Rediscovering Soskov
(shared thoughts)

There is only one thing permanent in this life, and that is change.
Shakyamuni Buddha

Not long ago he departed this life. It was just after midnight on the first day of orthodox Easter. A bee, still awake, stole into his bedroom through the open window, and took him to Eternity. We, Bulgarians believe that God’s most beloved children pass away on Easter.

Ivan lived almost 59 Earth years and I was a witness to about half of them. I am nearly getting used to his absence as that is born will die, and what has been gathered will be dispersed. What I still fail to understand in full is what was the meaning, the aim... WHY had Ivan come amongst us and what was his mission. And he sensed his mission, indeed. Once, with some friends he shared his reckon of whether he would be able to live his life in a way that would earn him the naming of a street. At that time he was about thirty. He had left behind the careless days of youth, the University and the dissertation defended recently. What was ahead? The unknown future with its challenges and responsibilities, with the yet uncrystallized sense of duty that Ivan seemed to have always had in his genes.
In the spring of this year we are speaking about his roots. Ivan is in a talkative mood - he has just submitted (unfortunately, his last) article and says he is resigning from thinking about math. Both families - his mother’s and his father’s - come from Southern Bulgaria. I ask him whether they were war refugees. ”No, they weren’t. They had always lived there, simply natives.” His grandfather on the maternal side was a notary’s son from Nova Zagora.

"It’s interesting - ponders Ivan - my great-grandfather managed to support my grandfather as a student in Paris with a modest salary of a small town notary. Is it possible today?” The student Georgi Rafailov met his fathers trust and expectations completely. He graduated with honours from the Sorbonne and later defended a doctorate at the same university. He had just turned 30 when one day, while walking on the Champs Élysées, he met Elena. A couple of words were enough to find out that they were compatriots, from the same town even living in close neighbourhoods. Blind fate...

Elena was young, beautiful, and intelligent. She was fresh out of Robert College of Istanbul and was rewarded by her father with the trip to Paris for the brilliant graduation. La belle Hélène had complemented her diploma with the 1927 graduates beauty pageant crown. In the following year Ivan’s mother Rose Marie was born in Paris.

At that time it used to be a matter of honour for the young Bulgarians, who were educated abroad, to come home bringing to the country their knowledge, as well as the spirit and culture of Europe.Having defended the doctorate, Dr. Georgi Rafailov established his family in his hometown and started a lawyer’s career. ”So, what? Had your grandfather remained in Nova Zagora, the story might have gone completely differently and you could have been his colleague now?’ - I ask him. ”I could have been.” - says Ivan emerging from his thoughts.

Surprisingly Soskov, who seemed like a man born to create Mathematics, in fact had dreams of studying law. Perhaps since that had been the broken dream of his mother Rose Marie or because of the heredity of his three ancestors-lawyers on his maternal side? Anyway, very early Ivan was quite aware that law was his causa perduta, his impossible, forbidden future.

A future that the young Georgi Rafailov had not the vaguest idea of. Educated, well-read and honest, he rapidly gained the respect of his fellow citizens and in 1941 was elected a Member of Parliament. The family moved to Sofia. The times were uneasy, the Second World War in which Bulgaria was Germany’s ally had just started.

There is something in the modern history, that makes us, Bulgarians especially proud - saving our Jews from the death camps. Ivan was twice as proud because his grandfather, who at that time was chairing the Legislative Committee of the Bulgarian Parliament, had merit in that act. ”The honour of Bulgaria and its people is not only a matter of feelings - it is first of all an element of its politics” - says the Declaration against the Deportation of the Jews from Bulgaria signed by 43 MPs, Dr. Rafailov amongst them.
The Bulgarian Jews were saved. Alas! their saviours were not. The men who had the incredible courage to oppose Hitler were alleged pro-fascists and accused of ... anti-Semitism?! Then they were killed hurriedly and buried in one trench. Their families were interned, the property - confiscated, and the future of their children and grandchildren - robbed. Human’s mind is unable to comprehend all that. Moreover, the human heart is unable to forgive. However, Ivan had forgiven. I never heard him complaining of the unfair fate. After the fall of the Iron Curtain he kept an aristocratic distance from the events - he did not benefit from his status of ”prosecuted by communism”, did not join any party, did not search for any revenge.

Ivan was born on 23rd September 1954 in Stara Zagora, his father’s hometown. His paternal grandfather Dr. Ivan Soskov was a respected physician in the city. The father, Dr. Nikolay Soskov was a physician-pulmonologist and at the beginning of his career he had to work at sanatoriums in the mountains. That is why Ivan spent his childhood with his grandparents in Stara Zagora.

Ivan used to recall their ”beautiful house with a gorgeous winter garden” and his German grandma Else, who raised him. Ivan’s grandfather had met Else during his university studies in Germany and brought her to his hometown after acquiring the diploma. Bulgaria became Else’s second homeland (well, with a small exception: she was proclaimed to be a fascist and sent to a work camp by the communist regime; Thank God at least that story had a happy ending).

The early teenage years might have been the hardest for Ivan. In the course of three years he lost his most beloved - his grandmother Elena, grandma Else and his mother. That might be the reason of his refusal to get up on the day of the high school entrance exam. Seeing words failing, Ivan’s father slapped him in the face. Fortunately, that took effect. Later his father would joke that Ivan’s career in mathematics was initiated by a slap. Curiously, at that entrance exam for the National High School of Mathematics, Ivan met Dimiter Skordev - the man, that 10 years later would become his first teacher in Computability and who Ivan would always refer to as his mentor.
Ivan made wonderful friendships during his school years which lasted his whole life. This is what one of his closest friends, Dr. Kiril Kalev recollects:

We were brought together by our school in the heart of Sofia. At dusk, after the last bell ring we would head with the rest of the gang to an attic where until the early hours we would discuss, argue, play music and sing about our experiences, dreams and hopes. Ivan was the one, who with his subtle sense of humor and intellect, made every friendly gathering unique. We often talked in rhyme. His quiet and poetic passion was known only to a few of us - the closest friends, because it came from the heart and would often not make it through the socialist censorship.

The late 1960s and early 1970s were a dark period for our free spirit. In the Cold War whirl the music of Jimi Hendrix, Beatles, Doors, Rolling Stones, etc. of all titans of English music pop-culture were unwelcome and banned in Bulgaria. During our house parties and gatherings outside Sofia we used to disguise as hippies, to try to recreate somehow subconsciously but very realistically a mini free society, wherein pop music and poetry, the free communication, jokes, and prank were not in accordance with the communist gyves and restrictions. That was a world of our own, which filled us and compensated what the dictatorship had deprived us of, a world that made us really happy. These reminiscences are still living nowadays.

The famous Bulgarian writer Yordan Radichkov writes in his play "Bustle": The way you get into the bustle has no importance. The way you get out of it is important. Ivan seems to have gotten into mathematics by chance, following his father’s advice, but soon it turned to be his destiny. Denka Kutzarova, a fellow-student of Ivan tells about his mature, professional attitude to mathematics since the first University year:

In the summer after our first university year a group of students were gathered at a mountain camp to train for a math Olympiad for universities from the Balkan countries. What a surprise it was for me to learn about Ivan’s decision to go back to Sofia after 2 or 3 days. "But why? True, we have no Olympiad experience, but we came here mainly for the training, didn’t we?" “I don’t need it. Olympiads are one thing, research - something else. Olympiad
problems, no matter how hard, have already been solved by someone. You can play a mind game with the people who gave you the problem, guessing how they think and what level of difficulty you may expect. In research you face something entirely new, nobody knows how to solve it, or even if it has a solution. I don’t deny Olympiad skills are useful for it; still research is a different game, the real game, much more exiting! I’ve decided in which math area I want to specialize and talked to the top professor in math logic. He shall be my advisor.

The eminent professor that Ivan had in mind was Dimiter Skordev. While still a bachelor student, Ivan attended almost all courses from the Master’s programme in Mathematical Logic, including Skordev’s legendary course on Computability. And Skordev did become his advisor - both for his MSc and PhD theses.

Here is what Dimiter Skordev remembers about his student:

In the academic year 1978/1979, as a supervisor of Ivan Soskov’s Master’s Thesis, I had the chance to be a witness of his first research steps in the Computability Theory. My role was rather easy thanks to Ivan’s great ingenuity and strong intuition. Several years later, in 1983, Ivan Soskov defended his remarkable PhD dissertation on computability in partial algebraic systems. Although I was indicated as his supervisor again, actually no help of mine was needed at all in the creation of this dissertation. Everything in it, including also the choice of its subject and the form of the presentation, was a deed of Ivan only.

Our further communication with Ivan enriched me with new ideas and a new perspective on things. From him I’ve also learned a lot about basic skills in using computers. When about a quarter of a century ago computers began to enter our work, Ivan Soskov was the one who made sure that we, his colleagues from the Department acquired the necessary skills. During the past decades I have always seen him as a benevolent and well-meaning colleague with true perspective on values in mathematics, who I deeply respected and who I thought of as a friend. Ivan Soskov left us in the prime of his creativity, full of ideas and plans for the field of science, teaching and administration. His absence creates a huge void in my life as a mathematician. His outstanding contributions however remain, and I hope that his numerous former students will be able to continue his work.

The remote socialist 1986 was the year of the first of a series of international conferences, organized by our Department. That conference was attended by a number of prominent scientists all over the world. How happy was Ivan to meet there personally with Yiannis Moschovakis from UCLA, the scientist whose notions of Prime and Search Computability were at the heart of his PhD dissertation “Computability in algebraic systems”.

Pic. 6. With Prof. Dimiter Skordev at the Faculty of Mathematics and Informatics, Sofia, 2005
Yiannis Moschovakis recalls their first meeting:

I met Ivan Soskov in 1986, at an International Conference on Mathematical Logic in Družba, near Varna. It was an important and very successful meeting, the first (I believe) in Bulgaria which included among its many distinguished speakers several from “the West” as we said then, and it was conducted almost entirely in English. The organizers were Dimiter Skordev and Petio Petkov, and I suppose I owed my invitation to the fact that I knew Skordev quite well from his visiting UCLA some time earlier.

Almost thirty years later, I still have very vivid memories of the Družba meeting, some from the talks and the place, but most from the young Bulgarian logicians I met there. They were a lively group, with close professional and personal connections among them.

I remember especially a dinner in the garden of a farm house that (I believe) had been rented for the meeting by Soskov and Lyubomir Ivanov with their families; several of the logic graduate students and Post Docs in Sofia were there, including (I think) Solomon Passy, Angel Dichev and Tinko Tinchev. The guest of honor was Albert Dragalin, another first-rate logician who died too young, and his lively and humorous conversation dominated the evening. But I was mostly taken by the young Bulgarians, their easy interactions and their intelligent and inquisitive discussion of every aspect of logic that came up. I remember thinking that if this sort of active logic group could be built in Sofia, then why not in Athens; and some years later we tried to imitate them, with some success.

I met with Soskov many times after that, including the two years (1991 - 1993) that he spent at UCLA, his visit to Athens in the Fall Term of 1999-2000, where he taught a terrific course on “Automata and applications” that I audited, and several conferences in Bulgaria. We became close friends, and I learned a great deal from him. But I know that I will always remember him most and best from that warm, late summer evening in Družba, with the vivid mixture of logic, youthful enthusiasm and Balkan garden smells.
I would not say that mathematics came first in the life of Ivan or that it was his second nature. Mathematics was just his life. Here is what Mariya Soskova and her mother Alexandra Soskova share about their life with the mathematician Ivan Soskov.

Mariya: My earliest mathematical memory is of my father, in the morning, coffee in his hand, sparkle in his eyes, talking excitedly about forcing. It sounded so mysterious and powerful... I decided then, I will do whatever it takes to find out what it means. This is how it always was, he would never push you to do something, rather he would make it seem so interesting and meaningful, that you would be drawn to it. This is how I learned how to ride a bike and swim and ski, and how I got into computability.

Later on, we would talk about math, research and the meaning of it all for many hours. He thought of mathematics as a way of uncovering deep and important ideas, he thought that people in this field share an invisible bond in some ways stronger than our bonds to people we see every day. Math was never work for him, it was his purpose. The reward was his own satisfaction and a nice novel, or an interesting movie, or a long dinner with music in the background and pleasant conversation.

It was a wonderful experience to be able to share all of that with him.

Alexandra: I will never forget how his eyes would light up when he was talking about mathematics. And this was everywhere: in the office, at the seminar, at the lectures, at home, at lunch or while taking a walk in the park. We would listen and try to understand the ideas, while they were getting more and more interesting, like magic. Working with him was an adventure. He had a very good sense of the quality of an idea. When he said "Yes, this is worth it", I was always convinced that it was indeed; not only about mathematics, about life in general as well. He was very generous with his time and made your mathematical experience seem like part of something grand. I will always be grateful for these shared moments.

Prof. Dr. habil. Ivan Soskov spent his entire career at the Faculty of Mathematics and Informatics at Sofia University. He climbed every step of the academic ladder, starting in 1983 as an ordinary programmer at the University Computing Laboratory and ending as a Dean of the Faculty. For many years he has also played a major role in various councils and organizations related to the management of Sofia University and the administration of research in our country.
Nadya Zlateva, vice-dean of the Faculty of Mathematics and Informatics at Sofia University:

Professor Soskov was not only an outstanding man and a brilliant mathematician but he was a charismatic leader. As the Dean of our Faculty during the last 6 years Prof. Soskov contributed to the rise of the authority of the Faculty. He made huge efforts for increasing the level of education of students, for accelerating the career development of lecturers and for improving the working conditions for all. He led the department with honesty and integrity, and enjoyed the respect of all colleagues and students.

Although standing aloof from politics, Ivan was a politician at heart, a visionary. He was tolerant and diplomatic, but determined when defending his ideas and goals. Here is what Ivan’s fellow student and former Bulgarian foreign minister Dr. Solomon Passy says about him:

Ivan was an unforgettable friend, an ingenious mathematician and extremely diplomatic colleague. He would solve the problems that others would not even phrase. He was a master at turning an awkward silence into a lively discussion with a constructive way out. And he was always equally effective - in the auditorium, at a workshop, at an international conference or among friends!

Soskov has supervised a large number of MSc and PhD students. His scientific heritage consists of about forty articles. Perhaps one of the most valuable things he left us is "The School Soskov", in which he built his spirit. He was also a scientist of international renown and enjoyed the respect of his colleagues abroad. Here is how he has remained in the memories of three of his contemporaries.

Andrea Sorbi, University of Siena:
I came across the work of Professor Ivan Soskov in the late 90s, when I first read his paper on jump inversion in the enumeration degrees. Since then, I always admired him, although I never met him until recently. Ivan has been one of those mathematicians who introduce new ideas and new directions of study and research. Thus it is not surprising that under his leadership, the University of Sofia has seen the rise of such a fine and successful group of logic.
When I met Ivan in 2007, I was able to appreciate his great human qualities: His broad culture, his friendly and generous manners, his smiling eyes. We have lost an excellent mathematician, and personally I have lost a dear friend.

Antonio Montalban, US Berkeley:

I always appreciated the deep insight Ivan had into the field of computable structure theory. It allowed him to do some great mathematics. A couple of my favorite things he did that come to mind are: the work on Intrinsic Pi-1-1 relations, the work on jumps of structures, and the work on omega-jump-inversions. I admire his work quite a bit. And also his personality. He’ll be missed.

Pic. 11. With Barry Cooper before the Doctor Honoris Causa Ceremony, Sofia University, 2011

S. Barry Cooper, University of Leeds:

Ivan was a man with a mission, it seemed to his friends and family. And the mission was to look after you. He was on your side. It was like the eyes of the Mona Lisa, Ivan’s belief in you followed, whatever. He knew the world was a dangerous (and wonderful) place. Walking the earth with Ivan was a very real and rewarding experience. Because he cared about the real things...

The teaching for Soskov was not just a part of his job commitments. He loved to teach, loved his students and enjoyed their love and respect as well. Ivan Soskov will stay for sure as one of the most charismatic professors of our Faculty. Here is how he has remained in the memories of one of his recent students Ivan Georgiev:

Professor Soskov was an incredible man and teacher. Doubtless my journey in Logic (and that of many other colleagues as well) began with the curiosity he managed to provoke during his courses on theoretical computability. Prof. Soskov sparked our love and commitment to science and this spark along with the bright memories of him will always shine over our way ahead.

The Lord had generously bestowed Ivan with oratorical skills and a brilliant sense of humor (his aunt Ekaterina Rafailova says he took after his grandfather, the politician). Here are just two stories that illustrate both these abilities. The first one dates from the end of 2002. We had gathered in the Main Building of the Rectorate for a ceremony honoring Prof. Dimiter Skordev with a major state award. After a few introductory words, the then-Dean of our faculty Prof. Yordan Mitev gives Ivan Soskov the floor. Ivan mumbles quietly something (I was sitting next
“Didn’t you know about it?” “No”, answers he heading for the podium. And what a speech he delivers! When I ask him later: “How did you manage?” he replies modestly: “Fortunately, we were in the back seats, so I had the time to formulate my speech walking to the rostrum.”

Pic. 12. Celebration of the 40th anniversary of the Department of Logic, Gyolechitza, 17th November 2012 (one of the last pictures of Soskov)

The second story is quite recent. It happened earlier this year in the spring. We are again in the Central Building of the Rectorate very early in the morning. There is going to be an entrance examination. Everybody from the Examination Commission is sleepy. Only Ivan is not, because he is angry - the administrative troubles have begun from the very Sunday morning. Soon we are invited to the official opening of the examination in a huge lecture hall. I am 2 or 3 minutes late, and as I am approaching, I hear the entire hall bursting into laughter. What do I see upon entering the hall - The Dean of the Faculty Prof. Ivan Soskov, dressed in an elegant suit and with a dignified look, is enchanting his future students with words about the wonderful world of Mathematics and why it is so important to study it. And the young people cannot take their eyes off him...

These young people will never see him lecturing and will never hear the first words Ivan used to begin each course with: ”Mathematics, dear colleagues, is like love: you have to experience it, having someone else tell you about it is not enough. But I’ll try.”

Similarly, I believe, Ivan had to be experienced, and having someone else tell you about Ivan is not enough. I just tried.

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