too dangerous for David. Ben Zion wrote his letters so that dad always understood, what was written for him. And, also, when the grandmother answered there were always phrases from David. From 49 to 56, Ben Zion held a very important and responsible post.



Ben-Zion Milman (1908 – 1970)

Golda Meir was then Minister of Labor for the Government led by Ben-Gurion. Back then there were only 9 Ministers (maybe even only 7?), And the entire business of construction works in Israel was also under the control of Golda Meir. Golda transferred this part of her responsibility to Ben Zion (today this status would had been the Minister of Construction). The Soviet authorities monitored everything that was happening in Israel, and such a connection as the mother of the person responsible for the construction works in Israel living in Russia in all likelihood did interest them.

One day my father was invited to visit KGB. Separate room, table and one person. My Dad is offered a seat in front of him. This man talks about David's brother in Israel writing to his mother, and, surely, wanting to visit her. Why not to invite him to come and see his mother. The tone of voice is nice, calm, friendly. My father inquires: "Do you want him to come here?" The KGB man is awfully happy, "you are a smart person, you understand correctly," he says. My father frowns and pronounces "I will write

to him not to come.” The table, at which they sat, flew at my father. “Out, you, the enemy of the people,” shouts KGB man. And my father sullenly leaves. There were tears at home, a suitcase with things for an occasion of expected arrest got collected; followed awaiting, waiting for a knock at the door, a search of premises, arrest. But, Oh, Miracle !, none of this happened. Nobody touched our father. I do not know exactly the year when this happened, but I think, before the death of Stalin. For the authorities the interest of the matter had be between 1949 and 1956, but I think that for the years 54-55 its focus was in other areas. Considering, also, some other facts, my estimate for the event is 1950-1951, that is, during the lifetime of Stalin. The only explanation that seems reasonable is that, having opened the father’s file (which is always done before the arrest), and seeing in him a letter of Stalin’s answer, they were afraid to act. This one “rotten Jew” was not worth the risk.

Here’s another example of such behavior of my father, although this time around not as critical. At the end of 52 and the beginning of 53, position of Jews in the Soviet Union became appalling. Stalin had been preparing the expulsion of all the Jews from the European and others civilized parts of Soviet Union. They were to be sent to the Far North and to distant parts of Siberia. According to recently published data, it was planned that one third of Jews would had not reached their destination. Such was the a la Stalin solution for the Jewish “problem”. I am not aiming, though, at describing this now. Close to this planned event most of famous Jews were already declared enemies of people by the newspapers. That’s to prepare the population. In Odessa, Marc Krein, David’s former thesis supervisor, and the most famous scientist in Odessa, underwent such an obstruction among the scientists. Everyone knew this, no one dared to come to visit him. He was waiting for his fate alone with his wife and daughter. My father was not in any close relationship with him at that time. He had not been at his apartment for years. But he told

my mother, Nema, "I cannot leave him alone now. I will go to him." And he went, and stayed there with Krein all day. And then, as you already understand, he was expecting an arrest. But it did not happen! I think his talisman worked again. I watched many other of his very brave deeds. But they were not politically motivated, and I will not talk about them.

After Stalin's death in March 53, life returned to its "normal" Soviet form, including the "normal" level of anti-Semitism, the

state anti-Semitism. In 1956, I had entered university of Kharkov, and further I had rarely visited Odessa. I came to Odessa for two short visits a year, and then, when I moved to and started working in Moscow, there was no more than one visit a year. So, I very rarely communicated with father in person (as well as with mother). Then, in 73, we emigrated to Israel, along with my middle brother Petya, also a mathematician. He moved to Toronto a few years later, and is a professor of Mathematics at the University of Toronto until these days. A year later in 74, my parents also moved. Only my younger brother, Volodya, and his family remained in Russia for many more years. Our father's brother, Bin-Zion, died a few years before we arrived to Israel. In his honour there had been built a building for new immigrants, very close to Tel-Aviv university. Upon arrival, our parents, David and Nema, were settled in this building that carried name "Miiman". Two older sisters of David met my parents in Israel - after so many years apart that was a happy reunion between brother and sisters. I think, finally, a calm and happy period had begun in my father's life.



From the moment he arrived, our Dad was immediately appointed a full professor at Tel Aviv University, and he returned to his scientific work, wrote several scientific articles. Only this did not last long. David Milman got sick with pancreatic cancer, and died within a year in July 1982. It was a time of war in Lebanon, and I was at the battles front, in the Beirut area. A message that my father was dying and I needed to be released did not come in time to my commander. I arrived to his funeral one day after his death. This circumstance was very emotionally difficult for me. My brother Pierre (Petya) from Toronto managed to arrive earlier and stayed with our father until his passing.

A good afterword. In 2018, I suddenly receive a message that several Enthusiasts are arranging with the Chechel'nik Mayor's Office, and with the participation of the Department of Mathematics of Vinnitsa University, to establish a memorial plaque in the chemistry school, where two boys, who became great scientists of our time, Israel Gelfand and David Milman,

studied. As a result, through efforts of Alina Voevoda, Leonid Trahtenberg and Larisa Shabelnik this had happened.



I think both of them would be very happy to know this.

Vitali Milman, June 2020.

ON THE ORIGIN OF BANACH

Foreword

Stefan Banach was one of the central figures in mathematics of the first half of the 20th century. He was a Polish mathematician who grew up from the Polish School of Mathematics. He was the creator of Functional Analysis, and many of the concepts that emerged in mathematics in the last century bear his name. An extensive and powerful school of mathematics originated from him.



However, his biography is only unambiguous starting at the age of 15 and is also ambiguous during the war years. One of the legends claims that he was an illegitimate son of some noblewoman and was raised by a laundress named Banach. The confusion is compounded by the biographies written as a tribute to the hundredth anniversary of his birth, where many things are obvious fiction. My wife laughs about this and jokes that they interviewed nearly hundred-year-old ladies who remember well how they sat next to Stefan on potties at a day nursery. This is not too far off from what was written. Completely by accident, having arrived in Israel, I apparently came across the roots of his childhood.

I devoted a small part of my article "Observations on the Movement of People and Ideas in Mathematics of the Twentieth Century" to this. It was published in the book *Mathematical Events of the Twentieth Century* (Springer-Phasis, 2003) and translated into English in 2005. It is reproduced below. However, at the time, I did not understand Banach's survival during the war. A young colleague of mine, professor of mathematics Leonid Potyagailo, who works at Lille, read this article of mine

and sent me information that explains what happened during the war. Again, it was my luck that he was from Lviv. This is the city where Banach spent the war years. His grave is there (and Leonid visited it). I will include this information at the end of this essay. As for what I wrote at the end of that article 20 years ago, I removed it. This additional information is extremely important, and I am returning to this topic because of it.

2020, May

It is known that Banach grew up and was raised in a foster family, but my story will be about his biological family. Banach's Polish biographies state that the details of his childhood are unknown, that he never knew his mother or father, and therefore (?) from the age of 15 he worked part-time as a private tutor (and what happened before that?). It is believed ("everyone believes", as Steinhaus, who was the closest person to Banach, at least in mathematical circles, wrote) that he somehow wound up in the family of a laundress named Banach shortly after he was born, and that she brought him up.

In contrast to this scarce information, it is pointed out that his father was a man named Greczek, who worked in the administration of the Krakow railroad. (Let me remind you that this so-called father never maintained close ties with Stefan, which is why the fact that the father's name is indicated, while nothing is known about Banach's mother and childhood, raises a question.)

Through a fortuitous concatenation of circumstances, I know a different story. The reader may regard it as an unfounded legend, although I personally have no doubt of its complete veracity. Judge for yourself.

Here are the facts. For the entire 27 years of my life in Israel (I mean, until 2000), I worked in the mathematics department of

Tel Aviv University with Professor of Applied Mathematics Bernie Schiff. He died unexpectedly in December 1999 at the age of 68. All those years, I knew that the maiden name of his wife Miriam was Banach, and that she had heard a legend about her grandmother's younger brother, who abandoned his Orthodox Jewish family at a young age and was baptized and transferred by the church to some family as an adopted son.

However, in connection with Bernie's death, several professors in our department decided to meet with Miriam Banach-Schiff to find out the details. She knew very little: nearly the entire family perished in the Holocaust, while her father left for the Netherlands in 1930 and therefore survived. But I shall relate what she knew.

Her grandfather and grandmother — Moishe and Netl — were second cousins (which was often the case in traditional religious Jewish families in the late nineteenth and early twentieth centuries) and both bore the name Banach. Miriam did not know the exact year of her grandmother's birth, but Miriam's father was born in 1907, which may give some idea of her grandmother's age. Let me remind you that Stephen Banach's official year of birth was 1892.

Her grandmother's younger full brother left the family at an early age and became a Catholic. One must realize that for a deeply religious family this was a great tragedy (Miriam and her entire family belong to the extreme orthodox religious movement even today). Therefore, all relations with the brother were broken off, and it was considered bad taste to even show interest in news about him. Nevertheless, certain information reached the family — perhaps the older sister Netl wanted to know what was happening with her younger brother.

Miriam's uncle — that is, Netl's son — told her that this brother (his Jewish name was unknown to Miriam) had studied at a

polytechnic college, and one of the mathematics professors had noticed the gifted student and helped him develop his talent. Later on, as they heard, he became a professor.

By the way, when shown a photo of Stefan Banach, all the family members confirmed his uncanny resemblance to one of Netl's sons — Joseph Banach.

Miriam told me that many years ago her husband Bernie showed her some old photo — a group picture of the participants in a conference where there were about 50 people — and asked her if she could find Banach in the picture. She did not know what the mathematician Stefan Banach looked like, since she had never seen his portraits, but she unerringly picked him out in the group photo based on his resemblance to her uncle.

And here is the last fact. Miriam's grandfather Moishe Banach was born in the town of Tarnowskie Gory (Galicia), a large railroad hub near Krakow. Miriam was not sure that her grandmother and her brother Stefan were also born there, but it probably was not far from there.

I would like to end this part of my story with a speculative remark of my own. It was the late 1930s. A vicious war was looming (or already going on), in which a person of Jewish descent could not survive. To have “holes” in your biography or ancestry puts you in mortal danger. If one believes the story above (and I do), Banach's ethnicity could have been determined by pulling down his trousers. For that reason, in order to “patch” the holes, a story was concocted about an unknown mother, that he was perhaps the illegitimate son of a noblewoman and a white-collar worker. And the choice of the “father's” name may not have been random. Greczek was, most likely, the godfather of Banach. It is known that he was a deeply religious person and therefore may have maintained occasional contact with his godson. In addition, Greczek's first name was also Stefan. It is unusual for Poles to

give their son the father's name. But it is a standard tradition to give the son the name of the godfather. Greczek, a good and religious man, allowed in this very difficult time to have himself called the biological father. It was necessary that everyone believed the story and that no questions arose. And perhaps many people believed it. However, some insurance was needed. This will be my next story. Meanwhile, the war ended. Emaciated by the war, Banach died soon after the liberation of Poland, but the invented legend lived on and flourished with details.

What was Banach's "insurance" then? This is a remarkable story about one of the heroes of that horrific war.

I collected the information I am about to share from two articles sent to me at different times by Leonid Potyagailo. One of them is in front of me, but the other one has disappeared, and I am unable to restore it. Thus, some of the story I am about to tell comes from my memory.

A horrific war was proceeding on the Germany's Eastern Front. German soldiers were dying not only from the war, but also from epidemics. One of the most dreadful epidemics was typhus. Something had to be done.

Admiral Canaris, the head of the Abwehr, ordered to track down the doctor in Lviv who had been reported to have created a vaccine against typhus before the war. The doctor was found, and it was Dr. Weigl. Perhaps he was not even a Pole, but a Sudeten German. And Canaris created an institute under the direction of Dr. Weigl for the production of the typhus vaccine. The workers of this institute were provided with Abwehr documents and they were considered Abwehr workers! With such a document one could walk at night even after the curfew. Weigl recruited many people whose job was to feed typhus-infected lice with their blood. But they had immunity against

patrols and authorities. Weigl saved a lot of people in this manner. Whether or not Weigl knew that Banach needed to be saved, I do not know. But Banach worked for him and held this document. This is how he made it through the war.

Everyone knows that Banach was a feeder for typhus-infected lice. Olek Pelczynski (the most prominent Polish mathematician continuing Banach's work) told me that Banach did not have enough money for vodka. He had enough to get food, but it is known that he really enjoyed drinking. But he could not afford it. Personally, I was very offended by this point of view. But until 2005, when I read an article about Dr. Weigl and saw Banach's name on the list of people he saved, I had no other hypothesis.

I returned to this topic about Banach in order to describe this war period and remove this stigma from Banach. Yes, he was a feeder for this muck, but he did it in order to survive, to protect himself from a deadly random inspection.

Just a few more words about Weigl, very briefly. Since he was producing the vaccine for the German army, upon conclusion of the war, he remained a controversial figure for some time. However, it was quickly discovered that he provided high-quality vaccines to the underground resistance, while the army was supplied with vaccines of inferior quality. In addition, the list of people he saved was quite substantial. I have already stated that Banach was on this list. As the years passed, his contributions were fully recognized. He was also designated here in Israel by Yad Vashem as the righteous among the nations who saved many Jews.

P.S. To soften the mood after the last gut-wrenching episode with Banach, I will recite one entertaining, nearly comical episode from his life.

After the partition of Poland in 1939 between Germany and the Soviet Union, Lviv ended up a Soviet city, and Banach a Soviet citizen. Various mathematical research centers invited him. And after a trip to Georgia in 1940, he was returning home with a stop in Odessa. The inviting party was Mark Krein. However, he asked Boris Levin to attend the reception. From a scientific perspective, Levin's presence made sense, but the request was to drink with Banach. It was believed that Levin could be a worthy companion for Banach. Everyone knew that Banach loved to drink and knew how to do it. When the feast began, Banach said that he had drunk too much in Georgia and was unable to drink at the reception. The scene that followed was described to me by Levin's wife. Levin drank only together with Banach, but he soon became intoxicated to the point that he no longer remembered anything. And yet, Banach was not yet feeling that he had been drinking. At no other time in his life was Levin in such a condition. (This is a story about Banach knowing how to drink.)

Written in 2000 and 2020

Desires and Reality

It is important to be able to desire, to be able to ask. In formulating our wishes, we are always imprecise.

In a conversation, we try to convey our thought to the interlocutor. We articulate this thought in words based on our understanding of the words and our background. The sentences we compose are accepted by the brain of our interlocutor and transformed into some kind of thought based on his/her understanding of the words and his/her background. Remember, this may turn out to be a completely different thought.

Many disputes and misunderstandings arise from this. One could provide many serious examples of such a situation.

But I do not want to be serious here, and therefore take the liberty of providing two comic examples of such a misunderstanding. In these examples, I myself did not understand how different the solutions could be. After that I will provide one example of a more serious nature.

In 1978, when leaving for my first sabbatical as a visiting professor, we decided to exchange our Olim apartment (that is, an apartment for new immigrants) for a nice and spacious one. We signed an agreement with the contractor, whereby we had to pay the cost of the apartment within the two years that we were going to spend in the US. This is an interesting story, but I will only mention here that the price exceeded one million lire (the Israeli currency at that time). It was a huge amount of money for us, although it is hardly a significant amount by today's standards. At the official exchange rate, it was approximately \$160,000 for a five-room apartment in Ramat Hasharon. And now my request — pardon me, a comic request — addressed to God. I asked to become a millionaire. (I like to say that in Israel we “feel” very close to God and need to be careful in our requests.) I became a millionaire, but my financial status did not change, because inflation skyrocketed over the next two years. And our salaries in the old lire, soon, were in the millions. Over the two years, the value of the sum that we had to pay for our new apartment declined to \$70,000. So we caught a bit of a break as well. But this was only the beginning of inflation, and salaries exceeded 1,000,000 a few years later. (Inflation was stopped only by 1985.)

And here is another equally amusing example. Toward the late 1990s and early 2000s, the problem with parking on our campus

became unbearable. Naturally, everyone, including myself, was outraged by this and questioned whether something could be done. I asked for something to be done and something was, in fact, done. Due to the difficult financial situation, the university reduced its teaching staff by 30%, and immediately parking became plentiful. You can imagine how I dreamed of returning to the situation where we had problems with parking but were able to recruit new young talented scientists.

Thus, the solution to a problem may be unexpected and not necessarily favorable.

And here is a serious example. In our area, we all want peace with our neighbors. But what is meant when this word is uttered? It has been a long time since anyone imagined peace of the kind enjoyed by Belgium, Luxembourg, and the Netherlands. This is emphasized when they speak of the “peace process”. The meaning of this expression is not made clear, which leads to disputes and disagreements. This reminds me of the talk in Russia about democratization in the 1990s. The process of building democracy is called “democratization”, and a wonderful pun circulated in Russia at that time, in the 1990s: “democracy differs from democratization like sewing differs from sewerage”. [In Russian it sounds even better: “демократия отличается от демократизации, как канал от канализации”.] I think this is a wonderful explanation of what democratization is, and it also applies to the “peace process” in comparison with peace itself. Those who call themselves the “peace camp” are forces supporting the peace process (that is, “sewerage” in our analogy). And those who do not want such “peace” are declared enemies of “peace”. Meanwhile, all they need to do is agree on the meaning of the words. Everyone wants true peace, but

everyone, or almost everyone, has already realized that it is unattainable in the foreseeable future.

Now I want to share a little variation on the previous thoughts.

Understanding Reality

I will start with an interesting story of an experiment shared with me by Professor E. Shield (1930–2006). This very interesting person was at that time, in the late 1980s, the president of the Haifa University. Well, the following experiment was conducted. In each of the various districts of the big city where the experiment took place, the researchers found a person considered highly intelligent by everyone around them. All these people were asked several questions about their understanding of how certain events would develop over the course of the following year. In addition, the researchers identified an appropriate group of experts on these issues and asked them the same questions. One year later, the answers were compared. The result was remarkable. You might think that the answer of the “intelligent” people was more accurate (simply because I am asking this question). Okay, the answers were statistically identical. This remarkable observation means that the experts’ training brings them to the level of the “intelligent” people. This is not obvious a priori.

I will now provide two examples of understanding the future by “intelligent” people. These are examples of incredible, impossible predictions of events. One needs to see and understand the situation at a level inaccessible to me in order to predict the future in these two examples. I believe that there is another parameter for a good understanding of the future, which we tend to forget. It is the lack of a preconceived opinion. When we are biased, our explanations try to confirm our bias. This can

reduce our reasoning to near absurdity. We lose our natural judgment. And we fail to see unconventional angles and possible explanations.

The first story takes us back to 1956, the famous 20th Congress of the Communist Party in Moscow, and Khrushchev's report at this Congress. Khrushchev broke all the taboos of the Soviet Union and declared Stalin a criminal. Certain elements of this report were made public, but the report itself, as a whole, was strictly classified. All intelligence agencies of the world tried to obtain this text, and the American intelligence community put a lot of effort into this. All, however, to no avail. And all of a sudden, the Israeli intelligence obtained the whole thing. The head of the FBI, the famed Hoover, was absolutely delighted and called the Israeli intelligence perhaps the best in the world. The story of how this happened became well known in Israel in the 1990s. It is virtually a humorous tale. Israel got a hold of the report without any effort on its part — in a sense, completely by accident. I will not repeat this story here. I am interested in Ben-Gurion's reaction. When he read the report, he said that if it was not a fake, then this was the beginning of the end of the Soviet Union. Moreover, he even indicated the timeline. I recall him stating that some thirty years later the communist regime of the Soviet Union would fall. This was an absolutely incredible prediction. How well did one need to understand the internal levers that drive history in order to foresee the events that actually took place?!

And now the second story. This happened some time around 1954–1956. One gypsy woman who was extremely famous in her circles (that is, highly intelligent) was telling fortune (that is, making a prediction) to Ludmila, my future wife. Much of her prediction was unusual and interesting. But the most striking part was her telling Luda that she would live in Israel. At the time,

Luda did not even know what Israel was. The first reaction to this prediction was that it was simply impossible. But Luda remembers this absolutely clearly. Let us put aside the preconceived notions, our confidence in those days that everything in Russia was unshakable, unchangeable. In the example of Ben-Gurion, we saw that a different perspective is possible. In those distant horrific years, they managed to convince us, to make us believe in the absolute immutability of that life. The free-thinking gypsy woman was a fortune teller precisely because she saw the reality for what it was, unencumbered by the constraints set by the authorities. And what she saw in front of her was a girl who looked Jewish. And after everything that was done to the Jewish people during the war, and just recently, by Stalin, she realized that this ethnic group would leave for their country. Her perception and foresight looked “merely” 20–40 years forward.

As a footnote, not everyone may be aware that Stalin prepared the expulsion of all Jews to the Far North and Siberia but died three weeks before the start of the operation. This saved the Russian Jews. However, the entire country sensed the spine-chilling atmosphere in the lead-up to those events. Of course, the gypsy woman knew that.

Vitali Milman, June 2020

A Little Bit About Mathematics and Mathematicians

As a mathematician, I am not about to bring mathematics into this text. I will talk about mathematics in the same way I talked about art in my article on art. Also, I will only say personal things about mathematicians if I came across such matters myself.

What is mathematics? What does it involve? Why is this so difficult to explain to a non-mathematical audience? I doubt that many mathematicians have given this serious thought, and without serious thought it is impossible to answer these questions.

Of course, any short essay on this subject (and I only write short essays) is going to be somewhat naive and will only cover part of the truth. But it is still better than being in a complete, absolute fog.

80% of mathematics, or possibly more, is a language, a new language (theorems only account for the remaining part, and most of them also transform into language later). This is why it is so difficult to explain this to people who do not know this language. I have had to present and talk about mathematics in front of a non-mathematical audience on many occasions, and I always started with this claim. Because no matter how well and how slowly you give a talk on something in Chinese, a European listener who does not know Chinese still will not understand you. Therefore, the key point is to explain why this new language is needed. And this is what I discuss next.

In another article, “Desires and Reality”, I already explained how difficult it is to convey an idea accurately. I will repeat myself. We

articulate our thought in words based on our understanding of the words and our background. The sentences we compose are accepted by the brain of our interlocutor and transformed into some kind of thought based on his/her understanding of the words and his/her background. Remember, this may turn out to be a different thought. Mathematics must avoid this. This is a science being developed by a great number of people at the same time. This has always been the case, but it is particularly true today. This is why we must understand each other precisely, without uncertainty. This is the first reason for the need for a language that has no ambiguity. Even though there is still ambiguity at the forefront of the science, it is gradually being eliminated. But there is also a completely different reason that is no less important and perhaps much more important. I am about to explain this, but it will take me some time.

Our civilization needs mathematics not because the human brain is so powerful, but rather because it is not strong enough. The Lord God does not need to practice mathematics, because He knows all the answers at once. As for us, we need to find them. In a sense, mathematics is a lever to amplify the power of the human brain, just as an actual lever amplifies the power of muscles. Mathematics strengthens the very process of understanding, the thinking process. (Side remark: If this fact were known to the public, we could expect great support for mathematics. Everyone knows about the importance of using the brain and that it would be better to use it efficiently.) Since I am not sure that this simple idea is recognized even in our mathematical community, I will elaborate on it in more detail. Our ability to use the brain is very limited. Our brain enables us to compare and process only seven different observations/facts at a time. I could be mistaken, and the number might be six or ten, but that does not change anything. A psychologist, my cousin, Professor Uri Shafrir from Toronto, told me that the number is seven and that it is the same for all people. (He also explained

to me a few points that I will use below.) As a result, we are unable to comprehend the consequences of events based on more than seven observations. We simply fail to see the consequences. For example, we know that sometimes we forget about the most important things that were planned in advance, which probably happens because the number of things that we need to deal with exceeds seven. Everything in our mind that exceeds this number seven is beyond our control. Our brain ignores some of the “superfluous” observations, and we do not control which ones are ignored.

How do we avoid this complication? It is clear that most of the things we do depend on a much larger number of parameters, and we are unable to monitor them simultaneously. Think of an airplane that takes 400 or more people into the air. Could anyone in the 19th century imagine that this was possible in principle? The number of parameters that need to be reviewed simultaneously in this case is perhaps a hundred or more. This is where mathematics is needed. What approach does it use? Oddly enough, to solve this problem, we need to develop the most basic mathematics — we develop theories, completely abstract theories.

And what is abstraction? We combine different things and create one (abstract) concept that takes them all into account. Thus, five (for example) initially different things are combined into one. Once, in prehistoric times, this is how a language was created, any of the languages. For example, the word “tree”. Note that this is a complete abstraction, because what kind of tree does this refer to — an oak, a birch, a palm, or what? Depending on our past, we will visualize different trees. But often this does not matter for understanding what is happening — for example, in the case of the phrase “there, under a tree, you will meet a person”. Would we be able to convey this simple thought if we did not have this abstract word “tree” and began to explain what

this specific object looked like where we had to find someone? All seven “available” spaces that we have in our brain for memorization might not be enough to describe this one object, a specific tree. Not to mention the additional information (meeting someone).

I realize how primitive this example and explanation appear. But I want to make it clear that already at this prehistoric stage, people encountered the need to view things abstractly. Developing a language was the “mathematics” of the past. And now mathematics is also a language that we are developing for the future.

For the same reason, we sometimes allocate three months for a course at a university, when in fact I could complete it within two weeks. But students need time to get used to new abstract concepts, without remembering every time all the details of their origin, to “package” the knowledge and the facts into a very small number of concepts and previously unfamiliar abstractions, so as to subsequently see the picture quickly, relying on just a few concepts that sound familiar.

Basic mathematics and fundamental science are entities of paramount importance that form the cornerstone of the development of civilization. It creates a language that enables one to see an extremely complex picture, connecting a few pieces of a jigsaw puzzle, where each piece presents another jigsaw puzzle, and as we move forward with this process, we assemble jigsaw puzzles with a huge number of connections.

We perceive and see this assembled jigsaw puzzle as a single picture. Now the time comes to apply it to our “earthly” problems, to descend from our mathematical “Olympus” to “simple earthly” problems. This is not an easy process either. It is convenient to view it as “inverted” trees. At the very top there are trunks, just a

few of them. Each trunk has branches running down, which scatter and divide into other branches. The path down from the level of the trunks is traveled by applied mathematicians. They are now building the path “down”, from the first line of knowledge, maximum abstraction, toward problems that are more specific and understandable to the general public. However, one can use different routes in the constructed trees. One needs to understand the entire picture of the connections in order to find the correct path and be able to carry out the correct calculations. Also, this can be rather challenging, despite the fact that the correct connections have already been identified. But even all of this is only the first preparatory step on the path down to the problems that we, the humanity, need to solve. Engineers will then follow, if the problems are engineering in nature, or biologists and doctors, if the problems are biological or medical. However, if today there are many problems in medicine, biology, or economics (as well as other areas where very large systems are involved) that we are unable to solve, this may be simply because Pure Mathematics has not yet developed the corresponding language. The correct level of abstraction has not yet been achieved.

I think that the humanity simply does not understand that mathematics is the critical point in the development of our Civilization, that any other significant technical or scientific achievement, development, or breakthrough follows a corresponding breakthrough in mathematics. Once upon a time this happened with large time gaps (fifty or more years), but today these gaps are much smaller. This is why previously this went unnoticed. The vast majority of talented mathematicians begin to obtain significant results when they are too young and socially immature, or simply do not have time to think about the place of their work in the global picture. Time runs fast, and by the time you no longer feel young, you are often over sixty. That is why we mathematicians have ourselves to blame for the fact

that the extraordinary, critical significance of mathematics is underestimated by our world. I am concerned that at present the gap between a mathematical discovery and its application has been reduced to several years in some cases. For me, this is a sign that mathematics is lagging behind, despite the fact that we are witnessing a tremendous surge in the development of mathematics in the last few decades.

That is all I wanted to say about mathematics.

I recently crossed the 80-year mark. In connection with this milestone, I wrote an essay entitled “I Am 80 Today”. It was written in English and there is no Russian version. This essay has an appendix entitled “Words of Advice to Students”. Naturally, this refers to students of mathematics. In this appendix I describe various traits of character and mind, which, based on my observations, are extremely important for a mathematician. This also includes certain features of the brain function. It is not so easy to become a mathematician even for someone with distinct mathematical talent. A great number of various other parameters interfere with our destiny. I recommend this section (Section 8) to those who take interest in us, mathematicians.

I will now move on to mathematicians.

Over the course of my life, first in Ukraine (Odessa, Kharkov), then in Russia (Moscow, Leningrad), and then in Israel, Paris, and the United States, I met a huge number of mathematicians of various levels and styles. Somehow, I was even too lucky in that respect.

I was very closely familiar with the Kharkov Mathematical School of the 1960s–1970s. In those same years, I was closely familiar

with the schools of functional analysis and mathematical analysis of Moscow, Leningrad, Voronezh, and other cities.

But I want to talk only about very personal interactions and meetings, in no particular order. I hope that they will show the diversity of our characters and talents.

Israel Glazman (1916–1968)

He was an artistic character with an incredible number of stories around him. I was enrolled in many of his very serious courses. But he had the ability to crack a joke along the way so that you could not hold back your laughter. I would start laughing at the very sign of his smile before yet another joke. For all that, the story of his life was a tragic one. Here is one of his favorite stories. He graduated from the university just before the war and went through the entire war as an artillery officer. Among his military awards was the Order of the Red Banner, a prominent decoration. Here is the story of his award, as he told it. It was Victory Day, May 9, and Glazman asked several young people close to him out to a restaurant. I was among them. The restaurant was full of veteran groups celebrating this day. Having already imbibed, Glazman stood up and said: “I received this order for being a Jew”. And then comes the story. A huge number of soldiers were surrounded near Kharkov. I believe this was the aftermath of the Third Battle of Kharkov. This was a horribly failed operation, which, as I heard, was initiated by Stalin himself. He was not the military leader he aspired to be, but after Stalingrad he decided that he could give it a try. He ordered the occupation of Kharkov, even though the operation had not yet been prepared at the flanks. His marshals warned him that although he would indeed be able to occupy Kharkov, the entire army would end up encircled. And something of the sort transpired.

Tens of thousands, or perhaps hundreds of thousands, of soldiers were moving east through forests trying to break through to their fellow troops. It was known that the German army would kill officers and, of course, Jews on the spot. Therefore, officers, but not Jews, removed their shoulder straps. As for Glazman, a lieutenant, he did not remove his shoulder straps. He was an absolutely typical Jew. And so the group he was moving with escaped the encirclement — the huge crowd of soldiers was surrounded by their fellow Soviet troops. And some big-shot general, possibly even a marshal, was driving around these surrounded soldiers. He was the commander of the entire grouping of troops in this area. And suddenly he saw Glazman, the only officer in the huge crowd. The commander pulled up to him and said that this was our real hero. The only officer in the crowd. He took off his Order of the Red Banner and pinned it on Glazman. “This”, Glazman concluded, “is how I received my order because I am a Jew”. He told this whole story in a loud voice. He was proud, not embarrassed. Then again, there was noise and shouting at all the tables.

As a child, Glazman studied the violin with Stolyarsky, the famous maestro and educator. However, when Glazman studied with Stolyarsky in the early 1930s, the latter was not so famous yet, which is why Glazman managed to become a mathematician. You see, when Glazman decided to become a mathematician and apply to the university, Stolyarsky went to the university and asked the bosses not to accept him. “He must be a musician, a violinist. He is incredibly talented, please do not accept him to the university”, Stolyarsky begged. But nobody yet knew him at the time. Just a few years later, his request would have been akin to an order.

A few words about Stolyarsky (1871–1944; for details, see Wikipedia). He created the best violin school in the world —

David Oistrakh, Elizabeth Gilels, and great many other stars of the Soviet Union came out of his school. His success culminated in 1937, when Oistrakh became the winner at the First Eugène Ysaÿe International Violin Competition in Brussels, while the other top prizes were also won by Stolyarsky's students. Stolyarsky was personally received by Stalin. The music school that he was developing in Odessa was named the Stolyarsky School during his lifetime. This school is still called the Stolyarsky School today, and it graduates the best musicians of the former Soviet Union. And during the years of my life in Odessa, the city was full of jokes about Stolyarsky. Actually, the jokes were about his Jewishness, but they were in good humor. After all, he was the star of Odessa and even the entire Soviet Union. And his stardom reached such a level that the following story described in Wikipedia appears to have actually happened:

In 1939, speaking at the People's Commissariat for Education in Moscow, Stolyarsky expressed his gratitude as follows: "For me, it is ultimate bliss to have had the opportunity to create a wonderful music school for children in Odessa and even feed the hungry children. To that end, allow me to thank comrade Kaganovich and other bigwigs".

By "other bigwigs" he meant Stalin and other party leaders in the audience.

His Russian was poor. And here is one of the stories. A man invites Stolyarsky to a restaurant and asks the waitress, "May I ask you about the menu please?" Shocked, Stolyarsky whispers into his companion's ear, "Why would you ask her about the menu she pleases?!" [The Russian version of the story is as follows: "Некто приглашает его в ресторан, и просит официанта принести меню. Столярский обиженно спрашивает, 'почему только тебя, меню тоже'."]

Glazman was and remained his entire life a close friend of Oistrakh and many other distinguished violinists of that time. He

played the violin beautifully himself all his life. I could fill a book with stories about him, and so I will stop. (I am starting to feel sad.) Two people who were very close to him, Yu. Lyubich and V. Tkachenko, wrote an article about him entitled “Israel Glazman, Mathematician and Personality”. I am sure many interesting facts can be found there.

While on the subject of this connection — a mathematician and a musician — I want to talk about **Per Enflo** (born 1944), a remarkable Swedish mathematician who is also a remarkable pianist.

In 1955, when Enflo was 11 years old, he was already performing a concert at the Stockholm Concert Hall with the Stockholm Philharmonic Orchestra. A newspaper has survived from those times where almost the entire front page is devoted to this event. And on the same page there is a tiny little article about the appointment of **Lennart Carleson** as a university professor. It should be noted that, at least at that time, it was incredibly difficult to become a university professor, because the number of these positions in Sweden was strictly regulated. One of the professors had to resign or pass away in order for a new professor to be appointed. As a note to non-mathematicians (as this is generally known to mathematicians), Carleson was (and is) one of the greatest names in mathematical analysis of his time. For example, not long ago he received the Abel Prize with a cash award of one million dollars. Around the late 1980s and early 1990s, Carleson and I became very close. People told me about him that his assessment of researchers in mathematical analysis proceeded as follows. If he learns of a result that he understands and likes, he tries to prove it himself, without reading the proof. And if he cannot do this, he develops tremendous respect for the author. Something like that happened with my results. Many of them have very clear and simple formulations, but the proofs are far from trivial. They are

based not so much on technique (which Carleson is great at), but on a combination of rather new ideas (I would even call them novel, which is greater than simply new). Thus, I got lucky, and Carleson treated me very well. Subsequently, he introduced me at a Plenary Lecture at the 1996 European Congress of Mathematics. Sergei Novikov, who was present at the meeting of the commission, told me much later that Carleson gave a talk about my papers. He was familiar with them (and I am very proud of this).

But let us get back to Enflo. As a mathematician, Enflo achieved tremendous success, having solved, for example, two problems that had been open for nearly half a century. After he solved the second problem, there was a very serious discussion about awarding him the Fields Medal, but, unfortunately, the result had not yet been confirmed. The construction was too complex, and by the time the decision was made about the award, no one had yet read his work to the end to be able to confirm. As a result, he did not have a position in Sweden and was a professor in the United States all his life. Enflo only returned to Sweden after he retired. Personally, I am very fond of him, and our interactions have always been very pleasant. At all the conferences that we organized and where Enflo was present, we asked him to play for us, and he always performed a concert for the conference. Very few world-famous professionals perform at his remarkable level. He performed a concert at my seventieth birthday in Tel Aviv. In 1996, we organized a semester for “our” mathematics at MSRI in Berkeley. It included a week-long action-packed conference, which was attended by Enflo. I knew that he would be present and prepared the piano in the main entrance/hall of the institute. The building is designed so that all levels and offices of the three-story structure overlook this hall. We had the piano specially tuned ahead of Enflo’s arrival. I asked him to give us 10 to 20 minutes of music after the last lecture of each day so that people could relax after a day of very intensive work. I had

no doubt that he would oblige, and he did. The director of the institute, the famous Thurston (William Thurston, Fields Laureate and so on) and his secretaries were very skeptical when money was being spent to put this piano in order. All of them stayed until 6 p.m. to listen to what the money had been spent on. The next day, at my request, his performance was extended to an hour-long concert. This time, institute staff brought their families to attend the concert. Every day of that week they waited until 6 p.m. to listen to his music.

There were many other interesting stories related to music and Enflo's concerts, but I will end the conversation about Enflo with a different story. I once asked him why, after graduating from school, he decided to become a mathematician instead of continuing his career as a musician. He replied that he had already seen and understood his life as a musician until the end of his days. Everything there was clear, so he decided to try one other life. It seems to me that with age, his love of music began to surpass his love of mathematics. At Kent State, the university where Enflo worked, he was also given a part-time position at the faculty of music. Thus, he started to combine both of his specialties formally as well.

Hermann König and I have been extremely good friends from around 1984 until now. I do not remember at all where we first met. But starting in 1984, when I invited him to visit me at IHES in Paris, I remember a great number of our meetings.

He is a man of such a good character that I cannot imagine him being able to do anything negative to anyone. Moreover, he cannot even imagine that anyone could do such a thing. This is why for decades he was elected the head of the senate of his university. I imagine that senate members were uncomfortable even hatching plots in his presence. His mere presence settled conflicts. In this harsh world, ripe with envy and intrigue, I relaxed

psychologically in his presence. In the summer of 1985, my family and I spent a month in Kiel, and Hermann and I proved one very good theorem, an important case of a very interesting Pietsch problem about the duality of entropies. Although later, after additional 20 years of work, this problem has been nearly finished, our result has not been completely covered by the subsequent papers. It is interesting that although we met regularly and always discussed mathematics, our joint results only began to emerge again starting in 2010 and have been flowing steadily since then. Over the course of the 8–9 years, we have written 17 papers and even a book. I am very fond of these works. I see potential for delightful follow-up work, but coronavirus and age could stop this research. That would be a pity.

Hermann also taught me to relax. We always lived in Kiel opposite the port frequented by huge cruise ships. Having grown up in Odessa, I was keenly attracted to these ships. Hermann taught me how to use them and recommended various routes. We ended up going on cruises twice a year. We returned from our last cruise a month before the start of the coronavirus pandemic, just in time before the closure of Israel's borders.



Carsten Schütt, Lyudmila Milman, and Hermann König

Carsten Schütt is also a professor at Kiel. I knew him even before Hermann. I learned many results of convex geometry from him, and one could say that I developed a passion for convex geometry through him. He first told me about the Urysohn inequality and perhaps the Santaló inequality. I also learned from him about integral geometry formulas such as the Blaschke-Petkantschin formulas. But in the very beginning of our acquaintance he was engaged in work with covering numbers, and I developed a passion for this subject after him as well. I recall now that I also learned the concept of “floating body” from Carsten. Unfortunately, we do not have any joint papers, although we did a lot of discussing and thinking together. Perhaps time flows differently for the two of us. He is unhurried and calm, whereas I am too explosive and fast. This has absolutely no effect on the depth of his thoughts.

And now a few interesting and funny stories. First, in his early years, Carsten was a magician. He performed some absolutely amazing tricks. Our children, who were little at the time, watched the tricks with their mouths open, unable to step away. To be fair, this describes me as well.



Once, back in the 1970s, Carsten spent a summer in Jerusalem. It was an incredibly hot summer. We visited him in Jerusalem. He worked at home (houses did not yet have air conditioning, but there was natural coolness). I was amazed at his ability to work in that heat. I have been repeating his answer all my life to different people: “The principle is simple: If you needed to step outside, do not pretend to be working once you return”. In 2005, we organized a summer semester at the Schrodinger Institute in Vienna, which I think went very well.

There are many interesting stories that connect us.

Here is one funny story that made me feel ashamed of my country. I am struggling to remember the year, but it does not matter. Kiel is a city whose shipyards build submarines for Israel. I usually stay exactly opposite this place and enjoy watching their navigation tests across the bay. When their construction is completed, they depart for Israel and pass through a very narrow canal separating Denmark from the mainland. This passage is considered a little dangerous in terms of potential Arab terrorism. To that end, several people fly into Kiel and accompany the vessel along the canal by car until it exits the canal.

That was background information. And now the story. Carsten lives in a multi-story apartment building. One of his neighbors in the building is an immigrant from Israel, an Arab. While not friends, they are on very good terms. This neighbor did not know how close Carsten was to us, Israel, and many Israelis. One day he ran into Carsten on the stairwell and told him that he was returning from Hamburg by train the day before. There were two people sitting with him on the train and discussing in Hebrew in vivid detail their next-day trip by car along the canal to escort a submarine (strictly classified information)!! These idiots (pardon

me) could not imagine that someone around them could understand Hebrew. Good thing this was a peaceful Arab.

There is another mathematician of a character as remarkable as Hermann's. This is our Israeli professor **Dan Amir**, my friend of all my years in Israel.



Dan Amir with Jean Bourgain and Sergei Kislyakov

He is also a completely conflict-averse person but differs from Hermann in that he understands other people's conflicts. Dani, as we call him, is an incredibly versatile person. No matter what direction I take in a conversation, he understands the subject and most likely knows more about it than I do. He is extremely magnanimous. I never sensed any envy emanating from him, as I sensed from almost every one of my colleagues in Israel. We have been friends for 47 years, so talking about Dani and his family for me is like writing a book about myself. His wife Adina is a biologist, and we can spend hours discussing the most interesting (to me) matters of biology and life. Dani has served as our dean, as our vice-rector, and as our rector. The school of mathematical sciences at our university (Tel Aviv University) flourished with his support and thanks to his vision. In addition, he played a huge, critical role in the acceptance and

accommodation of scientists immigrating from the countries of the former Soviet Union in the 1990s. With ease he kept track of a dozen different projects in his mind and worked on them at the same time. In addition, he has perfect memory and remembered the names of thousands of scientists who had arrived. I described this process in one of my essays. We collaborated very successfully in mathematics during the initial period after my arrival, but later the administrative duties began to take up more of Dani's time. But this did not affect our friendship in any way. I knew all the members of his family. His sister Ziva planted and raised many highly exotic trees and fruits in their garden. Later I will talk about one episode with these exotic fruits. Unfortunately, she died of cancer early. His father and mother were involved in creating Israel. For example, his father Yisrael was the first commander of the Israeli Air Force. But he was not a pilot, he was simply creating the Air Force. When he died, all subsequent Air Force commanders attended his funeral. Of course, these were indeed pilots and aviation generals. Dani's mother Rivka was involved in the creation of Magen David Adom (the Israeli Red Cross). She was the head of Magen David Adom in the city of Herzliya, where we live now. I recently exchanged my apartment and now I live very close to Dani. The back of my house faces the street named after Dan Amir's parents. I am happy and proud to drive past the memorial plaque and the "Amir Street" sign every day.

And now one funny story about the exotic fruit that I mentioned earlier. I am talking about carambola. This fruit was not known in Israel until the mid-1980s. I think that Ziva, Dani's sister, brought this fruit from her travels in Southeast Asia, and in 1973 she planted it in their garden. She managed to grow a tree from it. They have a wonderful garden where the father of Dani and Ziva put in a great deal of work. So, the first time we saw and tasted this fruit was at Dani's house — I think this was in 1984.



The photo on the left shows the fruit on a tree. In the middle photo you see a thin section of it. This is how the fruit is served. The photo on the right shows the fruit being sliced.

Okay, so we were served a few star-shaped slices on saucers, as shown in the middle photo. None of us (there were several other guests) had ever seen such a fruit before. I exclaimed: "What a Zionist fruit!" Everyone reacted with amazement: "What are you talking about? This star only has five vertices, not six". Indeed, everyone had slices with five-pointed stars, but all of my slices had six vertices! Their amazement was endless. Our hosts had never seen this fruit with six vertices. At the time, I was thought to be the most Zionist-minded guest, and this miracle was additional evidence. Many months have passed, perhaps several years even. We were sitting in Dani's garden and above us was this tree, carambola. Adina and Dani told us that they never saw the fruit with six ridges again, that when they tell their guests the story about the six-pointed stars of carambola, no one believes them, and that they themselves doubt that this ever happened. I got up from my chair, walked up to the tree, and picked a piece of fruit at random, just to have a look. And lo and behold, it was a six-pointed carambola fruit! After the initial shock, everyone rushed to the tree to search, but they found no more six-pointed carambola fruits. Adina decided to preserve this specimen in alcohol, as evidence of its existence. Later,

such carambolas were no longer a miracle — many people found them.

I would like to remind you here of a certain legend, which I wrote about in my essay “Miracles”: God does not like for people to witness miracles, and therefore he turns a miracle that happened by chance in front of people into a law of nature.

The following two funny stories relate to jackets.

In 1994, Jean Bourgain received the Fields Medal, and on this occasion the University of Paris-Est Marne-la-Vallée awarded him the title of Doctor Honoris Causa. There was a small reception. Gilles Pisier had left a little earlier. As we were all parting, Jean discovered that the jacket that remained hanging was not his. We quickly figured out that Gilles had mistakenly taken Jean’s jacket. They had jackets of the same color. Of course, they exchanged their jackets back. A couple of years passed, and Lyuda decided to buy me a new jacket. I asked for a colorful one, burgundy, like the ones my friends Jean and Gilles had, to look younger. Lyuda bought one. After some time, with my new jacket on, I ran into Gilles. Gilles saw my jacket and asked: “Vitaly, why do you wear such a jacket, one of the color worn by mafiosi?” “I wanted to have a colorful jacket the same color as yours; I wanted to look younger”, I retorted. “But my jacket was blue (as was Jean’s)”, Gilles marveled. There it was, I got mixed up. Do not try to emulate people, so you will not get “mixed up”.

The truth is that we mathematicians do not like to wear jackets. Not everyone wears them. But some, like Olek Pelczynski, took it to the extreme. In 2002, we traveled together on a cruise from Vancouver to Alaska. It was a five-star cruise on Celebrity Infinity. Cruise ships of this sort hold formal dinners where men are required to wear jackets. Olek never owned jackets and did

not have one on the ship either. Lyuda had brought two jackets for me, and I offered Olek one of them. Not immediately, but eventually he agreed to wear it. By the way, it fitted him very well. When the cruise was over, Olek's wife told Lyuda that Olek did not want to part with it. I think that Olek subsequently began to wear jackets. (The benefits of a cruise).

I feel like I am overloading this text and I should write a separate story about my meetings with various mathematicians. However, I do not wish to postpone telling about my last meeting with

Laurent Schwartz (1915–2002),

so I will tell that story now.

Throughout his life, Professor Laurent Schwartz maintained extremely liberal views. For example, he used to visit communist Vietnam and was an honored guest there. We became acquainted and met from time to time a few years after my immigration to Israel. Of course, my views were diametrically opposed to his, and certain disputes arose, despite the fact that I tried my best to be restrained and careful. The funny part was me being told later by those who were present about Laurent Schwartz's reaction when someone later tried to apologize for me. He said that Vitali had lived there and had the right to speak the way he speaks. Interesting how having lived "there" gives the right to a different opinion.



Early 1980s. Meeting with Laurent Schwartz in Tel Aviv.

And now, on to the story that motivated me to write about this.

In 1982 Israel fought a war in Lebanon. France was extremely critical of Israel, and after the so-called “massacre” in the Palestinian camps in Sabra and Shatila near Beirut, in which the Christian Phalangists took part while the Israeli troops were not far away, France declared Israel guilty, and the criticism crossed all acceptable boundaries. In particular, Laurent Schwartz signed a letter from several top intellectuals of France on the suspension of scientific ties with Israel. It was a very offensive letter. A year passed, and in the summer of 1983, there was a very large conference in Paris in honor of the retirement of Laurent Schwartz. Because of that 1982 letter, I was even thinking about not going (in protest). But everyone was going, and such a solitary protest would have looked like “spitting against the wind”. And so I went and made a presentation at this

conference. Lunches were held in a hall with large tables seating 10 or more people. For one of these lunches, Laurent Schwartz and his wife went with us, several Israelis. I did not see his wife on other days, so perhaps this was thought out in advance. As we were sitting down, Joram Lindenstrauss and Lior Tzafriri tried to sit between us, and I did not mind. They were simply afraid that I might speak on topics where Laurent Schwartz held a sharply differing opinion. But Laurent Schwartz wanted to sit next to me. That was his request.

And he said to me: “Vitaly, you were right the whole time”. And he began to tell me how not a single publisher or journalist in Paris wanted to talk with him about the 1982 events in Beirut. He said that, without exception, all the French newspapers, radio, and television were saying that the Israeli army, the Jews, slaughtered Arabs in Sabra and Shatila. “I tried to explain that yes, the Israeli army was not far away, but it did not take any part in the killing of civilians. And it immediately stopped the killings once it became aware of what was happening”. But no one wanted to listen to him, Laurent Schwartz. “Those who were once my friends were telling me that no one was interested. But most journalists simply would not answer my calls. Their secretaries would not put my calls through to them. Once they were all running after me asking to give them an interview, but now they did not want to talk”. I did not record this conversation, so the exact phrases may have been different. But I am conveying the meaning precisely. His wife was frequently interjecting in the conversation. This was an extremely sensitive topic for her as well. (By the way, she was the daughter of Paul Lévy, which carries a special meaning to me). People told me later that she leaned even further left than Laurent Schwartz. It was clear how important it was for them to tell me about their epiphany. Everything turned upside down in their views. It was a good thing that I went to Paris for this event. They were not sharing this pain with the other Israelis sitting at the table — they

were speaking to me. Just like that — a distressing epiphany at the age of 68.

In conclusion, I will note that I described my own very personal meetings with many mathematicians and some related events in other essays. For example, in the chapter on “aging conferences” of the essay “I Am 80 Today”. In it I wrote about many events involving Jean Bourgain, Joram Lindenstrauss, Alexander (Olek) Pelczynski, and Friedrich Hirzebruch. In many places of various essays, I described my interactions with Gilles Pisier, Nicole Tomczak-Jaegermann, Michel Talagrand, Misha Gromov, and many other remarkable mathematicians and people. I am overflowing with many other interesting stories about my interactions with them and many other colleagues, which I did not have a chance to mention in these essays. But I feel that I should postpone the description of these interactions until another opportunity presents itself. This essay looks oversaturated. And it is filled with my retirement-age colleagues. Apparently, impressions about earlier ages, the ages of my former students, have not yet formed, have not yet matured.

Vitali Milman, June 2020

Conclusion

Once, sometime in the mid-1990s, I was walking around with Gelfand in the woods of IHES (Bures-sur-Yvette). He asked me why I had not gone into politics — he had heard that I could have. I replied that a good result in mathematics sometimes brings me years of satisfaction, while the greatest achievement in politics (and I had some) brings only days. This is why I am a mathematician. Gelfand almost smiled and said: “The same thing with me”.

I remembered this in connection with the coronavirus pandemic and our life over the past few months. We spend months practically without leaving our apartment, and I found a way to spend this time wisely, I found myself something to do. I write stories about my life. This is already the third book that I am going to print myself, at my own expense. I like the stories I write. These days I started to write stories about animals, about our encounters with them. Interesting, but the satisfaction ends with the last period mark in the story or book. The day is not over yet, and I already start getting bored. And memory brings me back to mathematics. Although it is hardly possible to return to mathematics, due to my age and the lack of those very extensive connections that I enjoyed previously. I mean returning with that force, without which there will still be no satisfaction. And I am back to writing stories.