

LEARNING COMPLEX OUTPUT REPRESENTATIONS IN CONNECTIONIST PARSING OF SPOKEN LANGUAGE *

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ABSTRACT

Due to robustness, learnability and ease of integration of
different information sources, connectionist parsing systems
are promising for parsing spoken language.

figure 3

```
([statement]
  ([sub-clause]
    ([agent]      his big brother+s friend)
    ([action]     loved)
    ([patient]    himself)))
```

Figure 3. Base lading structure

The important point to note here is that internal analysis is performed by the system. In a natural language would not

```

([statement]
([subj] (( form passive) ( tense present )
          ( mood ind) ( agr sing -3) ) ;features of
          ([infc] falls)
          ([agent] ( ( case nom) ( agr sing -3) ( gender masculine) ) ihr artl
                ([actia] akzeptiert)
                ([iarr] wird))
          ([dause] ( ( form active)
                    ( tense future) ( mood ind) ( agr pl
                    ([iarr]
                    ([agent] ( ( case nom) ( agr plu_1) )
                            ([recipient] ( ( case dat) ( agr pol -2)
                            ([acter]
                            ([patient] ( ( case acc) ( agr pl
                                    ([ind] ( ( case acc
                                        ))

```

The process of generating training from the syntactic tree for the example sentence is given in figure 6. It shows the respective input "sentences" for all levels in the respective syntactic tree (cf. figure 5), where to put phrase boundaries, and how to label the respective phrases. From the resulting more detailed syntactic analysis of input sentences it is much easier to define a mapping into some representation e.g. an interlingua for machine translation. In addition, this more

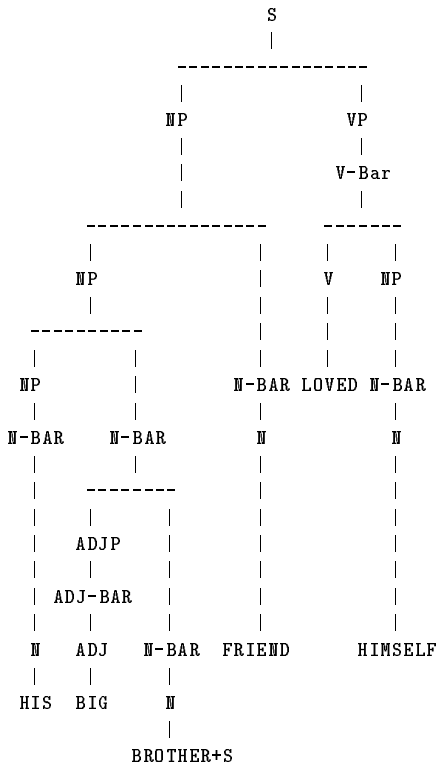


Figure 5. Structured parse tree

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