LEARNING COMPLEX OUTPUT REPRESENTATIONS IN CONNECTIONIST PARSING OF SPOKEN LANGUAGE

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ABSTRACT

Due to robustness, learnability and ease of integration of
several information sources, connectionist parsing systems
are promising spoken language parsers.
figure 3.

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

Figure 3. Parse lacking structure

The important point to note here is that no internal analysis of the agent slot is performed by the system in a machine translation framework. The analysis above would not be sufficient to enable a regular mapping into the target language. A much more detailed analysis of the internal structure of e.g. the agent slot is needed.

Both problems above could be tackled by a symbolic rule-based parsing system. However, ungrammatical sentence (which are frequently found in spontaneous speech) sent a major problem. On the other hand, the system with its inherent robustness of input with less difficult input.

Moreover, the input...
The process of generating training from an abstract representation 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 target representation, e.g. an interlingua for machine translation or an SQL for database access. In a detailed structure can be used for only possible the s
Figure 5. Structured parse tree

$\begin{array}{c}
| \\
| \text{NP} \quad \text{VP} \\
| \\
| \text{V-Bar} \\
\end{array}$

Input Sentence: Generating a Generating a Generating a Generating a Generating a Generating a

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Figure 6.


