From corpus to profiles: the Icelandic learner error corpus

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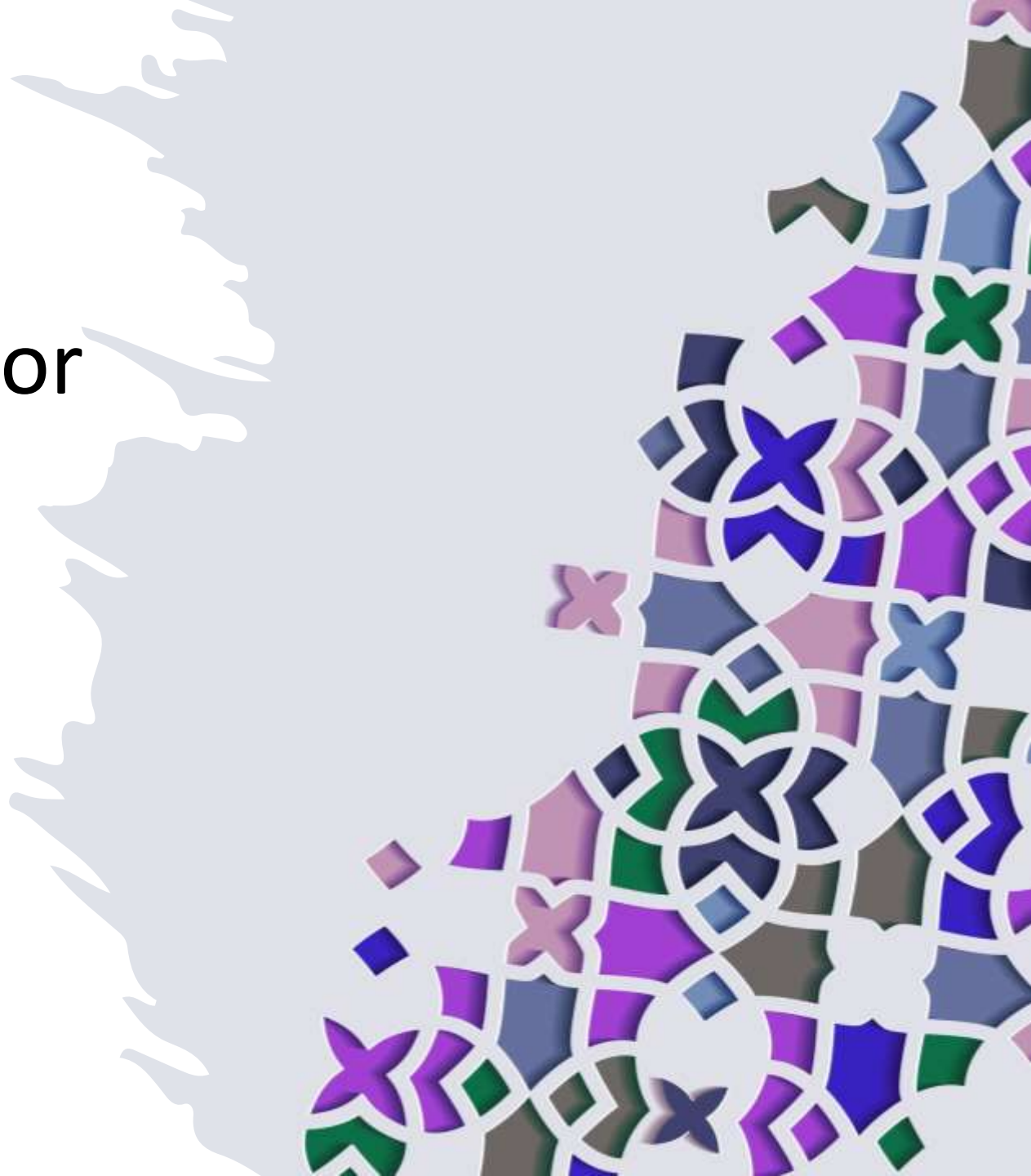


Overview

1. Icelandic as a learner language; Icelandic and CEFR

2. Icelandic error corpora & the first learner corpus

3. Contrastive interlanguage analysis based on CEFR scale

4. Conclusions, challenges, future plans

Icelandic and CEFR

- Demand for teaching Icelandic as SL/FL quite new
  - 2023: around 15–20% of the Icelandic population are immigrants
- No defined CEFR scale for grammar or vocabulary
  - Self-assessment grid from 2001
- No frequency lists for word families
- *Icelandic as a second language* program at the University of Iceland:
  - one-year Practical diploma in Icelandic (est. proficiency level A1-A2)
  - 3-year bachelor degree - students are estimated to be on the level B1-B2 by the end of the first year and reach B2-C1 by the end of the program
- Growing and urgent need for creating learner profiles, new teaching materials, standardized testing

Icelandic error corpora

- CLARIN-IS digital resources repository (Database of Modern Icelandic Inflections, Database of Icelandic Morphology, Icelandic Gigaword corpus etc.)
- Government project *Language Technology for Icelandic 2019-2023*
  - First error corpora for Icelandic:

    The Icelandic Error Corpus (IceEC)

    Three specialized error corpora (2019-2022): The Icelandic L2 Error Corpus, The Icelandic Dyslexia Error Corpus, and The Icelandic Child Language Error Corpus

Corpora	Number of words	Errors per 1000/w
General	1,239,024	45.67
L2	162,071	153.93
Children	37,443	208.77
Dyslexia	38,891	216.91

Creating the corpora and annotation scheme

```
5990  <w>gera</w>
5991  <w>ráð</w>
5992  <w>fyrir</w>
5993  <revision id="255">
5994    <original><w>tvö</w><w>myndbrigði</w><w>fyrir</w></original>
5995    <corrected><w>tveim</w><w>myndbrigðum</w><w>í</w></corrected>
5996      <errors>
5997        <error xtype="case-collocation" idx="255-1" eid="0" />
5998        <error xtype="nominal-inflection" idx="255-1" eid="0" />
5999        <error xtype="wrong-prep" idx="255-2" eid="0" />
6000      </errors>
6001  </revision>
6002  <w>þágufallsendingu</w>
```

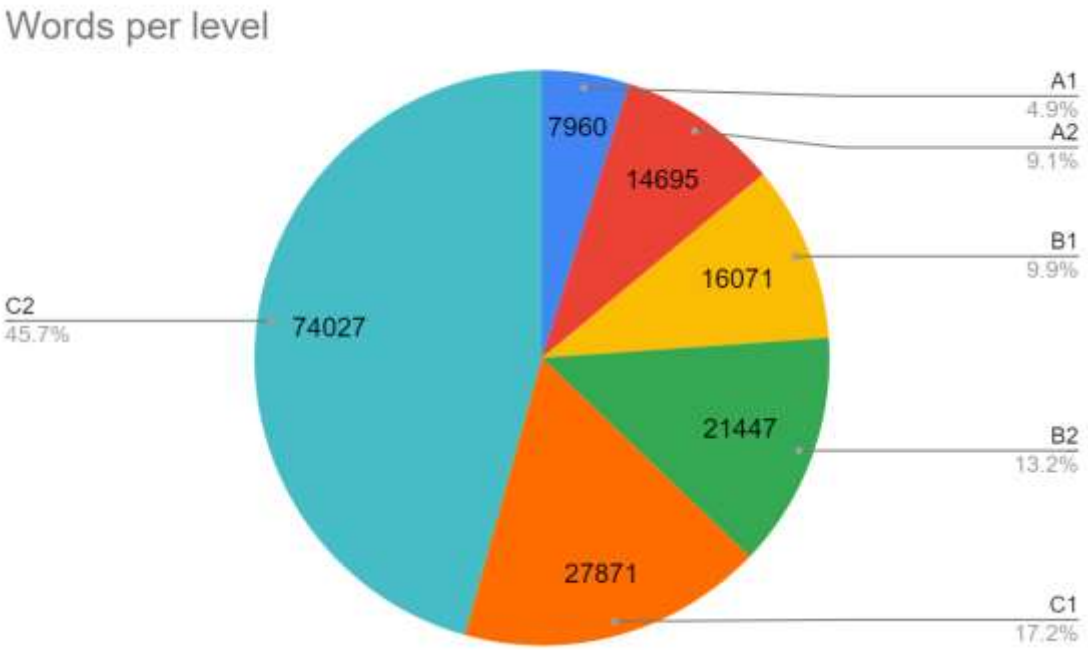
An example of revision spans with multiple error codes.

- The steps involved:
  - gathering large quantities of texts within each category, manually proofreading and marking errors (each error manually labeled within a pre-formed annotation scheme)
  - published in augmented TEI-format XML documents. Specific TEI element, *revision*, was created to map out the differences between the original text file and the corrected file.

- Error classification scheme combined linguistic errors (morphology, syntax, etc.) and surface structure taxonomies (omission, addition, etc.)
- 5 main categories (orthography, grammar, vocabulary, coherence, and style), each further divided into more descriptive subcategories, divided into error codes - 258 in total
  - general: *wording*
  - specific: *af4að*, *i4y*

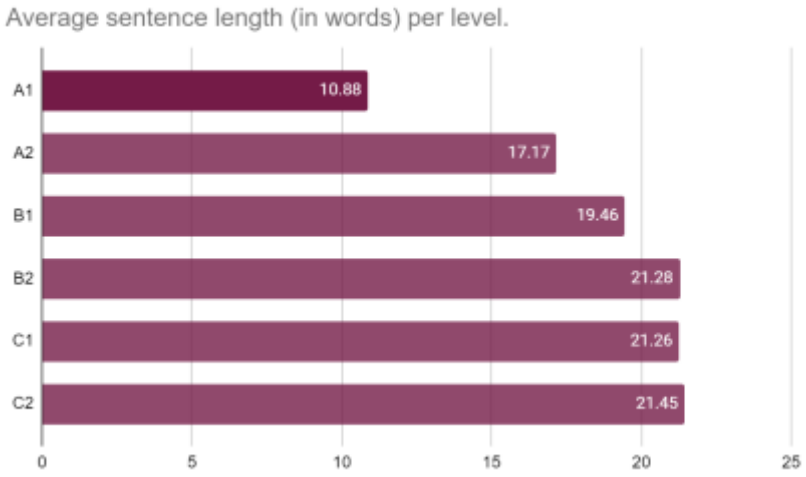
The Icelandic L2 Error Corpus (IceL2EC)

- Text collection: public online submission form (texts previously unpublished and obtained directly from their authors)
- Original annotation scheme expanded with new labels that were specific to the L2 errors
- Metadata: author's first language, other languages, length of residence in Iceland, length of study of Icelandic, and ***proficiency level***



Number of revision: 17241
Number of errors: 24948
Number of files: 101
Number of words: 162071
Errors p/1000 words: 153.93
Average words per file: 1605

17 different L1s

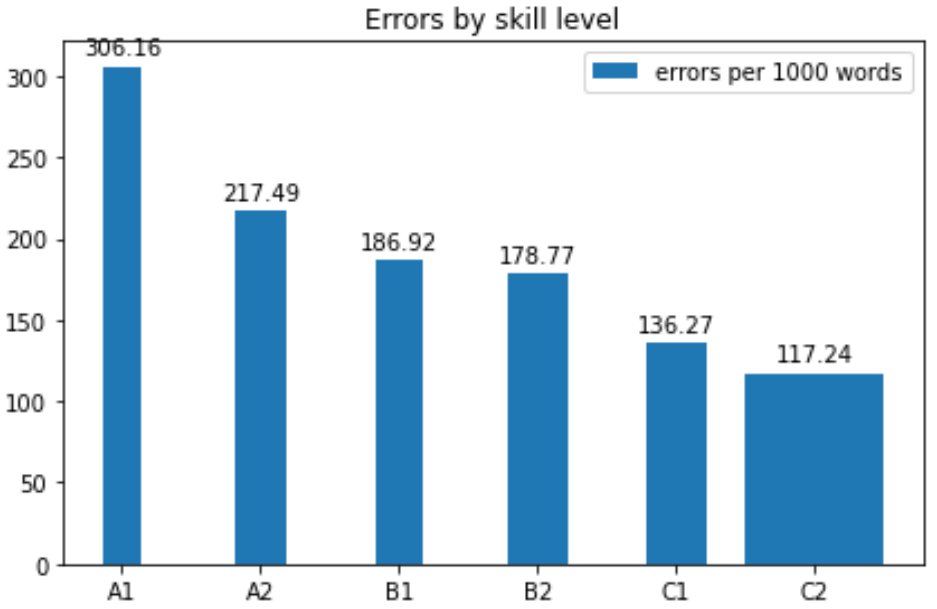


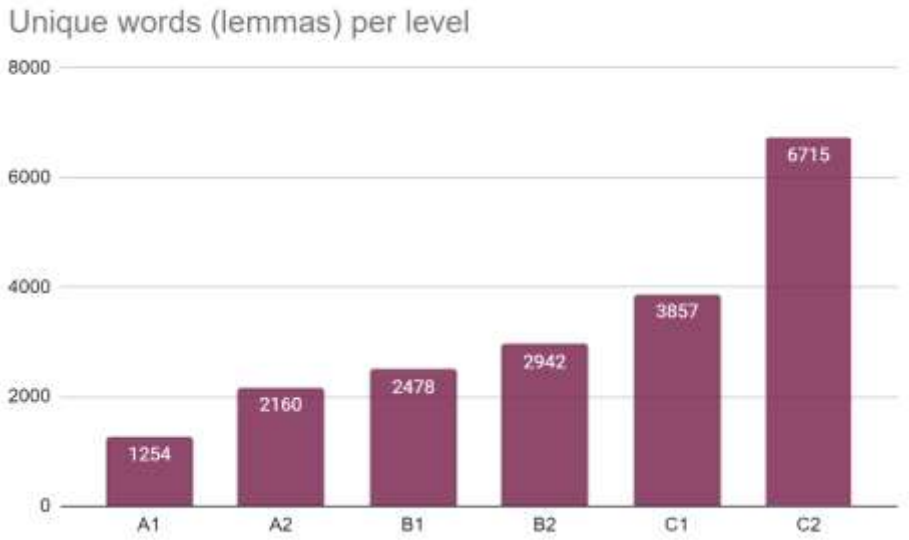
Word and error frequency

- Most frequent errors within grammar (43.57%) – mostly involve case government, agreement, and definiteness
  (grammar category accounts for only 11.8% in the general Icelandic Error Corpus)
- Example: 5 most common errors for level A2 (%)

wording	19.94
nominal-inflection	14.22
wrong-prep	7.83
context	7.42
case-prep	6.87

- Unique lemmas total: 12167
  663 that appear on A1 but not on A2
  1569 that appear on A2 but not on A1
- Corrected versions of texts used





Future steps

- Icelandic Error Corpus is already used in creating a grammar and spelling correction software - *GreynirCorrect* (only open-source Icelandic spell checker and a part of the spelling and correction module of the Language Technology Program)
- Using the L2 corpus in a collaborative project on mapping out the grammar and vocabulary on the CEFR scale
- Train a machine learning model for automatic skill level detection based on extracted features

- Issues: scarcity and inconsistency of data, PoS taggers, manual error tagging vs. automatic error detection

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