
An American Student of Professor A.S. Davydov

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In 1959 I was a second year graduate student at Harvard University, in a chemical physics program, and searching for a subject for a Ph.D. thesis. That year, Michael Kasha of Florida State University, gave an important series of lectures on excited states of molecules and energy transfer. He emphasized the work of two Soviet groups, those of A.N. Terenin and A.S. Davydov, work that was not as well-known to us as it should have been. I listened carefully to these lectures.

Later that year I became aware of a new U.S.A.-U.S.S.R. graduate student exchange. I applied for it, and was accepted for the 1960-61 academic year. I specified that I wanted to work with either Terenin in Leningrad, or Davydov in Moscow; the Soviet receiving side assigned me to Moscow. I might say that everyone in the U.S.A. thought I was crazy to do this: my mother was certain I should be drafted into the Red Army (I was born in Zloczow, then Poland, now Zolochiv in western Ukraine; we had come to the U.S.F. only ten years earlier). Harvard just thought it was a waste of time.

So I wound up in Moscow in September 1960, in a group of 30 American graduate students. We lived in Zona E of the familiar big building. I was a chemist, but in Moscow I was working in the Physics Faculty, where Prof. A.S. Davydov was. Most of the Americans were specializing in Slavic language or literature

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studies, government or history; in contrast the Russian students who came in exchange to the U.S.A. were all engineers or scientists.

Does that tell us something? It was the Khrushchev period, only seven years after Stalin's death. The U-2 incident happened the summer before we came. There were no foreigners in Moscow except for diplomats and a handful of journalists. We were watched, and not just by curious individuals. Ordinary Russians, our fellow students, were very curious about everything we did (from our music to how we managed birth control). But, they were also scared, it was too soon after Stalin. In our year at Moscow, only Georgians, Armenians and Central Asian students dared to invite us into their dormitory rooms.

Aleksander Sergeevich had gone on from exciton theory to nuclear theory. But he welcomed me, and we agreed I should work on energy transfer in helical polymers, a problem I brought with me. At that time, orbital rotation was a good way to follow the percent of helical structure in a polymer. With that helix content came spectral changes that I tried to calculate. My meetings with Prof. A.S. Davydov were always formal, scheduled a week or two in advance, lasting for perhaps an hour. I got good advice from him, and I sensed that Aleksander Sergeevich had a deep combination of physical and mathematical insight; he loved to see mathematics applied to real problems.

At the end of our stay he encouraged me to publish my work, by myself, in the «Vestnik of Moscow State University». In Russian, of course. And he helped me to correct my faulty Russian, which I really appreciated.

When I returned to the U.S.A. I did not continue to work in molecular energy transfer, but turned to bonding theory. But my experience working with A.S. Davydov left a mark on me; it taught me to value modeling, and to look for physical and chemical meaning in mathematical structure. He was a great scientist and a superb teacher.