

Comparing Arguments in Discussions of Two Parliaments

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Abstract: Estonian argument corpus includes verbatim records (in Estonian) of sessions held in the Parliament of Estonia (Riigikogu). Arguments used in discussions and inter-argument relations are annotated in the corpus. By using the corpus, argument structures (basic, convergent, divergent, linked, and hybrid) and inter-argument relations (rebuttal, attack, and support) are studied. For comparison, a discussion in the UK Parliament House of Commons is analysed. Similarities and differences are considered between arguments of both parliaments. Our further aim is extending the corpus in order to make it possible the automatic recognition of arguments in Estonian political texts and comparison of discussions in the Riigikogu with other parliaments and other languages.

1 INTRODUCTION


Verbatim records of sittings of many parliaments can be accessed online. The CLARIN ERIC infrastructure offers access to 27 parliamentary corpora (Parliamentary corpora, 2022). The first stage of the ParlaMint project has produced freely available comparable and interoperable corpora of 17 European parliaments with almost half a billion words (ParlaMint, 2022). The corpora are uniformly encoded, structured and supplied with metadata about 11 thousand speakers, and are linguistically annotated following the Universal Dependencies formalism and with named entities. The corpora have already been used in several studies, incl. the 2021 Helsinki Digital Humanities Hackathon (Erjavec et al., 2022). There, the research questions focused on the identification of differences and similarities in parliamentary debates on the COVID pandemic in four countries (Calabretta et al., 2021).

The parliamentary data allows compare proceeding on bills in different parliaments and can be used for linguistic, political, sociological, historical etc. research. Discussions in parliaments include numerous arguments.

Therefore, in the first part of the paper, we analyse discussions on motions in the Parliament of Estonia (Riigikogu) by using an annotated argument corpus. The corpus currently includes a part of verbatim

records (in Estonian) of sittings in the Riigikogu (cf. Riigikogu, 2022). In the corpus, argument components (premises and claims) and inter-argument relations (rebuttal, attack, and support) are annotated. The first attempt to analyze and model the formal structure and relations of arguments in Estonian political discourse is made in (Koit, 2020). The current paper considers the arguments presented by the Members of the Parliament (MPs) when passing an act. In the second part of the paper, we compare our parliamentary discussions with the UK Parliament House of Commons. The aim is to demonstrate how the annotated corpora can be used for the analysis and comparison of parliamentary discussions.

The remainder of the paper is structured as follows. Section 2 describes related work. In Section 3, we examine a discussion in the Riigikogu by using the annotated argument corpus. We consider the arguments presented by the MPs – the structure of arguments and do they support or attack the bill or its amendments. In Section 4, we consider a discussion in the UK Parliament in order to compare the structure of arguments and inter-argument relations with the Riigikogu. In Section 5, we discuss the similarities and differences between the arguments in both parliaments. Section 6 draws conclusions and figures out future work. Our further aim is to make it possible to automatically analyze Estonian

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parliamentary discourse and compare it with other parliaments.

2 RELATED WORK

Argumentation in political discussions is studied in many works (Bara et al., 2007; Stab and Gurevych, 2014; Naderi and Hirst, 2015; Petukhova et al., 2015; Atkinson et al., 2015).

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

Lippi and Torroni (2016) study whether vocal features of speech can improve the automatic extraction of arguments from text. They develop a machine learning classifier and train it on an original dataset based on the 2015 UK political elections debate.

Stab and Gurevych (2017) introduce a corpus of 402 persuasive essays annotated with discourse-level argumentation structures. Three annotators independently annotated a random subset of 80 essays. The remaining essays were annotated by the expert annotator. The annotation scheme models the argumentation structure of a document as a connected tree.

Petukhova et al. (2018) describe the Metalogue Debate Trainee Corpus. A debate is a communication process in which participants argue for or against a certain position proposed for the dispute. In the training scenario, each debate session is motivated by a motion – new law proposal or changes to an existing law. The actual debate training session starts by the Proponent presenting the motion and an argument in favor of it. An argument is defined as consisting of a statement that can be supported by evidence. A statement (claim) is an assertion that deserves attention. There may be a conclusion which presents a result, which can be derived from certain evidence (premises). The task of the Opponent is to attack the proponent’s argument. Both trainees can be in the role of either a proponent or opponent.

Haddadan et al. (2018) present the annotation guidelines for annotating arguments in political debates. The dataset is taken from the U.S. Commission on Presidential Debates website.

Menini et al. (2018) apply argumentation mining techniques, to study political speeches where there is no direct interaction between opponents. They use a tool called OVA+ (Janier et al., 2014), an on-line

interface for the manual analysis of natural language arguments.

Stab and Gurevych (2017) and Lawrence and Reed (2019) consider argument diagramming which aims at transferring natural language arguments into a structured representation. An argument diagram (argument structure) is a *node-link diagram* whereby each node represents an argument component (i.e., a statement of natural language) and each link represents a directed argumentative relation indicating that the source component is a justification of the target component. There are different types of argument diagrams (Stab and Gurevych, 2017:626). A *basic argument*, the minimal form of an argument, includes a claim supported by a single premise. In a *linked argument*, multiple premises work together to support a conclusion, each premise requires the others in order to work fully. In a *convergent argument*, multiple premises are used to independently support a single conclusion. In a *divergent argument*, the same premise supports multiple conclusions. In a *sequential (serial) argument*, one premise leads to another and this, in turn, leads to the conclusion. More complicated, *hybrid arguments*, involve several combinations of the above elements into a larger argument structure.

Calegari and Sartor (2020) are modelling the burden of persuasion in legal proceedings. The burden of persuasion indicates that it is necessary to give a dialectically convincing argument to establish a claim. In order to be convincing, the argument must prevail over all counter-arguments that are non-rejected on other grounds.

Quijano-Sánchez and Cantador (2020) propose an extension of an argumentative model. Their new generic model considers argument structures with different semantic components and relationships. A case study is carried out on contents of the Spanish Parliament demonstrating how to extract structured arguments from texts.

Navaretta and Hansen (2020) consider differences in the word use of two left-winged and two right-winged Danish parties and study how these differences can be used to automatically identify the party of politicians from their speeches. The analysis shows that the most frequently occurring lemmas reflect either the ideology or the position of the parties.

Ruiz-Dolz et al. (2021) present a large, richly annotated debate corpus VivesDebate. The corpus has been created from the transcripts of 29 complete competitive debates in Catalan and includes 139,756 words. The annotation contains argumentative propositions, argumentative relations, debate

interactions and professional evaluations of the arguments and argumentation.

This article studies discussions in two parliaments in order to identify arguments and relations between arguments. An annotated corpus of Estonian Parliament discussions is introduced and compared with the corpus of UK Parliament debates. We aim at demonstrating how the annotated corpora can be used for comparisons.

3 ARGUMENTS PRESENTED IN THE PARLIAMENT OF ESTONIA

Let us start with the analysis of discussions held in the Parliament of Estonia, in order to figure out how the arguments are used in discussions.

3.1 Empirical Material

Our empirical material comes from the Estonian argument corpus. The corpus currently includes verbatim records of the proceedings on seven bills in the Riigikogu (social care, animal protection, etc.). Arguments and inter-argument relations are annotated in the corpus (Koit, 2020).

The passing of acts and resolutions is an important task of the Riigikogu. A bill initiated by the government will pass three readings, during which it is refined and amended. The proceeding of a bill is managed by the relevant leading committee. The proceedings have predetermined structure (Figure 1). First, the representatives of the government and the leading committee make their reports about the bill and/or its amendments. After every presentation, MPs can ask questions which will be answered by the presenter. Then negotiation follows where arguments for and against the bill and its amendments are given. Arguments can be presented also in reports and when asking and answering questions. The 2nd and 3rd readings in addition include voting on amendments and final voting, respectively.

As an example, let us consider the bill on sale and consumption of alcohol proceeded in 2001. The records of three sittings consist of 27,768 tokens in total.

3.2 Argument Structures

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*.

```

-- 1st reading
Presenter (Minister): Report
{
MP: question
Presenter: answer
}
Co-presenter (Head of leading committee):
Report
{
MP: question
Co-presenter: answer
}
-- negotiation
{
MP: argument
}
-- 2nd reading
Presenter (Head of leading committee): Report
on amendments
{
MP: question
Presenter: answer
}
-- negotiation
{
MP: argument
}
voting on amendment motions
-- 3rd reading
-- negotiation
{
MP: argument
}
final voting

```

Figure 1: General structure of proceeding a bill in the Riigikogu. The brackets {} connect a part that can be repeated; '- -' starts a comment. MP – any member of Riigikogu.

When analysing persuading essays, Stab and Gurevych (2014) make a distinction between the *main claim* and a claim of an argument. In parliamentary discussions, we similarly can determine the main claim that is together with its premises given in the report of Minister in the beginning of the first reading. We can consider a set of the statements supporting the main claim (i.e. *main premises*) together with the main claim as *the main argument*. Example 1 presents the main argument of proceeding the bill on alcohol. The annotation follows (Koit, 2020).

As said before, arguments can be presented in reports as well as when asking and answering questions. Nevertheless, 75% of arguments are given in special parts of readings – negotiations (cf. Koit, 2021). The total number of arguments is 48 (in addition to the main argument).

(1)

<main argument>

<main claim>

<...>kehtiva alkoholiseaduse asendamiseks vastu võtta uus seadus. ... *adopt a new law that will substitute the existing one.*

</main claim>

<premise>

Kehtivast seadusest kaks korda mahukama eelnõu väljatöötamisel on peetud silmas vajadust tagada tooteohutus <...>, illegaalsete alkoholikäitlejate vastutuse möödapääsmatus. ... *assure product safety <...>, responsibility of illegal dealers.*

</premise>

<...>

<premise>

<...> tänavakaubanduses oleks igasugune alkoholimüük keelatud. <...> *prohibit selling alcohol in street commerce.*

</premise>

<premise>

<...> puskariajamine nii oma tarbeks kui müügi eesmärgil on keelatud. <...> *prohibit distillation of homebrew both for own usage and for sale.*

</premise>

</main argument>

In majority of cases, an argument has only one premise and one claim, i.e. its structure (diagram) is *basic* (Stab and Gurevych, 2017:626). The next most frequent structure is *linked* where the argument has more than one premise that work together to support a claim (like the main argument, Example 1). There are some arguments with two or more premises that independently support a claim (*convergent* arguments). There are also some *hybrid* arguments that involve several combinations of simpler arguments into a larger argument structure (Example 2).

(2)

Ma arvan, et *I think that*

<argument>

<premise>

<argument>

<premise>

kui me peaksime millegi bensiinijaamas müümise keelama, *if we prohibit selling of something in petrol stations,*

</premise>

<claim>

siis me peaksime keelama just nimelt lahjade alkoholsete jookide müügi, siidrite, lahjade õlled müügi, *then we have to prohibit just selling of cider, bear etc.,*

</claim>

</argument>

</premise>

<claim>

sest need võivad tekitada autojuhil isu ja arvamuse, et selle võib ta siiski ära juua. *because they whet appetite and bring a driver to believe that he may drink them off.*

</claim>

</argument>

This hybrid argument includes two basic argument structures inside. Let us mention that there is a different option to annotate the argument (2) as *serial*. However, we are departing from the current annotation of our argument corpus.

Divergent arguments have not been used by MPs when proceeding the bill on alcohol (according to our annotation).

The distribution of different argument structures is shown in Figure 2.

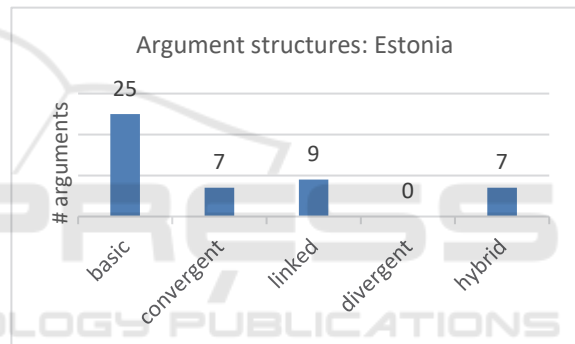


Figure 2: Distribution of argument structures when proceeding the bill on alcohol (number of arguments).

3.3 Arguments for and against the Bill

Three types of relations can appear between the arguments: support, attack and rebuttal (Amgoud et al., 2015).

An argument can *support* a premise or a claim of another argument. An argument also can *attack* another argument or its premise (Example 3). The distribution of different inter-argument relations is shown in Figure 3.

(3)

<argument>

- - attacking a premise of the main argument (1)

<premise>

Kui aina rohkem piiratakse alkoholi kättesaadavust *If availability of alcohol will be restricted more and more*

</premise>

<claim> – see on Põhjamaade kogemus – hakkavad levima igasugused kompenseerivad toimingud ja äritsemised. – *that is the experience of the Nordic countries – then all kinds of neutralising activities and trades will escalate.*

</claim>
</argument>

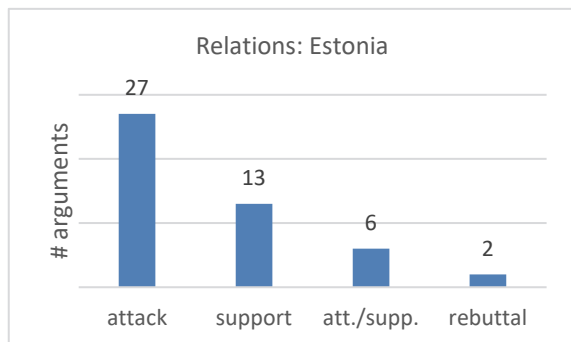


Figure 3: Distribution of inter-argument relations when proceeding the bill on alcohol (number of arguments).

The number of attacking arguments is twice bigger as compared with the number of supporting ones. However, majority (66%) of the arguments are related to amendments and do not attack the premises of the main argument presented in the report of Minister in the first reading. An argument can support (a premise or claim of) a previous argument and at the same time, explicitly attack another argument or its premise. Two arguments curiously rebut the main argument.

4 ARGUMENTS PRESENTED IN THE UK PARLIAMENT

For comparison, let us consider a discussion in the UK Parliament from the same year (2001). The proceedings can be accessed online, similarly with many other parliaments.

4.1 Empirical Material

A debate is a formal discussion of a specific proposal (motion) in the House of Commons or House of Lords. Members take it in turns to speak and there are rules and conventions that are followed. Debates can be read in the Official Report (Hansard) and viewed online via Parliament TV. We selected the Tobacco Advertising and Promotion Bill (2001) discussed in the House of Commons. We analyse the second reading which is the first opportunity for MPs for debate on the bill (the verbatim record includes

55,327 tokens). The Secretary of State for Health opens the discussion. His presentation includes the main argument (Example 4).

(4)

<main argument>

<main claim>

The Bill will ban tobacco advertising and sponsorship in this country.

</main claim>

<premise>

It will do so to protect public health, to safeguard children and to reduce health inequalities.

</premise>

<...>

<premise>

Smoking kills 120,000 people <...> every year.

</premise>

<...>

<premise>

It is one of the principal causes of the health gap between the richest and the poorest in our country.

</premise>

</main argument>

After the report of the Secretary of State, the official opposition spokesperson responds with their views on the bill. The discussion continues with other opposition parties and backbench MPs giving their opinions. After every report, MPs can ask questions that will be answered by the presenter. Finally, the Commons decides whether the Bill should be given its second reading by voting, meaning it can proceed to the next stage. Therefore, the procedure is quite different as compared with the Riigikogu. However, arguments can be presented in every report as well as when asking and answering questions.

4.2 Argument Structures

An expert annotated the arguments and inter-argument relations in the proceedings. In total, 41 arguments have been found in addition to the main argument (4). More than half of the arguments (63%) have the simplest, *basic* structure, i.e. including one premise and one claim (Example 5).

(5)

<argument>

<claim>

There are all kinds of pragmatic arguments against the Bill

</claim>

<premise>

<...> its most offensive aspect is that it proposes a total ban on the advertising of a legal, much-used

product and denies consumers information that would enable them to make an informed choice.

</premise>

</argument>

Out of the remaining arguments, there are some *linked* and *convergent* arguments. There are also some complex, *hybrid* arguments (Example 6).

(6)

<argument>

<claim>

If we want to stop children smoking —I am one who does—

</claim>

<premise>

<argument>

<claim>

we must recognise that the most effective way is to limit their access to cigarettes

</claim>

<premise>

by making the laws prohibiting under-age sales more effective;

</premise>

<premise>

implementing education programmes designed to discourage children from buying cigarettes

</premise>

<premise>

and encourage adults to exercise more responsibility;

</premise>

<premise>

and by clamping down on the illicit importation of cigarettes.

</premise>

</argument>

</premise>

</argument>

The premise of the argument (6) is a different, linked argument. The distribution of argument structures is shown in Figure 4.

4.3 Arguments for and against the Bill

The arguments attack or support premises of the main argument presented in the first report. Some arguments attack or support premises of the (single) amendment presented by the opposition (stating there is insufficient evidence that the ban would reduce tobacco consumption).

The number of attacking arguments is slightly greater than of supporting ones. For example, the argument (5) is the only which rebuts the main argument. The argument (6) supports a premise and

the claim of the main argument. The distribution of relations is shown in Figure 5.

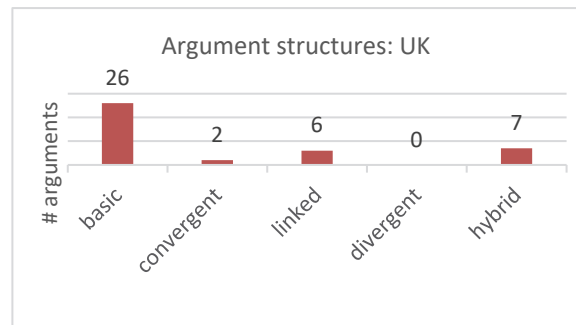


Figure 4: Distribution of argument structures when proceeding the Tobacco Bill (number of arguments).

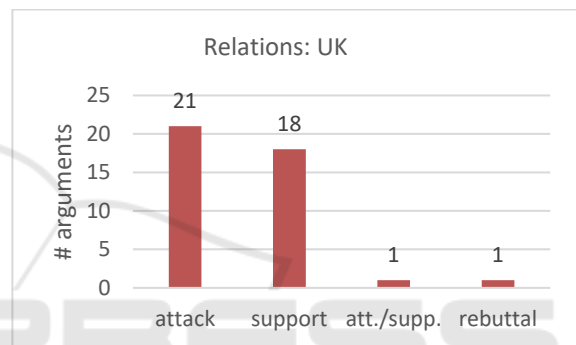


Figure 5: Distribution of inter-argument relations when proceeding the Tobacco Bill (number of arguments).

5 DISCUSSION

We are analysing arguments presented in two different parliaments when discussing a bill – in the Estonian Riigikogu and the UK Parliament House of Commons. The legislation procedures are different but arguments are presented in both parliaments.

In the Riigikogu, the representatives of government and the leading committee make reports about the bill. Every report will be followed by questions of MPs. 75% of arguments are presented during special parts of readings – negotiations, the remaining 25% – in reports and questions or answers (Figure 1).

Discussions in the UK Parliament are more complicated because the Parliament has two Houses. We consider here only one sitting in the House of Commons – the 2nd reading of the bill. Here, arguments for and against the bill are presented in reports and in following question-answer dialogues. We compare the argument structures and inter-argument relations in the two parliaments. We also

figure out the general procedures of presentation of arguments in both parliaments.

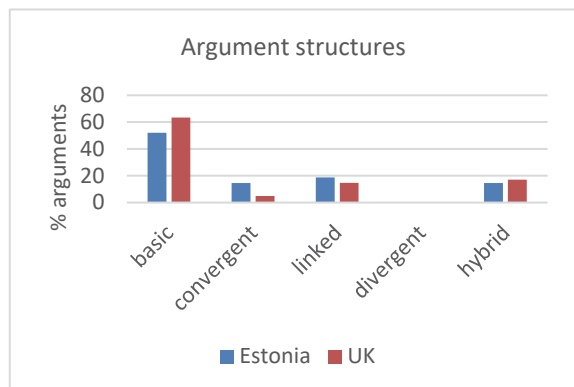


Figure 6: Distribution of argument structures (% of arguments): comparison of two parliaments.

In the Riigikogu, 48 arguments are presented either in reports, when asking and answering questions, or in negotiations on the general principles and the amendments of the bill (in addition to the main argument). In the UK Parliament, 41 arguments are given in reports and when asking and answering questions.

Considering the structure (diagrams) of the arguments, we can conclude that the debaters give preference to the simplest, *basic* arguments in both parliaments (Figure 6). Such an argument seems to be the strongest and most accessible to transfer the message expressing the relation between a premise and a claim.

More complex, *hybrid* arguments are only used in seven cases both in the Riigikogu and in the UK Parliament. Obviously, such arguments are not always easy to understand. *Divergent* arguments where more than one claim follows to one premise have not been found in neither of proceedings. The main argument presented in the very first report has the *linked* structure in both parliaments. Here, the premises work together to conclude the claim.

Comparative distribution of relations (rebuttal, attack, support) between the arguments is shown in Figure 7. Relations make it possible to figure out the progress of the debate. In the Riigikogu, negotiation curiously starts with an argument rebutting the main argument (*[...] If we approve the bill in the present form then we express our satisfaction with the high consumption of alcohol [...]*). After that, many arguments are presented to support or attack some amendments (only 39 amendments out of proposed 97 have been accepted after voting). Few arguments support the main claim ('to adopt the bill') or to the contrary, attack premises of the main argument.

Finally, it turns out that the arguments supporting the bill are more convincing than the counterarguments and the debate after final voting ends with adopting the act.

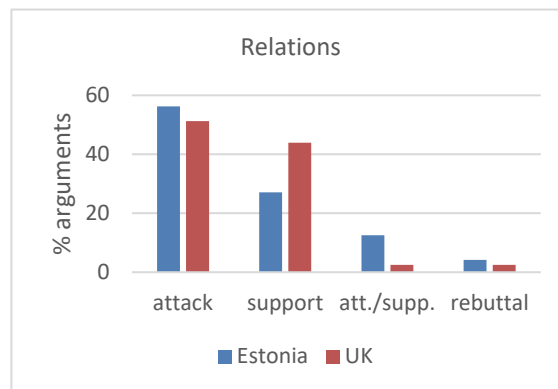


Figure 7: Distribution of inter-argument relations (% of arguments): comparison of two parliaments.

In the UK Parliament House of Commons, the debate starts with arguments supporting some premises or the claim of the main argument. Attacking arguments are presented later in the debate. Although their total number is greater, the voting decides that the bill can proceed to the next stage. Therefore, similarly with the Riigikogu, the supporting arguments turn out to be more convincing.

In the UK Parliament, arguments are often presented by using check questions (Bunt et al., 2020). There are 51 check questions out of 73 asked questions. Differently from the Riigikogu, 3rd person is used when applying to another person in discussion, e.g. *Does the Secretary of State think ...?*, *The hon. Gentleman is wrong* (not *Do you think...?*, *You are wrong* as in the Riigikogu). Specific style (negative question) often appears in the UK Parliament (e.g. *Does he not ...?*). That is different in the Riigikogu – Estonian MPs argue more personally and directly. It seems to be a cultural difference.

In this study, we compared the form and functions of arguments in two different parliaments. In order to characterize the MPs by their used arguments (incl. the structures and language features of arguments) we need to study different proceedings with the same participants. This requests extending our corpus in order to make a step toward the automatic recognition of arguments.

6 CONCLUSIONS

In the first part of the paper, a discussion on the bill of alcohol in the Riigikogu is analyzed. For comparison, the 2nd reading of the Tobacco Advertising and Promotion Bill in the UK Parliament House of Commons is considered in the second part of the paper. Argument structures and inter-argument relations are compared in two parliaments. The simplest, *basic* arguments prevail in both parliaments. Although the number of *supporting* arguments is less than of *attacking* ones, the former arguments turn out to be more convincing and both discussions end with approving the bill.

The current aim has been to demonstrate how annotated argument corpora can be used for characterizing and comparing the discussions in two parliaments. Our corpus has to be extended in order to make it possible the automatic recognition of arguments as well as further analysis of political discussions. This remains for further work.

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