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University of Amsterdam (UvA)

Project AI, January 2014

### Doubling DOP\*

Kruit, Veldhoen

### Data Oriented Parsing

Bias and Consistency

# Double-DOP and DOP\*: a

comparison

DOUBLE-DOP DOP\*

Comparison Experiments

#### Result

Analyzing grammars
Parsing Performance

ummarv

## Outline

# Data Oriented Parsing

Introduction to DOP Bias and Consistency

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# **Parsing**

- ▶ input: sentence
- output: constituent tree

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## A grammar describes:

- how trees can be built
  - CFG's elementary rules
  - ► TSG's larger units: fragments
- how likely constructions are: probabilistic grammars
  - ► PCFG's independence
  - TSG's derivations

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## Double-DOP

Extraction: Maximal Overlap

Estimation: relative frequency

► Coverage: PCFG rules

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► Held-out estimation - HC and EC

Extraction: Shortest derivations

► Estimation: relative frequency in shortest derivations

Coverage: smoothing PCFG rules with probability p<sub>unkn</sub>

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# Comparison

- Shortest derivations or Maximal overlap
- Held-out estimation or one vs. the rest.

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# Maximal overlap ↔ shortest derivation

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# Double-DOP and

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# Split $\leftrightarrow$ one vs. the rest

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## F1 scores

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Summary

Outlook

lines.

- ► Something you haven't solved.
- ▶ Something else you haven't solved.

The first main message of your talk in one or two lines.

► The second main message of your talk in one or two

Perhaps a third message, but not more than that.

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