LETTERS

The Finite 'String publishes letters of
reasonable length on topics relevant to
computational linguistics. On occasion
letters are reviewed by referees prior
to publication.

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Dr. Yorick Wilks' comments regarding the Logos Machine Translation System, published in Nov.-Dec. 1973 The Finite String (Vol. 10, Nos. 9-10· contain blatant untruths that should be corrected. In sum, he states that the Logos System has enjoyed such success because Logos has taken the option of translating..."such trivial material that the problems of natural language processing simply do not arise, or at least arise only in a trivial form."

It is difficult to imagine the source of such misinformation because nothing has been published or publicly revealed. about the system's linguistic approach since the Company's infancy in early 1970, before the development of three generations of Logos machine systems, at an expenditure of two and a half million dollars. For the record, the Logos System does not predicate its success on the processing of constrained English. Even in its earliest days the system handled standard linguistic operations as active-passive and verb-process noun transformations and limited pronomial antecedence recognition.

As early as mid 1971, when the Logos II English-Vietnamese system was still in mid-development, no less a critic of MT than Wallace Sinaiko acknowledged in an Institute for Defense Analysis study (Paper P-761, August 1971) that (p.33) "translation by computer, or machine translation (MT) is surprisingly good from a research and development point of view. It is encouraging, we believe, that the present state of technology permits fairly sophisticated technical English to be processed by MT; resulting translations into Vietnamese can be read and understood by native readers of that language." Or again, speaking of tests showing the relative merit of human translation, post-edited MT, and unedited MT by the Logos System, (p. 22) "Performance under all language conditions was surprisingly similar and not significantly different for the tests on Chapters 1 and 3. This suggests that some material might be left unedited, particularly if it is not too technical."

Mr. Sinaiko's views were based on the Logos System's performance in translating the Air Force's Instrument Flying Manual, which was

hardly written in constrained English. The English-Russian System, reported on in the March-April TFS (Vol. 10, Nos. 3-4) translated texts (to the satisfaction of Soviet officials) that were taken from foundry specifications destined for the Soviet Union's Kama River Project.

The Logos III English-French System has been under contract to translate IBM computer manuals experimentally, with success. On the strength of its performance, Logos subsequently received a contract from the UN to install its English-French System for pilot translation experimentation. The System is now about to undergo optimization for use in bi-lingual Canada.

If Dr. Wilks feels MT systems should address language other than as it is encountered in the real world of Kama engineering specs, UN treatises, and AF training manuals, then, of course, there can be no argument with his views.

Concerning linguistics and the Logos System, the Company attributes the strength of its technology to the system's grammar and ultimately to the linguistic principles on which it is based. This grammar has been developed inductively through the processing of 5 million words (and over 100 concordances) of scientific, engineering, legal and economic/political texts, and through contrastive studies of English with Vietnamese, Chinese, Russian, French, Spanish and German.

The grammar makes use of transformational techniques for normalizing (a la Selig [sic] Harris) various constructions for semantic transformation purposes. Other than this, the grammar is a phrase-structure grammar with a high degree of development in word class sub-classifications. These sub-classifications (somewhat along the lines suggested by Chomsky in Aspects) are semanto-syntactic groupings, that is, semantic groupings in terms of syntactic behavior and effect. For example, over 100 semanto-syntactic subclassifications have been recognized and applied to verbs, representing, in effect, a systematic mapping of the intersection of syntax and semantics in English verbs.

Logos has refrained from publishing any accounts of its grammar in the interest of protecting a proprietary aspect of the Company's business. But in all fairness to ourselves, Prof. Wilks' unaccountable misrepresentations could not remain unanswered.

Bernard E. Scott
President

P.S. Friends of Logos Development Corporation will be pleased to know that the Company is about to solve its recent financial difficulties through foreign commercial and governmental development contracts of healthy proportions. Logos regrets that it has had to go outside of the U.S. for recognition and support of a technology that in general has been too much maligned in the U.S., often unjustly, as the present case bears witness.