

# Bergen update

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# A web application for automatic syntactic analysis

- 7.5 years of 3-year project over
- Aim of the application
  - take a sentence as input
  - parse it
  - give as output the kind of analysis that is requested by the student

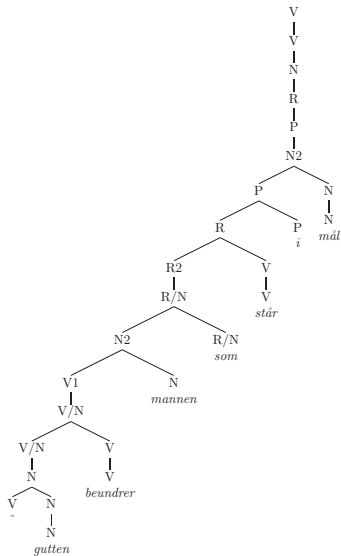
# A web application for automatic syntactic analysis

- A simple Web site has been set up
- Produces constituent tree and a field analysis

# Process

- Parse a sentence with ACE

## Incremental parse tree (almost unreadable)



# Process

- Reconstruct the AVM of the whole sentence with the ACE recons program

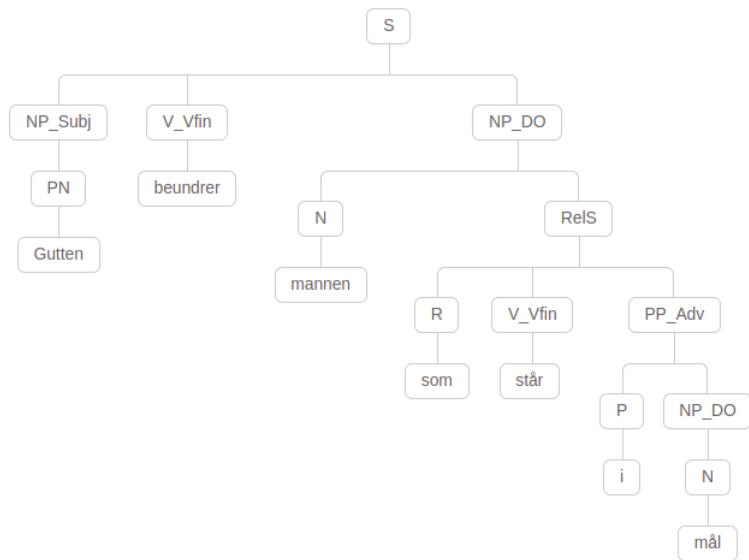
# AVM

LAAAARGE AVM

# Process

- Extract the constituent trees from the AVM with a script

# Constituent tree - readable for linguists



# Process

- Flatten out the constituent trees and enter the major constituents into a field schema

# Field schema – standard in teacher education

Forbinder	Forfelt	Midtfelt			Slutfelt		
		v	n	a	V	N	A
	Gutten	beundrer				mannen som står i mål	

# A web application for automatic syntactic analysis

## Analyse av norske setninger

Skriv en setning (bokmål):

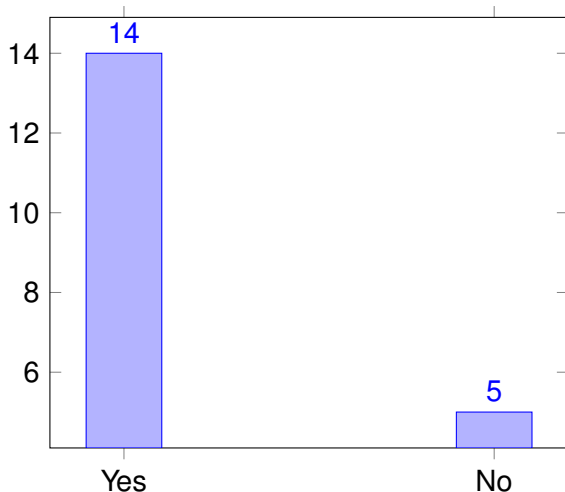
Analyser

Rangering av (inntil 5) analyser

Treanalyser	Feltanalyser																								
<p>1</p> <pre>graph TD     S[S] --- NP_Subj[NP_Subj]     S --- V_Vfin[V_Vfin]     S --- NP_DO[NP_DO]     NP_Subj --- PN[PN]     PN --- Gutten[Gutten]     V_Vfin --- beundrer[beundrer]     NP_DO --- N[N]     N --- mannen[mannen]     NP_DO --- RelS[RelS]     RelS --- R[R]     R --- som[som]     RelS --- V_Vfin2[V_Vfin]     V_Vfin2 --- står[står]     RelS --- PP_Adv[PP_Adv]     PP_Adv --- P[P]     P --- i[i]     PP_Adv --- NP_DO2[NP_DO]     NP_DO2 --- N2[N]     N2 --- mål[mål]</pre>	<table border="1"><thead><tr><th>Forbinder</th><th>Forfelt</th><th colspan="3">Midtfelt</th><th colspan="3">Slutfelt</th></tr><tr><th></th><th></th><th>v</th><th>n</th><th>a</th><th>V</th><th>N</th><th>A</th></tr></thead><tbody><tr><td></td><td>Gutten</td><td>beundrer</td><td></td><td></td><td></td><td>mannen som står i mål</td><td></td></tr></tbody></table>	Forbinder	Forfelt	Midtfelt			Slutfelt					v	n	a	V	N	A		Gutten	beundrer				mannen som står i mål	
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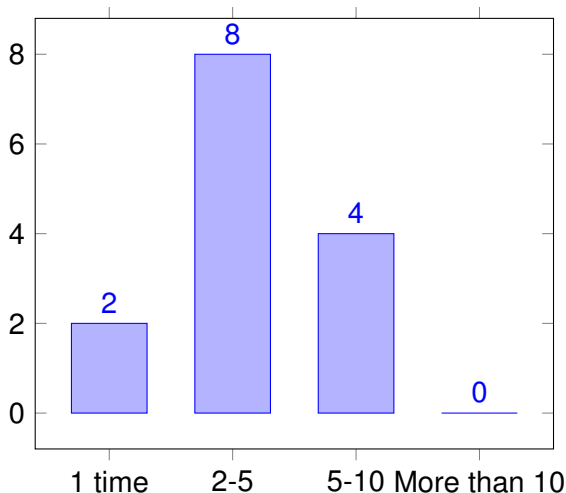
# Use in teaching

Have you used the syntactic tool?



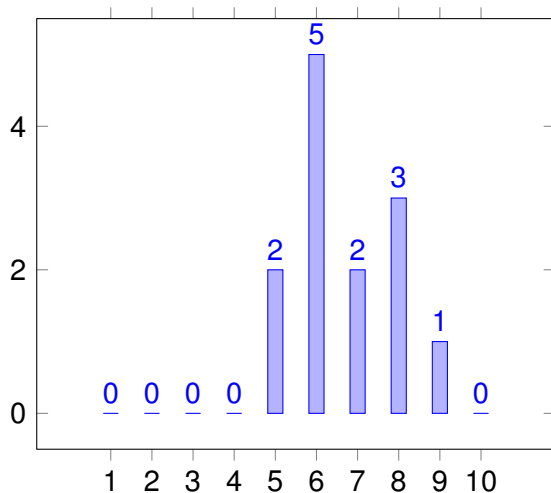
# Use in teaching

How many times do you think you have used the application?



# Use in teaching

How useful was the application?



# Plan

- Lexicon
  - + Converting the Norwegian LFG lexicon (NorGram) into an HPSG lexicon
- Statistical model
  - + Creating a small treebank and train a statistical model
  - Build a large treebank
- Application
  - Using bash
  - Hosted by the Western Norway University of Applied Sciences

# A web application for automatic syntactic analysis

`http://eple.hib.no/~phau/norsyg.cgi`