revision rule is determined to correct the mistake. Such rules consist in movements of a single link to a different head. Learning how to revise a parse tree consists in training a classifier on a set of training examples consisting of pairs $\langle(w_i, d, w_j), t_i\rangle$, i.e. the link to be modified and the transformation rule to apply. Attardi and Ciaramita (2007) showed that 80% of the corrections can be typically dealt with just 20 tree revision rules. For the adaptation track we limited the training to errors recurring at least 20 times and to 30 rules.

`DesrReviser` was then applied to `pchemtb_test_base.desr` producing `pchemtb_test_rev.desr`, our final submission.

Many conjunction errors were corrected, in particular by moving the head of the sentence from a coordinate verb to the conjunction `'and'` linking two coordinate phrases.

The revision step produced an improvement of 0.42% LAS over the score achieved by using just the base `DeSRwsj` parser.

Table 2 reports the official accuracy scores on the closed adaptation track. DeSR achieved a close second best UAS on the `ptchemtb` test set and third best on `CHILDES`. The results are quite encouraging, particularly considering that the revision step does not yet correct the dependency labels and that our base English parser had a lower rank in the multilingual track.

Task	LAS			UAS		
	1st	DeSR	Avg	1st	DeSR	Avg
CHILDES				61.37	58.67	57.89
Pchemtb	81.06	80.40	73.03	83.42	83.08	76.42

Table 2. Closed adaptation track scores.

Notice that the adaptation process could be iterated. Since the combination `DeSRwsj+DesrReviser` is a more accurate parser than `DeSRwsj`, we could use it again to parse `pchemtb_unlab1.conll` and so on.

11 Conclusions

For performing multilingual parsing in the CoNLL 2007 shared task we employed DeSR, a classifier-based Shift/Reduce parser. We used a second order averaged perceptron as classifier and achieved accuracy scores quite above the average in all languages. For proper comparison with other approaches, one should take into account that the parser is incremental and deterministic; hence it is typically faster than other non linear algorithms.

For the adaptation track we used a novel approach, based on the technique of tree revision, applied to a parser trained on a corpus combining sentences from both the training and the adaptation domain. The technique achieved quite promising results and it also offers the interesting possibility of being iterated, allowing the parser to incorporate language knowledge from additional domains.

Since the technique is applicable to any parser, we plan to test it also with more accurate English parsers.

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