

Annotating Arguments in a Parliamentary Corpus: An Experience

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Abstract: Estonian parliamentary corpus includes verbatim records of sessions held in the Parliament of Estonia (Riigikogu) in 1995-2001. An important task of the Riigikogu is the passing of acts and resolutions. A bill initiated in the Riigikogu will pass three readings, during which it is refined and amended. Negotiation is an important part of parliamentary discussions. Arguments for and against of the bill and its amendments are presented by the members of the Parliament in negotiation. In the paper, arguments used in negotiation are considered. Every argument consists of one or more premises, and a claim (or conclusion). The arguments and the relations between them (rebuttal, attack, and support) are determined with the aim to create a corpus where arguments are annotated. Some problems are discussed in relation with annotation. Our further aim is the automatic recognition of arguments and inter-argument relations in Estonian political texts.

1 INTRODUCTION

Parliament data has always been in the center of the humanitarian and societal interest with its influential language and content for the social and political environment. There are many ongoing initiatives for compiling digital collections of parliamentary resources. An overview of the existing resources is given in CLARIN-PLUS survey on parliament data (Survey, 2020).

As a rule, parliamentary discussions include numerous arguments. Analyzing argumentation from a computational linguistics point of view has recently led to a new field called argumentation mining. The review of Atkinson et al. (2017) considers the development of artificial tools that capture the human ability to argue. Such systems, being able automatically extract arguments and relations between them, can be used when modelling political argumentation.

Stab and Gurevych (2014) present an approach to model arguments, their components and relations in persuasive essays in English. The annotation scheme includes the annotation of claims and premises as well as support and attack relations for capturing the structure of argumentative discourse. The authors conduct a manual annotation study with three annotators on 90 persuasive essays. The corpus updated in (Stab and Gurevych, 2017), consists of 402 argument-annotated persuasive essays.

Amgoud et al. (2015) propose a language for representing arguments that captures the various forms of arguments encountered in natural language, and demonstrate that it is possible to represent attack and support relations between arguments as formulas of the same language.

Haddadan et al. (2018) introduce the annotation guidelines defined for annotating arguments in political debates. Their annotation scheme includes the annotation of claims and premises as the components of arguments.

Menini et al. (2018) have created a corpus of political speeches where argument pairs are annotated with the support and attack relations.

Lawrence and Reed (2019) provide a review of recent advances in argument mining techniques.

In the current paper, we examine negotiations in the Estonian Parliament (Riigikogu) based on verbatim records of the sittings. In the records, repetitions and disfluencies are omitted, while supplementary information such as speaker names are added. The records (in Estonian) are accessible on the Web. A corpus is formed that includes a part of the records from 1995 to 2001 (in total, 13 million tokens), both for download and on-line searching. We are looking for arguments presented by the members of the Parliament (MPs) in negotiations when proceeding a bill. Our further aim is to create a corpus where arguments and inter-argument relations are annotated.

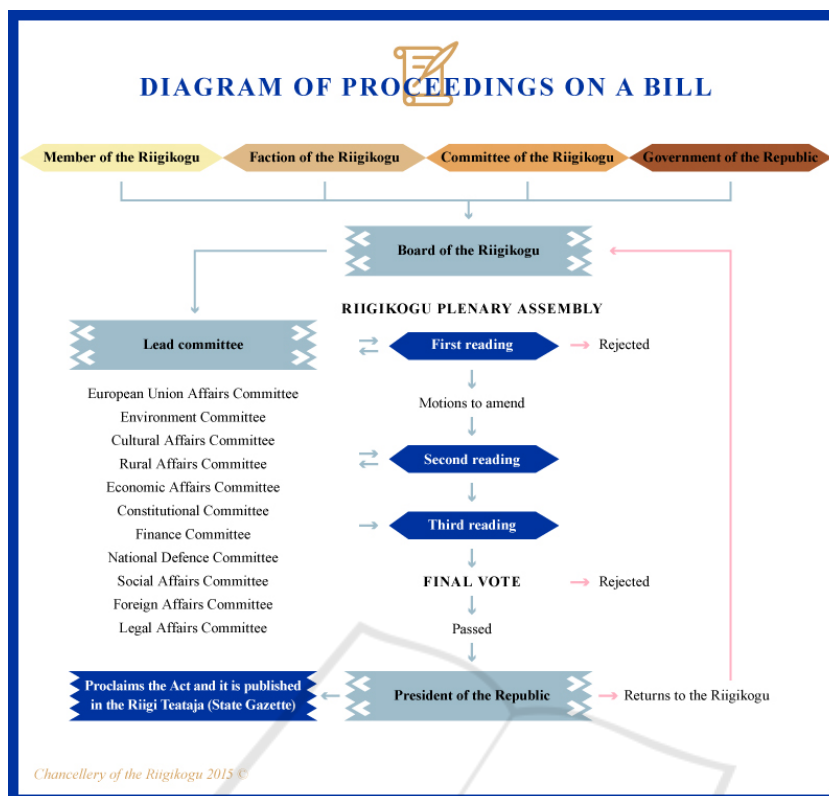


Figure 1: General structure of proceedings on a bill (source: <https://www.riigikogu.ee/en/introduction-and-history/riigikogu-tasks-organisation-work/what-does-riigikogu/legislative-work/>).

The corpus with annotated arguments will be used to prepare the automatic annotation. We are looking for formal indicators in Estonian political texts that can be used to annotate arguments automatically.

The first attempt to analyze and model the formal structure and relations of arguments in Estonian political discourse was made in (Koit, 2020). The current paper continues the analysis and brings out some problems of annotating arguments.

The remainder of the paper is structured as follows. In Section 2, we examine randomly selected discussions in the Riigikogu by using verbatim records of the sittings. We consider the arguments presented by the MPs, annotate the premises and claims of the arguments and determine the inter-argument relations (attack, rebuttal, and support). We also consider some problems of annotating the arguments and relations. Section 3 discusses creating a corpus where arguments are annotated. Further aim of creating the corpus is to prepare the automatic recognition of arguments (argument mining). Section 4 draws conclusions and figures out future work.

2 ARGUMENTS IN POLITICAL NEGOTIATIONS

In this section, we examine discussions in the Riigikogu based on verbatim records of the sittings. We consider the arguments presented by the members of the parliament in negotiations and determine the inter-argument relations.

2.1 Empirical Material

Our empirical material is formed by the records of the Parliament of Estonia – Riigikogu. The records are accessible on the Web (cf. Riigikogu, 2020). An important task of the Riigikogu is the passing of acts and resolutions. Acts are the result of work in multiple stages. The first stage of legislation involves the drafting of a bill. During the second stage, the bill is initiated in the Riigikogu. The bill will then pass three readings, during which it is refined and amended. The proceeding of a bill is managed by the relevant leading committee. After having been passed by the Riigikogu, the act is sent to the President of the Republic for proclamation, and is then published in

State Gazette (Riigi Teataja). The general structure on proceedings of a bill is shown in Figure 1.

The readings have a predetermined structure (cf. Koit et al., 2019). Every reading includes negotiation. Figure 2 shows the structure of the 1st reading. The 2nd and the 3rd readings also include voting on amendments and final voting, respectively.

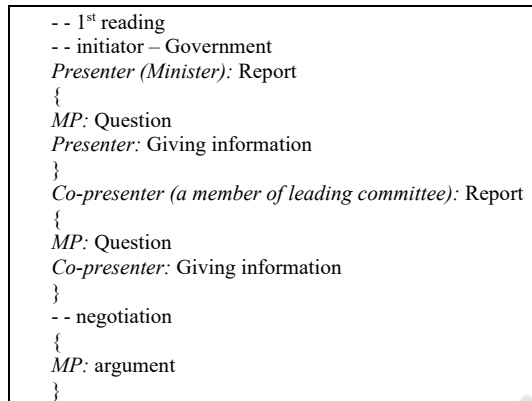


Figure 2: The structure of readings in the Riigikogu. The winding brackets ‘{’ and ‘}’ connect a part that can be repeated; ‘- -’ starts a comment; MP – any member of Riigikogu.

For this paper, arguments and inter-argument relations were annotated in a part of the corpus (27,768 tokens in total). The following examples are taken from proceedings on the bill of alcohol. It should be mentioned that we currently limit us with annotating the arguments in the negotiation part of the proceedings and do not consider the arguments that have been presented in the reports. The examples in Subsections 2.2 and 2.3 are taken from different readings.

2.2 Annotating Arguments

An argument is a series of statements in a natural language, called the premises, intended to determine the degree of truth of another statement – the claim (or the conclusion). These parts can be presented in one or more sentences. There are three types of relations between the arguments: attack, support, and rebuttal (Amgoud et al., 2015).

When analyzing persuading essays, Stab and Gurevych (2014) distinguish the major claim of the essay and the claim of an (arbitrary) argument. In parliamentary discussions, we can make similar distinctions. The major claim, together with its premises, is given in the beginning of the 1st reading, in the report of Minister and it is always ‘to approve the bill’. As a rule, the claim of a supporting argument presented in following negotiation, coincides with the major claim. The claim of a rebutting argument is

opposite: ‘do not approve the bill’. The claim of an attacking argument depends on a previous argument that is under attack.

In the analyzed negotiations, premises and claims of arguments and inter-argument relations were manually annotated by the author of the paper, following (Stab and Gurevich, 2013), (Amgoud et al., 2015), and (Haddadan et al., 2018). Therefore, the current annotation is rather subjective. Still, as a further work, we plan to involve more annotators as well as to calculate the inter-annotator agreement. Following (Amgoud et al., 2015), we use an annotation scheme where begins and ends of the components of arguments are labelled. The next examples illustrate annotations of arguments and relations. The first two arguments are against and for the major claim, respectively. The major claim is ‘to approve the bill on alcohol’.

Example 1: Argument rebutting the major claim.

<argument>

- - rebutting

<premise>

Täielikult puudub seaduseelnõus sotsiaalne dimensioon. [...]

The social dimension is fully missing in the bill. [...]

</premise>

<claim>

Seaduse vastuvõtmisega sel kujul näitame oma rahulolevat suhtumist sellesse, et meil alkoholi palju tarbitakse, ja sellesse, et meile on pigem tähtsam saada miljard krooni riigikassasse kui arvestada seda, mida alkohol teeb rahva tervisele, perekondadele, kuidas ta soodustab kuritegevust.

If we approve the bill in the existing form then we express our satisfaction with the high consumption of alcohol and demonstrate that it is more important for us to get a billion Kroon for the budget than taking into account how the alcohol influences the health of people and families and how it contributes to delinquency.

</claim>

</argument>

Example 2: Argument supporting the major claim.

<argument>

- - supporting

<premise>

[...] joomarlus on Eesti rahvuslik õnnetus. [...]

Excessive drinking is a national disaster in Estonia. [...]

</premise>

<claim>

Meil kui rahvaesindajatel on vaja näidata eelkõige oma suhtumist ja arusaamist selle probleemi olulisusest Eesti jaoks ja ka tahet seda probleemi lahendada.

We as public delegates must express our understanding of the importance of the problem for Estonia as well as our intention to solve this problem.

</claim>
</argument>

The next three arguments support or attack some presented amendments, respectively. It should be mentioned that the amendments' motions are not accessible on the Web therefore it is unclear how they have been formulated.

Example 3: Argument supporting (some) amendments.

<argument>
-- supporting
<premise>

Poliitiku [...] vastutus ja kohustus seisneb selles, et tagada riigis sellised seadused, mis toimiksid ja garanteeriksid elujõu kõigile, kes meie riigis elavad, ja lõppkokkuvõttes turvalisuse kogu rahvale. [...]

[...] Responsibility and obligation of a politician is to guarantee such laws that ensure normal life for all inhabitants of the country and the safety for all people. [...]

</premise>
<claim>

Ma kutsun täna kõiki hääletama selliste ettepanekute poolt (ja neid on palju), mis tagavad Eestis turvalisuse, mis tagavad selle, et meil joodaks vähem, et alkohol ei oleks nii kättesaadav, et sotsiaalselt ebaküps noor ei võiks seda iga kell igalt poolt hankida.

I invite you all to vote for these (numerous) amendments that will provide the safety in Estonia, in order to decrease drinking, to decrease the availability of alcohol and ensure that socially immature young people can't get it every time everywhere.

</claim>
</argument>

Example 4: Argument attacking (some) amendments.

<argument>
-- attacking
<premise>

Me näeme, et Eestis on alkoholi liigtarbimine probleem, kuid probleeme ei ole võimalik lahendada keelamisega. [...]

We see that drinking is a problem in Estonia but the problems can't be solved by prohibition. [...]

</premise>
<claim>

Seetõttu ei toeta me ettepanekuid, mis vähendavad alkoholimüügi võimalusi ja samal ajal võiksid kaasa tuua salaalkoholi leviku kasvu.

Therefore, we do not support the amendments for reducing the sale of alcohol that can bring along the growth of spreading the illegal alcohol.

</claim>
</argument>

Example 5: Argument attacking an amendment. The premise comes after the claim.

<argument>
-- attacking
<claim>

[...] ma ei ole nõus sõnastusega, et alkohol on toidugrupp või kuulub toidugruppi.

[...] I don't accept the definition of alcohol as a food group.

</claim>
<premise>

On selge, et siin on tegemist alkoholiäri, tarbimisele ja tootmisele paremate võimaluste loomisega, siin ei ole arvestatud inimeste tervisega.

It is clear that there is the alcohol business that creates better opportunities for consumption and production, which don't account the health of people.

</premise>
</argument>

2.3 Problems of Annotation

Following (Stab and Gurevych, 2013) and (Haddadan et al., 2018) we started with annotation of claims of arguments and determined whether the argument is supporting, attacking or rebutting another argument or one of its components. Then we determined premises and linked them with claims. Haddadan et al. (2018) have suggested some indicator phrases which were commonly used while making claims or premises. Stab and Gurevych (2017) also give certain linguistic patterns for recognizing the components of arguments.

In the negotiations on the bill of alcohol, 14 arguments (out of 28) have exact indicators to recognize premises and/or claims, e.g. *kui ... siis* (if ... then), *sest, sellepärast et, seetõttu* (because, in that). Nevertheless, the argumentation in the political debates is not always nicely signalled linguistically, or even and intuitively clear (cf. Visser et al., 2018). MPs in the Riigikogu often use figurative language (Example 6).

Example 6. An emotional claim.

Aga kas selle eest peaks siis risti lööma ainult putkad ja bensiniijaamad, kas nemad on siis Jeesus Kristuse rollis, kes kogu alkoholi õuduse ja patu peavad kinni maksma?

But should we only crucify booths and service stations, do they have the role of Saviour who buys out the horror and enormity of alcohol?

Some talks are ironic or sarcastic (Example 7).

Example 7. An ironic claim.

See seadus on väga hea alkoholiäri seadus.

This law is very good just for alcohol business.

Some MPs in the Riigikogu implement special strategies to present their arguments (cf. Abbott et al., 2016), including rhetorical questions or conditional (Example 8).

Example 8. Rhetorical question and conditional in argument.

<argument>

<premise>

Samuti, miks ei võiks riik oma alkoholi- ja alkoholimonopoli poodidega minna Eesti suurematesse keskustesse, et pakkuda turul konkurentsi alkoholile, mille kasumimarginaali on eraettevõtjad küllaltki kõrgeks ajanud? *Why not would the state open alcohol shops in bigger centres, in order to initiate competition with private entrepreneurs?*

</premise>

Siis *Then*

<claim>

oleks võimalik saada kätte suhteliselt odavamalt alkoholi, kvaliteetset alkoholi, mitte salaviina. *it would be possible to receive relatively cheaper and better alcohol, instead of illegal vodka.*

</claim>

</argument>

The components of the arguments have the order either ‘premise(s)-claim’ (Examples 1-4, 8) or ‘claim-premise(s)’ (Example 5). Likewise, there are some nested arguments where one argument is a premise of another, e.g. Example 9 (cf. Amgoud et al., 2015).

Example 9. Nested arguments.

<argument0>

<premise>

<argument1>

Siin öeldi, et kui *It was said that if*

<premise>

me teatud reegleid karmistame, *we introduce some sanctions*

</premise>

siis *then*

<claim>

kohe läheb taksoviinamajandus lahti, nagu oli Gorbatsõvi ajal. *alcohol business from taxi-cabs will start like it was in Gorbachov's time.*

</claim>

</argument1>

<claim>

Kuid siis olid teised ajad ja teised suhtumised. *But then the times and the attitudes were different.*

</claim>

</argument0>

A problem is how to recognize the inter-argument relations. We have determined the attack, rebuttal and support relations between an argument and the claim of another argument (incl. the major claim), e.g. Examples 1 to 5, like in (Stab and Gurevych, 2017). However, it has been difficult to determine another argument related to the argument under consideration like in (Amgoud et al., 2015). To do this, all arguments (incl. the ones presented in the reports and discussions preceding the negotiation) have to be annotated. However, we are here only looking for the arguments presented in negotiations.

3 DISCUSSION

The paper describes an experience of annotating arguments in Estonian parliamentary discourse. The empirical material is formed by the corpus that consists of verbatim records of sittings held in the Riigikogu. The components of arguments (premises and claims) and inter-argument relations (attack, support, and rebuttal) are annotated in a part of the corpus.

As an example, proceedings on the bill of alcohol are considered. The discussions in the Riigikogu have been intensive, the total number of questions asked after reports presented by the representatives of the government and the leading committee is 81. The number of presented amendments is 97 (still, only 39 of them were approved by MPs after voting). In total, 28 arguments have been presented by 12 MPs in negotiations. The arguments supporting the bill are prevailing over the counterarguments (by their weightiness, not the number) and the act is approved in the Parliament.

Every argument consists of two parts – one or more premises and a claim. In our parliamentary discussions, the presented arguments typically include more than one premise in many sentences. That is different as compared with persuasive essays where premise(s) and a claim are often located in the same sentence (Stab and Gurevych, 2014, 2017). In the negotiations on the bill of alcohol, 21 arguments (out of 28) consist of more than one sentence.

Microstructures of arguments (basic, convergent, serial, divergent, and linked) proposed in (Stab and Gurevych, 2017) have not been considered in our parliamentary corpus, it needs an additional study. Our current work on annotation of arguments is only the first step towards creating an argument corpus. More annotators must be involved in order to achieve reliable results. Some tools can be used for (manual) annotation of the arguments and for visualising the

inter-argument relations, e.g. OVA+ (Janier et al., 2014).

The definition of suitable NLP methods for the automatic identification of the argument components and the relations between them also needs an additional study. A challenging further research question is a comparative study of political argumentation in Estonian parliament and in other parliaments as well as in different political cultures and different languages.

4 CONCLUSIONS

Verbatim records of sittings of the Parliament of Estonia can be accessed online. Readings in the Riigikogu have a predetermined structure, including negotiations as one part. In this paper, discussions on the bill of alcohol are considered in order to illustrate arguments and their relations. The arguments used in the process of adopting the act and inter-argument relations are annotated. The structure of arguments and the relations are analyzed. Some problems of annotation are considered.

This study is a step towards automatic analysis of political arguments in Estonian parliamentary discussions. The current task has been the development of the annotation scheme and creation of a corpus with annotated arguments and inter-argument relations. Future work includes the finalization of the annotation process of a dataset of political debates, and the definition of suitable NLP methods for the automatic identification of these argument components and the inter-argument relations.

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