TeDDi Sample: Text Data Diversity Sample for Language Comparison and Multilingual NLP

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1. What is TeDDi Sample?

   Motivation
   Goal
   Data collection and curation
   Data availability

2. Demo

What is TeDDi Sample?

A diversity sample of text data. It features:

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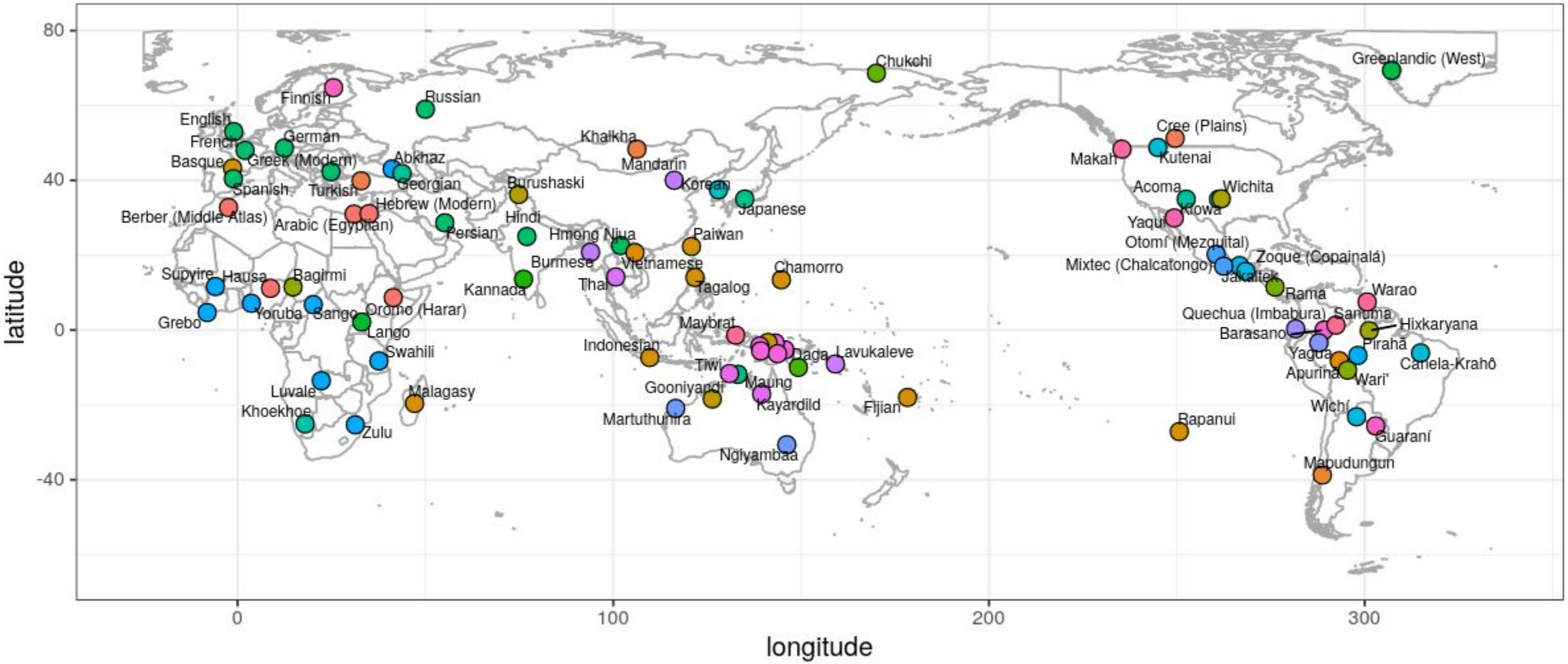
- Text corpora for languages on the typological diversity sample in the World Atlas of Language Structures (WALS)


80
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latitude
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Chukchi
Greenlandic (West)
Finnish
Russian
English
French
German
Basque
Greek (Modern)
Spanish
Turkish
Abkhaz
Georgian
Hebrew (Modern)
Arabic (Egyptian)
Berber (Middle Atlas)
Persian
Khalkha
Mandarin
Korean
Japanese
Burushaski
Hindi
Hmong Njua
Paiwan
Burmese
Vietnamese
Thai
Kannada
Tagalog
Chamorro
Supyire
Hausa
Bagirmi
Grebo
Yoruba
Sango
Oromo (Harar)
Lango
Swahili
Luvale
Khoekhoe
Zulu
Malagasy
Indonesian
Maybrat
Tiwi
Gooniyandi
Martuthunira
Ngiyambaa
Maung
Kayardild
Daga
Lavukaleve
Fijian
Cree (Plains)
Makah
Kutenai
Acoma
Wichita
Kiowa
Yaqui
Otomí (Mezquital)
Mixtec (Chalcatongo)
Zoque (Copainalá)
Jakaltek
Rama
Warao
Quechua (Imbabura)
Sanuma
Barasano
Hixkaryana
Pirahã
Yagua
Apurinã
Wari'
Canela-Krahô
Wichí
Guaraní
Mapudungun
Rapanui

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- Open-source corpus processing tools

Motivation

- Access to data from minority and under-resourced languages leads to deeper and more complete understanding of language

- Multilingual datasets are becoming increasingly important in NLP

Motivation

How to select languages?

Motivation

How to select languages?

Linguistics perspective

- More weight on representing a wide range of language families and areas, structural features

NLP Perspective

- Favors languages for which text data is readily available online.

Goal

The aim of TeDDi is to facilitate the use of text-based quantitative methods for analyzing linguistic diversity in both linguistic research and NLP:

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The aim of TeDDi is to facilitate the use of text-based quantitative methods for analyzing linguistic diversity in both linguistic research and NLP:

- Approximate the diversity of languages across the world by means of text samples

- Complement the existing knowledge about the structure of languages, which mostly consists of high-level feature-value pairs stored in linguistic databases

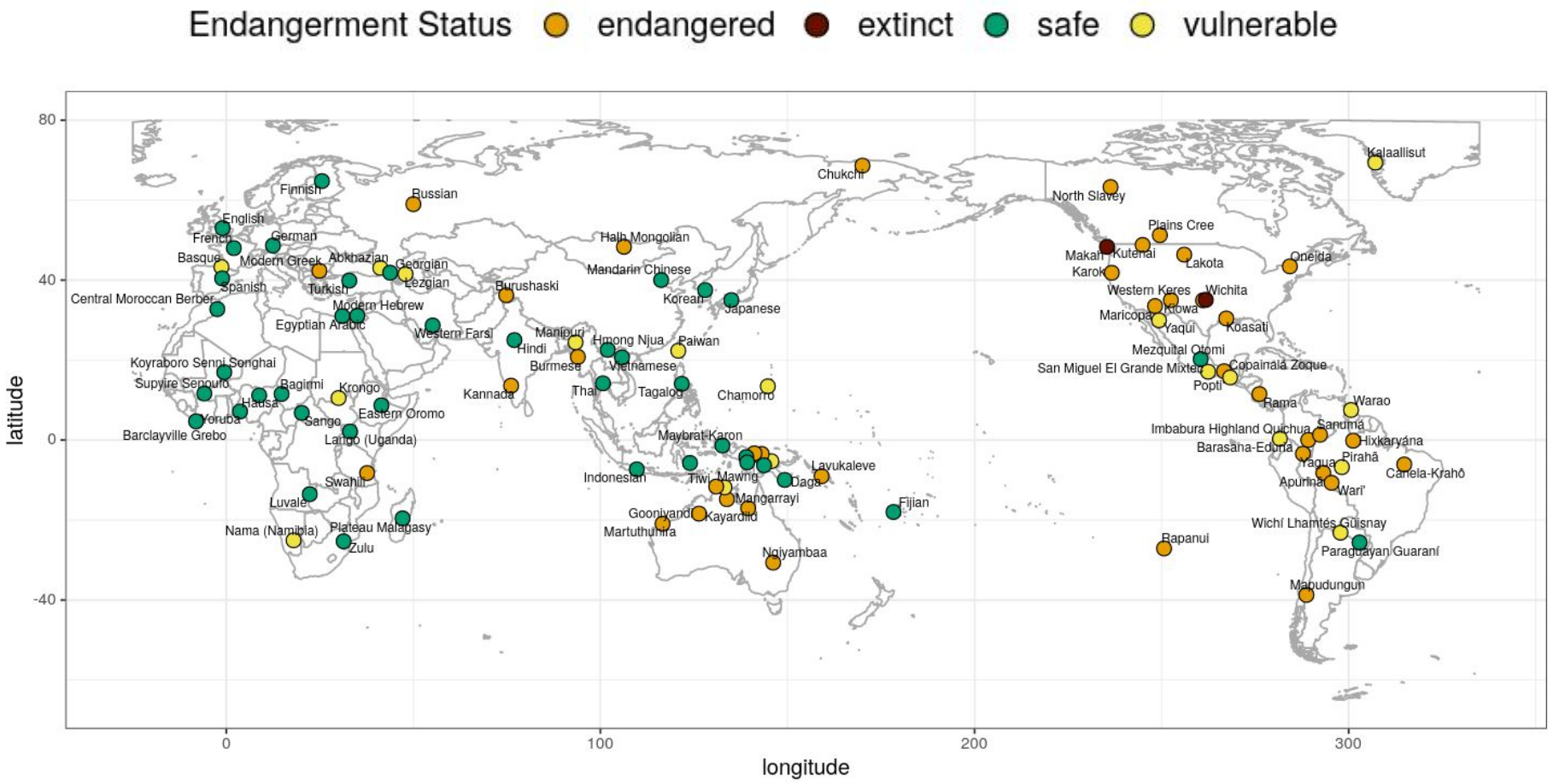
Data collection and curation

Based on WALS 100-language sample

Maximizes genealogical (language family) and areal (geographic) diversity

Selection is independent of text data availability

Data collection and curation



 TeDDi Sample. S. Moran, C. Bentz, X. Gutierrez, O. Sozinova and T. Samardzic.

Data collection and curation

Existing resources

- Project Gutenberg, Open Subtitles (Lison and Tiedemann, 2016), The Parallel Bible Corpus (Mayer and Cysouw, 2014), the Universal Declaration of Human Rights

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Manually collected translations, transcriptions, and grammatical annotations

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Sampling (for rich-resource languages)

- We do not include all of the texts available. Instead, we create smaller samples limiting the maximal size of a text unit to 50k tokens of contiguous text

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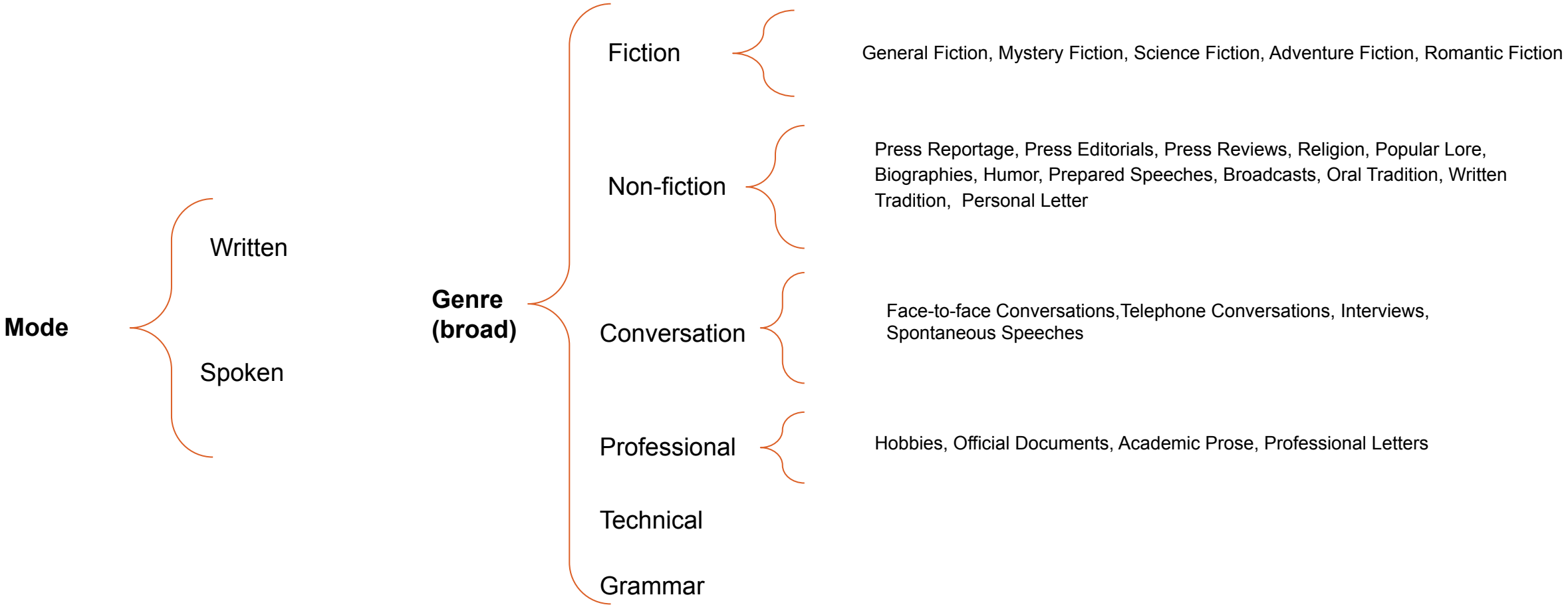
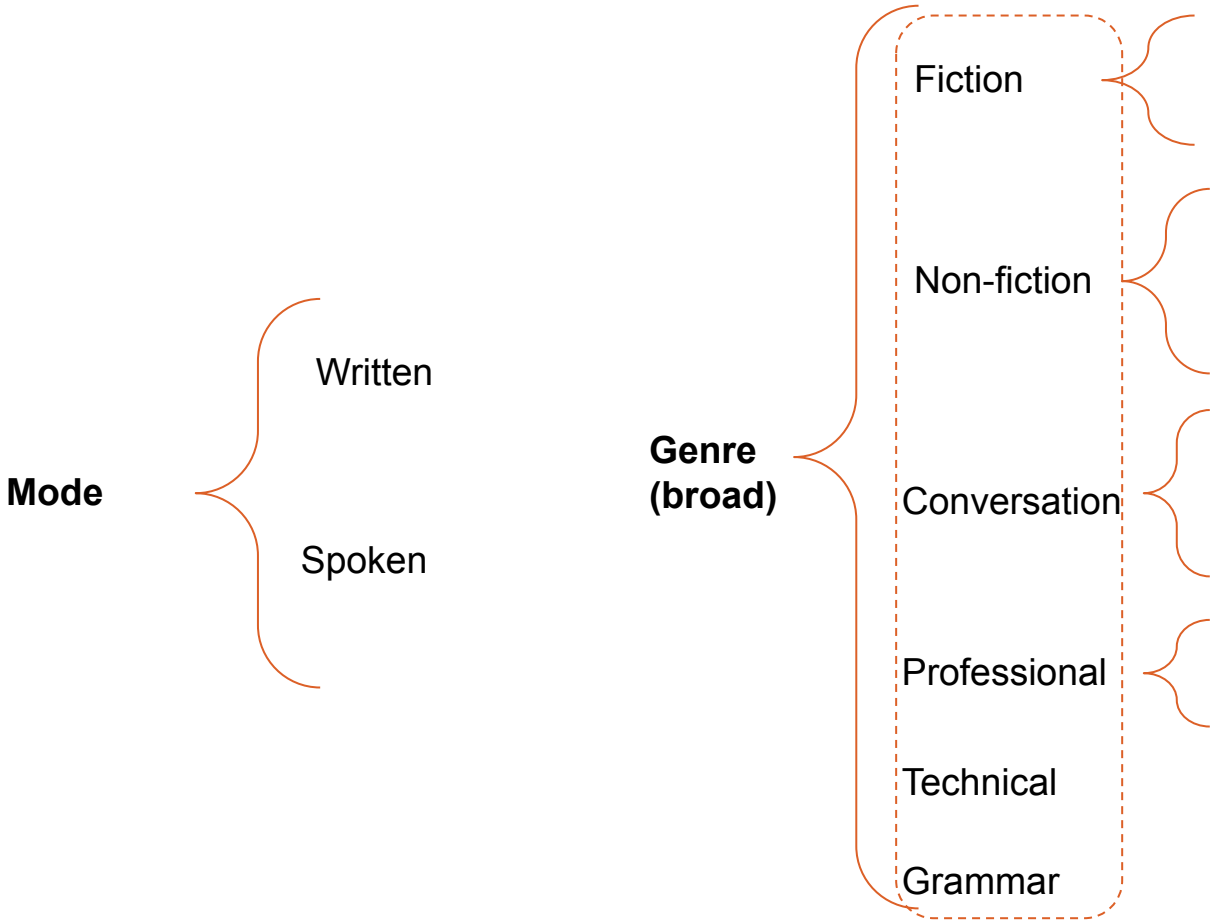


Data collection and curation



Genre (narrow)

General Fiction, Mystery Fiction, Science Fiction, Adventure Fiction, Romantic Fiction

Press Reportage, Press Editorials, Press Reviews, Religion, Popular Lore, Biographies, Humor, Prepared Speeches, Broadcasts, Oral Tradition, Written Tradition, Personal Letter

Face-to-face Conversations,Telephone Conversations, Interviews, Spontaneous Speeches

Hobbies, Official Documents, Academic Prose, Professional Letters

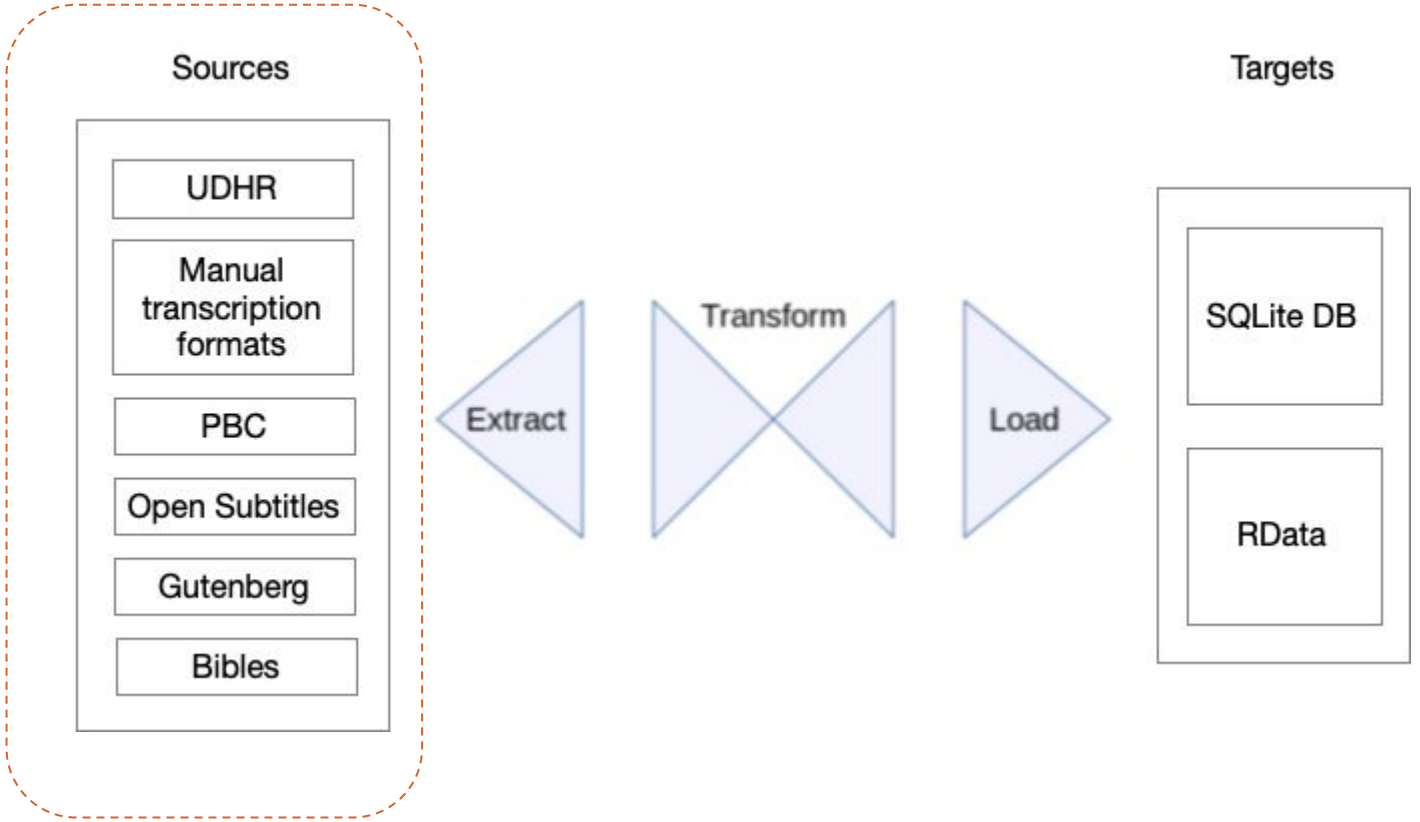
Data collection and curation

Genre	Langs*	Tokens	Scripts†
conversation	10	15,835	1
fiction	12	36,811,339	7
grammar	5	1271	1
nonfiction	73	101,588,748	13
professional	40	80,092	15
Total	**89**	**ca. 138 million**	**16**

*According to ISO-639-3 codes.
†According to ISO-15924 codes.

- 89 different languages, stemming from 58 language families (according to WALS)

Data availability



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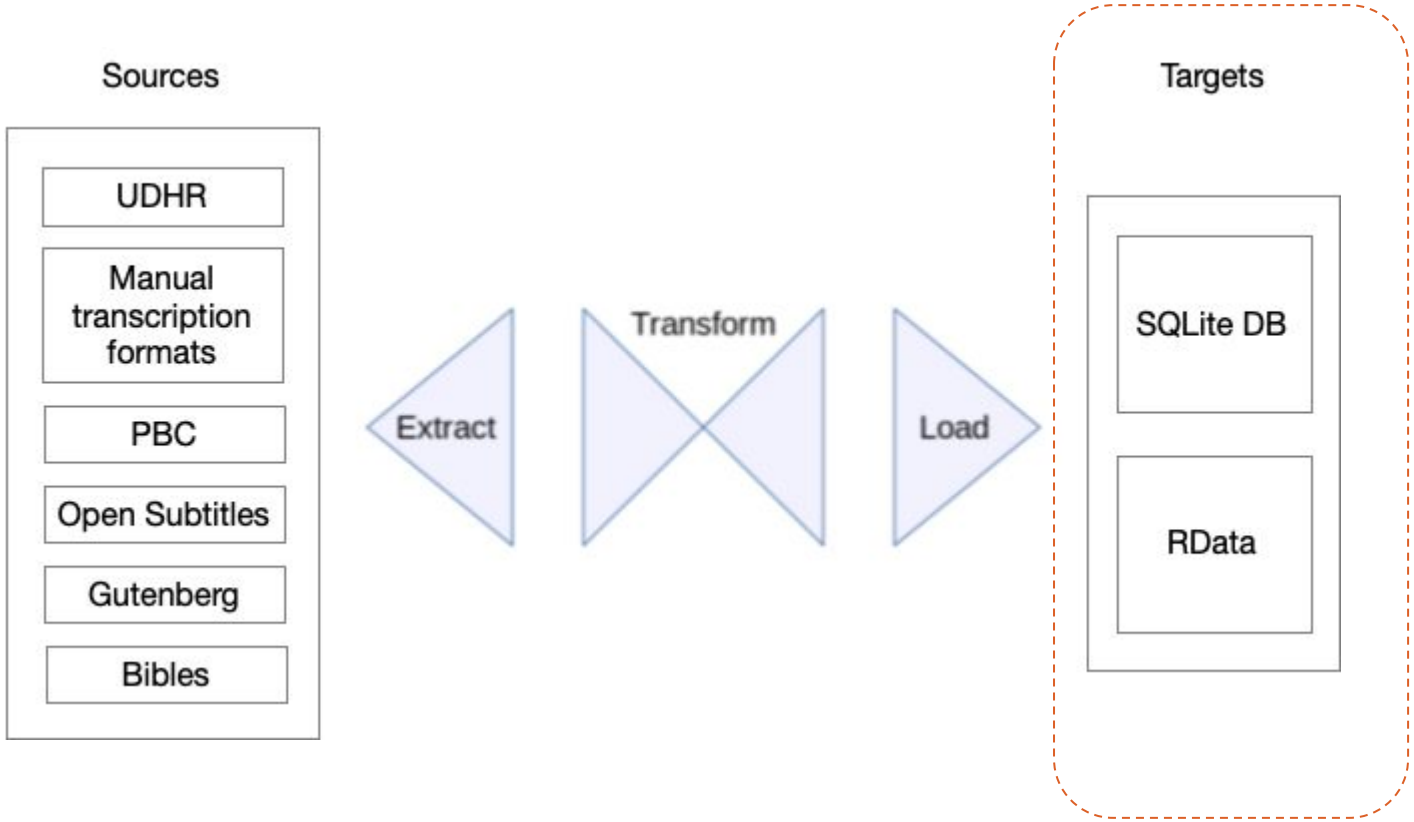

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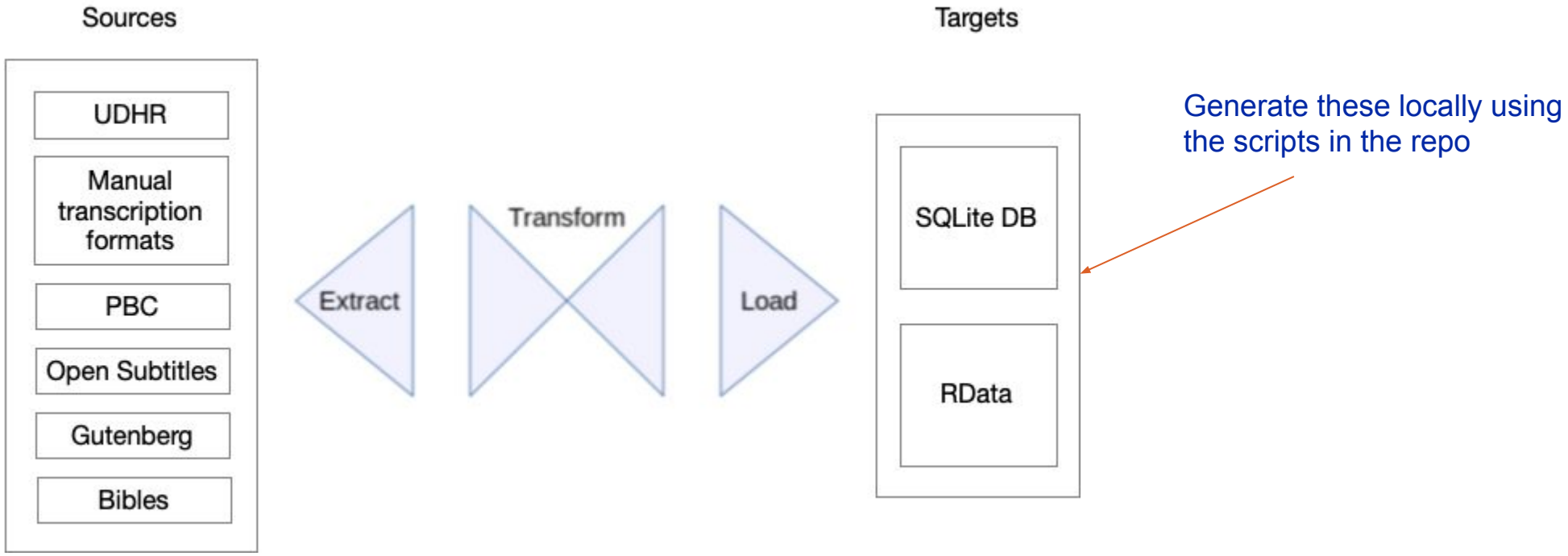
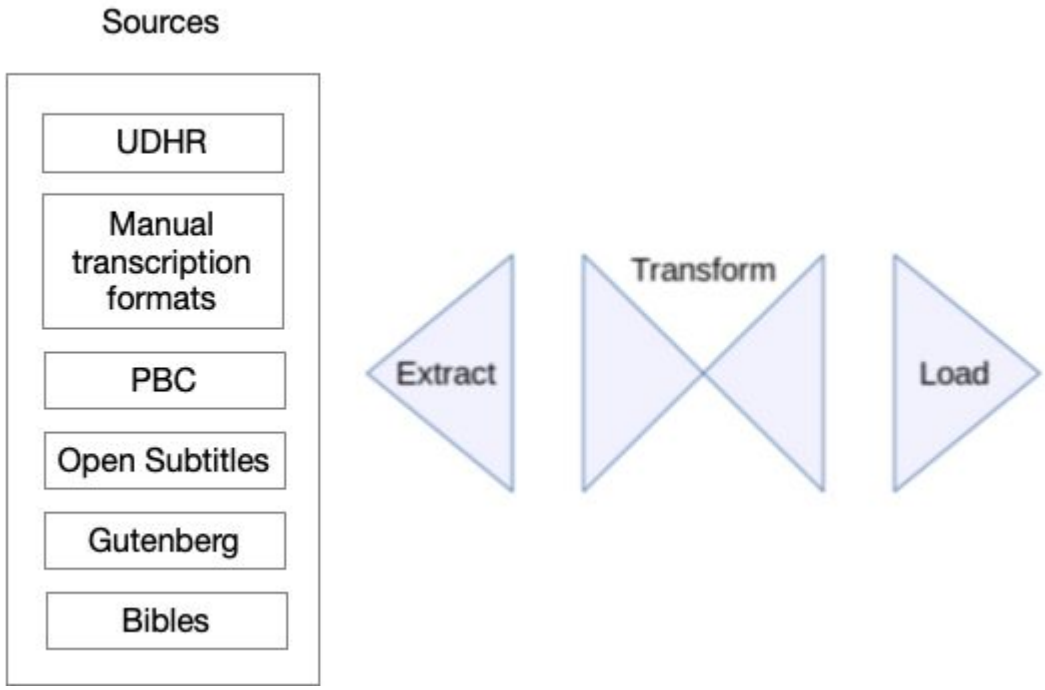


Generate these locally using the scripts in the repo

Source text files available directly in the repo

Data availability



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*Database dumps are also available online

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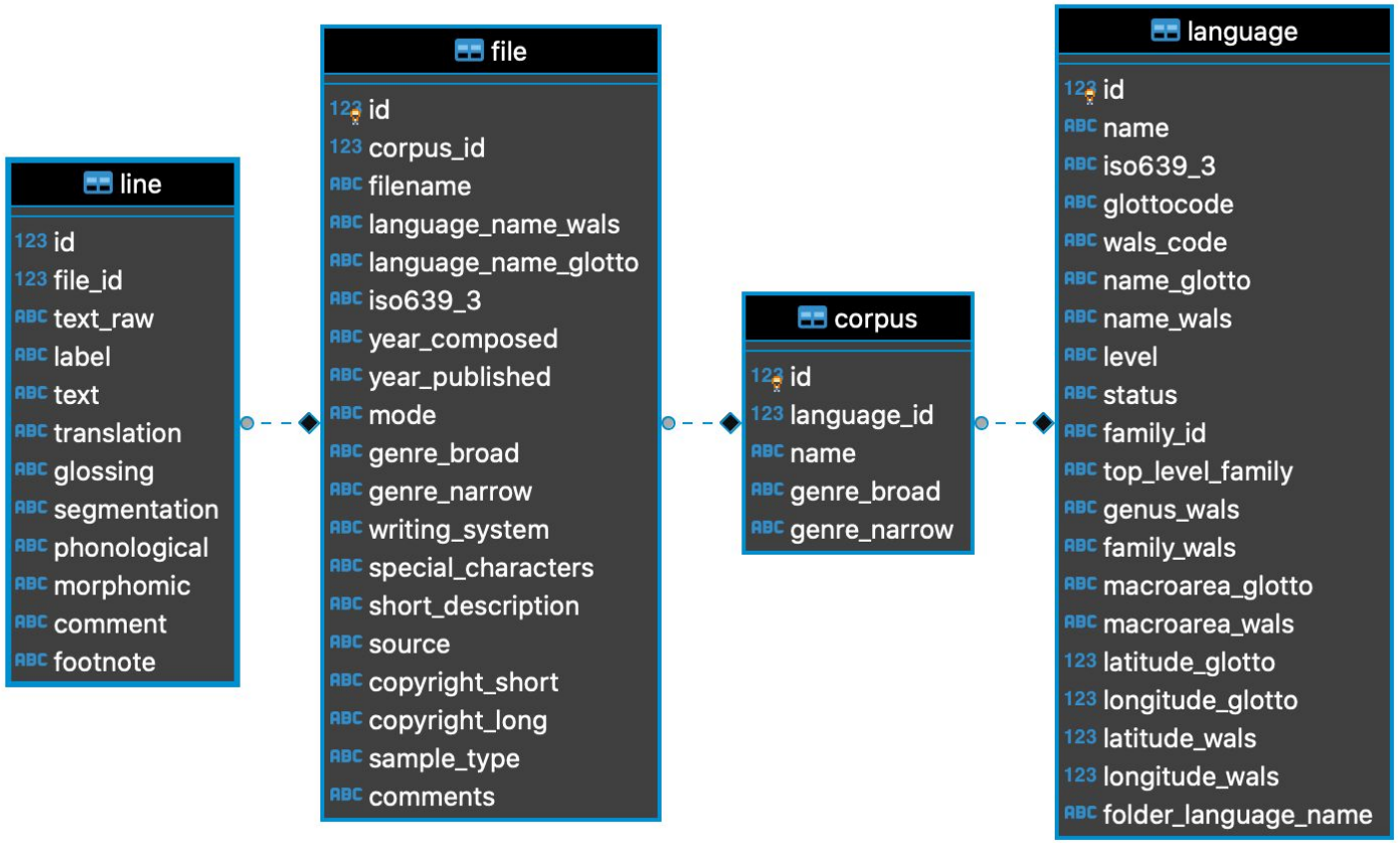

TeDDi's relational database schema

Data availability

Input corpora and the source code for processing them:

https://github.com/MorphDiv/TeDDi_sample

Data exported into CLDF (Cross-Linguistic Data Formats)

https://github.com/cldf-datasets/TeDDi_sample

DEMO

Thank you!