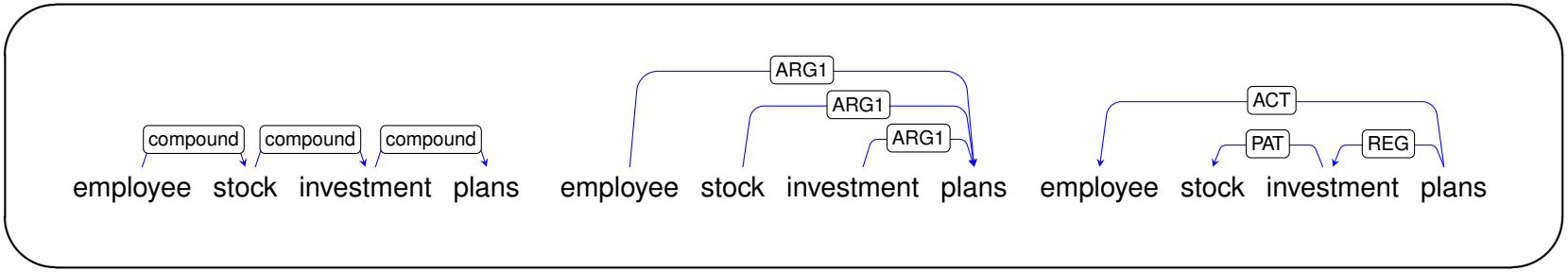

The Language Analysis Portal

Large-Scale, State-of-the-Art Language Analysis for Everyone

Emanuele Lapponi, Milen Kouylekov, Stephan Oepen

Department of Informatics, University of Oslo

lap-developers@ifi.uio.no

A Digital Sea Change: 'Text as Data'

We constructed a corpus of digitized texts containing about 4% of all books ever printed. Analysis of this corpus enables us to investigate cultural trends quantitatively. [...] This approach can provide insights about fields as diverse as lexicography, the evolution of grammar, collective memory, the adoption of technology, the pursuit of fame, censorship, and historical epidemiology. [...] If you tried to read only the entries from the year 2000 alone, [...] it would take eighty years. The sequence of letters is a thousand times longer than the human genome.

[Jean-Baptiste Michel et al., 2010; Science]

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Google Books or Europeana, for Example: Digitizing the World Libraries

Text as Data: A Somewhat Crude Analogy

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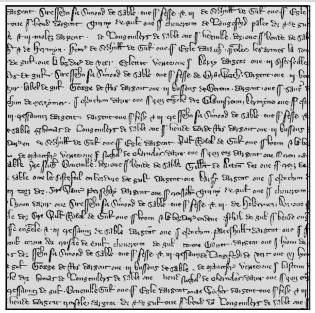
Raw Text



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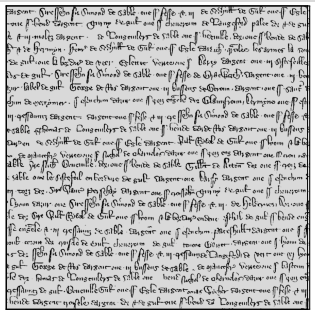

Science

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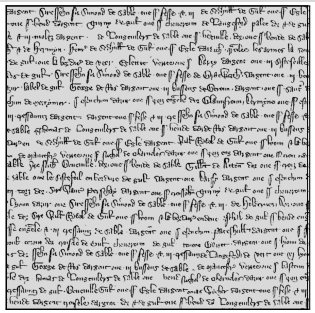

Utility

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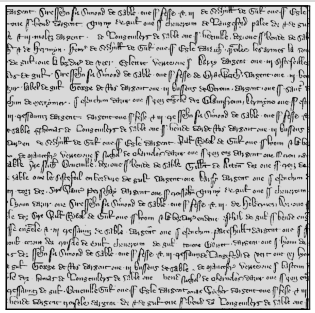

Refinement

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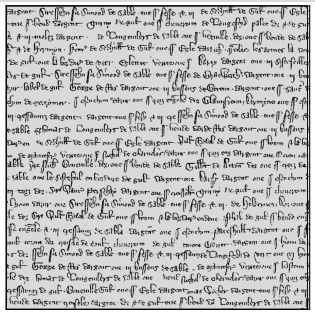

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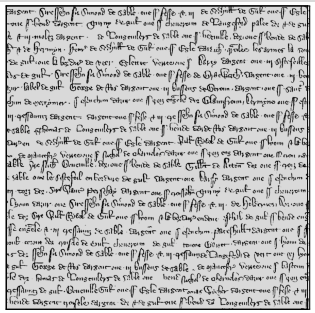

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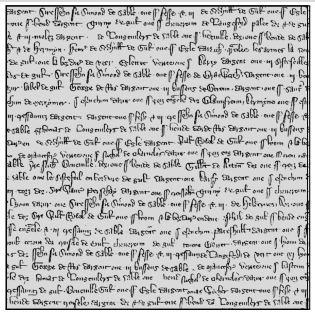

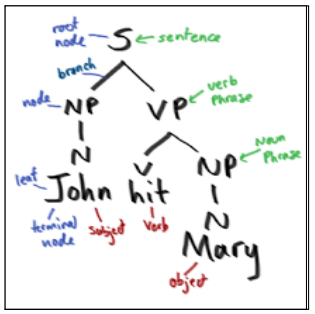

By Way of Introduction: 'Basic' Linguistic Analysis

Textual Building Blocks (All Too Often Taken for Granted)

- *Sentence Splitting* headlines, bullet lists, interactions with mark-up, etc.
- *Tokenization* punctuation marks, abbreviations, dashes and slashes, etc.

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The Olympic Committee already regrets choosing Russia for this Winter Olympics .

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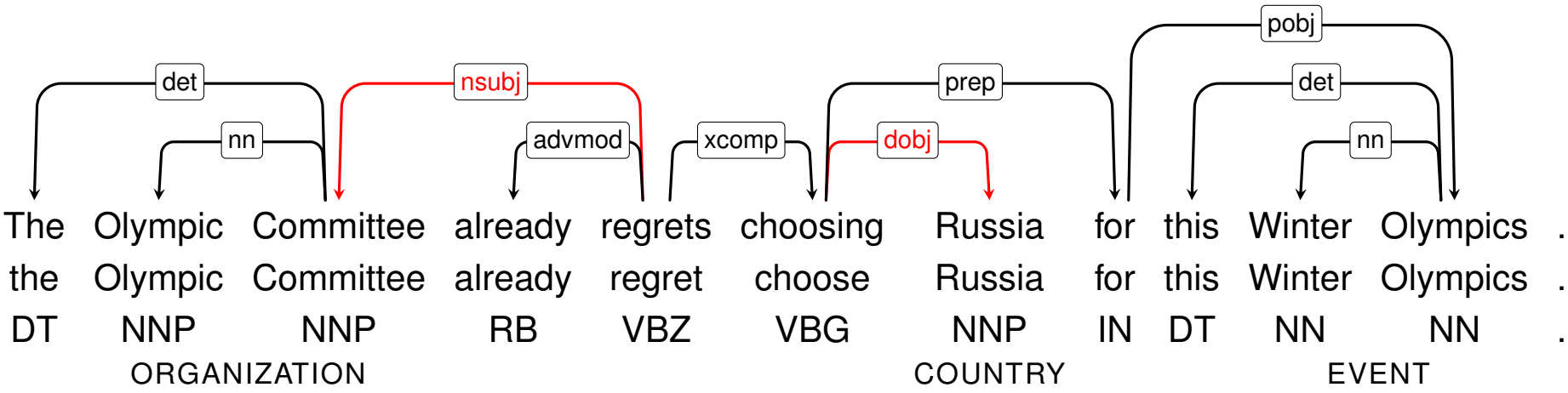

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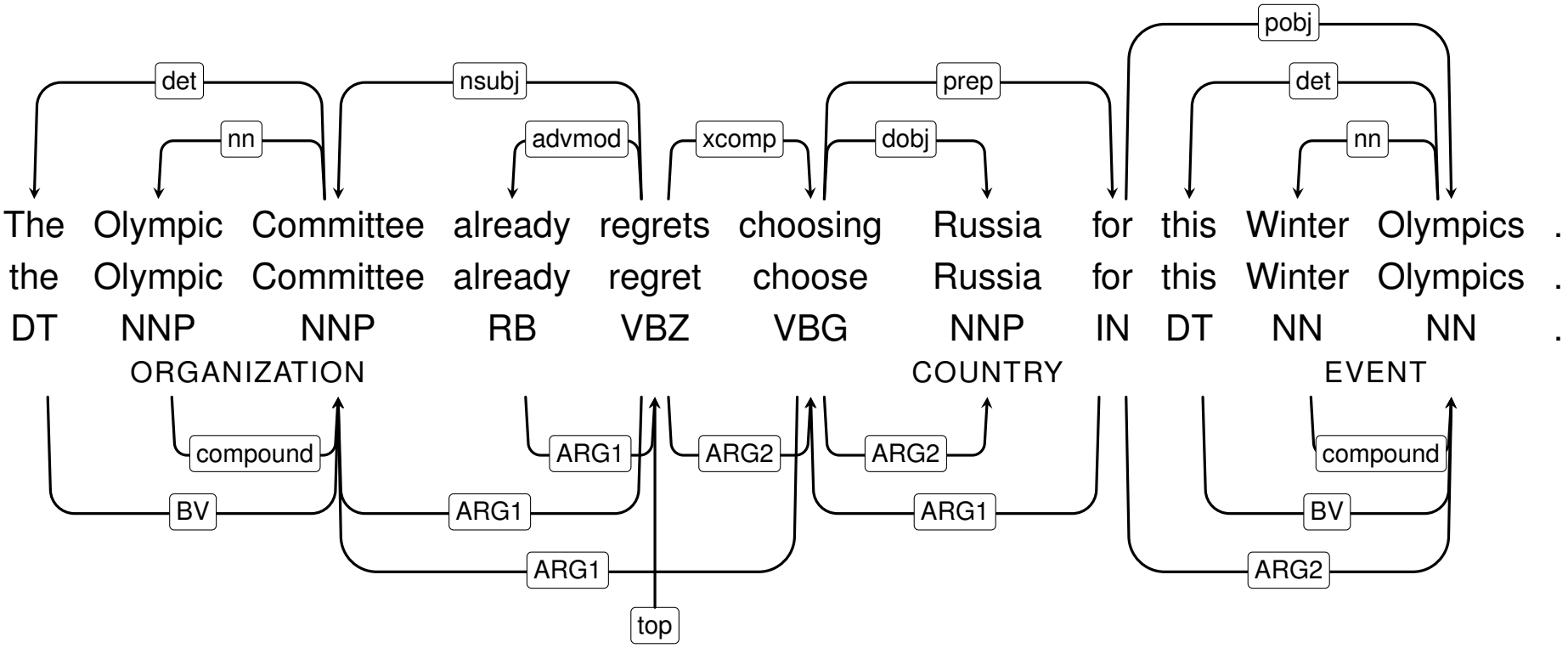

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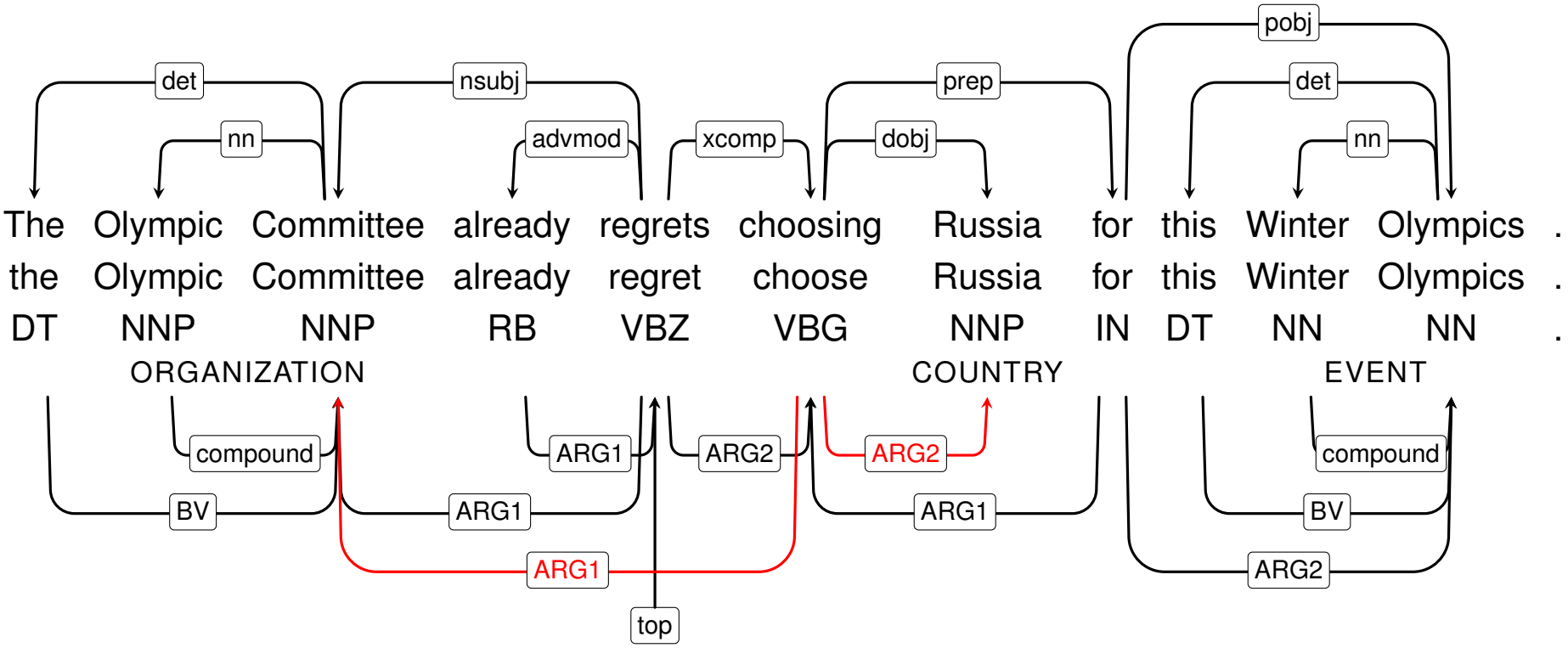

In Support of Digital Humanities and Social Sciences

Predicting Party Affiliations from European Parliament Debates

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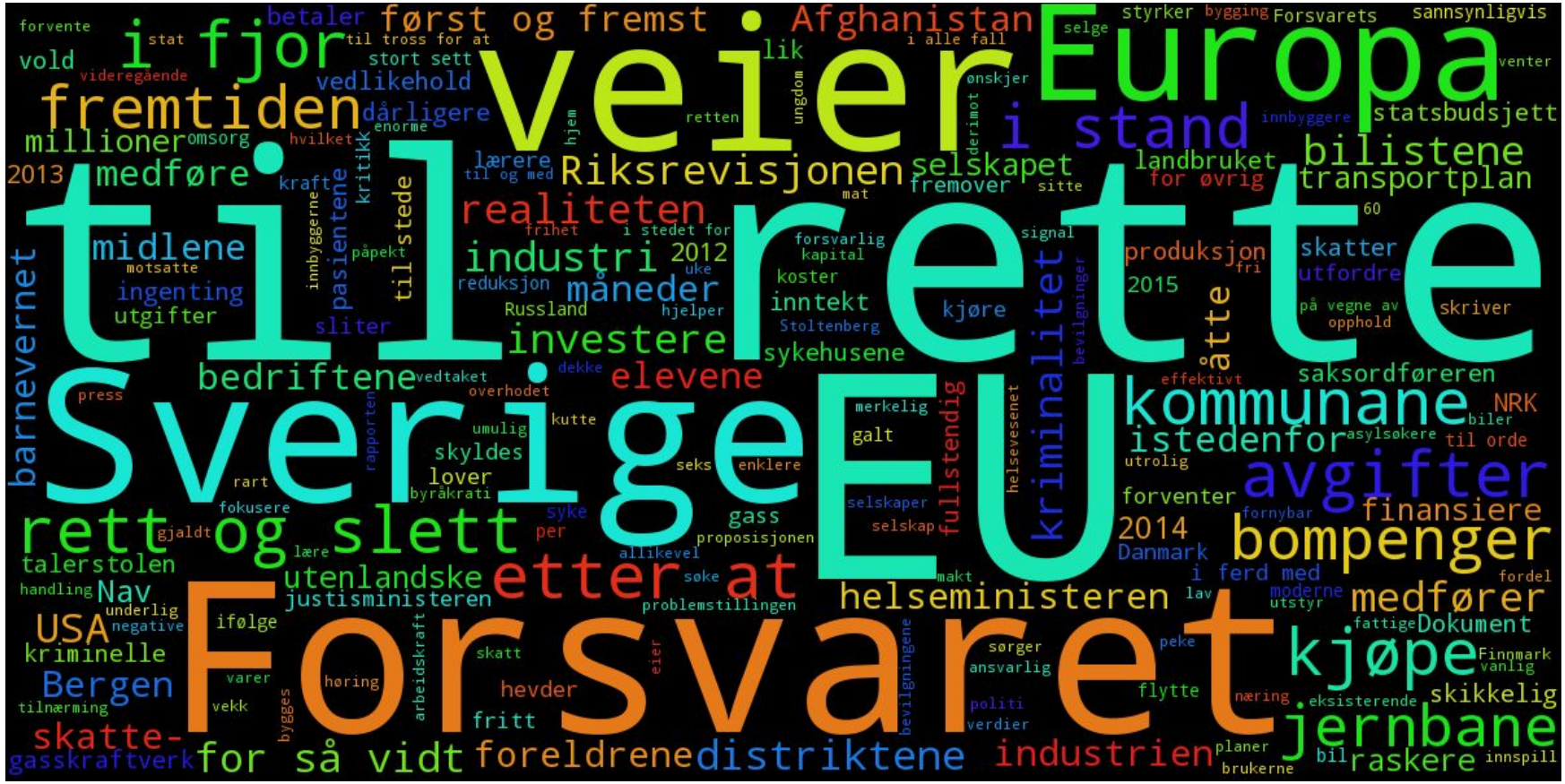
Abstract

This paper documents an ongoing effort to assess whether party group affiliation of participants in European Parliament debates can be automatically predicted on the basis of the content of their speeches, premise for the success of such an approach is that differences in ideology and belief systems are reflected in differences in choice of words in plenary debates. Another premise is that a shared belief system translates to the same choice of party group. As discussed below, systematic differences in prediction performance in the data can be used

(2014 Workshop on Language Technologies and Computational Social Science)

A Trivial Example: Benefits of Linguistic Analysis



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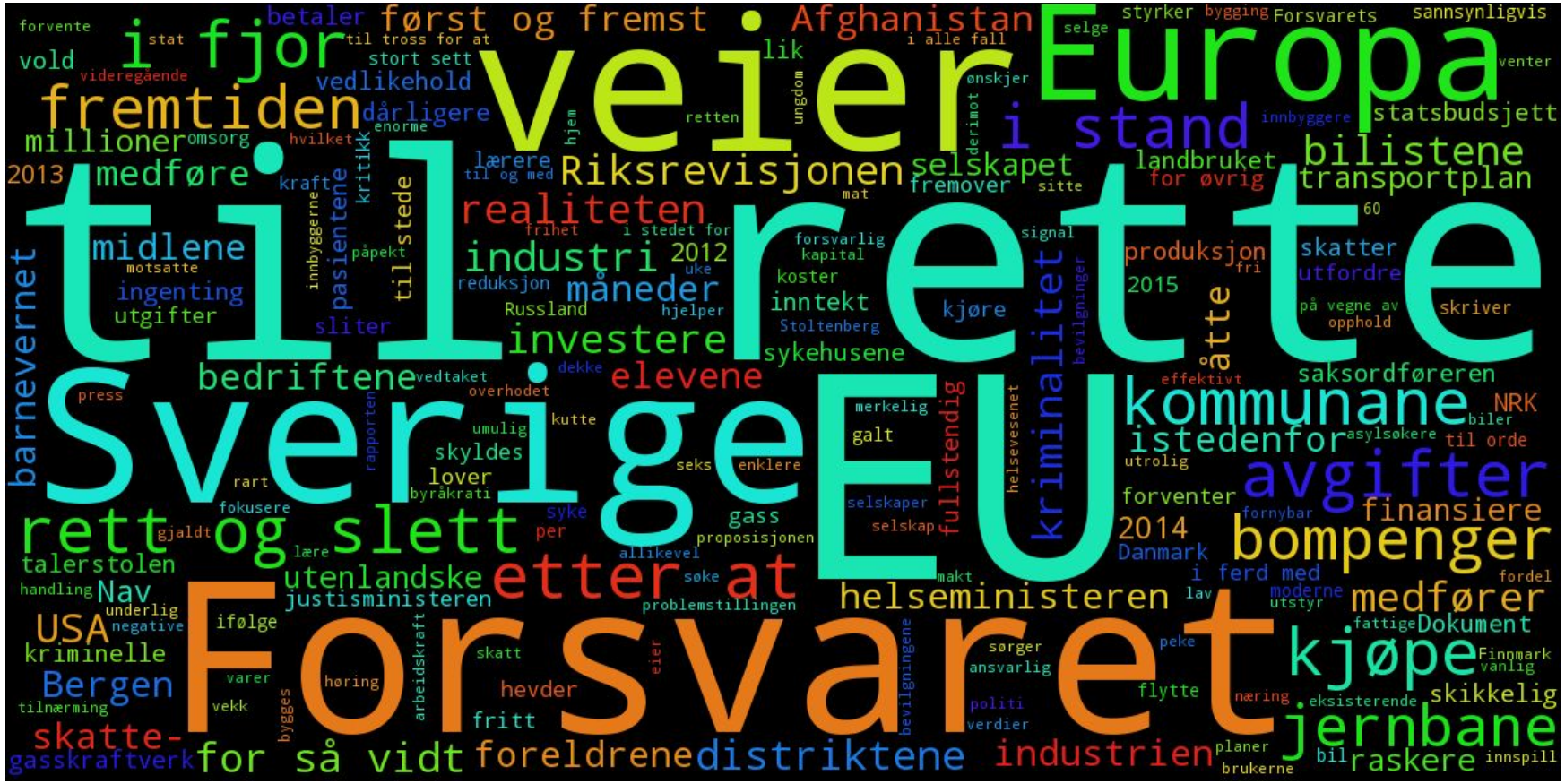

- 250,000 speech transcripts from the Norwegian Parliament: 1998–2016;
- rich and structured metadata available; e.g. all speeches from one party.

Seeking to ‘Amplify’ the Linguistic Signal

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- Morphological analysis through the Oslo–Bergen Tagger;
- ignore everything but nouns; use lemmata (‘base forms’).

LAP: High-Level Goals and Design

Motivation

- Lower barrier to entry for non-technical users: state-of-the-art tools;
- unified, Web-based point of entry; balance ease of use and flexibility.

Core Elements

- **Tools** Pre-installed and -configured, multi-lingual, common tasks;
- **Interfaces** Portal access; data injection and export; parameterization;
- **Plug & Play** 'mix and match' tools: unified LAP interchage format.

Scalability

- Submit to Norwegian eInfrastructure: 11,000$^+$ cores at your fingertips.

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CLARINO: Funded by Norwegian Research Council (2013–2018).

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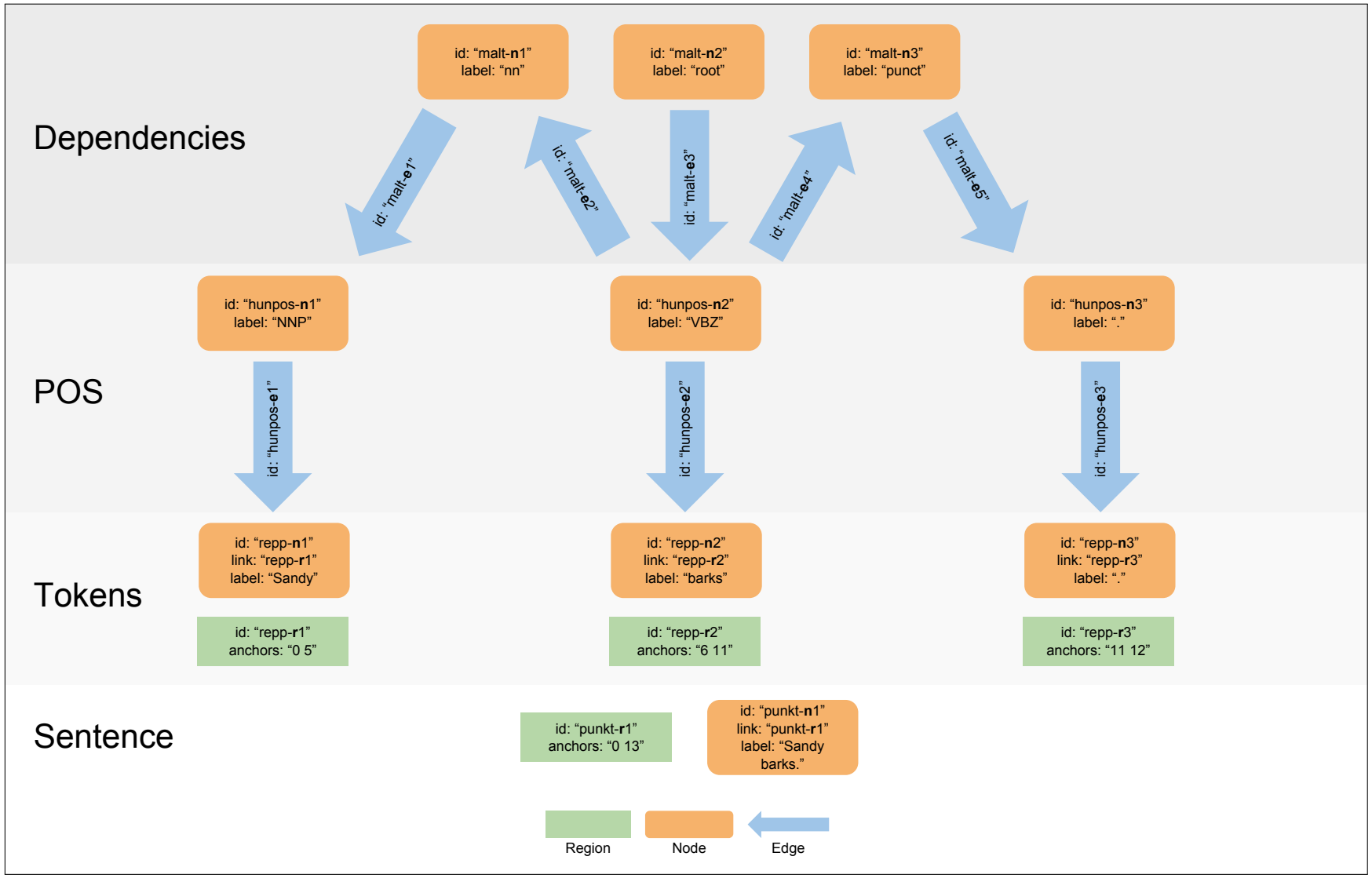

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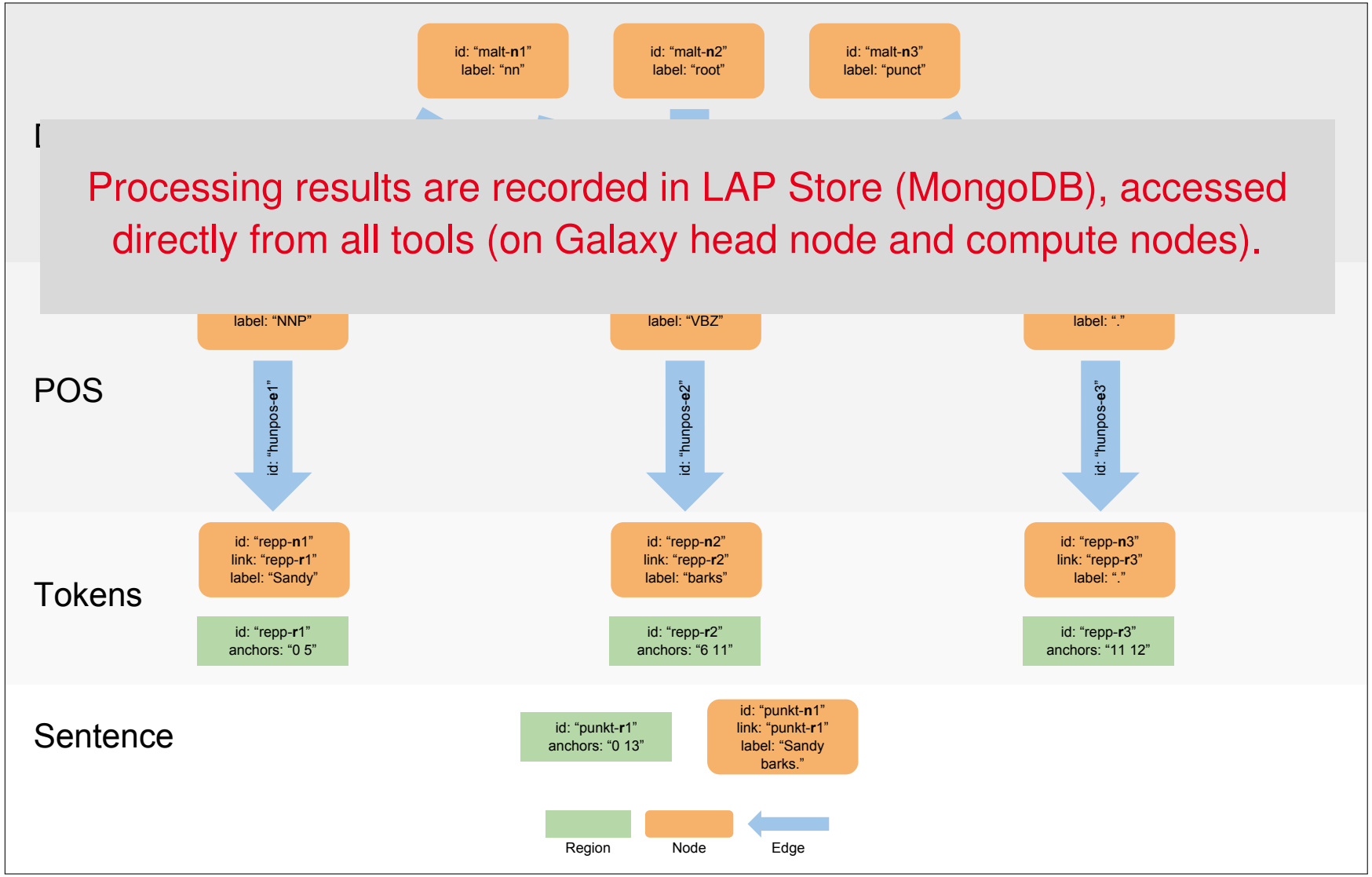

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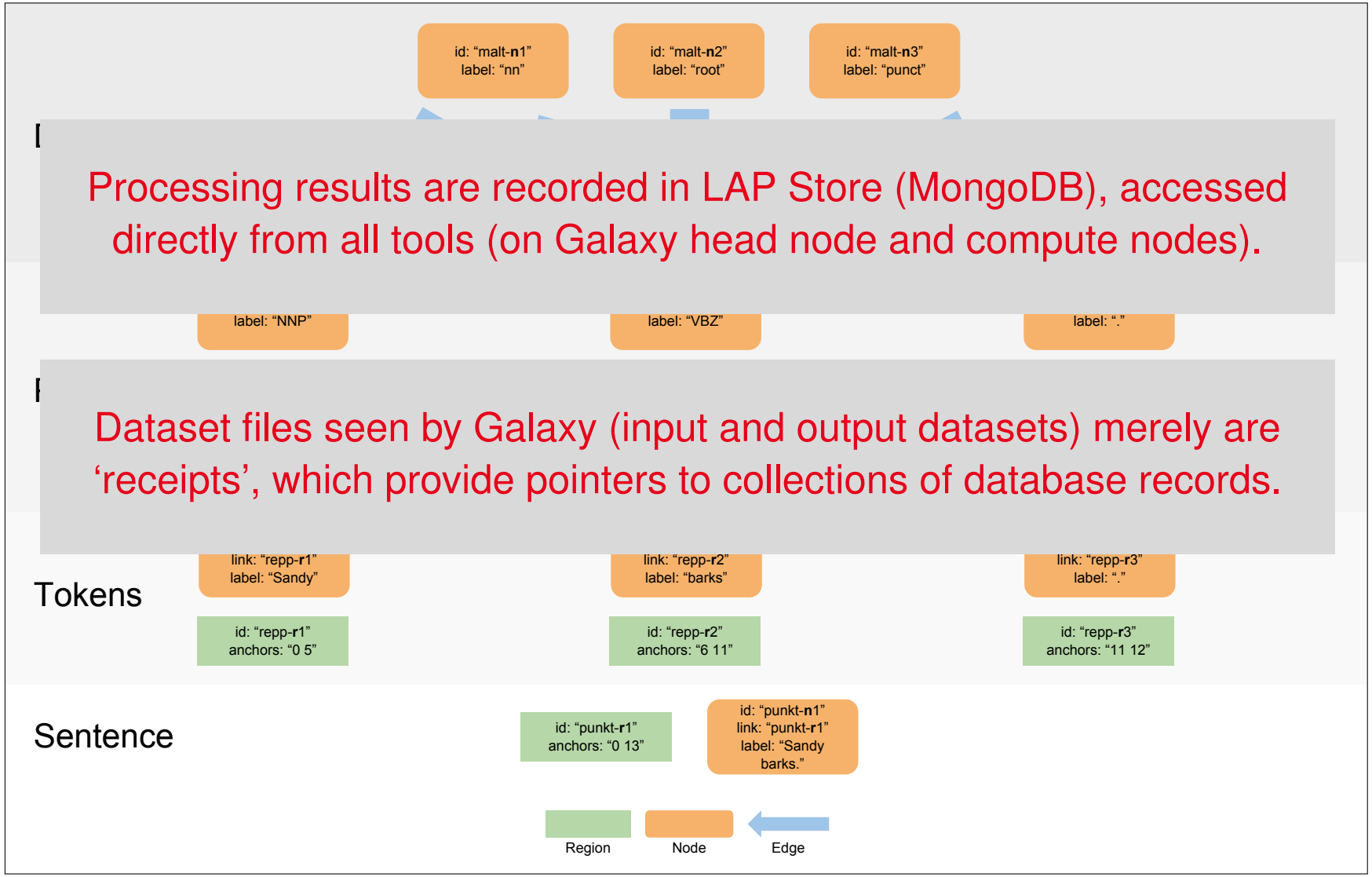

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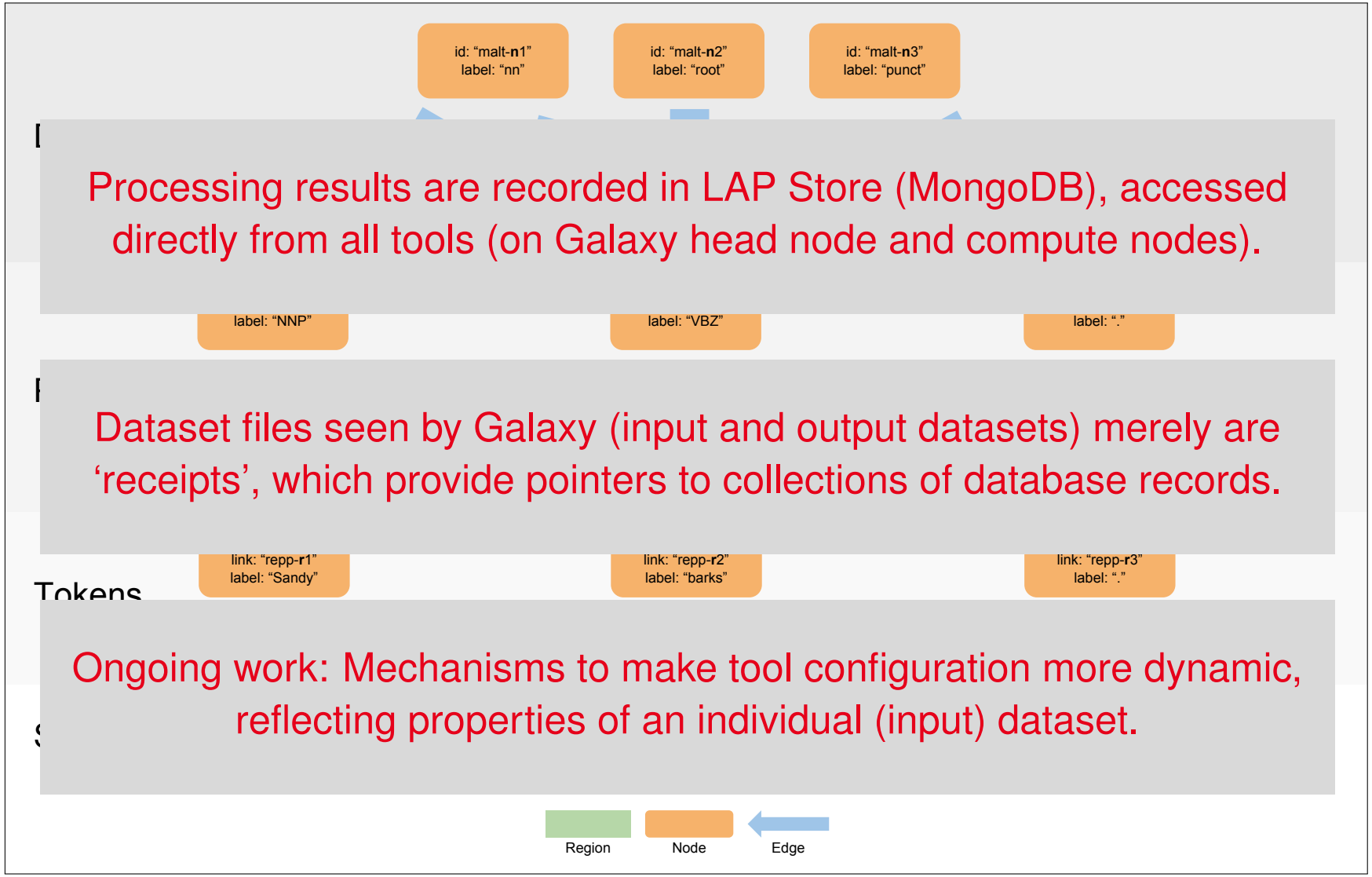

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