

# A simple template for gdoc \*

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\*We would like to thank.

## Abstract

This is the abstract! This is the abstract of the paper. An abstract summarizes, usually in one paragraph of 300 words or less, the major aspects of the entire paper in a prescribed sequence that includes: 1) the overall purpose of the study and the research problem(s) you investigated; 2) the basic design of the study; 3) major findings or trends found as a result of your analysis; and, 4) a brief summary of your interpretations and conclusions.

Keywords: word order, linguistic typology, language evolution

## 1 Introduction

This is an introduction (Kemmerer 2012).

- (1) Expectation-based facilitation in German
  - a. Er hat das Buch, [das Lisa gestern gekauft hatte], hingelegt.  
he has the book that Lisa yesterday bought had laid.down
  - b. Er hat das Buch hingelegt, [das Lisa gestern gekauft hatte].  
he has the book laid.down that Lisa yesterday bought had  
'He has laid down the book that Lisa had bought yesterday.'

In self-paced reading, the verb is read faster in such examples when it follows the semantically rich and complex noun phrase in 1a ("the book that Lisa bought yesterday") than when it follows the short object noun phrase "the book" in 1b, where the relative clause is extraposed. Since these facilitation effects matter most for long and information-rich dependents, one would expect less variation in placement with longer dependencies (long→head-final→less variable).

## 2 Data and Methods

This is the section for data and methods. The information of these treebanks is summarized in Table 1.

Table 1: Overview of 71 dependency treebanks from UD v2.7.

Language	Family	Europe	Sentences	Word token	Language	Family	Europe	Sentences	Word token
Afrikaans	Indo-European	F	1,934	49,276	Irish	Indo-European	T	4,910	115,969
Akkadian	Afro-Asiatic	F	1,804	21,962	Italian	Indo-European	T	14,167	298,343
Ancient Greek	Indo-European	T	17,080	213,999	Japanese	Japanese	F	57,028	1,250,875
Arabic	Afro-Asiatic	F	19,738	738,889	Korean	Korean	F	27,363	350,090
Armenian	Indo-European	T	2,502	52,630	Latin	Indo-European	T	26,977	450,515
Bambara	Mande	F	1,026	13,823	Latvian	Indo-European	T	13,643	219,955

We predict the direction and variation of each word order in a model assuming a Beta-Binomial likelihood function. The Beta-Binomial distribution is a mixture of a Binomial and a Beta distribution.<sup>1</sup> It generalizes the Binomial distribution, and can capture overdispersion. With the Beta-Binomial model, the Binomial probability is randomly drawn from a Beta distribution  $B(\alpha, \beta)$  with hyperparameters  $\alpha > 0$  and  $\beta > 0$ .

$$\text{Beta2}(\mu, \phi) = \text{Beta}\left(\alpha = \frac{\mu}{\phi}, \beta = \frac{(1-\mu)}{\phi}\right)$$

## 3 Results

You can put some fancy results here! Figure 1 visualizes the relationship.

## 4 Conclusion

Here is the conclusion.

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<sup>1</sup>This is my footnote.

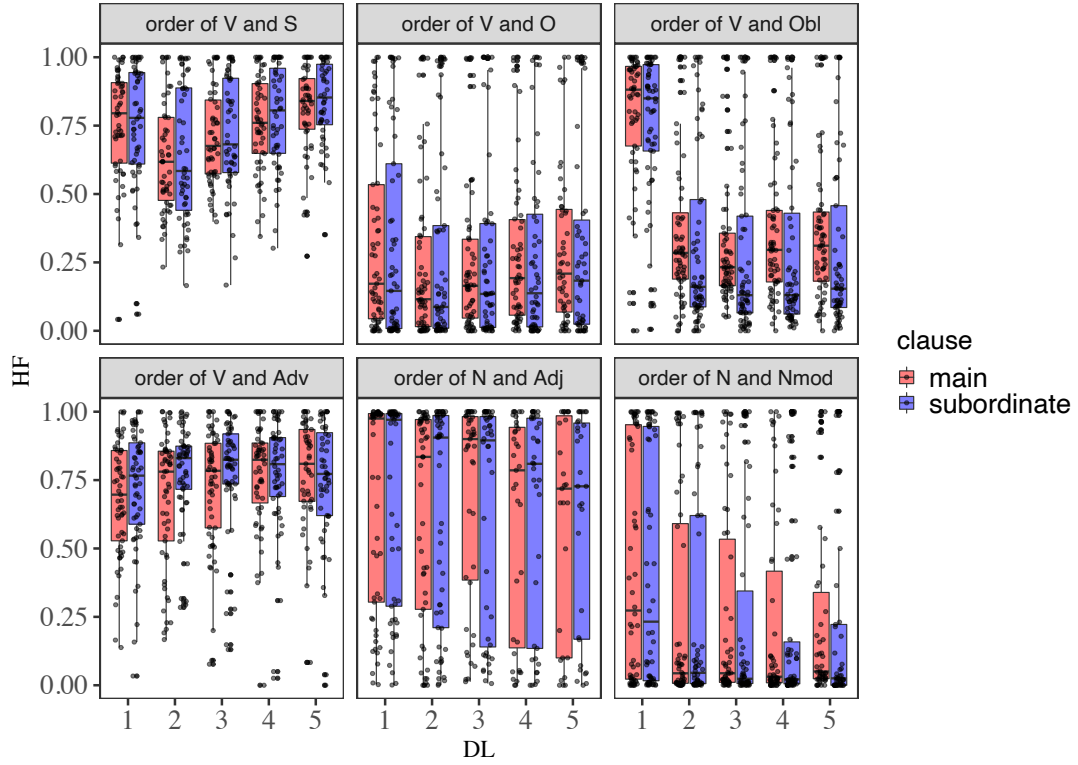


Figure 1: Boxplots for the distribution of raw head-final (HF) dependencies in relation to dependency length (DL) across main and subordinate clauses

## References

Kemmerer, David (2012). The cross-linguistic prevalence of SOV and SVO word orders reflects the sequential and hierarchical representation of action in Broca's area. *Language and Linguistics Compass* 6, 50–66.