PRESENTATION AND DISCUSSION OF PAPER 20

PRESENTATION BY DR. MICKLESEN

DR. MICKLESEN gave a resumé of the work that his group had been engaged on since the paper was written. The construction of a special-purpose computer has been completed. The dictionary has been augmented and the formats of the intermediate units which are the result of the segmentation lookup have been decided. A system of linkages for the elements of Russian sentences has been devised and ideas for making these linkages are being investigated. These linkages may be grammatic, semantic or co-grammatic-semantic. The character of the target-language synthesis, including word-order changes has also been decided, though there is much still to be done. For sentences in which the normal analysis fails there are to be "back-up" entries to effect some sort of translation. The system of programming being used allows easy writing of complex entries.

DISCUSSION

DR. HAYS agreed with the Chairman's remark that this work was very earthy! Some of the techniques are "beautifully elegant" (sic), but the procedure used to turn ХЛОРИД НАТРИЯ into SODIUM CHLORIDE is clumsy. When can we expect to see detailed publications of the IBM group's work?

DR. MICKLESEN admitted that particular procedure to be clumsy, but said that he had now abandoned it in favour of his scheme for making linkages. Publications will be forthcoming, and they will contain results.

DR. BOOTH drew the parallel between Dr. Hays' criticism of inelegant work with the criticism of early computer makers who actually built a computer while everybody else was planning better ones. Sometime planning must stop and action begin.

DR. HAYS rebuttal was to list some seven or eight groups whose translation routines he knew to be running on computers, thus indicating a thriving, active atmosphere, in which criticism of inelegance was valuable.

DR. MICKLESEN put a question himself. Was Dr. Hays still doing analysis by table look-up or had he changed to routines yet?

DR. HAYS replied that he was still using tables. Maybe a year from now RAND will have dropped tables, but only when they find a system which suits them.

DR. PARKER-RHODES strove to be fundamental. Everyone doing machine translation has at least one dictionary lookup. The important criterion of

"lookupness" of a translation routine is how much information per word it is necessary to have in order that the routine shall work. Whether this information is looked up in one or several references to one or several dictionaries is beside the point.

DR. MICKLESEN agreed and added that IBM will probably end up with three general dictionaries - segmentation and grammatical information, sentence structure and a very large English synthesis dictionary.

DR. EDMUNDSON said that the lookup or programmed routines option facing linguistic programmers was akin to the same option facing numerical analysis programmers. We don't know which is best. On a further point, we must be careful not to confuse laymen and must speak always of programmes, rather than machines, doing things.

DR. BOOTH agreed that there were no real translating machines, only computers.

DR. HAYS felt it his duty to point out to Dr. Booth that there are some who regard the IBM special purpose translator as a particularly desirable machine for machine translation, although others prefer the IBM 7090. To clarify his first observation on Dr. Micklesen's inelegant method, he is not an anti-table-looker-uper, but just against the procedure referred to, with its wasted zeros.

DR. KING apologised for defending his machine, but he had to state that it was quite wrong to condemn Dr. Micklesen's procedure as inelegant *compared with what has to be done on the 7090.* The procedure involves a lot of masking, which is inelegant on any numerical data-processing machine (like the 7090); nobody had yet in the conference stated that there was anything arithmetical in languages so that they could be handled elegantly by such machines.

DR. SHERRY ended the discussion by noticing that Dr. Micklesen had still some problems to solve in syntax and semantics, so that he may yet have use for machines using complicated masking schemes (like the 7090).

J. McDANIEL