

MY BROTHER

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I was lucky. I was born younger. My older brother has been with me my whole life. He was an altogether special person, very noble and generous, a foreigner to things kitsch and to banality. When I was a child, he spent a great deal of time with me. During that difficult period parents had to spend almost the whole day at work, and in many households children were left to themselves. At my home I had my brother, who was never a “babysitter” to me and never gave the impression that I was a burden to him. Being together was interesting.

Misha studied a good deal, and read a great deal. His range of interests was unusually diverse; he was interested in history, politics, philology and linguistics, studying foreign languages all on his own. Often, when he had come across something especially interesting, which intrigued his imagination, he would tell me about it. While at school the amount of time spent preparing for his classes was always a minimum; almost as a rule classes were uninteresting to him, since in the humanities Misha’s knowledge always surpassed the demands of the school and possibly even the knowledge of the teachers. The exercises in physics and mathematics were far too easy for him. Nevertheless, Misha studied physics and mathematics above and beyond the demands of the school curriculum. Loving to solve problems of increased complexity, he often attended the meetings of mathematical and physics circles and took part in physics and mathematics competitions, which were conducted by Moscow State University.

The level of these competitions was very high, not comparable to the usual city competitions conducted by the Ministry of Education. The University led competitions were held in three rounds on Sundays as a rule, so that it usually happened that the Sundays during March and April were all occupied by these competitions. He successfully performed in physics as well as in mathematics and as a rule won one of the first three awards (each award usually was shared by several winners) and came home with a prize, a pile of books on the subject.

Like many adolescents of the time, Misha was interested in collecting stamps; he had amassed an excellent collection, which was unfortunately lost during the move to Israel. His collection never took on any monetary character, but each stamp had its own history, many reflecting the histories of their

countries, their becoming independent colonies during the turbulent 50's and 60's, political juntas, revolutions, wars, the changing of borders, monetary reforms – all this was reflected on the stamps. Misha knew them in detail and could say much about them. Misha became interested in photography, and in a cramped place, in our room in our communal apartment,^a under the table, draped on all sides with towels, would develop film from a narrow-film German camera, and then would print the photographs himself. These small, black and white photographs are now especially precious to us.

For a while Misha played chess, and even was a champion of his high school, which was not a minor achievement, taking into account the fact that chess was a very popular game then. But Misha decided that if he was going to become involved in sports, he'd rather do an athletic kind. He believed that sport was a must for everyone, but at that time one could be accepted to sport class only if he decided to make it a professional career. Of course, Misha could not leave everything else for sports. For a few years he practiced fencing but finally quit when it became too time consuming.

When Misha was around 16, we were on vacation with our mother in Druskinikai, a small town in Lithuania. When I was splashing in the river, a strong undertow nearly carried me away, and I started drowning. Misha carried me to the shore, so that I didn't even have time to get really scared, but then Misha decided that he had to teach me to swim. I don't know when Misha learned to swim, for me it was natural that Misha, being an older brother, knew everything. He taught me to swim rather quickly, and we used to go to the swimming pool for many years together. We even participated in the swimming competition for ITEP (Institute of Theoretical and Experimental Physics).

It often happened that Misha would find something out, something that astonished his imagination or simply something that he liked and that interested him. In these cases he loved to share with me this new thing, but would always make allowances for my age and would recount it in such a way that I was never bored and never found it uninteresting. Misha gave me advice as to what books I should read and in what order. For example, he would say it wasn't a good idea to read several books by the same author in a row, so that their impressions would not be dulled.

In general, Misha saw to my upbringing very seriously. He even attended parental meetings in place of my parents. I studied well, and over-all there were no problems with any of my teachers, except for the occasional chat during class. This upset Misha a good deal and he always would say that I need to

^a [Where different families occupied rooms in the same apartment sharing the bathroom and kitchen.]

simply use the time in class for my own independent studies. In subjects of the humanities it is possible to read books about that subject, and in extreme cases even read the textbook, eliminating the need to do assignments at home. I know now, having already reared my own children, how difficult it is for children, especially for teenagers, to keep from chatting and laughing with their peers, and back then I suffered from my own good-for-nothingness and inability to attain Misha's ideal.

Misha was always ready to help me in school, if something needed to be explained, however he tried so that I would not get in the habit of asking for help, but would do everything on my own. Only if every possibility was used up, and I still hadn't solved the problem, would I ask Misha to help me, even more so because I was ashamed to go to him with a stupid question and disturb his work. In this way I learned to use encyclopedias, dictionaries and reference material and sometimes Misha would point me in the right direction, where I could find the answer to the question at hand.

I also liked to share with Misha all the new and unusual things I learned. This became a lifelong habit. Then, when we each had our own families and were not able to meet often enough, it became necessary, if only by telephone, to exchange opinions about current events and tell each other about the new things, read in books and intriguing the imagination.

Strangely enough, throughout the years Misha never acquired the "good sense" of maturity, but his world outlook remained young and acute, and his reaction to events remained very emotional. He had a very well developed sense of justice, instantly detecting insincerity, depravity and falseness. He never got bogged down by minor problems. He would advise me, saying that if something upset me, or if someone was conducting himself in an improper manner, that I should no longer associate with that person. Now I often seek advice from him in my mind, imagining how he would evaluate this or that situation and how he would react. To me, he is still the ultimate authority.

In our lives in those years it was easy to fall into a state of debasement, become the object of insults mocking our Jewishness. Misha was never about to tolerate this; he taught me to be proud of my Jewishness and not to be ashamed of it and try and hide it. He suffered our history, one of exile and misfortune, as if all of it happened in our own time and with himself personally. He bragged about Jews who tried to defend their dignity; for example, he told me about the revolt of Bar-Kochba and the ranks of the Jewish defense organized in a few towns and places during the pogroms.

For as long as I can remember myself, Israel was always for us an unobtainable dream, a place where Jews could be a valued people and shed their complex of being exiled. Our father would tell us about his cousins, who were

exiled from the Soviet communist heaven for Zionism and in this way were able to reach Palestine already during the 20's and beginning of the 30's. One of them, who did not leave in time and was able to survive during the Second World War, was sentenced for Zionism afterwards and was locked up in Soviet camps for many years. I think that if father had been old enough during the 20's, he, too, would have left.

At the beginning of the 60's Misha discovered a teach-yourself textbook of Hebrew in the Lenin Library, printed during Tsarist times at the beginning of the twentieth century. It was impossible to take the book home, but one could order microfiche. Misha had it copied in this way and we studied Hebrew with a small slide projector we had from our childhood. At that time, Misha bought at a bookstore the Hebrew-Russian dictionary by Shapiro, which had just come out and immediately became a bibliographical rarity. We studied in those times more for our own pleasure, not even thinking about the possibility that there would be a time we could practically use this knowledge. It is interesting that the textbook (author Riklis) was published before the real revival of Hebrew, and what we studied was Ashkenazi, Hebrew with an Ashkenazi pronunciation, which as it followed was not accepted in Palestine, as the Sephardi variation won over.

In '67, during the Six Day War, we lived on news from the front, happy and proud because of Israel's successes; father didn't leave the radio receiver, in an attempt to make something out through the Soviet jamming of stations Voice of Israel, the BBC and Voice of America. In general, since childhood I got used to the fact that we had our own world at home, which differed greatly from the those surrounding us, and being a child at the time I understood that what was said at home was not to be discussed with anyone, not even with my closest friends, even though nobody ever forbade me and this was never explicitly explained. Misha and father were always discussing current events, supported by information from foreign radio stations and extracted from Soviet newspapers by the method of "reading between the lines." In the reign of lies in which we lived, we succeeded in keeping our inner freedom.

Misha graduated from high school a valedictorian (with a gold medal), but the question of what to do next was far from simple. It was clear that many higher education facilities, Moscow State University included, were practically closed to Jews. With Misha's abilities there was no question that he should attend the best educational facility possible, so he decided to apply to Moscow State University. Usually for medal winners to be admitted it was enough to pass the admission interview successfully. If the interview was not successful, it was still possible to take the general admission exams. Exams at the university were a little earlier than at other higher educational facilities, so that is was

possible, in case of failure, to try to enter another facility.

Here comes one of interesting episodes about Misha. After the admission interview there was a little bit of a wait for the results and father went to see the admission committee. Father, also a college teacher (he worked in the radio technology department of the Institute of Energy), approached one of the committee members, explained to him that he was also a teacher and asked what chances did Misha have. Father was very worried, he almost didn't believe that they would accept Misha to the University, and wanted to have enough time to pass Misha's documents to another institute for an admission interview of medal winners there. The committee member was very attentive; he found Misha's file, opened it and, carefully looking father in the eye, said, "I recommend you to withdraw his application." What luck father didn't follow his advice! He was able to understand that the "adviser" was not benevolent, but simply an anti-Semite trying by any means not to admit a Jew.

Later, when it was clear that Misha had been accepted, father again stopped by the admissions committee. The secretary opened the folder with Misha's papers, and there father saw the decree: "Accepted in the highest rank", meaning Misha passed the interview with flying colors! This was the famous year of 1956, after the twentieth Communist Party Congress, when it seemed that the foundations of the empire had shaken, and, although it was still too soon to think of a democracy, at least the competition at the university was relatively fair. That year an unheard-of number of Jews was accepted, but after that everything returned to its prior state.

During his years at the University, as well as during high school, Misha spent much of the time at home at his desk. He quickly figured out which courses were worth attending and which courses he could miss without much harm so as to use the remaining freed-up time more effectively for studying on his own. Of course, the books at home no longer served for his studies at the University, so he sometimes had to study at the library. Misha always studied those subjects that interested him more widely and profoundly than the curriculum demanded; I don't remember him preparing for a specific exam, it seemed that he took them with a huge surplus, having studied intensively throughout the entire semester. I don't remember Misha going to any parties at high school, neither at the University. This was not because he didn't have friends or anyone to go with, but simply, he wasn't interested in parties.

Instead he loved kayaking and camping expeditions, choosing quite difficult routes. Before the trip he met with his friends, they chose their route, divided their responsibilities and bought the necessary food and supplies. There were especially many kayak trips over the rapids in Karelia, Lithuania and Komi, though Misha was just as serious about his winter skiing trips. I remember

one, at Kolsky peninsula, where his legs almost got frostbitten. When I grew up, Misha started to take me along if the route was not too difficult. When I think of those years, what first comes to mind are these trips, as there was probably nothing more interesting in my life.

It was then I was introduced to many of Misha's friends, fascinating people, many of whom Misha knew from the University, and many he worked with at ITEP (I still have till this day preserved good relations with a few). At one such trip I met the young couple Inna and Sasha Dolgov. I believe that they were hardly more than twenty years old at the time, as they had just graduated from PhysTech [Moscow Physico-Technical Institute] and Sasha began to work at ITEP. Throughout the span of our lives they were close; after Misha's marriage the families became friends and in the difficult refusnik years we highly appreciated their support. After our repatriation to Israel, Misha could only see them rarely, when they happened to be at international meetings. Misha was so happy when the opportunity came along for Sasha to come for a few months to work at the Weizmann Institute in Rehovot.

During that terrible year, when Misha became ill, Inna and Sasha Dolgov were supposed to come to Israel for the second time; Misha longed for them and lamented the fact that he felt poorly and could not regain his shape. He again had plans, as he did for their first trip, to travel around the country and show them the interesting sites he so loved. These plans were never realized, as Misha was overcome by his illness and, again, Sasha and Inna were near during one of our most difficult times and supported us.

Then, almost forty years ago, we, all four of us, began a camping trip in two kayaks: Sasha with Inna and Misha with myself. We were all happy and joyful, we swam in Lithuania's and Belorussia's most beautiful rivers. A little later we were joined by two other kayaks, the Terentev family and another couple, Yuri Simonov and Alla Badalyan. Such wonderful, intelligent and very decent people; Misha valued their friendship throughout the years.

On one of our river trips in Karelia a terrible misfortune happened: Misha accidentally cut open his leg with an ax. The wound was serious, the nearest civilization was far away and there was no road. Two of Misha's comrades from the University, D. Nikiforov and the late V. Nikolsky set out on foot for the nearest village and persuaded a half-drunk driver to drive up as near as possible to the camping spot. It was necessary to somehow get Misha to the car despite the absence of roads and we carried him in turn. Everyone was aware of the seriousness of the situation, but tried to keep calm and even made attempts at jokes to diffuse the tension. The way to the hospital took several hours and toward the end, still in the car, Misha lost consciousness due to the loss of blood. The whole time he didn't once complain about the pain, but

was upset at all the trouble he had caused his friends. He was operated on in a provincial hospital and when he had gotten a little better we were finally able to return to Moscow, Misha was very very upset that he had “ruined” my camping trip.

The year '57 was the middle of Khrushchev's monumental agricultural program, and, after his first year in the university, Misha, together with his fellow students, was sent to the Kustanai region in Kazakhstan. It was the first time Misha left home for such a long time, and we missed him, but his letters were quite happy. I remember Misha's return very clearly. He got off the train, tanned, with a new beard, smiling his wonderful smile. He only said that it is a pity that he caught flu on his last days there. After several days at home, when this mysterious “flu” did not go away, mother convinced Misha to get a blood test. She, as a doctor, saw that his illness does not look like a regular flu. Indeed, as we know now, his blood tests showed that Misha had been exposed to radiation. Then nobody knew that precisely when Misha was there, an experimental nuclear explosion had been performed nearby. The poor students all got a severe dose of radiation. Misha was sure that this episode was the origin of his fatal illness, because too many students that were there with him later became sick and some of them died of different forms of cancer. Indeed, Misha had lung cancer, which is very rare for a person, who never smoke. On that summer of '57 Misha slowly recovered, but most of his once beautiful and thick hair fell out. Still, Misha considered his summer away from home as a rather pleasant experience, and warmly recalled his friends, especially Boris Voronov.

Having graduated from the University, Misha vacillated on which direction of research he should take. I remember how he and father discussed this. While still a student Misha passed the famous “Landau Theorminimum”, which in all the years less than 50 people had passed. This was a series of meetings with L.D. Landau. Each time Misha received one or more problems, each taking a few days to solve, sometimes a week (I don't know if the amount of time needed to solve them was limited), and then he returned to Landau with the solved problems and received the next “portion”. In a sense this was similar to the competitions, where at every level a part of the participants were weeded out. Misha successfully passed all the levels and could have begun his scientific work under Landau's tutelage. As I remember it, Misha was one of the youngest, if not the youngest, to pass all the levels of Landau's exam, since the majority of participants were young physicists who already had their Masters. Misha began to do research already as an undergraduate. He tried different directions in search of the most interesting for himself. It was very prestigious to begin one's scientific career under Landau, however Misha, wavering, finally chose the

theoretical department at ITEP, whose line of research interested him more.

The work at ITEP was very interesting and productive. This was real research and not just “doing” a candidate dissertation [Russian analogue of Ph.D]. Even more so, when it was already clear that there was more than enough material for his dissertation, and it was necessary to write everything down, Misha kept putting it off, because he was in the middle of writing an interesting paper or solving a problem. We all joked that he had decided to surpass his candidate dissertation so he could go directly for a Doctor of Science degree [the highest degree in Russia, an analogue of professorship].

Misha’s papers were published in physics journals and he was sometimes invited abroad to conferences or seminars, however leaving the Soviet Union was out of the question. Misha was very upset about this because during these years of energetic development in physics it was necessary for scientists to communicate not only via publications, but face to face. Soviet physicists were deprived of this, cut off from the rest of the world, and were only able to talk to foreign physicists when they traveled to the Soviet Union, these being isolated events.

Apart from the natural professional desire to participate at interesting conferences and seminars in different countries, Misha also dreamed of seeing the world. He read so much and knew so much about the culture, language and history of so many nations, it was only natural for him to want to see everything with his own two eyes. Not once we discussed his choice of profession. I asked, why specifically he had chosen physics. He answered half-jokingly, that he always wanted to dig to the very source of the making of the world, and indeed, he studied the most fundamental of fundamentals, subatomic particles. Misha would also say, had he lived in another country and not been limited in choice, it is possible that he would have chosen a completely different line of career, for example, international relations. I am sure that he could have become an excellent diplomat or even have succeeded in having two careers, as did the Israeli physicist, Yuval Neeman. While still in Moscow Misha would talk with admiration about how this man, having built a successful military career, at the age of forty became interested in physics, went back to school for physics and in a relatively short time became a world class physicist. In the Soviet Union this path was closed for Jews, as were many liberal arts professions, leaving only the natural sciences where scientific achievements could at least to some degree be evaluated by objective criteria. Besides this, I think what influenced Misha’s choice was that in high school he had a wonderful physics teacher, Victor Leonidovich Raskin, who unfortunately also died early from cancer. He, by the way, a couple years later after Misha, taught V. Zakharov, who subsequently also became a successful physicist and stayed in close contact with

Misha. Misha's analytical thinking and his excellent command of mathematics determined Misha's decision to choose specifically the theoretical path.

Misha tried to persuade me, that in any profession it was possible to find something interesting and thus become captivated by the work. It, in many ways, depends on the person, and in most romantic professions together with the creative part there is always monotonous work. For example, the scrupulous note-taking of the experiment process or an accurate mathematical proof or calculations in theoretical research, the processing of literature, references etc. Misha considered that a scientist must command a developed imagination and besides this the ability to work incessantly and meticulously. What he objected to were an amateurish attitude and superficiality. I remember him saying, there is no such thing as, "I knew it, but I forgot." For him it meant, "You never knew it, at the time did not think about it and didn't not understand it profoundly enough." He admired professionalism in every area. Even with his broad education, he never allowed himself to make statements on subjects he was unsure about.

Misha was very modest, almost to the point of asceticism in his daily demands. He didn't like to waste time and energy on such unimportant problems as acquiring new furniture or fashionable clothes; his desk, paper, pen and the ability to work were the most important. By the way, about this desk. We had a very good, big and comfortable desk at home, with two stands with drawers. When we lived in a little room in a communal apartment, Misha slept on a collapsible bed and I on a suspended bed, like in a train, so that during the day our beds were put away. However, it never occurred to us to get rid of the desk or exchange it for a smaller one. It was simply the most important work area. It was at the desk that father prepared his lectures, mother, a neurologist, worked with her medical books when she had a complicated case in the hospital, and Misha and myself studied. Later we moved to our own apartment, where there was more room, and the desk, of course, came with us. And, when Misha married and moved with his family to a new apartment, he lacked a good desk. He could not buy a desk like the one we had, so Misha, a few years later, built himself a large, excellent desk. This was not a simple task for somebody who was not a professional wood-worker, but he worked laboriously and accurately; the drawers moved, the doors opened and closed. Misha was very proud of the fact that everything was up to par with a professional's work. When we left for Israel it was a pity we could not take the desk with us.

When the "iron curtain" started to open a little and there appeared some chance of leaving for Israel, Misha appeared to be in a difficult dilemma. We all knew that our parents could never leave, since father's work was highly

classified. Though neither our mother nor our father ever said anything against our leaving, we understood that if we were to go, that it would be goodbye forever and this would be fatal for our parents, as we were too close to each other. Within a few years it became clear that father was incurably ill, and we stopped discussing the question of our departure, all the while nervously following what was going on; the first and second Leningrad trials, the struggle of the refusniks, etc.

At the beginning of the 70's some of Misha's friends and fellow classmates left for Israel. One of them, D. Roginsky, who later became a professor of the Hebrew University in Jerusalem, helped us to find family from our father's side and to get in touch with them. Once there was an international conference in Moscow and our cousin, Dr. Uri Marinov was in the Israeli delegation. We met with him at Misha's home. Later, when father passed away, we applied for emigration. We wanted to leave, but only altogether, mother, Misha's family and my family. It was difficult to foresee how events would turn out. We ended up spending eight difficult years as refusniks before we were able to leave for Israel. During all those years D. Roginsky kept in contact and helped us tremendously. He applied to different social and governmental organizations to help our families receive permission to leave the USSR and repatriate to Israel. In 1982 D. Roginsky, together with our relative, also a professor of physics at the Hebrew University, Amnon Marinov, with whom we were acquainted only by correspondence, turned to Ronald Reagan, then the president of the USA, with a plea for action. The wall, however, was insurmountable, and only in the Spring of '87 did we fly to Israel; all of us, on one plane, just as we had wanted.

At last we met our relatives, the Israeli branch of the Marinov family, about which father talked so much. Misha even recounted to them the history of our family name which he remembered from father's words. We were especially warmly received by Uri Marinov, whom we had already met, and Amnon Marinov with his wonderful wife Rachel. I think that Misha would have been accepted with pleasure to any Israeli university, as he was well-known in his field. They, however, could not offer to a scientist of his stature anything less than a professorship. Such positions are rarely vacant, and it is especially difficult in Israel, where the number of universities is limited. I believe that Misha could easily have received an invitation to work in the US or in some European country, but he wanted to live and work in Israel. Approximately a year after he had arrived, having worked a little in the Hebrew University in Jerusalem and in a college in Ariel, Misha received a position at the Technion in Haifa. I remember how highly father spoke of the academic level of the Technion while still in Moscow. How proud he would be, if he lived to see

Misha become a full professor in the Technion.

It was a pity only that it was necessary to leave Jerusalem. However, after Misha got to know Haifa, he fell in love with the city. While working in Israel Misha was at last able to travel to seminars, conferences and do research in other countries. Still, having already traveled and seen much, he told me that Haifa was one of the most beautiful cities in the world, if not the most beautiful, truthfully adding that Jerusalem was out of the competition (besides everything else, he also didn't want to offend us, Jerusalemites). I remember well the last time we drove with Misha to the hospital. He asked me to take the long way, not wanting to hurry. We all understood that there was no hope of recovery. Misha, however, as always, was well composed; he didn't make any drama, but simply chose such a route, so we could once again admire the view of Haifa's gulf, the Bahai gardens and the whole panorama of the city on the way.

In spite of the fact that Misha achieved so many of his dreams: he conducted his own research, taught, lecturing in Hebrew (even though he could just as well have done it in English), and had several students who defended their dissertations under his supervision, he was nevertheless often unsatisfied with himself. He had a ton of ideas, he was searching for a path to solve many problems, and for all that he had a catastrophic lack of time. Teaching, which he loved very much and to which he gave much significance, took up much time and energy. A perfectionist in everything, he was very demanding of himself, and therefore, with much meticulousness, prepared for each and every lecture, even if he was merely teaching a long established course on classical physics.

I don't remember if Misha ever really took a vacation, in the common sense of the word, meaning spending his time completely uninvolved in his work. Even on weekends and during holidays he took a few hours to work a little. Misha used to say it would be a sin to complain about his life, leaving with pleasure in the morning to work, meaning to study things that were, for him, very interesting, and then, in the evening, racing home to be with his beloved family. He was so proud of his family: his beautiful wife, the tireless Lilia, his older daughter, Masha, who already started her PhD studies at the Technion, his younger one, Dina, when she became an officer in the Israeli Army! Many could have envied him, but nevertheless he had the sensation, that he was not doing all he could. The years at the Technion flew by much too quickly; the stressful and intense work, the travels abroad and connection with other physicists in world. What a pity, that all this came so late.

How painful that Misha did not do so much more!

Translated from Russian by Eric Barrett and Hana Chokler