

PRELIMINARY MEMORANDUM  
WRITTEN FROM THE ADMINISTRATION POINT OF VIEW  
ON THE REPORT BY Y. BAR-HILLEL ON  
THE STATE OF MACHINE TRANSLATION  
IN THE UNITED STATES AND GREAT BRITAIN

by

E. B. May  
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The following remarks are made from a purely administrative point of view with not attempt to assess the Report from the point of view of research.

I have read the above report through very carefully, and even when I reached the end, I was totally at a loss to decide what is the true nature of the report. It seems to me that it might have one of two intentions. Either it is a report on the state of machine translation in the United States and Great Britain (in which case, why are three of Bar-Hillel's papers included); or, equally well, it might be the statement for Bar-Hillel's theory that the "ideal of F.A.H.Q.M.T." is impossible, and only mechanically assisted translation is feasible. If the latter is the aim of the paper, the sweeping nature of many of the criticisms made against some of the M.T. groups could be more easily excused, and the paper would indeed be read in a different light.

However, I am forced by the title of the paper, and Bar-Hillel's own explanation of why he wrote the report, to conclude that it is intended as a survey of the state of Machine Translation in the United States and Great Britain. On page 2, paragraph 2, he says: "The visits upon which the report is based were made in October and the first week of November, 1958. . . . on November 13th, I reported before; a group of representatives of various government and military agencies upon the impressions obtained during my visits, and promised to supplement this oral report by a written one as soon as possible..."

It would be interesting to know to what extent he was officially commissioned to write such a report. If so, it seems unfortunate that the Director of an MT research group was chosen who might, as I am sure Bar-Hillel himself would be the first to point out if he were in the position of an on-looker, tend to be biased in his criticisms of other groups. It would also be interesting to know if Bar-Hillel was embodying the results of his investigations in a report he was submitting to government and military authorities.

Although it must be taken into account that some of the criticisms may be well-founded, many of them are made in a most unfortunate way. Most of them are bad-tempered in tone, and sometimes even vicious, and some of the more sweeping statements are made against individuals. It is perhaps indicative that Professor Zellig Harris and the Cambridge Language Research Unit are most strongly criticised. He admits that he did not actually visit the Cambridge Language Research Unit, but that his knowledge of their work was based (page 2, para. 2) "upon talks with members of the two research groups in England, as well as, of course, upon a study of their major publications including also, as much as possible, progress reports and memoranda". As it seems probable that Bar-Hillel did not have many of the workpapers of the Cambridge Language Research Unit, his

knowledge of the work in progress at the Unit was, on his own showing, too slight for him to make such adverse and destructive criticism. In his summary of his assessment of work done at the various mechanical translation centres, he has excluded only Dr. Ida Rhodes' group - small and recently started group - from criticism.

Bar-Hillel starts his survey with a table (Appendix I) in which he lists the Institutions, year of start of research, number of workers and yearly budget. As this list had to be completed largely from guess work or memory, it does not seem to serve any useful purpose other than drawing attention to the smallness of the grant allocated to the Bar-Hillel group compared to grants made to other groups. He then states his case for abandoning the aim for F.A.H.Q.M.T. and working for partial machine translation. In the following pages, he gives a summary of his assessment of the work done by the various groups. I list the criticisms made against the various groups, and the tone of which I take exception, below:

Review (of the state of M.T.) by Martin H. Weik & George Reitweisner, of Ballistic Research Laboratory, Maryland: page 2, line 7: "The second review seems to have been prepared in a hurry, relies far too heavily on information given by the research workers themselves, who by the nature of things will often be favorably biased towards their own approaches and tend to overestimate their own actual achievements, and does not even attempt to be critical."

M.I.T. Group: page 15, line 11: "...is not fully adequate and has to be supplemented by a so-called transformational model..."

Page 16, line 6: "...and the development of a program language is probably indeed not necessary, perhaps not even helpful for their restricted aims".

Zellig Harris: page 16, para. 8, line 7: "It is my painful duty to dispel at least some of these hopes. Though I think that the actual programs compiled by the Philadelphia group for the syntactic analysis of English embody solid achievements based upon valid intuitive insights as well as upon extremely painstaking and detailed observations, and in this respect equal if not superior to parallel achievements obtained during the same period by other groups concerned with the same problem (or rather, in most cases, with the materially different methodologically very similar problem of mechanically analyzing the structure of Russian, German, French, etc.), the theory behind these achievements seems to be of doubtful validity, if interpreted literally, and ill-formulated and misleading in any case. The detailed substantiation of this rather harsh judgment by quotations from the latest publication of this group, namely the paper 24 presented by Harris at the International Conference for Scientific Information, Washington, D.C., November 1958, will be undertaken elsewhere."

Page 17, line 18: "It is often quite certain that Harris could not possibly intended to say what he seems to be saying if his words were taken literally. But even if the reader is armed with a high degree of good will, he

he is often at a loss to interpret Harris' statements so as to save them from being patently false without becoming trivial"

Wayne Group, Detroit: page 27, para. 15, line 8: "The Wayne group expects to deal with the same problems treated elsewhere, but intends to make more use of modern statistical techniques. I am not quite sure what exactly this is supposed to mean...."

Cambridge Language Research Unit, Cambridge, England: page 35, para. 21, line 3: "In spite of its constant disclaimers, I regard this group as a highly speculative one with many of the good and equally many of the bad connotations of the term. I find myself again and again amazed by the prolificity of ideas emerging from this group, almost all of which have some initial appeal while also having the disturbing property of constantly changing their exact meaning or being quickly replaced by some other idea, for which the same process starts all over again after a very short time.

Page 35, para. 21, line 17: "Miss Masterman wrote three years ago a long (unpublished) paper on this topic (Combinatory Logic), but I had great trouble understanding its point, and the issue is no longer mentioned in more recent publications of the Cambridge group..."

Page 36, line 9: A third idea emerging from this group, though not only from it, is that of using a thesaurus-type dictionary instead, or perhaps in addition to, ordinary dictionaries. I find here the greatest difficulties of understanding in spite of many attempts on my part to do so and many hours of talking with various members of the group. Among other troubles I have here is the fact that the term "thesaurus" has not only been used by various groups in different, occasionally quite different, sense, but that members of the same group often use the term in different senses, and that its meaning keeps shifting even in publications of one and the same person with adequate warning given to the reader, perhaps without the writer being aware of such a shift."

Page 36, line 11: "Altogether there exists so far no evidence that any of the ideas brought forward by the various members of the Cambridge group will ever contribute new effective methods for practical M.T., and little evidence that they would result in new valid insights into the workings of language".

Appendix IV, page 6 (note 6): "Notice, e.g., that the very same - fictitious! - thesaurus approach that would correctly render "pen" by "plume" in the sentence "The pen was in the inkstand" would incorrectly render "pen" by "plume" in the sentence "The inkstand was in the pen".

Between summarising the work of the United States and Great Britain groups, Bar-Hillel makes a plea for closer cooperation between groups and exchange of research. This plea is possibly fully justified, but (on page 31, para. 2), he specifically and, I think, unfortunately, mentions the Lukjanow sub-group at Georgetown University under the heading of groups "reluctant to share their detailed results with others perhaps because of a feeling that these results have not yet gotten their definite formulation, perhaps also for less artistic reasons". He here mentions the Harvard group as one that "has little to learn from other group's achievements".

The report ends with Bar-Hillel's summary and proposals which again lay stress on abandoning high-level, fully automatic translation in favour of mechanical aids to translation. He again asserts the need for fuller co-operation between groups, with greater regard to special training for people to deal with the unsolved M.T. problems.

To sum up, the impression made by reading the report, I can only repeat that, whilst criticism in a report of this kind is to be expected and may be deserved, it is the underlying sneers which are behind the criticisms in this case that makes an unfortunate impression. In no case has Bar-Hillel tempered his remarks by pointing out that these are his opinions. The fact that in many cases he has made attacks on individuals is unfortunate and, in the case of the group of Professor Harris and the Cambridge Language Research Unit is so destructive that it appears strongly emotively biased.

One final point: the names of the British Mechanical Translation groups do not appear on the distribution list at the end of the report.

E.B. May  
Cambridge Language Research Unit  
Some time of:  
Administration, American Red Cross  
Allied Officers' Welfare, Admiralty  
School of Agriculture, Cambridge