OUR DOUBLE ANNIVERSARY

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ABSTRACT

In June of 1952, ten years before the founding of the Association, the first meeting ever held on computational linguistics took place. This meeting, the succeeding ten years, and the first year of the Association are discussed. Some thoughts are offered as to what the future may bring.

I THE EARLY YEARS

When the suggestion came from Don Walker to celebrate our twentieth anniversary by a panel discussion I responded with enthusiasm at the opportunity for us all to reminisce. Much has happened in those twenty years to look back on, and there have been many changes: Not many here will remember that founding meeting. As our thoughts go back to the beginnings it must also be with a note of sadness, for some of our most illustrious early members can no longer be counted among the living.

Not many of you will remember either that our meeting here today marks another anniversary of signal importance for this Association. Thirty years ago the first organized conference ever to be held in the field of computational linguistics took place. The coincidence of the dates is remarkable. This conference is on June 16-18, 1982, that one was on June 17-20, 1952, overlapping two of our three dates. That meeting was the M.I.T. Conference on Mechanical Translation. It was an international meeting organized by Y. Bar-Hillel and held at the M.I.T. faculty club. If our association was born twenty years ago, this was the moment of its conception, exactly thirty years ago. I will try to recall that meeting for you, as best I can, for I propose that we celebrate that anniversary as well.

For that very first meeting Bar-Hillel had brought together eighteen interested people from both coasts and from England. The first session was an evening session open to the public. It consisted of five short semi-popular talks. The real business of the meeting took place the next three days in closed sessions in a pleasant room overlooking the Charles River. We sat around a kind of rectangular round-table, listened to fifteen prepared papers or presentations, and discussed them with a no-holds-barred give-and-take catalyzed by the intense, open, and candidly outspoken personality of Bar-Hillel. He was the only person I ever knew who could argue with you, shouting excitedly at the top of his lungs until your back was literally against the wall, and always with that angelic smile on his face and you couldn't help liking him through it all. The stenotype transcript of the discussion at that first meeting makes interesting reading even today. The participants grappled in a preliminary but often insightful way with difficult issues many of which are still with us.

As for the papers at the conference, three were given by Erwin Reifler of the Far Eastern and Russian Institute, the University of Washington; two by Victor Oswald of the Department of Germanic Languages, UCLA; two by William Bull of the Department of Spanish, UCLA; one each by Stuart Dodd of the University of Washington, William Locke of the Department of Modern Languages, M.I.T., James Perry of the Center for International Studies, M.I.T., Harry Huskey of the National Bureau of Standards computer lab at UCLA, and Jay Forrester of the Digital Computer Laboratory, M.I.T. Two were by Bar-Hillel himself, from M.I.T.; and one was by A. D. Booth of the Electronic Computer Section, Birkbeck college, London. Most of the substantial papers were later revised for publication as some of the fourteen articles in the volume Machine Translation of Languages edited by Locke and Booth, or in the pages of the journal Mechanical Translation, which was started in March of 1954. Two reports of the conference were subsequently published in the journal, one by Erwin Reifler and one by Craig Reynolds, Jr. of IBM.

The ten years between the first conference and the founding of the Association were marked by many newsworthy events and considerable technical progress. A number of individuals and groups entered the field, both here and abroad, and an adequate level of support materialized, mostly from government agencies. This important contribution to progress in our field should be a matter of pride to the agencies involved. It was an essential ingredient in the mix of efforts that have put us where we are today. Progress in that first ten years can be estimated by considering that up to the time of the founding of the Association the journal Mechanical Translation published 52 articles, 187 abstracts of the literature, and ran to 532 pages.

To review all of that research adequately would be a large task, and one that I will not undertake here. But I should like to say that it includes a number of cases where computer techniques have played an essential role in linguistic research. Just one example is the work on the depth hypothesis during the summer of 1959, which owes everything to the heuristic advantages of computer modeling in linguistics. Those linguists who still scorn or ignore computational linguistics should consider carefully those many examples of the efficacy of computer methods in their discipline.

II   FOUNDING THE SOCIETY

Toward the end of those ten years the need for a professional society became clear. We did keep in touch by phone and letter, and ad hoc committees had been formed for various purposes. But most of all we needed a formal organization to bring a degree of order into the process of planning meetings. We could make plans through our informal contacts, but there was always the problem that new groups or existing organizations would go ahead with plans of their own for meetings too soon before or after our own. There were also requests from sponsoring agencies for symposia reviewing progress and encouraging cooperation between the growing number of federally supported projects. We wanted regular meetings but we resisted the idea of having too many.

As an example of the situation we faced, I received a letter early in 1959 from the Association for Computing Machinery, who were planning a National Conference to be held at M.I.T. September 1-3, 1959. They asked me if I thought that people connected with mechanical translation would like to have a session at the meeting or meet concurrently. I said I didn't know, but agreed to write to some people in the field about it. I did write, offering to set up a session or a separate meeting if others wanted me to do it, but expressing the thought that there were very few of us doing research in the field and that there now were a number of organizations that would like to include mechanical translation papers in their programs to build interest and attendance. It was a hot topic at the time.

We did not take up the ACM in their kind offer. Had we done so, we might today be a Special Interest Group of the ACM, and that would have hindered our close ties to linguistics.

In any event, the people at UCLA organized a National Symposium on Machine Translation, which took place on February 2-5, 1960, just five months after the date of the ACM meeting, and five months after that, on July 18-22, 1960, a meeting of federally sponsored machine translation workers, organized by Harry Josselson and supported by NSF and ONR was held at the Princeton Inn, Princeton, New Jersey. The next year, on April 4-7, 1961, a similar conference was held at Georgetown Univer-

sity, and just five months after that, on September 5-8, 1961, the National Physical Laboratory in Teddington, England hosted an International Conference on Machine Translation of Languages and Applied Language Analysis. Something clearly had to be done. So the stage had been set, and nine months later, on June 13, 1962, at another conference organized by the irrepressible Harry Josselson at the Princeton Inn, we finally founded a professional society: The Association for Machine Translation and Computational Linguistics, renamed six years later the Association for Computational Linguistics.

I have not been able to locate a list of our charter members. I am sure one exists. The officers for the first year were Victor H. Yngve, President; David G. Hays, Vice-President; and Harry H. Josselson, Secretary-Treasurer. Mrs. Ida Rhodes, Paul Garvin, and Winfred P. Lehmann were members of the Executive Council. Richard See, Anthony G. Oettinger, and Sydney M. Lamb were members of the Nominating Committee. Our announced purpose was to encourage high professional standards by sponsoring meetings, publication, and other exchange of information. It was to provide a means of doing together what individuals cannot do alone.

Many of us had hoped for a truly international association. We felt this would be particularly appropriate for an organization involved in trying to improve the means for international communication through mechanical translation. But the cost of travel, travel restrictions from some countries, and various other practical problems stood in the way. We became an international but predominantly American association. We decided from the beginning to meet in alternate years in conjunction with a major computer conference and a major linguistics conference.

My year of tenure as President was uneventful, or so it seems. It is difficult to extract one year of memories twenty years ago. I do remember a trip to Denver to see about arrangements for our first annual meeting at the Denver Hilton, to take place August 25 and 26, 1963, the two days immediately preceding the ACM National Conference. The local arrangements people for that meeting were most helpful. The program was put together by Harry Josselson. There were thirty-four papers covering a wide variety of topics including syntactic analysis, semantics, particulars of languages, theoretical linguistics, research procedures, and research techniques. Abstracts for the thirty four papers were published in Mechanical Translation, Vol. 7, No. 2, and a group photograph of some of the delegates attending appeared in Vol. 8, No. 1. Looking at this photograph and those taken at earlier conferences and published in earlier issues invokes considerable nostalgia for those days.

III   THE FUTURE

I do remember my presidential address, for it stressed some matters that I thought were particu-

larly important for the future. These thoughts were also embodied in a longer paper read to the American Philosophical Society three months later, in November 1963, and published the next year by that organization. I should like to quote a few sentences for they are particularly appropriate at this point:

"A new field of research has grown up which revolves about languages, computers, and symbolic processes. This sometimes is called computational linguistics, mechanical linguistics, information processing, symbol manipulation, and so on. None of the names are really adequate. The implications of this research for the future are far-reaching. Imagine what it would mean if we had computer programs that could actually understand English. Besides the obvious practical implications, the implications for our understanding of language are most exciting. This research promises to give us new insights into the way in which languages convey information, the way in which people understand English, the nature of thought processes, the nature of our theories, ideas, and prejudices, and eventually a deeper understanding of ourselves. Perhaps one of the last frontiers of man's understanding of his environment is his understanding of man and his mental processes.

"This new field touches, with various degrees of overlap and interaction, the already well-established diverse fields of linguistics, psychology, logic, philosophy, information theory, circuit theory, and computer design. The interaction with linguistics has already produced several small revolutions in methodology, point of view, insight into language, and standards of rigor and exactness. It appears that before we are done, linguistics will be completely revolutionized."

This quotation is particularly apt because I still believe that before we are done linguistics will be completely revolutionized. Let me explain. First, the difficulties in mechanizing translation had already at that early date called attention to fundamental inadequacies in linguistic theory, traditional or transformational, it makes no difference. Second, the depth hypothesis and the problems raised in trying to square it with current linguistic theory threw further doubt on the scientific integrity of linguistics. And third, the depth hypothesis also provided an important clue as

to how the inadequacies in linguistic theory might eventually be overcome. I have spent the last two decades or so following this lead and trying to find a more satisfactory foundation for linguistics. The following is a brief progress report to the parent body, as it were. A recent written report may be found in the Janua Linguarum Series Maior volume 97, edited by Florian Coulmas.

Modern scientific linguistics, since its beginning a century and a half ago, has been characterized by three central goals (1) that it study language, (2) that it be scientific, and (3) that it seek explanations in terms of people. It turns out that these goals are contradictory and mutually incompatible, and this is the underlying reason for the most serious inadequacies in linguistic theory.

Linguistics, and that includes computational linguistics, is faced with two mutually exclusive alternatives. We can either accept the first goal and study language by the methods of grammar, or we can accept the second and third goals and seek explanations of communicative phenomena in terms of people by the methods of science.

We cannot continue with business a usual and try to have it both ways. Basically this is because science studies real objects given in advance whereas grammar studies objects that are only created by a point of view, as Saussure realized. Their study rests on a special assumption that places grammar outside of science. To try to have it both ways also leads to the fallacies of the psychological and social reality of grammar.

The full implications of this fork in the road that linguistics faces is just now sinking in. Only the second alternative is viable, science rather than grammar. This means we will have to give up the two thousand year grammatical tradition at the core of linguistic thought and reconstruct the discipline on well-known scientific principles instead. This will open up vast opportunities for research to uncover that essential and unique part of human nature, how people communicate. We may then finally be able to do all those things we have been trying so hard to do.

In this necessary reconstruction I foresee that computational linguistics is destined to play an essential role.