




# How Do the Members of a Parliament Negotiate? Analysing Verbatim Records

Mare Koit<sup>1</sup><sup>a</sup>, Haldur Õim<sup>2</sup><sup>b</sup> and Tiit Roosmaa<sup>1</sup><sup>c</sup>

<sup>1</sup>*Institute of Computer Science, University of Tartu, J. Liivi 2, Tartu, Estonia*

<sup>2</sup>*Institute of Estonian and General Linguistics, University of Tartu, Jakobi 2, Tartu, Estonia*

**Keywords:** Negotiation, Parliament, Verbatim Record, Dialogue Act, Knowledge Representation.

**Abstract:** Negotiation is a strategic discussion that resolves an issue in a way that both parties find acceptable. Specific forms of negotiation are used in many situations, among them in parliamentary discussions. In this paper we report on a pilot study on verbatim records of sittings held in the Estonian Parliament. The structure of the discussions will be represented by using the dialogue acts of a custom-made typology. It will be compared with the structure of negotiation in everyday life. Our further aim is to create means for automatically recognizing the structure and analysing the contents of parliamentary negotiations and political arguments. To our knowledge, this is the first attempt to model Estonian political discussions.

## 1 INTRODUCTION


Negotiation is a communication whereby parties who have opposing interests discuss the form of any joint action that they might take to manage and ultimately resolve the dispute between them (Dispute, 2017). Specific forms of negotiation are used in many situations: international affairs, the legal system, government, industrial disputes or domestic relationships as examples (Negotiation).


Parliamentary speech has always been in the centre of the humanitarian and societal interest with its influential language and content for the policy making as well as for the social and political environment (Working, 2017). The empirical study of parliamentary discourse contributes to an understanding of how policy issues are framed. Studying parliamentary discourse can also be related to comparative assessments of the deliberative performance of different parliaments (Bara et al., 2007).


In the current paper we present an approach to modelling the discussions held in the Estonian Parliament (Riigikogu) based on the verbatim records of the sittings. In the records, repetitions and disfluencies are omitted, while supplementary

information such as speaker names are added. We are looking for the general structure of the discussions including negotiations on motions where arguments and counterarguments are presented. To our knowledge, it is the first attempt to model Estonian political discussions.

The paper is structured as follows. Section 2 describes the related work. In Section 3, we examine two randomly selected discussions by using verbatim records of sittings – one from 1992 when the Riigikogu has newly started its sessions after the restitution of the Republic of Estonia, and another from 2018. We represent the structure of both discussions as a sequence of dialogue acts. In Section 4 we concentrate on the descriptive analysis of these structures with the aim of establishing the similarities and differences between them. These data can be used for interpreting the changes in Estonian parliamentary (political) discussions during the period under consideration. Section 4 considers some problems related to these structures, finding out the similarities and differences between them. We also compare the structure of the parliamentary negotiations with the structure of everyday negotiation of two people. Section 5 draws conclusions and figures out the future work.

<sup>a</sup> <https://orcid.org/0000-0002-7318-087X>

<sup>b</sup> <https://orcid.org/0000-0002-1123-7252>

<sup>c</sup> <https://orcid.org/0000-0001-7412-7168>

## 2 RELATED WORK

There are many ongoing initiatives for compiling digital collections of parliament data (Workshop, 2017). The parliament-focused corpora are for example, EuroParl – a multilingual parallel corpus of the sessions of the European Parliament in 1996–2011, Hansard corpus that includes speeches given in the British Parliament from 1803-2005, speech data from the Czech parliament, the Talk of Norway corpus – a collection of proceedings from the Norwegian parliament, etc. 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. “It is urgent to gather researchers producing parliamentary corpora and making them available, in order to share methods and approaches of compiling, annotating and exploring them” (ParlaClarín, 2018).

Parliamentary debates are an important resource because they contain impactful information and special, formalized and often persuasive and emotional language. The data can be used for linguistic, historical, political, sociological etc. research.

Bara et al., (2007) compare two approaches, one semi-automated (Hamlet) and the other fully automated (Alceste), when analysing debate from the UK House of Commons on a private member’s bill on abortion in 1966. The authors conclude that both techniques have produced results which are pertinent to the study of deliberation set within a parliamentary context and that each of them has particular strengths.

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 being able automatically extract arguments and relations between them.

Bunt et al., (2015) analyse plenary sessions in the UK Youth Parliament and apply the information state update approach to tracking and understanding the argumentative behaviour of participants in a parliamentary debate, in order to predict its outcome.

The paper of van Aggelen et al., (2017) describes the design, generation and use of LinkedEP, an RDF translation of the verbatim proceedings of the plenary sessions of the European Parliament, including links to four other datasets.

Vilares (2017) presents a model to analyse what is going on in political debates, without relying on any labelled data and assuming the perspectives of a topic

to be latent. It is implemented through a hierarchical Bayesian model.

Abercrombie and Batista-Navarro (2018) annotate Hansard debates with sentiment tags, creating a novel corpus (HanDeSeT) for use in the evaluation of automatic parliamentary speech-level sentiment analysis systems. These consist of proposed motions and the associated speeches of Members of the House.

Venkata et al., (2018) analyse a dataset of synopsis of Indian parliamentary debates. They develop a generic software parser for the conversion of unstructured pdf files into structured format, i.e. into a relational database. They analyse the purpose of the speeches of the members of parliament and categorize them into four categories. They also present the results on binary stance classification of the speeches whether the member is in favour of the debate topic or not.

A new series of workshops (ParlaClarín) are being conducted to encourage research in parliamentary debates for better harmonization, interoperability and comparability of the resources and tools relevant for the study of parliamentary discussions and decisions, not only in Europe but worldwide.

## 3 TWO CASE STUDIES

In the following, we analyse the verbatim records of some discussions held in the Parliament of Estonia. Our aim is to figure out the structure of discussions on a topic and represent it by a sequence of dialogue acts.

### 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 some 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.

Verbatim records of the sittings of the Riigikogu (in Estonian) are accessible on the Web as pdf files. 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 (Koondkorpus: Riigikogu). For the current study, however, we have randomly chosen two items outside of the corpus – one from the sittings in 1992 when the Riigikogu has newly started after the restitution of the Republic of Estonia, and another from 2018. The first item considers the draft act on animal protection (it passed two readings) and another – on social care (three readings). Both debates end after voting with adopting of the acts by the members of Riigikogu (MPs).

In our study, we are looking for the structure of the debates held in the Riigikogu and especially, of negotiations as parts of these debates where arguments for and against a motion are presented. To do so, we have annotated the records under consideration by using a custom-made dialogue act (DA) system that is based on Conversation Analysis (Sidnell and Stivers, 2012).

The typology was worked out and has been used for annotation of DAs in Estonian dialogues before the ISO 24617-2 standard has been approved (Bunt et al., 2017). In the used typology, the DAs are divided into two groups – (1) adjacency pair (AP) acts where the first pair part expects a certain second pair part (like question–answer), and (2) non-AP acts which do not expect any response (like giving additional information which was not asked for). Names of the DAs consist of two parts separated by a colon: the first two letters give an abbreviation of the name of an act-group, e.g. QU – QUestion, AI – Additional Information. The third letter is used only for AP acts – the first (F) or the second (S) pair part of an AP. The second part is the proper name of the act. There are acts like QUF: Wh-question, QUS: Giving information, AI: Justification, etc. The total number of the acts is 126. An overview of the typology is given in Appendix. Custom-made software has been used for semi-automatic annotation carried out by the authors of this paper.

As a rule, one DA corresponds to every sentence but when annotating, any presented report as a part of a discussion was considered as a whole, no DAs were annotated inside. Still, both the DA system and the tool have been designed for annotation of the Estonian human-human spoken dialogues therefore many manual corrections have been needed when annotating the parliamentary records.

However, we plan to go over to the ISO standard in our future work. The aim is to make our research better comparable with other studies.

### 3.2 Animal Protection: The General Structure of Parliamentary Debate in 1992

The first analysed bill (from 1992) considers the conditions of handling domestic animals, their killing, stray animals, etc (cf. Riigikogu). It has been initiated by the Minister of Environment.

The meetings are chaired by the President of Riigikogu. The 1<sup>st</sup> reading starts with the report of the leading committee. The presenter asserts that the bill has been worked out by a specialist who is not a member of the committee but he will make a co-report. Then, questions are asked by the MPs and answered by the presenter. For example: *Is the bill approved by the veterinary service? Are there some rules for ritual killing?* The co-presentation of the specialist follows. Again, questions are asked by the MPs and answered by the co-presenter. Not only questions but motions to amend are made by MPs, e.g. *Some adjustments are needed in this paragraph – indicate who exactly will do the proposed actions.* After the 1<sup>st</sup> reading, the amendments concerning the bill have to be delivered to the leading committee in the written form.

The 2<sup>nd</sup> reading starts with the report of the leading committee on the amendments which whether have been accepted or not by the committee and on the changes that were introduced into the bill. Then questions are asked by the MPs and answered by the presenter, e.g. *Who is responsible for solving the problem of stray dogs?* Now the negotiation starts where arguments and counterarguments are given for and against the introduced corrections. New amendments are also proposed, e.g. *I propose to add an explanation to §8 related to torture of animals by infants.* After the negotiation, a break is announced by the Chair in order to introduce the final corrections into the bill. After the break, a report is presented by the leading committee on the accepted amendments. The authors of the amendments not accepted have the right to request voting (but nobody does it request in this case). Finally, a voting follows where the MPs adopt the act.

The general structure of the discussions is represented in Fig. 1. As said before, we consider any presented report as a whole and do not annotate the DAs that it includes. The authors of turns are given in italics. MP, MP<sub>i</sub>, MP<sub>j</sub> is any member of Riigikogu. The winding brackets connect a part that can be repeated; round brackets connect a part that can be missed; '/' separates alternative dialogue acts; '+' marks multifunctional acts; '- -' starts a comment.

```

-- 1st reading
-- initiator of the draft Act – Minister
Presenter – a member of the leading committee Report
{
    MP QUF: Wh-question/ DIF: Proposal
    Presenter QUS: Giving information (PS: Giving information/
AI: Justification)
}
Co-presenter – author of the draft Act Report
{
    MP QUF: Wh-question/ Yes-no question/ DIF: Proposal
    Co-presenter QUS: Giving information
}
-- break, presenting the amendment proposals to the leading
committee in written form

-- 2nd reading
Presenter – a member of the leading committee Report
{
    MP QUF: Wh-question/ Yes-no question/ DIF: Proposal
    Presenter QUS: Giving information
}
-- negotiation
{
    MPi OPF: Assertion/ Opinion / DIF: Proposal/ PS: Giving
information/ AI: Justification -- argument
    MPj OPS/DIS: Accept/Reject/ OPF: Assertion/ Opinion/ PS:
Giving information/ AI: Justification -- argument
}

-- break; introducing the corrections into text
Presenter – a member of the leading committee Report about
the corrections made
(- - voting on amendment motions)
-- final voting
    
```

Figure 1: The structure of discussions in 1992. The winding brackets ‘{’ and ‘}’ connect a part that can be repeated; round brackets connect a part that can be missed; ‘/’ separates alternative DAs; ‘+’ marks multifunctional DAs; ‘- -’ starts a comment. MP, MP<sub>i</sub>, MP<sub>j</sub> – any member of Riigikogu.

### 3.3 Social Care: The General Structure of Parliamentary Debate in 2018

The second analysed bill (from 2018) considers introducing the changes into the valid law on social care (cf. Riigikogu). It is initiated by the Government. The aim is to create an additional supporting system for youth security. The reason to introduce the changes is that the rate of unemployed young people is twice greater than the average unemployment.

The 1<sup>st</sup> reading starts with the report of the Minister. He presents several arguments for the planned changes, e.g. *They are needed to better perform the tasks proposed by the European Committee; Early intervention helps to involve the passive young people who are neither working nor learning.* After that, questions are asked by the MPs and answered by the presenter. Then, a presentation

of the leading committee follows where an overview of the discussion is given that took place in the committee. Again, questions are asked and answered, e.g. *Do the changes increase the workload of officials? – Yes, but a compensation will be granted.*

```

-- 1st reading
-- initiator – Government
Presenter – Minister Report
{
    MP QUF: Wh-question / Yes-no question/ PS: Giving
information/ AI: Specification/ Explication/ Justification
    Presenter QUS: Giving information
}
Co-presenter – a member of leading committee Report
{
    MP QUF: Wh-question
    Co-presenter QUS: Giving information
}

-- negotiation
{
    MPi OPF: Assertion/ Opinion -- argument
    MPj OPS: Accept/ Reject + OPF: Assertion/ Opinion/ PS:
Giving information/ AI: Specification/ Explication/ Justification
-- argument
}
-- 2nd reading
Presenter – a member of leading committee Report
{
    MP QUF: Wh-question/ OPF: Assertion/ Opinion
    Presenter QUS: Giving information + OPS: Accept/ Reject
}

-- negotiation
{
    MPi OPF: Assertion/ Opinion/ DIF: Proposal/ PS: Giving
information/ AI: Specification/ Explication/ Justification
-- argument
    MPj OPS: Accept / Reject + OPF: Assertion / Opinion/ DIS:
Accept/ Reject -- argument
}
-- voting on amendment motions

-- 3rd reading
-- negotiation
{
    MPi OPF: Assertion/ Opinion/ DIF: Proposal -- argument
    MPj OPS: Accept/ Reject + OPF: Assertion/ Opinion / DIS:
Accept/ Reject -- argument
}
-- chair announces the final voting
-- voting
    
```

Figure 2: The structure of discussions in 2018. The winding brackets connect a part that can be repeated; round brackets connect a part that can be missed; ‘/’ separates alternative DAs; ‘+’ marks multifunctional DAs; ‘- -’ starts a comment. MP, MP<sub>i</sub>, MP<sub>j</sub> – any member of Riigikogu.

Negotiation is announced by the Chair on the general principles of the bill. Here, arguments for and against are presented, e.g. *The changes will intervene into private life; We (social democrats) definitely support the changes.* Between the 1<sup>st</sup> and 2<sup>nd</sup> readings, written

amendments concerning the bill are transferred to the leading committee.

The 2<sup>nd</sup> reading starts with the report of the leading committee about the amendments accepted or not. Questions are asked and answered, e.g. *Why we must change the valid law for the pilot project? – This pilot project is impossible without a law.* Negotiation follows where arguments for and against are given concerning the amendments.

The corrected text of the bill has been distributed to the MPs before the next reading. The last, 3<sup>rd</sup> reading starts with negotiation. Again, arguments and counterarguments for/against the draft act are proposed, e.g. *We can't support pursuing of young people; Tax free service for people who need help should be approved.* Finally, the Chair announces the final voting and the act will be adopted by the MPs. Fig.2 represents the general structure of the discussions.

## 4 DISCUSSION

Some preliminary inferences can be drawn from the analysis. When comparing the structure of the analysed items we can conclude that during the years, our Riigikogu has refined its work. In 1992, the act was approved after two readings while three readings were needed in 2018. The record from 1992 includes 5,824 running words while the one from 2018 – 14,662. The number of questions asked (and answered) also has increased. In 1992, from one to five questions have been asked after every presented report on the considered item but in 2018 – from four to fifteen. When comparing the structure and contents of negotiations, we can summarize that the general structure is similar in discussions on both topics but the number of the presented arguments is bigger in the negotiations in 2018 than 1992 (respectively, eight and three). In both years, motions to amend were put to voting. In 1992, MP who has made the amendment did not request voting. In 2018, on the contrary, all the amendments have been voted. We can see how the political culture improved during the years – the MPs are now more informed and self-conscious.

However, in order to draw general inferences, a thoroughgoing analysis will be needed. This remains for the future research.

In our previous paper, we have analysed the structure of everyday face-to-face negotiations taken from the Estonian Dialogue Corpus (Koit, 2016). There are two participants (*A* and *B*) involved in negotiations. *A* makes a proposal to *B* to do an action.

Then arguments for and against will be presented by the participants and finally, a decision will be made by *B* – accept or not the proposal. The typical structure of the negotiation is presented in Fig.3.

As expected, in parliamentary negotiations, the situation is more complicated. It is multi-party event, i.e. all MPs can have a floor when negotiating a motion (i.e. the proposal that has been considered in a preceding report). In the report, arguments for the motion are also given (but we currently do not annotate them). Arguments for and against presented in negotiation are not single DAs but always sequences of DAs where information is repeated, justified and explained. In the two analysed cases, arguments for the motion are prevailing over the counterarguments and both acts are approved.

```
A DIF: Proposal
(PS: Giving information/ AI: Justification - -argument)
- - negotiation
{
B DIF: Request/ QUF: Wh question / OPF: Assertion
(PS: Giving information/ AI: Justification - -argument)
A DIS: Giving information/ OPS: Reject + OPF: Assertion
(PS: Giving information/ AI: Justification - -argument)
}
- - decision
B DIS: Accept/ Deferral/ DIS: Reject
```

Figure 3: The structure of everyday negotiation (*A* makes a proposal to *B* to do an action). The winding brackets connect a part that can be repeated; round brackets connect a part that can be missed; '/' separates alternatives; '+' marks multifunctional acts; '-' starts a comment.

The inner structure of arguments presented in parliamentary negotiations needs an additional study. An argument is made of three parts: a set of premises representing the reason, a conclusion representing the supported claim, and a link showing how the premises lead to the conclusion (Amgoud et al., 2015). However, the automatic recognition of DAs and arguments in Estonian parliamentary discourse remains for the further work.

The approach introduced in this research can be applied also for the study of parliamentary discussions in other languages where DAs are annotated. It is challenging to compare the structure of negotiations in order to draw conclusions about the similarities and differences between the political discussions in different countries and cultures.

## 5 CONCLUSIONS

Verbatim records of sittings of the Parliament of Estonia were considered in the paper. This is a

preliminary study where two occasionally chosen items are analysed – one from 1992 when the Parliament newly started its work after the restitution of the Republic of Estonia, and another from 2018.

We established the general structure of the discussions on both items (animal protection and social care, respectively) and represented them by using the dialogue acts of a custom-made typology. We compared the two structures and concluded that although they are similar, in 2018 the discussion was much longer and more exhaustive. This is not surprising because, first, a large number of new laws had to be adopted in 90ties, and second, the Parliament had rather little experience in legislation. The structure of parliamentary negotiation has been compared with the structure of everyday negotiation. Still, we are aware that exhaustive analysis of more empirical material is needed in order to draw general inferences about the structure and changes in political discussions.

The further work will be concentrated on the automatic analysis of the structure of Estonian parliamentary discussions and the recognition of political arguments.

## ACKNOWLEDGEMENTS

This work was supported by institutional research funding IUT (20-56) of the Estonian Ministry of Education and Research, and by the European Union through the European Regional Development Fund (Centre of Excellence in Estonian Studies).

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## APPENDIX OVERVIEW OF THE USED DIALOGUE ACT TYPOLOGY

### I. Adjacency Pair (AP) Acts

Dialogue Managing Acts

1. Conventional (ritual) acts (greeting, thanking, etc.), e.g. RIF: Greeting, RIS: Greeting, RIF: Wish, RIS: Thanking.
2. Topic change acts (are used to start a new topic or sub-topic), e.g. TCF: Initiation, TCS: Accept.
3. Contact control acts (typically occur in phone conversations and are used as formulas that can be presented as lists), e.g. CCF: Initiation, CCS: Confirmation).

4. Adjusting the conditions of answer (ACF: Adjusting the conditions of answer, ACS: Adjusting the conditions of answer).

Repair Acts

5. Repairs initiated and made by different participants, e.g. RPF: Non-understanding, RPS: Repair.

Information Acts

6. Directives and grants (request, proposal, offer, etc.), e.g. DIF: Request, DIS: Giving information.
7. Questions and answers, e.g. QUF: Wh-question, QUS: Giving information.
8. Opinions and responses (assertion, opinion, etc.), e.g. OPF: Assertion, OPS: Accept, OPS: Reject.

**II. Non-Adjacency Pair (non-AP) Acts**

Dialogue Managing Acts

1. Conventional (contact, call, etc.), e.g. RS: Introduce.

Repair Acts

2. Repairs initiated and made by the same person, e.g. RP: Self-repair.

Information Acts

3. Primary single acts (narration, promise, giving information, etc.), e.g. PS: Giving information.
4. Additional information (specification, explanation, justification, etc.), e.g. AI: Specification.
5. Voluntary responses (continuer, acknowledgement, etc.), e.g. VR: Neutral continuer.

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