Corpus Linguistics
Some Available Corpora

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Available Corpora

It will help to look at a set of available corpora:

- To see how corpora can be categorized
- To learn about design decisions for different corpora
- To become familiar with a range of commonly-referenced corpora

The focus here is mostly on English corpora

Corpus-Distributing Organizations

- Linguistic Data Consortium (LDC)
- European Language Resources Association (ELRA)

Some important English corpora

- Brown Corpus: 1 million words of written American English texts from various genres, dating from 1961
- Lancaster-Oslo-Bergen (LOB) Corpus: 1 million words of written British English texts, dating from 1961. Genres are parallel to the Brown Corpus.
  - FLOB and Frown are 1990s versions of Brown & LOB, out of Freiburg
- British National Corpus (BNC): 100 mio. words of written and spoken language, balanced corpus of current British English
- International Corpus of English (ICE): national or regional varieties of English; one million word collections of contemporary spoken and written English (Great Britain, USA, Australia, South Africa, Canada, Hong Kong, India, etc.)

Some non-English corpora

- German National Corpus: 2.2 bio. words
- IPI PAN Polish Corpus: 300 mio. words
- Chinese National Corpus: 100 mio. words
- Czech National Corpus: 100 mio. words
- Hungarian National Corpus: 80 mio. words
- Croatian National Corpus: 30 mio. words
- Hellenic National Corpus: 20 mio. words
- METU Turkish Corpus: 10 mio. words
- ...
### Specialized corpora

Some examples:
- Guangzhou Petroleum English Corpus: petrochemical domain
- HKUST Computer Science Corpus: undergraduate textbooks in CS
- Corpus of Professional Spoken American English (CPSA)
- Michigan Corpus of Academic Spoken English (MICASE): [http://quod.lib.umich.edu/m/micase/](http://quod.lib.umich.edu/m/micase/)

### Spoken corpora

- London-Lund Corpus (LLC): spoken British English from 1960s to mid-1970s
- Spoken English Corpus (SEC): spoken British English from 1980s, mainly radio broadcasts
- Cambridge and Nottingham Corpus of Discourse in English (CANCEDE)
  - Corpus coded with the relationship between speakers: intimates, casual acquaintances, colleagues at work, strangers
  - 75% informal speech/dialogue (more private material than most)

### Synchronic & Diachronic corpora

Synchronic corpora often compare regional varieties
- ICE, comparisons of Brown & LOB, etc.
- Longman Spoken American Corpus, Survey of English Dialects (SED)
- Need detailed speaker information

Diachronic corpora cover a wide range of time periods
- Corpus of English Dialogues
- Helsinki Dialect Corpus
- Helsinki Diachronic Corpus of English Texts
  - Old, Middle, & Early Modern English
- ARCHER corpus: A Representative Corpus of Historical English Registers
  - 1650-1990, divided into 50-year periods

### Learner corpora

Learner corpora collect the language of second language (L2) learners
- Developmental corpora (e.g., CHILDES) for L1 language

Some examples:
- International Corpus of Learner English (ICLE)
- Cambridge Learner Corpus part of the Cambridge International Corpus (CIC)
- Longman Learners’ Corpus
- Standard Speaking Test (SST) Corpus
- Chinese Learner English Corpus (CLEC)
- HKUST (Hong Kong University of Science and Technology) Corpus of Learner English

See [http://jones.ling.indiana.edu/wiki/LearnerCorpora](http://jones.ling.indiana.edu/wiki/LearnerCorpora)

### Monitor Corpora (theory)

Monitor corpora continue to grow
- Ensures larger corpus size and allows for large individual sample sizes
- Often only admit new material which has new features not already in corpus
- Used to track changes across different periods of time
  - Monitor corpora could be a series of static corpora

Disadvantages:
- No attempt to balance the corpus
- Text availability can become an issue (e.g., copyrights)
- Confusing to indicate specific corpus version
- Cannot easily compare results run on corpora of different sizes

### Monitor Corpora

- Bank of English (BoE)
- Global English Monitor Corpus
  - Collection of newspapers in English
  - Monitors language use and semantic change in English across US, Britain, Australia, Pakistan, & South Africa
Multilingual corpora

Multilingual corpora are corpora with multiple languages
- Gain new insights, as compared to monolingual corpora
- Highlight language-specific, typological, or cultural features
- Useful for lexicography

Three types of multilingual corpora:
- Type A: Source texts plus translations (e.g., Hansards)
- Type B: Monolingual subcorpora designed with the same sampling technique
- Type C: Combination of A&B (e.g., EMILLE)

Parallel corpus is Type A, & comparable corpus is Type B
- Corpus with different varieties of the same language (e.g., Brown, LOB) are comparative corpora

Facets of parallel corpora

Parallel corpora can be uni- or multi-directional
- i.e., there could be translations in either or both directions
- be on the watch out for “translationese”

An important step is to align corpus units
- at the level of the text, section, paragraph, sentence, and/or word
- often useful to have a separate alignment file with pointers to, e.g., word IDs

Alignment

Basic methods for doing sentence alignment automatically:
- statistical: based on sentence length, in terms of words or characters
- lexical/rule-based: exploit morpho-syntactic information to align
- hybrid: integrate linguistic knowledge into a probabilistic system

Fairly accurate for sentence alignment of European language pairs

Verbmobil Example

e102ach1,109_JLF,420000: well, I guess it depends on how we are going to go to the branch to do our business.
e102ach1,109_JLF,420000_D: also, ich denke, es kommt darauf an, wie wir zur Zweigstelle kommen, um die, unsere Arbeit zu machen.
e102ach2,110_SNC,420000: mhm.
e102ach2,110_SNC,420000_D: mhm.
e102ach2,111_JLF,420000: will we take the train or will we drive I am not I don’t know how to get there.
e102ach2,111_JLF,420000_D: nehmen wir den Zug oder fahren wir, ich bin nicht, ich weiß nicht, wie man da hinkommt.
e102ach2,112_SNC,420000: yeah, me neither. maybe we should # maybe we should # take a train.
e102ach2,112_SNC,420000_D: ja, ich auch nicht. vielleicht sollten wir # einen Zug nehmen.

Europarl Example

English:
<CHAPTER ID=1> Approval of the Minutes of the previous sitting <SPEAKER ID=1 NAME="President"> The Minutes of yesterday ’ s sitting have been distributed. <P> Are there any comments? <P> ( The Minutes were approved ) <SPEAKER ID=2 LANGUAGE="FR" NAME="Wurtz"> Mr President, as you know, today is the eleventh World Press Freedom Day. Many of our fellow Members would certainly wish to take this opportunity once again to state their solidarity with this struggle, a struggle, furthermore, which is proving successful, because, according to the Reporters sans Frontières association, fewer journalists are being imprisoned and fewer media outlets are being censored than a year ago. <P> German:
Some online corpus lists

- Association for Computational Linguistics (ACL) wiki: http://aclweb.org/aclwiki
- at Linguist List: http://linguistlist.org/sp/Texts.html
- Stanford list: http://www-nlp.stanford.edu/links/statnlp.html#Corpora
- Tübingen list: http://www.sfb441.uni-tuebingen.de/c1/corpora-engl.html

Syntactically Annotated Corpora: Treebanks

**English:**
- Penn Treebank
- BLLIP Treebank
- The Penn-Helsinki Parsed Corpus of Middle English
- Susanne Corpus and Christine Project
- International Corpus of English ICE (British)
- Lancaster Treebank
- The Redwoods HPSG Treebank

**Treebank Projects**

- Basque
  - Eus3LB project
- Bulgarian
  - HPSG-based Syntactic Treebank of Bulgarian (BulTreeBank)
- Catalan
  - CAT3LB project
- Chinese
  - The Chinese Treebank Project
- Czech
  - Prague Dependency Treebank

**TreebankProjects (2)**

- Danish
  - Danish Dependency Treebank
- Dutch
  - The Alpino Treebank
- French
  - Project TALANA
- German
  - NeGra Project - NeGra Corpus
  - Project TIGER
  - VerbMobil Treebank of Spoken German (TüBa-D/S)
  - The Tübingen Treebank of Written German (TüBa-D/Z)

**Treebanks Projects (3)**

- Italian
  - Turin University Treebank TUT
  - Italian Syntactic-Semantic Treebank
- Portuguese
  - The Floresta Sinta(c)tica project
- Slovene
  - Slovene Dependency Treebank
- Swedish
  - Swedish Treebank
- Turkish
  - METU treebank