

## Review of Thesis Proposal

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**Thesis Title:** Argumentation in speeches of the Security Council of the United Nations Organizations

**Candidate:** Mgr. Mariia Anisimova

**Supervisor:** PhDr. Šárka Zikánová, Ph.D.  
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The thesis proposal submitted by Mariia Anisimova is an interdisciplinary work anchored in psychology (the appraisal theory), the methodology of which is based on techniques used in computational linguistics (corpus linguistics, NLP). The overall goal of the thesis is to develop a **linguistic representation of facts and attitudes** suitable for their automatic detection. The representation should cover the domain of diplomatic speeches in English. Further, the candidate plans to develop **an automatic tool for the identification of these phenomena** and use this tool to annotate the entire corpus of available diplomatic speeches.

While the thesis topic is very attractive, the approaches presented in the proposal only partially cover the field, focusing mainly on the annotation part of the project. It brings some interesting qualitative characteristics of the diplomatic language. The NLP part of the project is presented as future work.

### Content

The proposal is written in good English, it spans a bit more than 9 pages of the main text, plus a list of references (1.5 p.). It summarizes what has already been done (preliminary annotation and its results on sample data). Further, it suggests planned steps separately in the attitude identification task and in the fact identification task.

In Section 1, the candidate shortly **introduces** the thesis topic, its goals, and (possible) outputs. Main facets of the diplomatic language are described here as well. The proposal also cites a few projects approaching either the automatic identification of facts and argumentation or the identification of sentiment, including those anchored in the appraisal theory.

Section 2 presents a **dataset** of English diplomatic speeches used in the project, the selection of a sample for manual annotation, and the planned annotation itself.

Section 3 is devoted to **attitudes** (i.e., explicit or implicit expressions of the speaker's opinion) and their identification. It defines the "attitude" concept (3.1), an overview of the background appraisal theory (3.2), the current state of its application for the data annotation, and preliminary findings (3.4-3.5). Further, Mariia shows basic inter-annotator agreement on preliminary annotated data (3.6) and planned future work (3.7).

Section 4 deals with **facts** (i.e., statements of events or actions presented as to have happened or to exist). The candidate cites selected related work and, in rather general terms, proposes planned steps.

Section 5 illustrates the **resulting annotation**.

## Evaluation

After a very interesting introduction and overview presenting esp. **characteristic features of the diplomatic language and its use**, the candidate separately describes two tasks: processing attitudes and processing facts.

As for the first task, the **identification of attitudes** (described in Section 3, which represents a key part of the proposal, spanning almost 5 pages), the chosen approach is based on the appraisal theory developed (for English) within the framework of *Systemic functional linguistics*. Though this choice is only cursorily justified, Mariia apparently well understands the approach, and she is able to apply it to a data sample (I will refer to this data portion as to the 'PA data', standing for preliminary annotated data). Based on preliminary annotation results, she now focuses on refining the annotation scenario. The annotation of the full portion of the data selected for manual annotation ('MA data' in the sequel) will be completed as one of the planned steps.

**Question for discussion:** The amount of data considered in this experiment is not mentioned. Please provide some statistics, esp. how many speeches/sentences/tokens were annotated in this phase. How many attitudes per speech were found (on average)? How long sequences of tokens (continuous or not) typically correspond to a single annotated attitude? Can you show an annotation sample?

Sections 3.4 and 3.5, dealing with preliminary conclusions on the 'PA data' portion of the corpus, seem rather inconclusive. These sections are mainly based on examples, with no real attempt to characterize individual annotated features and their values. I would expect, e.g., a sample of commented criteria for distinguishing individual features/values or an illustration of a coherent annotation scenario. In my opinion, such only vaguely defined annotation principles might cause a very unsatisfactory F1 score ( $F1=0.265$ ) on the 'PA data'. Moreover, as far as I understand from the proposal, the golden data were not annotated independently ("The data was annotated by one of them, and then reviewed and newly annotated by another annotator."). Further, even the agreement level on 'whether an expression/phrase expresses attitude or not' is surprisingly low ( $F1=0.71$ ). No baseline score is provided.

**Question for discussion:** Can you present a sample of the annotation schema, present the experiment (amount of data, workflow) and comment on the low performance of the first annotator?

Finally, section 3.7 presents future steps: when the manual annotation of the 'MA data' portion is completed, Mariia expects that she will develop **a sequence labeling model** and use it to annotate the whole corpus. The data will be further reviewed by human annotator(s). No particular methods are mentioned here, and no details! As a second approach, the development of a **rule-based scheme** for attitude identification is mentioned (with no details).

**Question for discussion:** Can you be more specific about machine learning methods you plan to apply for this task? What is your experience with such methods? What about the planned time schedule?

The second task deals with the **representation and identification of facts** (Section 4, 2.5 pages in total). The candidate has not started working on this task yet, and she thus reports only preliminary research into existing approaches and tools. Thereby, the text is rather general – it mainly consists in citing short statements from several related papers. The proposed solution is to employ an **argument analysis**, focusing on the identification of main

claims and supporting reasoning. The automatic processing should be based on some **argument mining** techniques; however, no particular techniques are at least briefly described.

**Question for discussion:** Can you show a sample of the argument analysis covering both the extraction of arguments and the identification of relations between them? Can you exemplify implicit argumentation?

**Question for discussion:** In Section 4.2.2, you state, “NLP serves as a mean[s] of identification arguments and their components (i.e., claims and reasons), while KRR contributes to the analysis of reasoning in the retrieved components ... (Cabrio, 2018).” Can you explain this process, comment on the overall role of NLP and KRR techniques, and maybe show their contribution on several simple examples?

**Question for discussion:** You mention “the Argumentation Theory” in the same section; however, no references are provided – which theory do you mean?

The last subsection in 4 (contrary to its title, “Description of the planned workflow for annotating facts”) presents another very preliminary and sketchy data characteristic. It also suggests just another annotation tool that might be used.

To summarize, concerning the fact identification task, the **proposal contains no conclusions regarding the methodology and the elaborated plan for future work.**

### Other comments

- Section 3.2, right column on p. 3:

I do not understand the argumentation concerning the suitability of sentiment analysis methods for the given task: “Careful consideration ... has also shown that sentiment analysis would not provide significantly less information regarding the representation of attitude as it was concluded that sentiment and attitude do not refer to the same linguistic concepts.”

- Section 3.3 on p. 4:

Awkward formulation – “As the results of the analysis of our first introductory analysis of annotations has shown ... particular cases ...”

- Section 3.5, 1st paragraph, p. 5:

Missing conjunction? (?as) ... “the proper name “Security Council” is inevitably interpreted positively context is not being taken into account, ...”

- Bad quotation marks appear throughout the proposal.
- References:
  - Proper citing needs more attention – the reference section contains:
  - many incomplete citations (just links provided, no full citations as required by the respective publisher, e.g., West et al., 2021),
  - incorrect links (e.g., M. Anisimova. 2022),
  - wrong entries merging several co-authors together (e.g., A. Baturo J. Gray. 2021 → Julia Gray and Alex Baturo. 2021. or J. Gray and A. Baturo. 2001.)
  - an inconsistent form of references (initials or full first name),
  - wrong alphabetical ordering (e.g., M. A. K. Halliday under “M” instead of “H”), probably caused by errors in the BibTeX author field.

### Summary

The thesis proposal introduces the attractive topic of the diplomatic language and its main (primarily qualitative) characteristics. The project seems to be in an initial phase – so far, the

candidate focuses more or less only on the preparatory annotation of a data sample, with some preliminary observations on the inter-annotator agreement. She does not illustrate (or provide an excerpt of) the refined annotation scheme allowing resolution of text ambiguities, nor she attempts to generalize her observations. Though the proposal presents a general overview of related work, no elaborated approach to the project is formulated – I miss at least a short description of its methodology and a detailed description of individual subtasks, including tools and techniques that will be used. There are no achievements concerning the NLP part of the project, this part is presented as future work in the proposal. To conclude, ***the submitted thesis proposal does not indicate adequate preparedness for the dissertation project (at least as expected for this phase of PhD); it does not show desired progress and achievements. Thus I cannot assess the feasibility of the proposed project, nor can I assess its preparedness to be successfully finished.***

In Prague, March 6, 2023

Markéta Lopatková