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A Brief Description of the XTRA Machine Translation System

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1. Summary of the system

Name: XTRA (English Chinese Sentence Translator)

Status: research

Type: transfer; fully automatic; bi-lingual (multilingual version under development)

Translated languages: English (source), Chinese (target), and Spanish (under development as target language)

Speed: average 5 seconds (real time) per sentence

Type of analysis output: intermediate structure (see example below)

An English sentence and the analysis output for it:

The tough coach married a star.

s

type(dcl)

tense(past)

aspect([ ])

modality([ ])

neg([ ])

parenthesis([ ])

head([ ])
verb_structure

verb(marryl)

subject(np(det(the),pre_mods(tough2),n(coach2),post_mods([ ])))

object(np(det(a),pre_mods([ ]),n(star2),post_mods([ ])))

Dictionaries: analysis, 1000 entries; transfer/generation, 1000 entries

Implementation language: PROLOG

Operating system: UNIX

Hardware: SUN workstation

A sample paragraph translated by the system:

The term "phrase" is here used deliberately in a sense which does not necessarily imply that it is a specific element within a clause. A wholly hierarchical approach to the analysis of the English sentence in which sentences are composed of clauses , clauses are composed of phrases , phrases of words , and in which decisions must be taken as to the status in terms of phrases , et cetera , of any individual piece is avoided in this book. This decision is taken for both practical and theoretical reasons. For practical purpose we need not be concerned with what exactly a phrase really is since we do not go on to consider sentence analysis. But there are also theoretical objections to the wholly segmental approach towards language. Many of the problems are shown fairly clearly in Chapter 9, but it is worthwhile briefly stating some of them here.

(Palmer, F.R.: A Linguistic Study of the English Verb, University of Miami Press, 1968, p.16)

2. References

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