Summary of discussion

The Chairman: I could not help feeling a moment ago, when Dr. Young alluded to the University Computing Centres as Piccadilly Circuses, that that was an apt illustration; there is as much activity at one in the morning as there is in Piccadilly!

Mr. E. Stuart (*Welsh College of Advanced Technology, Cardiff*): There are a number of questions one would like to ask after Dr. Young's talk, but all I am left to say is: "Hear! Hear!" It is to my mind a great pity that there is not much more effort made in the universities, perhaps by some joint collaboration with industry and particularly between the manufacturers and the universities, to deal with this bottle-neck of training computer programmers. We find here that people in the colleges are dealing with computers almost single-handed. We get a great number of requests from local industry, from departments in our own College, from the Medical Research Council units in this area, for help and assistance. It has become a very real problem to try to deal with all this work as well as tackling our main job, to train programmers, who in their time will be able to deal with the work themselves. I feel that some form of co-operation, perhaps with the manufacturers, may help the present shortage of teaching staff who are responsible for training the next batch of programmers.

Mr. H. Grosch (*U.S.A.*): When you went to the University Grants Committee for the second batch of money for the second batch of computers, would it not have been possible to ask at the same time for support for additional staff?

Dr. A. Young: It would take a long time to answer this question completely. Universities in Britain are different from American universities. Finance for computers is asked for under "capital expenditure" whereas money for staff and running expenses is asked for under the "quinquennial grant." We *did* all ask for money for more staff, but the heavy government cut in the university grants for the quinquennium 1962–67 has meant that all recurrent expenditure has had to be drastically cut not only in computer laboratories but in all university departments.

Correspondence

To the Editor,
The Computer Journal.

Dear Sir,

We would like to comment on the Presidential address of Mr. Dudley Hooper at the recent meeting of The British Computer Society in Cardiff, in particular with reference to his remarks about the computer activities of British universities.

Mr. Hooper painted what seems a horrifying picture of the future as he would like to see it. On the one hand he deplores the fact that Germany and England are the only countries which have at least some scientists and mathematicians who think that pure research, not immediately and obviously applicable to useful ends, is a worthwhile activity. He thinks these scientists are deluded, that they live in "ivory castles," and he would apparently have the universities turn out a stream of programmers, coders and technologists to serve the growing demands of computing machines, presumably in industry. On the other hand, he looks forward to the day, not far distant in the university time scale, when the whole business will be controlled by a few experts, the machines being so intelligent that they perform easily even the most complicated requirements of their handful of masters.

Now these things are mutually contradictory, and unless we want our students to become the slaves of the computer controllers in Mr. Hooper's vision, we should surely stop teaching technology altogether and concentrate on the humanities, the liberal arts and the most abstract mathematics.

In fact we believe that the basic question is not "How fast can we get there?" but "Where are we going and why?" Will our 1984 be dominated by computing machines, which like present-day television, even via Telstar, will disseminate canned music, westerns, quizzes and dancing girls, composed and constructed on the cheap, with negligible human intervention? We might, presumably, be allowed to play games in which physical co-ordination and stamina are necessary and important, but what about our chess, bridge and other intellectual pursuits? Or, as Gill suggests in his letter (this *Journal*, Vol. 5, p. 71, April 1962), will the machines, by performing the chores of symbol manipulation, free the human intellect for higher things? What are these higher things, and what percentage of the human race will have the intellect to pursue them unless men and women can have a full education, socially orientated perhaps, but certainly unfettered by immediate technological demands?

Unfortunately, it seems that Mr. Hooper has nothing to fear in this connection. Perhaps it escaped his notice that out of the 450 or so delegates at the Cardiff meeting only about 15 were representatives of British universities. We neither have money nor staff, and any bright young man is quickly lured away from us to incomparably better-paid jobs in industry and government. Research, even the basic kind with no immediate aim, is leaving the university and is pursued increasingly by government departments and the research laboratories of industrial concerns. This may or may not be a good thing, but please let those of us who want to teach the young and to show them how to use their intellect, and who refuse to be bribed by better pay and equipment, remain undisturbed in our ivory castle.

Mr. Hooper looks forward to a happy solution for under-developed countries whereby a mere handful of people are taken out of their own countries and trained abroad, to be returned home with their presumably foreign computers—safely indoctrinated no doubt in more than computer know-how—to run a country otherwise occupied by an uneducated population. Perhaps we shall need our ivory-tower universities to preserve the right to dissent in this totalitarian future.

The big problem of the future, for the majority at least of the so-called civilized countries, will be how to spend our increasingly large amount of leisure time. In the solution of this problem the universities have and we think will continue to have, a large part to play.

Yours faithfully,

L. Fox.

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