Comparative Vector Space Modeling of Tolkien's Works

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Mae g'ovannen!

Part 1 :

Digital Philology: Sources and Methods

Part 2 :

Word Frequencies in Tolkien's Primary Works

Part 3:

Vector Space Models of Tolkien's Primary Works

Github link:

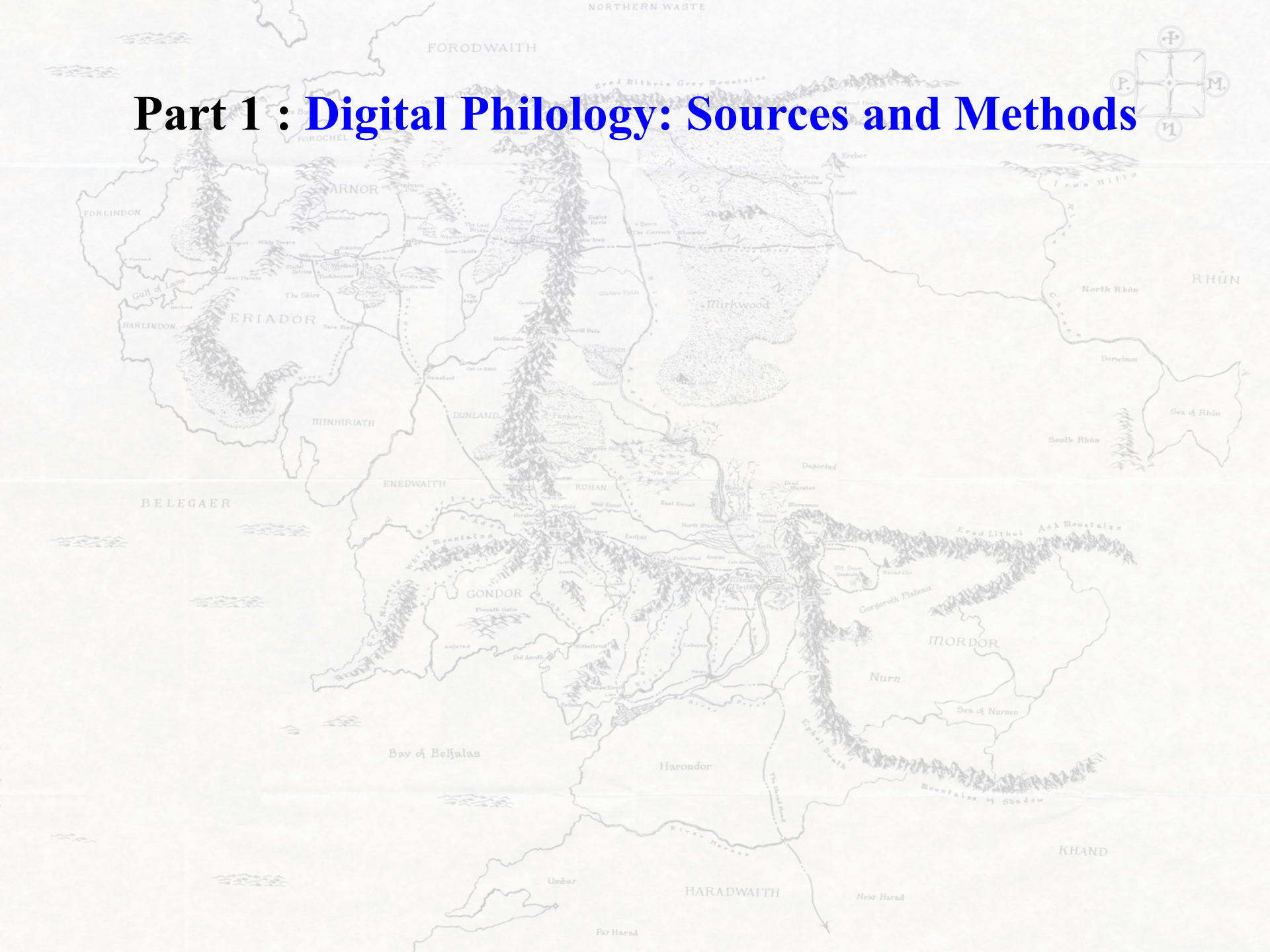
github.com/thars3n/Tolkien_Vectors

Today's Big Questions :

When we use machines (computers) to model languages and literature, what can they tell us?

Is there anything there that we didn't already know?

Part 1 : Digital Philology: Sources and Methods



Part 1 : Digital Philology: Sources and Methods

- We always start with the books (sources)
  - *The Hobbit*
  - *The Lord of the Rings* (3 volumes)
  - *The Silmarillion*
  - *The Lost Tales* (2 volumes)

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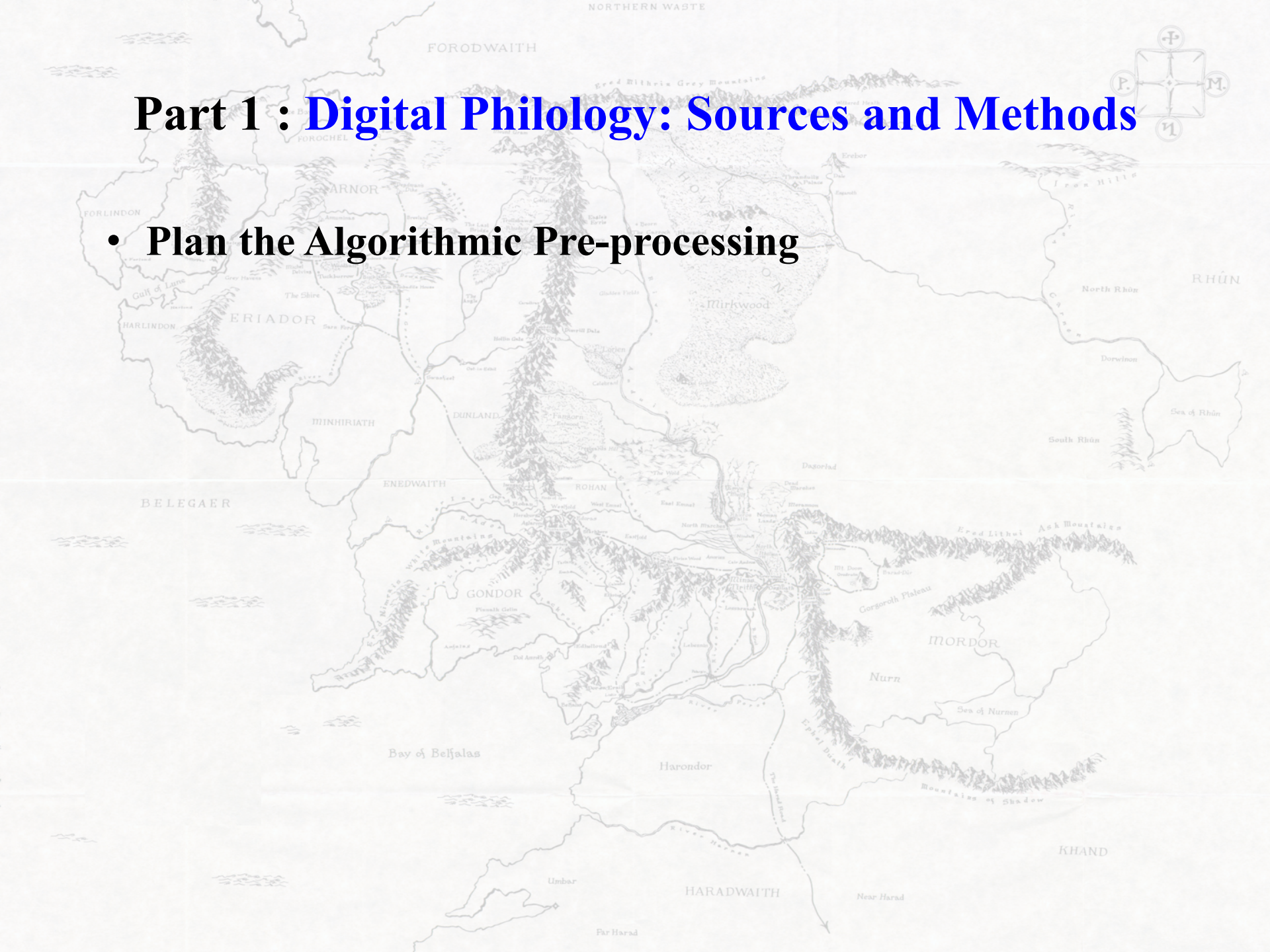
- The sources will almost always need pre-processing
  - Check for errors in the text (there were some: é = j etc)
  - Remove "non-head-text"/"extraneous" sections (*LT* Notes & Commentary, Front & Back Matter)
  - Decide what to keep and what to take out

Part 1 : Digital Philology: Sources and Methods

- **Plan the Algorithmic Pre-processing**



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  - For the Vector Space (Word2vec) Models:
    - Cut into sentences
    - Remove punctuation and white space

Part 2 : Word Frequencies in Tolkien's Primary Works

- **The script (code) is in the "code" folder**
  - **Python .ipynb file :**
    "SpaCy Most Frequent Words and Lemmas.ipynb"

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- ***What are lemmas? Why do we care?***

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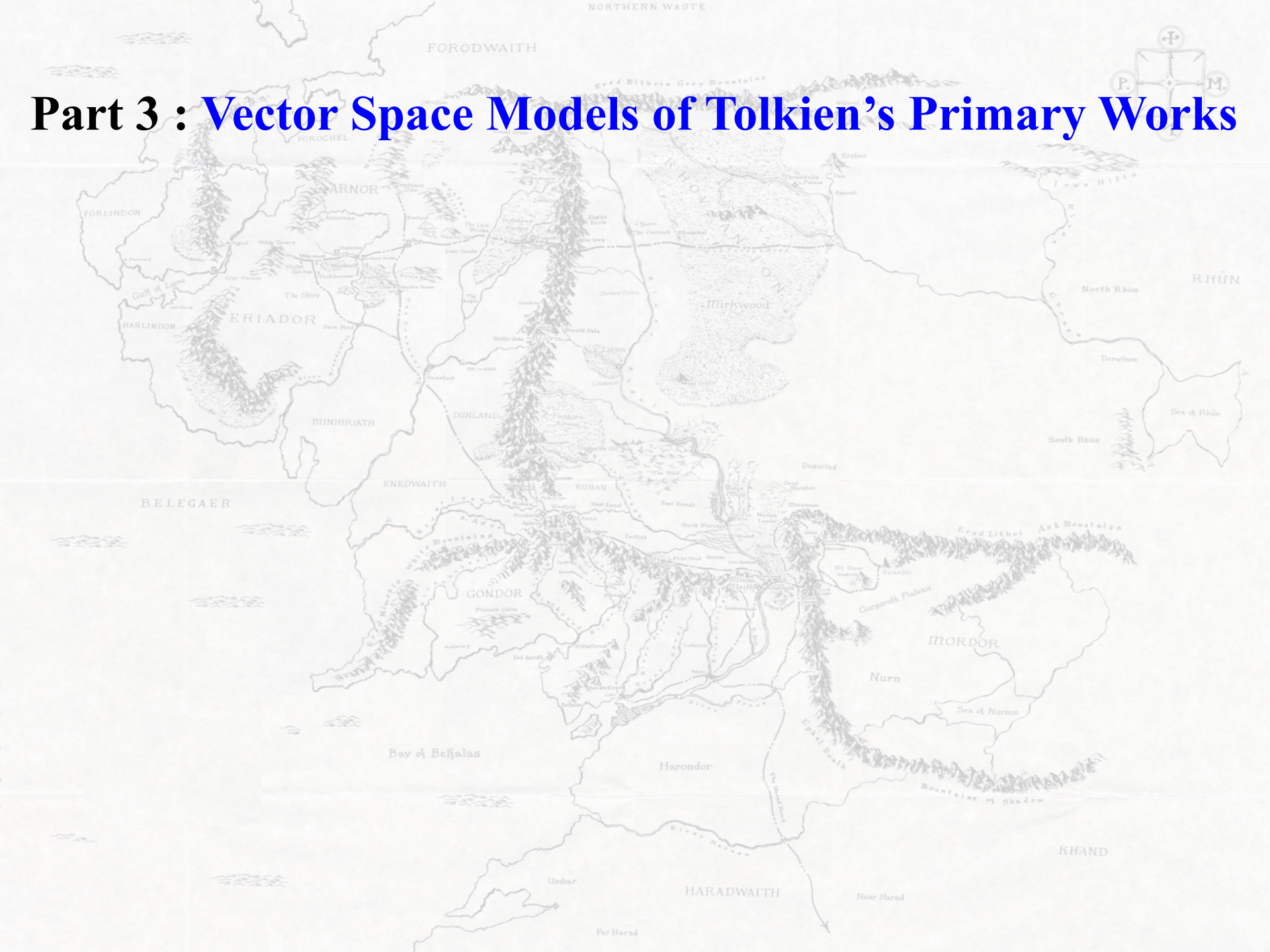

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- ***What is a "vector space model"? Why do we care?***
- ***What can it tell us about the words/phrases Tolkien used?***
- **Word2vec : "proximate semantics"**
  = semantic similarity
  = <u>word associations</u>

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- ***What can it tell us about the words/phrases Tolkien used?***
- **Word2vec : "proximate semantics"**
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  = word associations
- ***How many models should we build?***
  (1 each, and then "one model to rule them all")
- ***Will they all work equally well?***
  (What should our Word2vec parameters be?)

Part 3 : Vector Space Models of Tolkien's Primary Works

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But far more fun is to use the

- **Interactive Visualization of Vector Space models:**

https://projector.tensorflow.org/

- **All model files (vectors and metadata/words) are in the "projector_files" directory**

Thank you!

Hantanyel órenyallo!

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