Unifying the Annotations in Turkic Universal Dependencies Treebanks

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Objective

Standardizing annotations in Universal Dependencies (UD) [1] treebanks of Turkic languages.

Introduction

- Treebanks in UD keep growing in number
- Annotation consistency becomes even more important [2]
- 16 treebanks in 8 Turkic languages, 9 in Turkish
- Earlier studies reported consistency issues in Turkic treebanks [3]
- This work started with a workshop (UDTW23, see below) [4]
- Aim: **unifying annotations in Turkic treebanks**
- Current discussion expected to increase consistency throughout

UDTW23

(UD Turkic Workshop 2023)

- One-day workshop in September 2023 (hybrid) in Istanbul co-located with WG3 meeting
- Beforehand, participants asked to list issues they want to discuss
- 20 exemplary sentences prepared based on issues listed [5]
- Issues discussed through examples since workshop in regular meetings

Information

github.com/ud-turkic

Relevant UniDive working groups
WG1, WG3, and WG4

Issues

– Tokenization

Main source of **tokenization** inconsistency is delineating 'syntactic words'

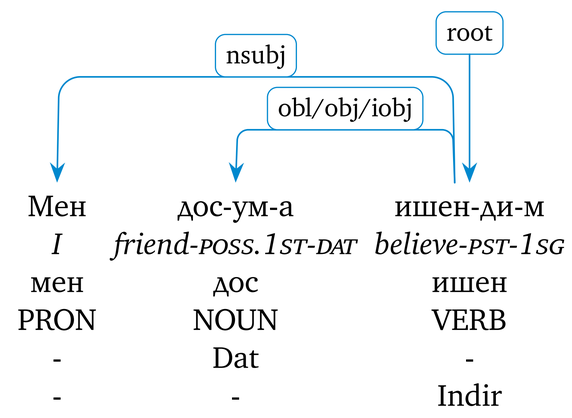
– Morph. feature specification

Many camel-case **tense/mood tags** used inconsistently that should be unified, e.g. `GenNecPot` 'general necessitative potential'

– Oblique/object distinction

Non-accusative objects annotated inconsistently:

- `obl` (**oblique**), based on assessment of event structure
- `obj` (**object**), based on morphological/syntactic tests (object promotion in passivisation)
- `iobj` also a possibility



"I believed my friend" (`kir`). Lines below the glosses are for 'Lemma', 'POS', 'Case', and 'Subcat', respectively.

– Question particle

uyu-yor-sun / uyu-yor **mu**-sun
sleep-PROG-P2.SG / *sleep-PROG* ***Q***-*P2.SG*
"You're sleeping"/"Are you sleeping" (`tur`)

- Can be seen as an *infix*, separated by a space
- Annotations differ on tokenization and assigned POS

– Code switching

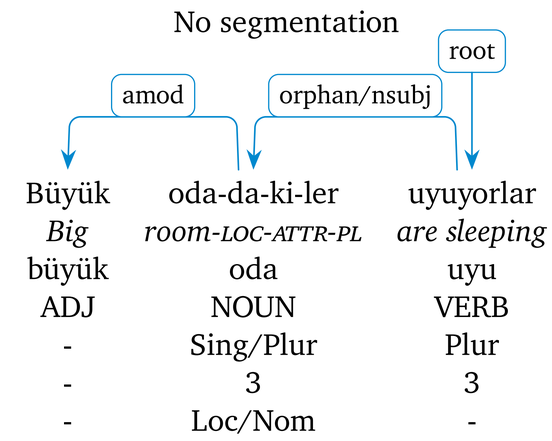
Common within Turkic-speaking multilingual communities, with its own challenges in annotation

– Transcription

Coexisting mainstream schemes challenge unified treatment of `Translit` of `MISC` attributes

– Pronominalized nouns

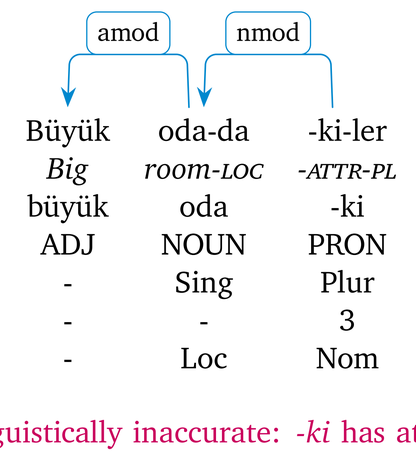
- Turkic languages have **pronominal** uses of **locative and genitive nouns**
- We can imagine 4 different ways of annotation



"The ones in the big room are sleeping" (`tur`). Lines below the glosses are for 'Lemma', 'POS', 'Number', 'Person', and 'Case', respectively.

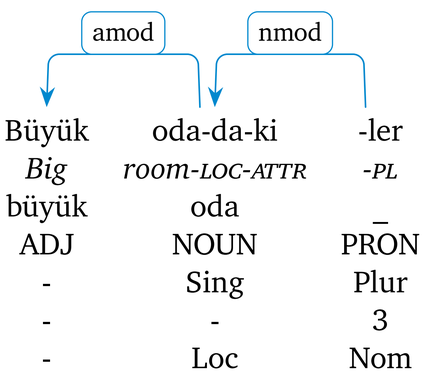
- one node for two semantic items
- multiple `Number` and `Case` features
- `Number` agreement mismatch
- `orphan` relation uninformative, `nsubj` relation misleading

Segmenting before *-ki*



- linguistically inaccurate: *-ki* has attributive function, is not PRON lemma

Segmenting after *-ki*



- empty lemma
- empty form when no suffixes

Conclusions

- Workshop served as an important catalyst to foster discussions required to identify and formulate issues on annotation of Turkic languages and developing recommendations for a uniform annotation approach
- Regular discussions *still* ongoing
- **Next step**: discuss all issues in continued meetings with examples from treebanks to reach a collective unification recommendation
- **Eventual goal**: write a comprehensive paper detailing issues and decisions to document group's position
- Study at hand expected to improve overall quality of treebanks and guidelines of UD

References

[1] `universaldependencies.org`
[2] Universalising Latin Universal Dependencies, Gamba et al., 2023.
[3] An assessment of Universal Dependency annotation guidelines for Turkic languages, Tyers et al., 2017.
[4] `ud-turkic.github.io/udtw23`
[5] `github.com/ud-turkic/udtw23/wiki/selected-20-turkish-sentences`

Acknowledgements

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