Tripreport E.W.Dijkstra, Columbus - Pittsburgh - Paoli, 12 - 22 January 1977

    This short trip was successful: the hardships of travel were negligible
and the time was well-spent. I knew that people from Burroughs, Paoli (near
Philadelphia) would like to speak with me, and the State University of Ohio at
Columbus had invited me for the Distinguished Lecture Series that it had arranged
for the 10th anniversary of its Department of Computer and Information Science.
With an open invitation from Carnegie-Mellon University in Pittsburgh --just be-
tween Columbus and Philadelphia-- I could combine the three visits smoothly.

    On Wednesday the 12th of January I flew from Amsterdam to Columbus via
O'Hare Airport (Chicago), where now also TWA has TV-sets at its gates, something
I regard as a disservice to its passengers. Thursday was spent at the University,
where I performed late in the afternoon for an audience of about 300 people in
an auditorium that --being new and "modern"-- had no decent blackboards. My
host seemed shocked when he learned that I had no "visuals" and refused to use
the overhead projector, which I think a poor medium: it hurts the eyes of the
speaker and severly limits the amount that can be displayed simultaneously. I
prefer to work in an auditorium with wall-to-wall blackboards, so that I hardly
need an eraser and, at the end, can point to a formula I wrote down at the be-
ginning. I just like to display the whole development. But the style of the
sales presentation is invading the academic world, and many a new auditorium
has no longer the decent facilities. In spite of my handicap I gave a good per-
formance, which was well-received. (A week later I attended a presentation by
Barry Boehm of TRW, the usual duet for overhead projector and male voice....)

    On Friday morning I flew to Pittsburgh, where I arrived at Carnegie-Mellon
University at 11.30. In Pittsburgh I gave a series of three lectures on the
afternoons of Monday, Tuesday and Wednesday. The last two days the blackboards
were even cleaned when I started. This was three times for the same audience of
about 150 people, and I enjoyed it very much. It was a nice, actively cooperating
audience. (Contrary to my request, these lectures had been publicized widely,
and I feared overflow of the lecture room, but thanks to the very grim weather,
the lecture hall was just big enough for the audience.) I was perfectly honest
when, at the end of the third lecture, I thanked my audience for the attention.

    On Wednesday evening, after a quick dinner, I flew to Philadelphia. Thursday
and part of Friday were spent at various Burroughs plants, where I gave two
--rather impromptu-- lectures, the one leading up to the Gries-Owicki theory
and the other on various aspects of distributed processing. At 3.30 I had to
leave; I had moved my flight to New York one hour forward to allow for delays
that might be caused by the bitter cold. The precaution was unnecessary: I
arrived at J.F.Kennedy Airport exactly on schedule. Equally exactly on schedule
I arrived the next morning at 10.15 at Schiphol Airport. At 12.45 I was home
again.
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    At Columbus I spoke on Wednesday evening and nearly all of Thursday with
all sorts of faculty members. They were a varied lot. A man with an intense
but critical interest in Artificial Intelligence, a chairman whose unit of thought
was the dollar, a totally inflexible addict of relational data bases, a broad
and enthusiast colleague with interests ranging from quantum physics to parallel
computing, from number theory to biology, etc. Shortly after my arrival I was
told that I would meet "a former student of mine": it turned out to be Bruce D.
Russell, whom I knew from Marktoberdorf. He had chosen this place for his sab-
batical on account of its broadness, and did not regret the choice; next year

he goes to Cork University, Ireland, where he has been appointed as Senior
Lecturer or Reader. (In Ireland it has a different name.) He gave me two of
his recent memoranda, one of which we studied the other day with great inter-
est (and enjoyment: it was very well-written.)

At Carnegie-Mellon I have spoken with many, both faculty members and graduate
students. Upon arrival I was given an office next to the coffee lounge, and that
helped; besides that I have been invited for dinner each evening. As a result
the contact was quite intense and varied, very much like it was during my stay
at MIT in 1969. I suddenly realized that since 1969 I had not had such a long
exposure to the daily life in American departments of computer science. The
exposure made me aware of some deep differences between American and European
computer science departments.

At American universities, the teaching, coaching, supervising and tutoring
absorbs a larger fraction of the life of a faculty member: quite typically, the
University is often referred to as "the School". (This may be a consequence of
the existence of private universities, where students have to pay a substantial
fee.) It creates a different atmosphere.

Add to this that American universities are less hesitant than European ones
to get involved in vocational training. Schools of Business Adminstration, for
instance, are quite common in the USA, while Europe is generally reluctant to
admit them to the campus (for lack of underlying intellectual discipline).

In computing science I found very specific differences, some of which
are undoubtedly connected to the above.

In the USA, computing science is more regarded as "an established discipline"
than in Europe. At American universities a separate, independent department of
computer science is rather rule than exception, while in Europe, computing science
as a branch of the department of mathematics is not unusual at all. The reactions
to the ACM 68 Curriculum Proposal are, I think, typical: in the USA it has been
generally accepted, most Europeans, although observing the effort with sympathy,
thought the proposal premature. The ACM 72 Curriculum Proposal has been adopted
in the USA only mildly, but when Ashenhurst and Couger presented it in Newcastle-
upon-Tyne, it was openly rejected.

Joe Traub, the chairman of the department at Carnegie-Mellon, felt this
greater sense of "establishedness" to be a gain. I am less convinced. In Co-
lumbus I observed that many faculty members suffered from a great gap between what
they taught and their research. They felt that the teaching load interfered with
their research --whereas the administration seemed to feel that their scientific
hobbies interfered with their educational obligations-- . The conflict is only
too familiar, but I have always associated it with very "established" fields, in
which the material to be taught at the introductory courses has lost all its
freshness....

In Europe the view seems more widely accepted that the problems of computing
science should not be confused with the problems in using IBM's products. (And
many will gladly maintain, that the intersection is empty.) But Cornell and
Toronto, for instance, had no choice: the basic programming course had to be based
on PL/I. In a recent article in the Comm.ACM an MIT curriculum was described:
the first year included an introduction to PL/I as the prototype of the real world's
high-level programming language (it is hardly machine-independent, but that does
not seem to matter), next year's advanced programming is devoted to .... PL/I's

more sophisticated features (no doubt all the pathology included). This is in sharp contrast to the European scene, where I know of no respectable university teaching PL/I. (And what is more: if it did, I am afraid it wouldn't be considered respectable anymore!)

A striking difference is further presented by the attitudes towards Artificial Intelligence --in the sequel AI for short-- . In Europe, AI is viewed with great suspicion, and it hardly caught on. (In my innocence I thought that I had to make an exception for Edinburgh, but in doing so I seemed only to expose my ignorance and bad taste, for how dared I suggest that what they did in Edinburgh was real AI?) Last week I was truly amazed by the extent to which --although a high quack-density was readily admitted-- AI was regarded as academically respectable. (This is perhaps connected with the greater tolerance for the soft sciences in general.) In its social consequnces, AI struck me as religion, in the Pittsburgh department I felt a schism, a religious war in statu nascendi, either between the Artificial Intelligentsia and the rest of the department, or internally within the AI-community, whose True Believers were clearly divided into warring factions (Centuries ago the war would have been labeled "the Simonites against the McCarthyists"?)

I have spoken at length with a few Artificial Intelligentsia, and I have listened very carefully. I think I heard more than they thought they said, and I think that I am beginning to understand why they feel so superior and why they defend their religion so aggressively. During Tuesday afternoon's lecture I discovered by sheer accident an infallible technique of making the Artificial Intelligentsia completely mad at you: I can now assure you that casting doubts on the wholesomeness of Saint Johnny's anthropomorphic terminology is in this respect effective beyond your wildest dreams! It was a very interesting visit.

Finally it is worth noticing that computing science being less "established" in Europe than in the USA cannot be explained away by the traditional remark that Europe is just lagging behind: at both sides of the Atlantic a conscious choice seems to have been made.

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Visiting Carnegie-Mellon's Computer Science Department, I used the opportunity to collect material on how people solve problems. On Friday afternoon I presented a problem to the graduate students; during the next days, many of them brought me their scratchpaper. Their honesty and their cooperation are greatly appreciated. (The investigation is less a psychological experiment than an investigation of the Western educational system, which --as I feared-- has something to answer for.)

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Also in a very personal sense the visit was successful. I worked hard, but was completely relaxed, I slept well, wrote --in contrast to other trips-- more than usual in my diary and came home (after a quick shower) as fresh as a daisy. On Saturday night I went to sleep at 24.00, woke up Sunday 13.00 -- I had not been able to sleep on the plane-- and was back to normal. After an absence of only ten days, the problems of the time shift are clearly less severe than after a longer absence.

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