

Sentiment Analysis of Homeric Text: The 1st Book of Iliad

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Introduction

- Sentiment annotations for ancient Greek: limited.
- Released sentiment annotations for the 1st Book of Iliad.
- Investigated annotating the sentiment of the reader VS. that of the author.
- Provided a list of emotions suggested by the annotators.
- Experimented with (modern) GreekBERT.

The dataset

- 92 verses were given to 14 annotators.
- Half annotated the sentiment Homer aimed to provoke to the reader.
- The rest annotated their sentiment while reading.
- The latter group yielded a higher agreement (20+ units).
- Free-text emotions were recorded during the annotation.
- Opted for a modern Greek translation, close to ancient Greek. *
- The 1st Book of Iliad as the corpus of interest.
- Eight annotators annotated their perceived sentiment.
- Positive, Negative, Neutral sentiment or the Narrator speaking.
- Emotion selection from the compiled list to keep the annotator focus.
- Inter-annotator agreement for sentiment was 0.5 (Krippendorff's alpha = 0.39).
- Increased alpha (0.83) for the narrator (vs rest) task, compared to the rest.

"The same verse might yield different sentiment to different readers"

- Visualising the four sentiment probabilistic scores of the Book:

- $\bar{+} \rightarrow \bar{-} \rightarrow \bar{+} \rightarrow \dots$
- high $\bar{+}/\bar{-}$ peaks

- Detecting the verses that cause sentiment *polarity*.
 $pol(v) = f^+(v) * f^-(v)$
- Sorting the verses based on their polarity.
- Top-10 were polarised, half w/ $\bar{+}$ & half w/ $\bar{-}$.
- 69 verses had 3 $\bar{+}$ codes, 3 $\bar{-}$ and two Neutral/Narrator.

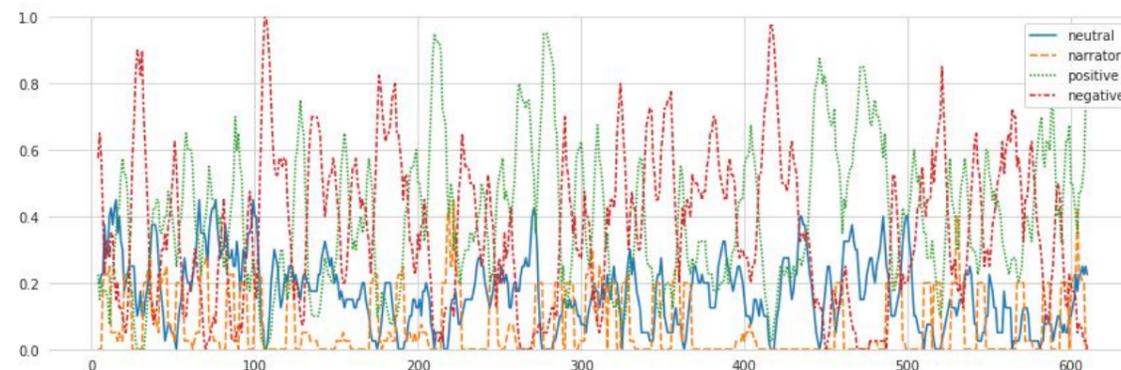
https://github.com/ipavlopoulos/sentiment_in_homeric_text

Empirical analysis

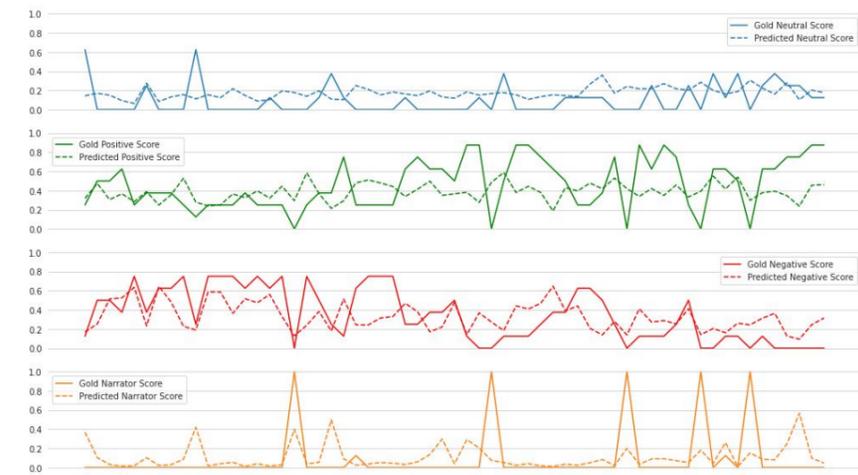
- Greek-BERT (Koutsikakis et al., 2020) fine-tuned for sentiment estimation:
- The annotators % that classified a verse as positive, negative, neutral, or narrator.
- Gold score or class?
Opted for score, to handle instance ambiguity (Fornaciari et al., 2021).
- Split at random or based on time?
Opted for a time-based split, to follow human reading and annotation.

hope, fear, joy, distress pride, shame, admiration, reproach, love, hate, anger, remorse, relief, satisfaction, mercy, empathy, anxiety, worry, awe, willingness, pain, complaint, sorrow, surprise, guilt, shocking, question, grief, suspense, insecurity, loneliness, sadness, humiliation, compassion, fury, dispassion, affinity, disdain, self-denial, irony/sarcasm, injustice, Being moved, rejection, longing, respect, jealousy, certainty, homesickness, self-pity, grudge, confidence, bravery, acknowledgement, despair, awareness

High + peaks: 5, 89, 127, 208, 209, 210, 213, 214, 262, 274, 277, 278, 279, 283, 298, 443, 447, 456, 472, 474
High - peaks: 26, 28, 29, 32, 103, 104, 105, 106, 107, 108, 176, 187, 324, 325, 413, 414, 415, 416, 417, 418



The predicted (--) line falls close to the gold (-), explaining the low error.



There are verses that the model cannot distinguish if it was a hero or the narrator speaking.

Conclusions

- New dataset released based on the 1st Iliad Book.
- Perceived sentiment has been annotated by native (modern) Greek speakers.
- Verses with polarised and unanimous sentiment annotations presented.
- Low error by a mechanical sentiment annotator.

In future work, we will expand the dataset with the help of human/machine annotators, and we will compare our sentiment annotations with those from ancient Greek scholars.