ON THE EFFECTS OF THE “RUSSEL VIRUS” IN EASTERN GERMANY

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As a citizen of the German Democratic Republic, I had once been an enthusiastic student of American culture, but had visited the United States only from my armchair, traveling in a "Gedankenreise," with finger on map. My son, meanwhile (at the tender age of fourteen), had, like the German author Karl May, even written a novel sight unseen about this "land of unlimited possibilities."

Now, in the fall of 1987, the two of us prepared for my great adventure, made possible through an invitation from the American Association of Teachers of German: a lecture tour of the United States, modern spoken German the topic. It would take me to a dozen American universities and colleges as well as several state chapters of the AATG, from New York and Boston to Tucson and Atlanta.

My first stop was the State University of New York at Stony Brook, my hosts John and Beth Russell, who touchingly looked after my well-being and introduced me to the peculiarities of the American English language, about which I had prepared myself with a booklet by my friend, Professor Harry Spitzbardt.
Was it Halloween, jet lag or my nervousness that kept me awake that first night? Or was it perhaps my host’s proclivity for the practical joke — I remembered well his gift to me during a previous visit of his in Weimar, a Karl Marx marionette clad in a jogging suit. In any case, John knew me better than our short acquaintance might suggest, and was well aware of the magical power a machine dedicated to learning purposes — the personal computer — would have on me, as he had provided one for me in my room.

Certainly he knew that I had written my dissertation on programmed learning. I had come to the conclusion that neither the programmed textbook nor the (really not bad) technical learning machines (called Unitutor) of those times would serve the lofty goal of measurably enhanced instructional effectiveness.

Even in the cradle of programmed learning, the United States, the technical solutions, in spite of their apparent opulence, did not yet measure up to pedagogical demands. This much we knew from the writings of B. F. Skinner.¹

That last sentence is written so easily today, and says nothing about the difficulties we were confronted with then, for perseverance and not a little mother wit were required to gain access to technical literature, particularly from the U.S.A. We got it, if at all, through adventuresome channels and usually one, three or even four years after it appeared. This had sometimes the involuntarily positive effect that certain conceptual weaknesses had already been demonstrated in practice by the time we could start working. And so these mistakes, at least, didn’t have to be repeated.

The perceptions of Pressey, Holland, Evans, Glaser, Homme, Crowder, Keisler, Gilbert, Eigen, Fry, Markle, Klaus, Komoski, Lysaught, Rothkopf, Mager, Stolurow, Coulson, Lumsdaine and Silbermann, to name only a few of the pioneers of programmed learning in the United States, helped us to develop our own variation of programmed learning.

We made them, willy-nilly, our own even more thoroughly than is the case with specialized literature nowadays, because we studied them as once medieval monks studied: copy machines were not yet widely available, so those of us who could take “official leaves” in other cities copied the works out for our research teams, tiresomely, by hand, page for page, in the few modern libraries open to us, in Leipzig, Berlin, Moscow, Prague or Budapest, travel to the West being still unavailable to us.
It was difficult to get even the current Soviet literature on programmed learning—the works of Leontjew, Galperin, Landa, Berg, Itelson, Schestakowa, Bespalko and Talyzina. We needed these not only, as so often, as an official justification for the many Western titles in our citations, but also because they provided a catalyst for the further development of programmed learning, still an active research area in the Soviet Union, while in the GDR "Cybernetics," one of its fundamental bases, was under suspicion as non-Marxist and hence to be avoided, especially in the liberal arts.²

Despite all of that, programmed learning was still respectable in the GDR even in the face of monetary and personnel limitations. As early as 1962 the foundations for development of programmed learning were laid at a conference of the German Academy of Science with the theme "The Significance of Cybernetics for Science, Technology and Economics." At this conference, on the one hand, the main goals for educational research were fixed; on the other there was an overview from a cybernetic standpoint of issues in the psychology of learning. Voices from this conference had a loud echo. When in 1963 the German Central Institute of Pedagogy’s research group, Cybernetics and the Schools, took over coordination of this field, it was able to use as a basis the numerous research results already available. In 1964 the first results from direct practical research were available. Programmed learning was especially popular in chemistry and mathematics, but also in biology, geography, history and arts and finally also in languages. Efforts were especially intensive in professional training, continuing education, in the Army, and to a lesser extent in higher education, where research in language laboratories and in auditory grammar and lexical and phonetic programming was of interest. These results made me a believer concerning programmed learning, and I said so in my stints as visiting professor in Prague and Sarajevo: I was among the few German teachers who actually used the language lab as a laboratory, even if one-sided audio training was finally unsatisfactory.

No surprise, then, that I was still on the search for a suitable medium for language software, especially since the giant computers from Zeiss-Jena that we glimpsed at professional seminars (but for financial reasons could not use) gave us an idea what could be done.

For economic reasons, we didn't get a serious start at using computers in foreign language instruction until 1986. At that time the Western countries had their well known "forbidden list" of electronic equipment that could not be exported to the East,
which forced us to reinvent, or at least redraft, the wheel. The result was tiny computers that proved highly unsuitable for language instruction, even if they were effective in the natural sciences for drills. They had unimaginative names, like KC 85/1 (Z 9001), or KC 85/2 (HC 900), had only 5 K of memory (which one could top off with 8K more), and they worked with tape cassettes as a memory medium. More interesting was the local PC 1715 with 48K of memory, which the powers that were at first didn't want to give to us linguists, because the tiny computers were thought quite adequate for language programs.

In the meantime we had, once again, with the above mentioned delays and with the already described difficulties, studied at least a part of the CALL literature from the West and were therefore able to avoid mistakes that people had made elsewhere. For example, accepting limitations set by technical or scientific standards and installing a pool of computers with too little memory, which would be hopelessly outdated almost immediately. We had enough experience with our administration to know that they would abandon us indefinitely to our inadequate machines. As a show of good will, however, and with the support of a few helpful physicists, we implemented a few of our designs in BASIC on the tiny computers assigned to us while developing more serious prototype programs, also in BASIC, on a private Commodore 64. Even here we reached the limit of our hardware and had to request at least an IBM compatible computer to carry on. Our continuing education summer seminars for foreign teachers and students of German, bringers of Western currency to both the University and its associated Ministry, provided us with a bargaining chip. Gritting their teeth, the administration and the established professors of literature who at the time had us under their thumbs gave in, but they insisted that we acquire the necessary hardware from a budget in GDR Marks.

This was an adventurous undertaking, since such computers could be bought only on the black market. Say, for example, that someone had an aunt or a grandmother living in the West, who had given him a computer and who somehow had gotten it into the GDR (for a short time it had even been possible to send computers by mail). Resale of such machines was as unwelcome to the government as direct purchase by public institutions. For a while such sales and resales worked only via the government. This way the state profited from a transaction that it officially discouraged.
Once having won the battle of finances (an IBM compatible computer cost at the time 100,000 GDR Marks), the would-be purchaser faced an even harder second battle: finding a computer owner willing to sell the equipment (who as a rule would be unwilling to appear in any official documents as the seller). You had to swear to the seller that you would not abscond with the expensive equipment, then take it to the authority for Sales and Purchases, register yourself as the seller (which attracted unwelcome official attention immediately), and "buy" it back ten minutes later, after a 10% deduction. This all had to happen within a limited period of time, especially if you had the bad luck to have had the funds committed from the University in the third or fourth quarter, because by the end of the year the funds might have dried up.

The bad news was that during my hunting season no IBM-compatible computer was to be found; the good news, on the other hand, was that somebody who wanted to get rich quick was offering two Commodore 128 computers (1986 price 32,000 marks), a Seikosha printer (7,000 marks) and ten 5 1/4" diskettes (not packets of diskettes) at 2,000 marks each.

We agreed on the deal within five minutes: warranty, off to the Purchase and Sales authority, deliver the machine, get the machine back, hand over the money, and then surprise the research team—it was like Christmas!

Now we could start. Not exactly the way we had imagined, but it was a start nonetheless.

At this point we truly realized the lack of user ready programs and models for our work. And then this invitation from AATG!

Back at the Russells', the sorcerer's apprentice named "PC" stood before me. Now the Russell virus kicked in and from this point on determined not only my travel route through the USA, but spread uncontrollably through the field in the GDR after my return. With Claire Kramsch and Karen Kossuth at the AATG Congress in Boston; with Ruth Sanders at Miami University of Ohio; with Renate Schulz at the University of Arizona, with John Austin at Emory University; and with Christa Kirby in Tampa; everywhere I busied myself as a hunter-gatherer and sat at the computer screen until my eyes burned, while I missed out on making that longed for, overpowering land and the lifestyles of its people my own! Aleidine Moeller of the University of Nebraska thought that even at parties no one could get me to talk sense, because I was always on
the search for another computer freak, trying to soak up anything to do with CALL. Thank God my son was able to make up for all this several years later, getting to know the U.S. as a graduate student in Ohio.

I used up the copy cards of my American colleagues (my retrospective apologies to all!) on journal articles and gratefully accepted all freeware, even if some of it turned out not to be usable later.

Consequently there were many embarrassing questions on both sides of the border. On this one topic the border guards of West and East agreed: CALL programs were dangerous. To the former, the programs could lead to an unwanted stabilization of the GDR; to the latter, the danger was destabilization of the Socialist state through Western ideology, in the form of drill and practice programs.

Ruth and Al Sanders’s amusing adventure game, SPION (see article by Ruth and Alton Sanders in this volume), had it not been rebaptized as ROBOTKY for the purpose, could have gotten me into as much serious trouble as a West German friend’s language learning diskettes, sent by mail to my home address. They landed in the hands of the border police, who ordered me to present myself for interrogation. I was advised to make it clear to my foreign colleagues that private shipment of computer disks was illegal. I promised hypocritically to pass this on to the one colleague, but indicated the impossibility of guaranteeing results beyond this: I was internationally known and could hardly be expected to put an ad in the New York Times requesting to be spared from shipments of diskettes.

This was, however, not the only time I got in hot water because of my newfound passion. For example, a customs official at Berlin-Schönefeld Airport interrogated me for half an hour. My nervousness kept me from noticing until the end that this man was also a would-be computer freak. Liberating laughter from him at my fatuous suggestion that I should request a respectable consulting fee for our conversation.

At home again, I sat down first at my desk and second with my CALL research group, founded in 1986, and we worked out our basic position from the vantage point of all I had experienced and read of the CALL literature, so as not to repeat the mistakes made in other countries.

Our introduction read, in part: “Since the current situation, in spite of much progress, is still characterized by the undifferentiated use of widely unspecific CALL programs, it has proved necessary to specify general principles for the development of computer software for the teaching of German as a foreign language. Some of these will overlap
with requirements for teaching other languages, some of them are specific to German. The following list is still hypothetical and incomplete and will doubtless have to be modified and completed on the basis of concrete experience of the programs to be developed."

The development of these guidelines was a pressing matter, for already the first of the programs we had deemed unacceptable was being praised in journals: the grammar-translation method, believed dead, celebrated its resurrection.

Our research group's book *Computer und Video im fremdsprachlichen Deutschunterricht* irritated a number of computer hobbyists as well the educational bureaucrats responsible for the acquisition of hardware (Menzel 1988).

The coming explosion couldn't be delayed: since hangman, Storyboard, or Jumbler programs hardly seemed to us the *ne plus ultra* of language instruction, we demanded not only at least one IBM compatible computer, but in addition a professional programmer, also at that time the assistant to the dean.

Now I was out of favor again, but we could start to run the software, analyze its strong and weak points, use authoring programs, write programs ourselves, in BASIC, Pascal and PROLOG, in the form of research reports antitheses, work out principles for designing software appropriate to today's demands, and propagate them quickly in the GDR and the rest of Eastern Europe, from Prague to Poznan, Warsaw, Budapest and Moscow, where I was invited as a referee to conferences.

We offered our extremely enthusiastic students and mostly interested teachers the possibility of improving their language skills with German and English programs, held computer courses for frequently skeptical researchers, open-minded librarians and sometimes unwilling secretaries; and put on a mandatory seminar in subject specific computing, which is still part of the master's program as well as of the continuing education curriculum in German as a Foreign Language. And we organized workshops on CALL in all the in-service courses for foreign Germanists and German teachers. Of course we couldn't hinder the use of programs that were, in our view, useless or even harmful, but at least we were able to give our program participants a bad conscience about using them.
On the other hand we soon found interested confederates. In Leipzig, considerable software was written under the direction of Jürgen Fechner (another of John Russell's computer "offspring") and Rudolf Rausch. Brandenburg, Erfurt, Halle, Berlin, Dresden and Greifswald also had CALL representatives whom we invited whenever we were able to attract speakers from West Germany, Denmark, Belgium and especially the U.S. Highlights of these occasions include Renate Schulz’s workshop on interactive video, Ruth and Alton Sanders’s fundamental thoughts on parsing and Otmar Foelsche’s demonstration of HyperCard.

This set the state for my research program on my second trip to the U.S. The hurricane at the AATG conference in Boston did not interest me, but I was fascinated by James Pusack’s interactive video and Frank Borchardt’s CALIS, which we used as an authoring system. This time I wasn’t groping in the dark, as in 1987.

This trip too was important for the development of CALL in East Germany, now the "new Federal States" of united Germany.

We had known that the computer, if it was to be effective in foreign language instruction, had to be more than the means of drills or the carrier of unvarnished information. Its specific potential lies less in the semantic analysis and evaluation of language data than in the representation of complex relationships; it is ideal for search, sort, connection, and checking of information and it permits the learner to acquire and manipulate knowledge in his or her own learning style.

We emphasized a use of the computers that to our way of thinking is most helpful in modernizing and making effective language instruction; namely, as a working and thinking tool for text processing, information gathering, data processing and problem solving.

After learning from the computer, at least in its present form, turned out not to have fulfilled the high expectations we had for it, we recommended that efforts be undertaken to set into motion learning by means of the computer, and to see how the two could be combined, possibly with a third possibility, learning about the computer.

Here are some ways we thought this could happen concretely:

- more integration of word processing in instruction
- use of hypertext, hypermedia and telemedia
- linking of new or not yet existing expert systems, to be developed by teams of computer experts, linguists, cultural experts, pedagogy specialists and psychologists
- strengthened parsing research
Our CALL research teams in Jena and at the Herder Institute in Leipzig could have been central to these goals, particularly in terms of Ph.D. dissertation research. But now the tender plant of CALL for the nineties is threatened by radical cutbacks (supported by imported literary specialists) in eastern Germany’s programs in German as a Foreign Language (except in Brandenburg). In the meantime the essential hardware, from fast processors with large memory capacity to sound blasters, and the matching software, such as Toolbook, are easily available.

Once again, someone from here needs to be sent to John Russell, or to Joseph Weizenbaum, whose book, *Computer Power and Human Reason,* which I devoured in those American nights, helped us in all our enthusiasm to keep the necessary critical distance from our undertaking.

*Translated by Paulien Ruijssenaars*

**Notes**

1 See, for example his *About Behaviorism.* New York: Knopf 1974.
2 For an American comparison, see Ivanov 1962, an essay on cybernetics and language translated from Russian for the *Modern Language Journal.* - The Editor
3 San Francisco: Wilt Freeman, 1976.

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