XTAG Tutorial

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XTAG Tutorial Outline

1. Introduction
2. Basics of TAG Formalism
3. XTAG System Demo
4. Specifics of XTAG System

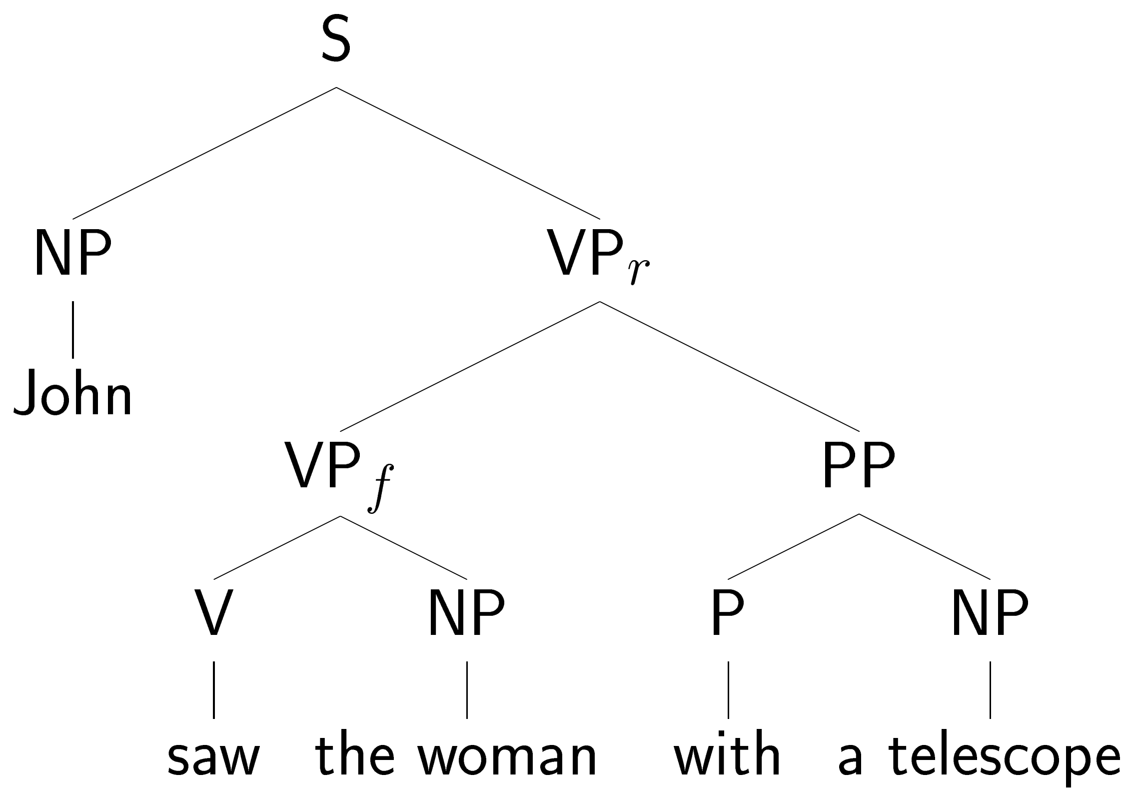
What does a parser do?

A parser takes a sentence as input, and provides:

- Constituency (NPs, VPs, etc.)
- Derivational History (how pieces combine)
- Predicate/Argument Structure (main verb, subject, object)

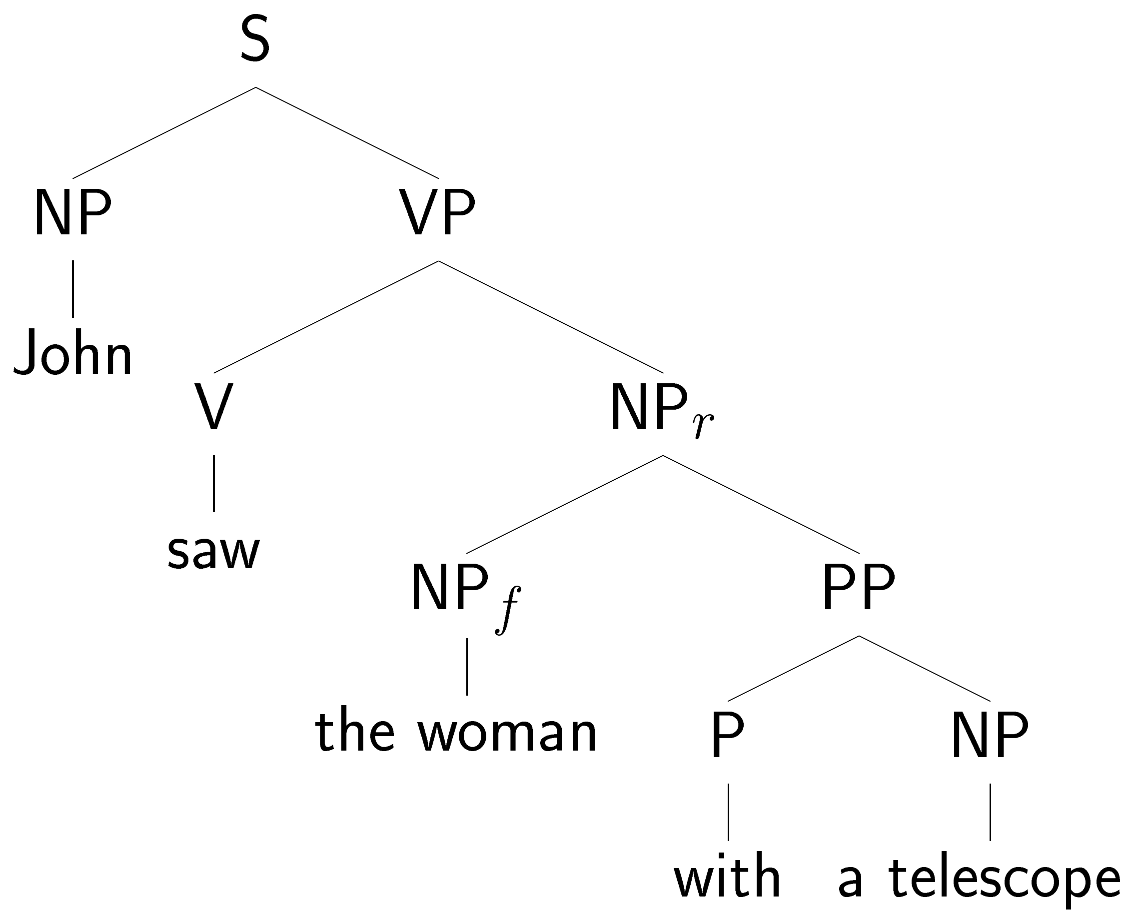
What does a parser do?

Gives tree structure for input sentences:



What does a parser do?

Can show ambiguity in input sentences:



Practical Uses

XTAG has been used in the following applications:

- Information Retrieval (finding web pages)
- Text Summarization
- Machine Translation
- Grammar Checking
- Natural Language Interface

Practical Uses

The XTAG system also contains diverse linguistic resources:

- Subcategorization information (argument structure)
- Syntax of various constructions (specific transformations)
- Frequency information (word to POS, word to construction)
- Morphological information

Theoretical Advantages

Underlying TAG formalism provides key insights about:

- Unbounded dependencies and subjacency (Kroch, 1986)
- Japanese causatives (Heycock, 1987)
- Extraposition (Kroch and Joshi, 1987)
- West Germanic verb raising (Kroch and Santorini, 1991)
- Syntactic locality (Frank, 1992)
- Scrambling (Rambow, 1994)
- Clitic Climbing (Bleam, to appear) (Kulick, to appear)