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ON A RECENT FULBRIGHT LECTURESHIP EXPERIENCE

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I. Introduction

The intent of this discourse is to summarize the highlights of my experience as a Senior U.S. Fulbright Lecturer, having served in Vilnius, Lithuania, and Riga, Latvia, in the Fall of 1981. My professional field of interest is Computer Science. It provided the basis for my grant-related activities and as such will focus the scope of this article.

II. Some Background Notes

Among the purposes of the U.S. International Communications Agency (USICA) is the encouragement, aid, and sponsorship of the broadest possible exchange of people and ideas between the United States of America and other nations.¹ To attain these goals USICA, among other things, administers the Fulbright program, which was first initiated by the Fulbright Act of 1946 and is currently supported under the Mutual Educational and Cultural Exchange Act of 1961. It is a broad program making some 3,500 grants annually to U.S. citizens for university lecturing, research, graduate study, and teaching in a large number of foreign countries.

Grants specifically for lecturing in the Soviet Union have been awarded since 1973 under the exchange program between the two governments. Approximately 20 awards are made each calendar year either for a full semester or an academic year abroad. I had the privilege to secure the nomination for the lectureship award ² for the Fall semester of the 1981-82 academic year. It is known that the United States nominated to the Soviet government 39 lectureship candidates, from which the Soviets selected 17 individuals. Out of the 17, 14 candidates ultimately accepted the assignment. I can only assume that approximately the same number of Soviet scientists came to the United States on the exchange basis.

On this assignment I was accompanied by my two sons, Vilius, age 19, and Tomas, age 17.

We arrived in Vilnius, capital city of Lithuania, on September 9, 1981. For the return journey we departed Vilnius for Leningrad and Helsinki on December 14, 1981. Except for a four-day trip to Riga, Latvia, we spent all of our time in Lithuania, primarily in Vilnius. While we could move freely throughout the city of Vilnius, any travel outside the city was severely limited during our stay.

During the course of the visit, I delivered 30 formal lectures or presentations (nominally 2 hours each) and consulted with a number of professionals on various computerization projects. My younger son audited courses at a local high school while the older son took courses for credit at the Vilnius State University.

At this point it is significant to note that I was born in Lithuania in 1932 and have retained fluent command of the Lithuanian language. I left Lithuania with my parents during the war in 1944, and came to the United States in 1949. I am fairly well versed in the Lithuanian social, cultural, ethnic, religious, and similar national affairs as well as the status of various Lithuanian minority groups living in the West. During the Fulbright lectureship tour, I lectured in the Lithuanian language while in Lithuania and used English for my lectures in Latvia. Both my sons speak Lithuanian but no one in our party knew any appreciable Russian.

In addition, I view this assignment as an exceptional personal privilege. Here I was able to return to the land of my birth, representing my profession as it is known in the United States while using the native Lithuanian language with the Lithuanian people. Since outside contacts with the West for the Soviet citizenry are limited in the most oppressive way, my presence and the presence of my sons provided those living in Lithuania [3](#) with live, rare, and perfectly legal glimpses into personal and professional activities normally encountered not only in the United States but throughout the Western world.

III. Professional Activities and Observations

My institutional host in Lithuania was the Vilnius Civil Engineering Institute, VCEI (known in Lithuanian as "Vilniaus Inžinerinis Statybos Institutas"), located in Vilnius. While most of my professional activities were centered at VCEI and the city of Vilnius, I had an opportunity to lecture at the Kaunas Technical Institute in the city of Kaunas, the Mathematics and Cybernetics Institute of the Lithuanian Academy of Sciences, the Mathematics Department of the Vilnius State University, the Agricultural Economics Institute (all three institutions located in Vilnius), and the Latvian State University in Riga. In addition to my lectures I dealt with several consulting-type requests, some of them for VCEI and one each for the Library of the Vilnius State University and the Lithuanian Language and Literature Institute (also located in Vilnius).

The audiences at my lectures consisted mostly of staff personnel but on several exceptional occasions I had opportunities to address university students and faculty. Out of the 30 formal lectures, about 28 of them dealt with some Computer Science topic. In my remaining two or three formal presentations, I talked about the life in the United States, our educational system, about Lithuanian ethnic communities in the West, and related topics. In my Computer Science lectures, I covered about ten distinct topics.

Most of the computing equipment in use in Lithuania consists of copies of IBM hardware, [4](#) executing actual IBM or IBM-compatible software and programs. They even use English language commands and keywords!

For instance, in the VCEI Computer Center they have one somewhat outdated machine and two newer, Soviet-built Ryad models. Of the two Ryad ES-1022 machines, one was running under IBM OS Version 21.8 operating system, the other under the IBM DOS system. In terms of on-line peripherals, they were using 800 bpi magnetic tapes, 7-million byte disks (resembling the old IBM 2311 variety), paper tape, card input, and printers for output. They also had a large, Czechoslovakian-made flat bed plotter and some hard-wired alphanumeric display-type terminals. Their ES-1022's looked like IBM 360's and executed the IBM S/360 instruction set. Without going into details, they use American software, some of it pirated, [5](#) and American-looking hardware, the latter bearing Russian names and model numbers and manufactured in the Soviet block countries. A similar situation existed in many other installations.

Assembler language programming is still very popular — even for application programs — at least as popular as it was here in the mid-1960's. FORTRAN is also being used, followed in popularity by PL-1. While COBOL does not seem to enjoy wide acceptance, they ask questions about PASCAL and ADA.

System programmers, several of them very nice, competent, astute professionals, are starting to talk about the IBM-made Virtual Machine facility, VM/370 operating system. Their interest is very natural, because the Vilnius State University is due to get a large virtual machine sometime in 1982.

Alphanumeric display terminals appear to be abundant, all hard-wired into mainframes because of unreliable and noisy public telephone circuits. After some probing, I learned that some special, reserved-for-government telephone circuits will be allocated for future computer communications. However, before this becomes operational, they are in for some hard and very trying, frustrating times.

One problem of great personal and professional interest to me in Lithuania was the lack of capability to process Lithuanian language texts, i.e., the full Lithuanian alphabet, which consists of 32 characters (rather than 26 letters found in the Latin alphabet used in English). It is a simple problem requiring a most modest monetary expenditure for a print bar and some modest internal code changes. To my surprise and disappointment, I found little interest in this, and the problem remained unresolved.

A challenging problem, one dealing with the automated processing of Lithuanian folklore, was being worked on at the Lithuanian Language and Literature Institute. My poking around revealed a startling fact, a fact more startling for me than for them, that, with the available single literature specialist working full time, it would take between 15 and 37 years just to specify the computer input data . . .

The personnel they most lack, in my opinion, is a stratum of practically oriented, experienced, problem solvers. They have highly trained theoretically oriented individuals who lend rather limited assistance to practical problem solving on hand. At the other end of the spectrum is the relatively inexperienced programmer/analyst who needs technical guidance and

achievable technical goals, professional grooming, and motivation. Professional motivation and rewards, are, regrettably, generally coupled first to the Party norms; everything else comes second.

There are no Computer Science study programs, no Computer Science degrees, and no mini or "kitchen" computers for personal use. Though Russian pocket calculators are available, they look bulky.

These and other examples show that progress in certain computer applications is afflicted with readily visible pains. I have seen other examples clearly demonstrating that the management in some cases was not necessarily aware of underlying capabilities, that there existed serious gaps in information exchange, coordination and cooperation. Finally, they — like us — do compete for the available resources.

This does not imply, of course, that every area of computer applications is lagging behind. Neither do I have any doubts that these observations do not hold true throughout Lithuania, nor the global Soviet domain. If they did, the Soviet Union would not be a world superpower.

Off the record, people know and talk about "Post Office Box" factories and installations. These factories have no name, no address, nor are they listed in phone books; they are secret installations. Neither do their workers march publicly in the Great October Revolution parades.

There is a SIGMA minicomputer manufacturing facility in Vilnius. I saw one SIGMA M5100 model on display at the Vilnius Exhibition Hall.

Some academic officials talk with appreciable excitement about the near-future availability of some batch terminal, due to be patched into some international computer network operating out of Vienna, Austria. With this link, they will be able to access computing facilities in the West. In my opinion, this is both good and bad. It may be good, because all contacts with the West tend to broaden their horizons and foster Western-type humanity and social norms. However, the link may be bad and actually dangerous for the West, because it will expose computerized informational resources to the selfish and most assertive Soviet initiative.

Finally, an observation on their rather liberal and misleading use of self-awarded doctorate degrees, which they reserve for dealings with Western foreigners only. There are basically three academic degrees in the Soviet Union: the diploma degree, followed by the science candidate degree, and the doctorate. There are many science candidates and relatively few doctors. They feel that the amount of preparation and intellectual effort intensity for a science candidate degree approaches or approximates the requirements for the doctorate in the West and, thus, use this degree on their business cards. In correspondence some of them simply call themselves "doctors" in English. Such practice is misleading, unethical, and I took the opportunity to advise them against it.

IV. Concluding Observations

My concluding observations will briefly reiterate the more significant accomplishments and impressions accumulated throughout the award experience. In other words, having reported on what "I gave and saw" in the course of my assignment abroad, I also felt I had "a message" to transmit (and, possibly, translate from Lithuanian) back home:

1. The Fulbright lectureship program is a worthwhile international activity, very well received not only among the academic or professional circles of the host country, but also by those within the much broader areas of mutual cultural, social, ethnic as well as personal interest.
2. In the course of my stay in Vilnius and Riga I delivered 30 formal presentations, most of them on Computer Science topics. I also had an opportunity to visit several academic and research institutions and to participate in consulting activities.
3. The State of computing technology in the Soviet Union strongly resembles the status in the United States circa 1970-1975. The Soviet major mainframes look like IBM 360's and 370's. They execute IBM instruction sets. The use of American software, such as IBM and IBM-compatible operating systems, compilers, and programming packages is widespread. Some of the American software is used without due regard to the proprietary rights.
4. The USICA should strengthen the Voice of America broadcasts because they command wide, popular interest and are widely appreciated in Lithuania.
5. Also, USICA should take steps to insure better distribution of the "America Illustrated" magazine within the Soviet Union. Current procedure, as it is handled by the Soviets, is a sham. Many people have heard of the magazine but have never (or only rarely) seen it.

6. Given the official, orchestrated, well known (and very boring) Soviet propaganda posture against the West, it is pertinent to note certain grass roots feelings. People in Lithuania express genuine concerns about such global issues as the atomic war, the neutron bomb, or the worrisome stress in the Soviet Union-China relations. Privately, people do not consider America nor the Western world as villains. I found a significant credibility gap, genuine Soviet style, between the official viewpoints expounded by the government-controlled press, communication media, and government agencies on one hand and individual citizens on the other. Surprisingly, sometimes these diametrically opposite norms are expressed from the same lips, with words spoken only minutes apart.

1 Abstracted from the "U.S. International Communication Agency Fact Sheet," issued by the Office of Congressional and Public Liaison, USICA, May, 1981, page 1.

2 For information and award applications contact the Council for International Exchange of Scholars, Eleven Dupont Circle, N.W., Suite 300, Washington, D.C. 20036.

3 The United States does not recognize the forcible incorporation of the Republic of Lithuania into the Soviet Union: "Background Notes, U.S.S.R.", Department of State Publication 7842, February 1978, U.S. Government Printing Office, 1978 J-261-124 (2390), distributed to Fulbright grantees.

4 For a detailed treatise, see "The Soviet Block's Unified System of Computers" by N. C. Davis and S. E. Goodman, pp. 93-122, ACM COMPUTING SURVEYS, Vol. 10, Number 2, June 1978.

5 Back home in 1982 I made inquiries about the status of IBM's OS, DOS, IMS, and CICS software systems as well as about Cincom's TOTAL data base management system.

IBM's President Opel stated in his 4/19/82 letter to me that OS, DOS, and early versions of IMS, being public domain programs, have been readily available worldwide at no charge some years ago. IBM has no plans to offer their new virtual machines or their supporting software in the Eastern block because of current political conditions and the U.S. government licenses.

My 3/28/82 communication with Cincom Systems, Inc. revealed that the TOTAL system, when executing with OS/360, is used without Cincom's authorization. As a matter of fact, only through my inquiries did Cincom find out about this unauthorized use of their software product.