# Arguments in Parliamentary Negotiation: A Study of Verbatim Records

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Abstract: Verbatim records of sittings of the Estonian Parliament are studied in this paper. The general structure of the discussions is presented. Arguments used in negotiation are considered as consisting of premises and claims. The relations between the arguments (attack, rebuttal, support) are determined with the aim to create a corpus where arguments are annotated. Our further aim is the automatic recognition of arguments and their relations in Estonian political texts. To our knowledge, this is the first attempt towards modelling Estonian political argumentation.

## 1 INTRODUCTION

Parliamentary discourse is an important resource because it contains impactful information and special, formalised and often persuasive and emotional language. The empirical study of parliamentary discourse contributes to an understanding of how policy issues are framed. The study can also be related to comparative assessments of the deliberative performance of different parliaments (Bara et al. 2007).

There are many ongoing initiatives for compiling digital collections of parliament data (Working 2017). The recent CLARIN-PLUS survey on parliament data has identified over 20 corpora of parliamentary records, with over half of them being available within the CLARIN infrastructure (Fišer, Lenardič 2018). The data can be used for linguistic, historical, political, sociological etc. research.

Parliamentary debates are full of arguments. Analysing argumentation from a computational linguistics point of view has recently led to a new field called argumentation mining. The review of Atkinson et al. (2015) considers the development of artificial tools that capture the human ability to argue. Such systems can be used when modelling political argumentation since they are able to extract arguments and relations between them automatically.

In the current paper, we study negotiations on motions in the Estonian Parliament (Riigikogu) based on verbatim records of the sittings (in Estonian). In the records, repetitions and disfluencies are omitted, while supplementary information such as speaker names are added. In the paper, we are looking for arguments presented in negotiations for and against a motion. To our knowledge, this is the first attempt to analyse and model the formal structure and relations of arguments in Estonian political discourse.

The paper is structured as follows. Section 2 describes related work. In Section 3, we examine one randomly selected discussion in Riigikogu by using verbatim records of the sittings. We consider the arguments presented by the members of the parliament and determine the inter-argument relations. Section 4 discusses some problems of annotating the arguments with the aim to create a corpus in order to prepare automatic recognition of arguments. Section 5 draws conclusions and figures out the future work.

## 2 RELATED WORK

A lot of work has been done when studying political discourse.

Bara et al. (2007) examine one UK parliamentary debate on abortion with the aim to identify the prominent themes in debate and to assess how far speakers who favour different positions adopt a distinct pattern of discourse.

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Vilares and He (2017) propose a Bayesian modelling approach where topics are modelled as latent variables. The model is evaluated on debates from the House of Commons of the UK Parliament. This is the first novel work towards topic modelling.

Addawood et al. (2017) investigate the question of whether opinion mining techniques can be used on Congressional debates or not.

Venkata et al. (2018) provide a dataset for the synopsis of Indian parliamentary debates and perform stance classification of speeches, identifying if the speaker is supporting the bill. Based on manual analysis of the debates, they develop an annotation scheme of four mutually exclusive categories to analyse the purpose of the speeches.

Special attention has been paid to argumentation in political discussions.

Walker et al. (2012) analyse deliberations and debates by using the Internet Argument Corpus. The corpus includes the posts from a website for political debate where the debates are annotated for argumentative markers like degrees of agreement with previous post, cordiality, audience direction, combativeness, assertiveness, emotionality of argumentation, and sarcasm.

In parliamentary discourse, politicians expound their beliefs and ideas through argumentation, and to persuade the audience, they highlight some aspect of an issue, which is commonly known as framing. Naderi and Hirst (2015) examine how to identify framing strategies in argumentative political speech. They use a corpus of speeches from the Canadian Parliament, and examine the statements with respect to the position of the speaker towards the discussed topic (Pro, Con, or No stance).

Petukhova et al. (2015) use the Information State Update (ISU) approach to model the arguments of the debaters and the support/attack links between them as part of the formal representations of a participant's information state. They consider the identification of claims and evidence relations to their premises as an argument mining task. The ISU model provides procedures for incorporating beliefs and expectations shared between speaker and hearers in the tracking model.

Lippi and Torroni (2016a) investigate how to improve claim detection for argument mining, by employing features from text and speech in combination. They develop a machine learning classifier and train it on an original dataset based on the 2015 UK political elections debate.

Petukhova et al. (2017) have collected the Metalogue Debate Corpus that includes 400 arguments from six different bilingual (English/Greek) speakers. The corpus is used to design a Virtual Debate Coach, in order to train young parliamentarians on how to debate successfully. Although it is often difficult to define clear properties of persuasive debate, there are certain linguistic, prosodic and body language features that correlate with human judgments of such behaviour.

Haddadan et al. (2018) present annotation guidelines for annotating arguments (their premises and claims) in political debates. The dataset is taken from the Commission on Presidential Debates website which is an independent non-profit corporation sponsoring U.S. presidential and vice-presidential debates.

Menini et al. (2018) apply argumentation mining techniques, in particular relation prediction, to study political speeches – monologues, where there is no direct interaction between opponents. They have created a corpus, based on the transcription of speeches and official declarations issued by Nixon and Kennedy during 1960 Presidential campaign, of argument pairs annotated with the support and attack relations. They use a tool called OVA+ (Janier et al. 2014), an on-line interface for the manual analysis of natural language arguments.

Many other studies have contributed to development of formalisms and tools for analysing arguments.

Chesňevar et al. (2006) introduce a specification for an argument interchange format intended for representation and exchange of data between various argumentation tools and agent-based applications.

Reed et al. (2008) describe a written corpus of argumentative reasoning. Arguments have been analysed using techniques from argumentation theory and have been marked up. The authors present experiences with initial pilot data collection, which raised a number of key questions that frame challenges for argument corpora in general.

Besnard and Hunter (2014) consider a deductive argument as a pair where the first item is a set of premises, the second item is a claim, and the premises entail the claim. This can be formalised by assuming a logical language for the premises and the claim, and logical entailment (or consequence relation) for showing that the claim follows from the premises.

Stab and Gurevych (2014) present a novel 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.

Amgoud et al. (2015) consider an argument as reasons in favour of a claim. It is made of three parts: a set of premises representing the reasons, a conclusion representing the supported claim, and a connection showing how the premises lead to the conclusion. They propose a language for representing such 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.

MARGOT (Mining ARGuments frOm Text) is a web server for the automatic extraction of arguments from text (Lippi, Torroni 2016b). It focuses on detection of argument components (claim and evidence). A claim is a general, typically concise statement that directly supports or contests a topic under debate, whereas evidence is a text segment that directly supports a claim. The tool currently supports only English.

Atkinson et al. (2017) summarise that recent developments are leading to technology for artificial argumentation, in the legal, medical, and e-government domains, and interesting tools for argument mining, for debating technologies, and for argumentation solvers are emerging. The extracted arguments will represent the nodes in an argument graph and the links are the relations between the arguments.

# 3 ARGUMENTS PRESENTED BY THE MEMBERS OF RIIGIKOGU

In this paper, we are analysing the verbatim records of discussions held in the Parliament of Estonia, in order to figure out the structure of the arguments presented in negotiation. Our current aim is to create a corpus where arguments are annotated. Such a corpus will contribute to the automatic recognition of arguments and can thereby promote studies on Estonian political discourse.

## 3.1 Empirical Material

Our empirical material is formed by the records of the Parliament of Estonia – Riigikogu (cf. Riigikogu). 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 (a draft act). During the second stage, the bill is initiated in the Riigikogu. The bill will then pass three readings (in exceptional cases two), 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. The general structure of the process in Riigikogu is presented in Fig. 1 (cf. Koit et al. 2019). The authors of turns are given in italics.

- - 1st reading
- - initiator – Government
*Presenter (Minister):* Report
{
*MP:* Question
*Presenter:* Giving information
}
*Co-presenter (a member of leading committee):* Report
{
*MP:* Question
*Co-presenter:* Giving information
}
- - negotiation
{
*MP:* argument
}

- - 2nd reading
*Presenter (a member of leading committee):* Report on amendment motions
{
*MP:* Question
*Presenter:* Giving information
}
- - negotiation
{
*MP:* argument
}
- - voting on amendment motions

- - 3rd reading
- - negotiation
{
*MP:* argument
}
- - final voting

Figure 1: The general structure of discussions in Riigikogu. The winding brackets '{' and '}' connect a part that can be repeated; '- -' starts a comment; *MP*– any member of Riigikogu. The authors of turns are given in italics.

Verbatim records of sittings of the Riigikogu (in Estonian) are accessible on the web as pdf files. For the current study, we have randomly chosen a draft act on social care that was proceeded in 2018 (the records of three sittings include 14,662 running words in total). The aim of the act is to create an additional supporting system for youth security in order to decrease the rate of the unemployment of young

people (16–26 years) which is twice the average unemployment (14.1% *vs* 6%). The debate ends after voting with adopting of the act by the members of Riigikogu (MPs).

## 3.2 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. Therefore, an argument consists of two parts: of one or more premises and of a claim. 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 analysing persuading essays, Stab and Gurevych (2014) make a distinction between the major claim and a claim. In parliamentary discussions, we similarly can differentiate the major claim and a claim of an arbitrary argument. The major claim together with its premises is given in the report of Minister and it is always 'to accept the bill' (Fig.1). 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 accept the bill. The claim of an attacking argument depends on a previous argument that is under attack. The arguments and relations will be illustrated by the following examples.

When taking the floor in negotiation, the members of Riigikogu are always presenting their arguments in more than one sentence. A premise and a claim are located in different sentences. In some cases, the claim is missing (is default), mostly when it coincides with the major claim or, on the contrary, when it is opposite. Typically, the arguments have more than one premise.

In the analysed negotiations, premises and claims of arguments were manually annotated by the author of the paper, following (Stab, Gurevich 2014) and (Amgoud et al. 2015). (In consequence, the annotation is rather subjective.) Let us give some examples of arguments and relations between them.

Major claim ('to accept the bill') and its premises are given at the beginning of the first reading, in the reports of Minister and the member of a leading committee (Fig. 1). Example 1 presents some of the premises given by Minister.

Example 1. Three premises of the major claim presented by Minister.

(1)
<premise>
Teatavasti on Eestis noorte töötuse määr ligi kaks korda suurem kui keskmine töötuse määr ning viimasel ajal on see vaatamata üldisele heale tööturu seisule hoopis suurenema hakanud.
*As known, the unemployment of young people is twice the average unemployment and it is increasing although the general situation on the work market is good.*
</premise>

(2)
<premise>
Noortegarantii tugisüsteemi eesmärk ongi vähendada mittetöötavate ja mitteõppivate noorte arvu.
*The aim of the supporting system is to decrease the number of the young people who are neither working nor learning.*
</premise>

(3)
<premise>
Kuna tegemist on andmetöötlusega, siis on selle süsteemi kasutamiseks vaja seaduslikku alust.
*The legislative basis is needed because there is data processing.*
</premise>

The following counterarguments presented by MPs in negotiations include different claims: negation of the major claim (Example 2) and derivatives of the major claim (Examples 3 and 4 where premises of the major claim are attacked).

Example 2. Argument rebutting the major claim.
<argument$_K$>
- - rebutting
<premise>
Eelnõu kohaselt võimaldatakse omavalitsustel proaktiivselt pakkuda potentsiaalselt abi vajavatele noortele inimestele tuge kas tööelu alustamiseks või haridusellu naasmiseks.
*The purpose of the bill is to provide proactive help by a local government to young people who need support for starting to work or for returning to education.*
</premise>
/---/
<premise>
Kuid kes oleks osanud arvata, et selle hea eesmärgi saavutamiseks minnakse nii kaugele, et hakatakse isikuandmeid töötlema liiga massiliselt ehk hakatakse tegelema omaalgatusliku nuhkimisega.
*But who could believe that in order to achieve this nice goal, personal data will be processed so massively, i.e. people will be tracked down.*
</premise>

<claim>
Sellist seadust meile tegelikult vaja ei ole.
*We don't need such a law.*
Kehtivas hoolekandeseaduses on olemas kõik hoovad statistiliste andmete kogumiseks ja analüüsimiseks ning noorte inimeste abistamiseks.
*The valid law already includes all the instruments necessary for collecting and analysing statistical data.*
</claim>
</argument$_K$>

The argument in Example 2 strongly rebuts the major claim (s. Amgoud et al. 2015).

Example 3. Argument attacking a reason of the major claim.
<argument$_L$>
- - attacking
<premise>
Meie ees olev eelnõu on kõige ilmekam näide õigusnormide loomise kohta seal, kus neid tegelikult vaja ei ole.
*This bill is a clear example of creating unnecessary juridical norms.*
</premise>
/---/
<claim>
Seega oleme seisukohal, et abi vajavaid noori on vaja aidata, kuid inimene peab ise abi saamiseks pöörduma või keegi hädas olemisest märku andma.
*Therefore, our standpoint is that a young man who needs an assistance will be assisted but he has to appeal himself or anybody else has to give a signal about his difficulties.*
</claim>
</argument$_L$>

The argument in Example 3 weakly attacks the reason of a supporting argument presented in the Minister's report.

Example 4. Argument attacking a reason of the major claim.
<argument$_M$>
- - attacking
/---/
<premise>
Ei ole ka piisavalt argumenteeritud ega suudetud selgitada, miks on vaja sellisel määral noorte eraellu sekkuda.
*It is not enough argued, why it is necessary to intervene into private life of young people in such a degree.*
</premise>
/---/
<claim>
/---/
Me vaidlustame valitud meetodit ja selle ulatust.
*We protest the method and its extent.*
</claim>
</argument$_M$>

The argument in Example 4 similarly to Example 3 weakly attacks the reason of the argument presented by Minister in his report.

The following Examples (5 and 6) are the supporting arguments. Both of them are presented as reactions to previous attacking arguments.

Example 5. A supporting argument.
<argument$_N$>
- - supporting
<claim>
Sotsiaaldemokraatlik Erakond kindlasti toetab seda eelnõu.
*Social democrats definitely support this bill.*
</claim>
<premise>
Selleks, et seda pilootprojekti läbi viia ja et oleks tagatud andmekaitse, on vaja see seaduses sätestada.
*In order to perform this pilot project and to guarantee the data protection, it is necessary to legalise it.*
</premise>
<premise>
Me teame ju väga täpselt, et meie riigis on kogu aeg iga inimene tähtis.
*We precisely know that every person in our country is important every time.*
</premise>
<premise>
Samas me teame, et paljud noored, kes on oma koolitee pooleli jätnud, kes hooldavad kodus oma vanemaid või kellel on mingi muu põhjus, on jäänud kõrvale meie ühiskonna rutiinist, tavapärasest arengust.
*We also know that many young people who have interrupted their education are maintaining their parents at home or they have another reason to hang back from our society, our usual development.*
</premise>
/---/
</argument$_N$>

The claim of the argument in Example 5 is presented before its premises and it coincides with the major claim. The argument supports the major claim.

Example 6. A supporting argument.
<argument$_P$>
- - supporting
<premise>
Selle seadusemuudatuseta võib osa noori jääda aktiivsest ühiskonnaelust kõrvale, ehkki teenused ja võimalused nende aitamiseks on olemas.
*Without this amendment, some of the young people will be eliminated from active life although we have all the means to help them.*

</premise>
/---/
<premise>
Olgu veel kord üle kinnitatud, et mingiks nuhkimiseks ei lähe – kõik toimingud saavad olema kooskõlas andmekaitse reeglitega.
*It should be stressed once more that no pursuing will be carried out – all the actions will be done according to rules of data protection.*
</premise>
<claim>
(major claim)
</claim>
</argument$_P$>

The major claim is not explicitly presented in the argument. However, it by default coincides with the major claim. Therefore, the argument supports the major claim.

# 4 DISCUSSION

The paper makes the first attempt to annotate and analyse the arguments in Estonian political discourse. The empirical material is formed by the verbatim records of sittings held in the Estonian Parliament. As a case study, proceeding of the draft act on social care is considered. Arguments and different relations between them (attack, support, and rebuttal) are annotated. In the analysed records, arguments that support the motion are prevailing over the counterarguments and the act is approved by the Parliament.

Every argument consists of two parts – one or more premises and a claim. In parliamentary discussions, the presented arguments typically include more than one premise and they consist of many sentences. The claims can be explicit or implicit, by default derived from the premises. In some cases, MPs in their turns also make proposals/amendments in addition to rebutting or attacking arguments. The situation is different as compared with persuasive essays where premise(s) and a claim are typically located in the same sentence (Stab, Gurevich 2014).

The inner structure of arguments presented in parliamentary negotiations needs additional study. Some tools can be used for (manual) annotation of the arguments as well as visualising the attack and support relations between them (e.g. Janier et al. 2014). A challenging further research question is a comparative study of political argumentation in Estonian parliament, on one hand, and in other parliaments, in different political cultures and different languages, on another hand.

# 5 CONCLUSIONS

Verbatim records of sittings of the Parliament of Estonia can be accessed online. For the current study, an act on social care is chosen as an example. The draft act passed three readings. The arguments presented in the process of adopting the act are annotated. The structure of arguments and the relations between the arguments are analysed. Some examples of the arguments are given.

This study is the first step towards automatic analysis of political arguments in Estonian parliamentary discussions. The current task is the development of the annotation scheme and creating a corpus where arguments are annotated. The automatic recognition of arguments in Estonian parliamentary discourse and comparison with other parliaments remains for the further work.

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