

How Are the Members of a Parliament Arguing? Analysis of an Argument Corpus

Mare Koit^a

Institute of Computer Science, University of Tartu, Narva mnt 18, Tartu, Estonia

Keywords: Argument, Inter-argument Relations, Argument Diagramming, Language Features, Annotated Corpus.

Abstract: Estonian argument corpus includes verbatim records (in Estonian) of sessions held in the Parliament of Estonia (Riigikogu). Arguments used in negotiation and inter-argument relations are annotated in the corpus. Every argument consists of one or more premises, and a claim. By using the corpus, inter-argument relations (rebuttal, attack, and support), argument diagramming (argument structures – basic, convergent, serial, divergent, and linked), and the linguistic features of the arguments are studied. Some problems are discussed in relation to the arguments the members of Riigikogu use when negotiating. Our aim is to add an additional layer to our argument corpus by annotating the structures of arguments as well as extending the corpus in order to make it possible the automatic recognition of arguments in Estonian political texts. A further challenge will be the comparison of discussions in Riigikogu with other parliaments and other languages.

1 INTRODUCTION


There are many ongoing initiatives for compiling digital collections of parliament data (CLARIN Survey, 2020). The data can be used for linguistic, political, sociological, historical etc. research. The data also makes it possible to compare discussions in different parliaments.

A lot of work has been done when studying political discourse and argumentation in political discussions (Bara et al., 2007; Naderi and Hirst, 2015; Petukhova et al., 2015; Lippi and Torroni, 2016). 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.

We study negotiations 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 of the Riigikogu. The records are accessible on the web as pdf files (cf. Riigikogu). In the records, repetitions and disfluencies are omitted, while supplementary information such as speaker names are

added. In the corpus, argument components (premises and claims) and inter-argument relations (rebuttal, attack, 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, 2020a). Based on the study, an argument corpus is being developed. The current paper considers the arguments presented by the Members of the Parliament (MPs) in negotiation when passing an act. Our aim is to demonstrate how the corpus can be used for the analysis of parliamentary negotiations. The corpus has to be extended in order to make it possible the automatic recognition of arguments as well as further analysis of political discussions.

The remainder of the paper is structured as follows. Section 2 describes related work. In Section 3, we examine one randomly selected discussion in Riigikogu by using the argument corpus. We consider the arguments presented by the MPs – do they support or attack the bill or some amendments, the structure of arguments and their linguistic features. Section 4 discusses problems related to the arguments – how are they used in negotiation, how are they built up, do they support or attack previous arguments, how do they characterize the MPs participating in negotiation. Section 5 draws conclusions and figures out future work.

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

2 RELATED WORK

Stab and Gurevych (2014) introduce an argument corpus that includes 90 persuasive essays in English. The corpus has been annotated in two consecutive steps. First, the annotators identified argument components (claims and premises) at the clause level. Second, they annotated argumentative support and attack relations between argument components.

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

Visser et al. (2018) present a corpus comprising the first general election debate between Clinton and Trump (17,190 words) annotated with types of argument. They use the Periodic Table of Arguments classification that is based on three discriminating properties: first- or second-order arguments; predicate or subject arguments; propositions of fact, value or policy (Wagemans, 2016).

Haddadan et al. (2018) present the annotation guidelines for annotating arguments in political debates. The dataset is taken from the 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.

Musi et al. (2018) present a multi-layer annotated corpus of 112 argumentative micro-texts encompassing not only argument structure and discourse relations (Stede et al., 2016), but also argument schemes – the inferential relations linking premises to claims. They propose a set of guidelines for the annotation of argument schemes both for support and attack relations. They have built the ArgScheme Annotator Tool, which provides a user-friendly interface for the labelling of support and attack relations with argument schemes.

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 *convergent argument*, multiple premises are used to independently support a single conclusion. In a *linked argument*, multiple premises work together to support a conclusion, each premise requires the others in order to work fully. 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.

Argument structures can be used to characterize a convincing argumentation. For example, Indrajani and Anggie (2009) examine the argument structures used by Hillary Clinton in her presidential debate. The *linked* arguments were the most frequent while the *divergent* ones were the rarest. Therefore, the linked argument structure turned out to be the most effective strategy for the speaker when arguing about the political, economic, and social issues.

Voloshchuk and Usyk (2018) analyse the power of persuasion in argumentative political discourse. Argumentation is aimed at achieving the ultimate communicative goal – to persuade the audience in the truthfulness of a certain thought, and it can be fulfilled by different means. In *simple argumentation*, the main reasoning relies on one argument. On the other hand, *compound argumentation* uses several arguments, and main reasons are supported by several facts or examples that validate the speaker's goal. Persuasion verbalizes in speeches, the speaker realizes oneself as a communicative individuality with own style – the stylistic and semantic composition of the speech.

Calegari and Sartor (2020) provide a formal model for 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.

3 ARGUMENTS PRESENTED IN NEGOTIATION

In this paper, we are analysing the verbatim records of discussions held in the Parliament of Estonia, in order to figure out which arguments and in which way are presented by the MPs in negotiation. We are using an annotated argument corpus.

3.1 Empirical Material

Our study is based on the Estonian argument corpus. The corpus currently includes verbatim records of the proceedings on seven bills in the Riigikogu (social care, animal protection, etc.). In the corpus, arguments and inter-argument relations are annotated (Koit, 2020b). For the current study, we have randomly chosen the bill on (sale and consumption of) alcohol proceeded in 2001. The records of the three sittings include 27,768 running words in total.

The passing of acts and resolutions is an important task of the Riigikogu. A draft act (a bill) initiated by the government will pass three readings in the Riigikogu, 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 readings have a predetermined structure (cf. Koit et al., 2019). Every reading includes negotiation. The procedure of a negotiation follows the definite rules. If a speech of an MP is made from the rostrum, it may last 5+3 minutes, according to the agreement with the chair of the sitting. A speech made from the seat of the MP in the Hall may take up to 2 minutes. In any case, MPs have only limited time to present their arguments when negotiating.

3.2 Arguments for and against the Bill

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. Three types of relations can appear between the arguments: attack, support, and rebuttal (Amgoud et al., 2015). Although Stab and Gurevich (2014) differently determine support and attack relations – between two statements (premises or claims of arguments) – we are departing from (Amgoud et al., 2015).

When analysing persuading essays, Stab and Gurevich (2014) make a distinction between the

main claim and a claim of an argument. In parliamentary discussions, we similarly can differentiate the main claim and a claim of an arbitrary argument. The main claim together with its premises is given in the introductory report of Minister in the beginning of the first sitting and it is always ‘to accept the bill’. Therefore, we can consider set of the statements in the report as ‘the main argument’. As a rule, the claim of a supporting argument presented in following negotiation, coincides with the main 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.

In total, 35 arguments are presented by 12 MPs in negotiations when proceeding the bill on alcohol. The components of the arguments occur in the order either ‘premise(s)-claim’ or ‘claim-premise(s)’. In average, an MP presents 2-4 supporting or attacking arguments in a speech. Only two MPs limit themselves with one argument, both *rebutting* the main argument (Example 1). The arguments are annotated following (Koit, 2020b).

```
(1) <argument>
    - - rebutting the main argument
    <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 [...] If we approve the bill in
    the present form then we express our satisfaction with
    the high consumption of alcohol [...]
    </claim>
    </argument>
```

An argument can *attack* another argument or its premise (Example 2).

```
(2) <argument>
    -- attacking a premise of the main argument
    <claim >
    [...] ma ei ole nõus sõnastusega, et alkohol on
    toidugrupp või kuulub toidugruppi [...] I don't agree
    with the definition of alcohol as a food group [...]
    </claim>
    <premise>
    See on kindlasti eksitav [...] This is definitely
    misleading [...]
    </premise>
    <premise>
```

[...] On selge, et siin on tegemist alkoholiäriaga, [...] *It is clear that this is the alcohol business* [...] </premise> </argument>

An argument can also *support* a premise or a claim of another argument (Example 3).

(3) <argument>
-- supporting the claim of another argument
<premise>
[...] alkohol on bioloogilist sõltuvust tekitav aine. *Alcohol causes biological dependency.*
</premise>
<claim>

Just see on minu jaoks ka ainus põhjendus, miks võiks alkoholi hakata müüma alles alates 21. eluaastast [...] *This is the only reason to sell it from age of 21 years.* [...] </claim> </argument>

Most (66%) of the arguments are related to amendments (which texts are unfortunately not accessible on the web). In negotiation, MPs support the amendments earlier made by themselves. They also attack some amendments made by the other MPs.

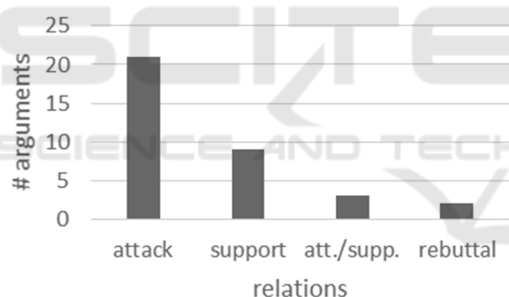


Figure 1: Distribution of inter-argument relations.

However, an argument can support a (premise or claim of) previous argument and at the same time, attack another argument or its premise. Arguments given for an amendment, at the same time, attack one of the premises of the main argument presented in the report of Minister in the beginning of the first sitting.

The distribution of inter-argument relations is shown in Fig. 1.

3.3 Argument Diagramming

When taking the floor in negotiation, the members of the Riigikogu are mostly presenting their arguments by more than one sentence. In this case, a premise and the claim are located in different sentences. There are also some complex, nested arguments where one

argument is a premise or a claim of another (cf. Amgoud et al., 2015). A speech of an MP always includes also a non-argumentative part that can be longer than its argumentative part.

In more than half cases (54%), an argument has only one premise and one claim, i.e. its structure (diagram) is *basic* like in Examples 1 and 3 (cf. Stab and Gurevych, 2017:626).

The next most frequent (29%) structure is *convergent* where the argument has more than one premise that independently support the claim (Example 2). In a few of cases, there are arguments with two or more premises that work together to support a claim (i.e. *linked* arguments, Example 4).

(4) <argument>
-- supporting the claim of another argument
<premise>

Paljudes riikides, sealhulgas USA-s, on alkoholsete jookide, ka õlle tarimine lubatud alates 21. eluaastast [...] *In many countries, among them in USA, consumption of alcohol, including beer, is allowed from age of 20 years* [...]

</premise>
<premise>

Selline piirang ei diskrimineeri neid noori kodanikke, kes ei saa 18-20aasta vanusena alkoholi osta [...] *Such a limitation does not discriminate the young citizens who can't buy alcohol being 18-20 years old* [...]

</premise>
<premise>

Seevastu on alkoholiga seotud noorte surmajuhtumeid Ühendriikides üle viie korra harvemini kui Eestis. *The number of deaths of young men is more than five times lower than in Estonia.*

</premise>
<claim>

Alkoholimüüki tuleks piirata nii vanuselises ja asukohalises mõttes kui ka kellaaajaliselt. *The sale of alcohol has to be limited depending on age, place and time.*

</claim>
</argument>

There are also some *hybrid* arguments that involve several combinations of simpler arguments into a larger argument structure. One MP especially distinguishes himself by his complicated arguments (Example 5).

(5) <argument>
-- supporting the claim of another argument
<premise>
<argument>
-- rebutting an argument

<premise>
 Kindlasti leidub neid, kes väidavad, et karmim keelupoliitika ei lahenda probleeme. *Definitely, there are people who claim that a stronger prohibitive policy does not solve the problems.*

</premise>

<claim>

Ma ei nõustu sellega. *I don't agree.*

</claim>

</argument>

</premise>

<premise>

Seadusega kehtestatavad rangemad reeglid on ainult üks osa paljudest abinõudest eesmärgi saavutamisel. *Stronger rules sanctioned by law are only one part of many instruments to achieve the goal.*

</premise>

<premise>

Eestis on seni alkoholipoliitika puudunud, [...] *Alcohol policy is missing in Estonia so far, [...]*

</premise>

<claim>

<argument>

-- rebutting the main argument

</premise>

Küsimine: kas käesolev seaduseelnõu proovib neid küsimusi lahendada? *We ask: will the current bill solve the problems?*

</premise>

<claim>

Arvan, et mitte. *I guess that not.*

</claim>

</argument>

</claim>

</argument>

The argument (5) has three premises. Among them, the first one is another argument. The claim is also presented as another argument. This hybrid argument includes linked and basic argument structures inside. Let us mention that, in fact, there would be different options to annotate the argument (5), e.g. annotate the first premise as a divergent argument with two claims. Still, we are departing from the current annotation of the corpus.

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

The distribution of argument structures is shown in Fig. 2.

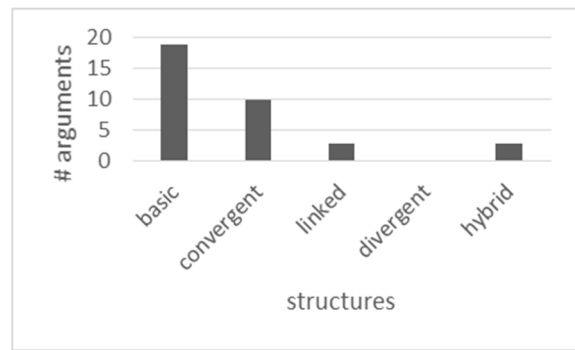


Figure 2: Distribution of argument structures.

3.4 Linguistic Features of Arguments

Some of the MPs (especially women) use figurative language (e.g. an emotional claim in Example 6).

(6) Aga kas selle eest peaks siis risti lööma ainult putkad ja bensiinijaamad, 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 MPs tend to prefer special voice and mood in their arguments (cf. Abbott et al. 2016; Examples 6 and 7).

(7) <argument>

-- supporting an amendment

<premise>

Kui riik siiski tahaks osaleda alkoholiturul alkoholi kättesaadavuse ja tarbimise reguleerimisel, *If the state aims to participate in the alcohol market in order to regulate the availability and consumption of alcohol*

</premise>

siis *then*

<claim>

võiks riik astuda uue sammu ja naasta alkoholi tootmise ja alkoholikaubanduse turule eesmärgiga turgu tasakaalustada. *the state will take the new step and return to the market of alcohol production and alcohol business with the goal to balance the market.*

</claim>

</argument>

Some speeches are ironic or sarcastic (an ironic claim in Example 8).

(8) See seadus on väga hea alkoholiäri seadus. *This law is very good just for alcohol business.*

However, these features have been found only in a few of the speeches and they do not characterize the majority of the MPs.

4 DISCUSSION

The paper describes an experience of analysing arguments in Estonian parliamentary discourse in order to explain how the MPs use arguments in negotiation. The empirical material is formed by the corpus that includes 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 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 (Minister) and the leading committee is 81. The amendments were presented in written form, in the breaks between the sittings, their number is 97. However, only 39 of them were approved by the MPs after voting. In total, 35 arguments have been presented by 12 MPs in negotiations on the general principles of the bill and the amendments.

Relations (rebuttal, attack, support) between the arguments make it possible to figure out the progress of the negotiation. It curiously starts with an argument rebutting the main argument. After that, a lot of arguments are presented to support or attack some amendments. At the same time, they attack or support some premises of the main argument, respectively. Between these arguments, a few of arguments are presented to attack the main argument or on the opposite, to support the main claim ('to adopt the act'). At the end of the negotiation, arguments presented by two MPs, rebut the main argument and/or attack different amendments. Nevertheless, the arguments supporting the bill seem to prevail over the counterarguments (by their weightiness, not the number) and the debate ends after voting with adopting the act.

Considering the structure (diagrams) of the arguments, we can conclude that the MPs give preference to the simplest, basic arguments. Such an argument seems to be the strongest to transfer the message expressing the relation between a premise and a claim. Using an argument corpus it is easy to label basic arguments as structures with one premise and one claim. On the other hand, the automatic distinction between convergent and linked structures is problematic – how to decide whether two premises

of an argument are independent or not? What is more, the question of whether to distinguish between linked and convergent arguments is still debated in argumentation theory (Stab and Gurevych, 2017). What next, we do not find serial arguments in our corpus. If s_1 implies s_2 and s_2 implies s_3 then it is annotated as a complex (hybrid) argument. The premise of the hybrid argument is another argument (with premise s_1 and claim s_2) and the claim is s_3 . The MPs only use hybrid arguments in three cases. Doubtless, these arguments are not easy to understand. Divergent arguments are also missing in our annotated corpus. However, we do not exclude the arguments where one premise implies two different claims. It should be mentioned that Amgoud et al. (2015) consider such cases as two separate arguments (differently from Stab and Gurevych, 2017).

Language features mark off some MPs who decline to use figurative language, prefer special voice and mood when arguing. Still, majority of the MPs does not distinguish oneself by the language usage.

Our current aim is to add labels of structures (basic, convergent, etc.) to the arguments, i.e. an additional layer to our annotated argument corpus. What next, we can study whether there are differences between the usage of supporting, attacking and rebutting arguments by MPs, depending on the final result of voting on the bill. To characterize the MPs by their used arguments (incl. the structures and language features) we need to study different proceedings because according to regulations, every MP is allowed to take a floor only once in one negotiation. This requests extending of the corpus in order to make a step toward the automatic recognition of arguments.

An interesting further research question is whether there are differences in political argumentation between the Estonian Parliament and other parliaments, i.e. the comparison of different political cultures in different languages. Another challenge will be the development of a tool that helps young politicians to carry out effective negotiation in Estonian.

5 CONCLUSIONS

Verbatim records of sittings of the Parliament of Estonia can be accessed online. A corpus is being developed where arguments used in negotiation when proceeding a bill are annotated. For the current study, an act on alcohol is chosen as an example. Argument

components (premises and claims) and inter-argument relations (rebuttal, attack and support) as well as their linguistic form are considered. The members of the Parliament use various means to transfer their messages when arguing, incl. arguments with one or more premises (basic, linked, convergent), nested (hybrid) arguments, figurative language for expressing emotions, etc.

The current aim has been to demonstrate how an annotated argument corpus can be used for characterizing the members of a parliament in the process of adopting a bill. This study is a step towards the automatic analysis of political arguments in Estonian parliamentary discussions. The automatic recognition of arguments in Estonian parliamentary discourse and comparison with other parliaments remains for the further work.

ACKNOWLEDGEMENTS

This work was supported by the European Union through the European Regional Development Fund (Centre of Excellence in Estonian Studies).

REFERENCES

- Abbott, R., Ecker, B., Anand, P., and Walker, M.A., 2016. Internet Argument Corpus 2.0: An SQL schema for Dialogic Social Media and the Corpora to go with it. In *Proceedings of LREC*, 4445-4452.
- Angoud, L., Besnard, P., Hunter, A., 2015. Logical Representation and Analysis for RC-Arguments. In *IEEE 27th International Conference on Tools with Artificial Intelligence (ICTAI)*, 104-110.
- Atkinson, K., Baroni, P., Giacomin, M., Hunter, A., Prakken, H., Reed, C., Simari, G., Thimm, M., Villata, S., 2017. Towards Artificial Argumentation. In *AI Magazine*, 38(3). <https://doi.org/10.1609/aimag.v38i3.-2704>
- Bara, J., Weale, A., Bicquelet, A., 2007. Analysing Parliamentary Debate with Computer Assistance. In *Swiss Political Science Review* 13(4): 577-605.
- Calegari, R., Sartor, G. 2020. A Model for the Burden of Persuasion in Argumentation. In *Proceedings of the 36th International Conference on Logic Programming (Technical Communications), EPTCS 325*, 151-163. <https://doi.org/10.4204/EPTCS.325.21>
- CLARIN Survey, 2020. <https://www.clarin.eu/resource-families/parliamentary-corpora>
- Haddadan, S., Cabrio, E., Serena Villata, S., 2018. Annotation of Argument Components in Political Debates Data. In *Proceedings of the Workshop on Annotation in Digital Humanities*, 12-16.
- Indrajani, N. T., Anggie, A., 2009. The Types of Argument Structure Used by Hillary Clinton in the CNN Democratic Presidential Debate. In *k@ta lama*, vol 11(2), 184-200. <https://doi.org/10.9744/kata.11.2.184-200>
- Janier, M., Lawrence, J., Reed, C., 2014. OVA+: An Argument Analysis Interface. In *Frontiers in Artificial Intelligence and Applications*, vol. 266, 463-464. <https://doi.org/10.3233/978-1-61499-436-7-463>
- Koit, M. 2020a. Arguments in Parliamentary Negotiation: a Study of Verbatim Records. In *Proceedings of the 12th International Conference on Agents and Artificial Intelligence ICAART-2020*, vol. 2, 822-828.
- Koit, M. 2020b. Annotating Arguments in a Parliamentary Corpus: An Experience. In *Proceedings of the 12th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K 2020)*, vol. 2: KEOD, 213-218.
- Koit, M., Õim, H., Roosmaa, T., 2019. How Do the Members of a Parliament Negotiate? Analysing Verbatim Records. In *Proceedings of the 11th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K 2019)*, vol. 2: KEOD, 329-335.
- Lawrence, J., Reed, C., 2019. Argument Mining: A Survey. In *Computational Linguistics*, vol. 45 (4), 765-818. <https://doi.org/10.1162/COLLA.00364>
- Lippi, M., Torroni, P., 2016. Argument mining from speech: detecting claims in political debates. In *Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence (AAAI'16)*, 2979-2985. AAAI Press
- Menini, S., Cabrio, E., Tonelli, S., and Villata, S., 2018. Never retreat, never retract: Argumentation analysis for political speeches. In *The Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18)*, 4889-4896.
- Musi, E., Alhindi, T., Stede, M., Kriese, L., Muresan, S., Rocci, A., 2018. A Multi-layer Annotated Corpus of Argumentative Text: From Argument Schemes to Discourse Relations. In *Proceedings of LREC 2018*, 1629-1636. <https://www.aclweb.org/anthology/L18-1258.pdf>
- Naderi, N., Hirst, G. 2015. Argumentation mining in parliamentary discourse. In *CMNA 2015, IWEC 2015, IWEC 2014: Principles and Practice of Multi-Agent Systems*, 16-25.
- Petukhova, V., Malchanau, A., Bunt, H., 2015. Modelling argumentative behaviour in parliamentary debates: data collection, analysis and test case. In *Principles and Practice of Multi-Agent Systems. CMNA 2015, IWEC 2015, IWEC 2014. Lecture Notes in Computer Science*, vol 9935. Springer, Cham. https://doi.org/10.1007/978-3-319-46218-9_3
- Quijano-Sánchez, L., Cantador, I., 2020. Structured argumentation modeling and extraction: Understanding the semantics of parliamentary content. In *Proceedings of the Joint Conference of the Information Retrieval Communities in Europe (CIRCLE 2020)*. <http://ceur-ws.org/Vol-2621/>

- Riigikogu (Parliament of Estonia) <https://www.riigikogu.ee/en/>
- Stab, C. and Gurevych, I., 2017. Parsing Argumentation Structures in Persuasive Essays. In *1636*, vol. 43 (3), 619–659. <https://doi.org/10.1162/COLI.a.00295>
- Stab, C., Gurevych, I., 2014. Annotating Argument Components and Relations in Persuasive Essays. In *Proceedings of COLING 2014, the 25th International Conference on Computational Linguistics: Technical Papers*, 1501–1510, Dublin, Ireland.
- Stede, M., Afantenos, S. D., Peldszus, A., Asher, N., Perret, J., 2016. Parallel discourse annotations on a corpus of short texts. In *Proceedings of LREC 2016*, 1051–1058. <https://www.aclweb.org/anthology/L16-1167.pdf>
- Visser, J., Lawrence, J., Wagemans, J., and Reed, C., 2018. An annotated corpus of argument schemes in US election debates. In *9th Conference of the International Society for the Study of Argumentation (ISSA)*, 1101–1111.
- Voloshchuk, I., Usyk, G., 2018. Argumentation in Political Discourse: Semantic, Composition and Stylistic Register. In *Humanities and Social Sciences Review*, 8(2):223–232.
- Wagemans, J. H. M., 2016. Constructing a Periodic Table of Arguments. In P. Bondy & L. Benacquista (Eds.), *Argumentation, Objectivity, and Bias: Proceedings of the 11th international conference of the Ontario society for the study of argumentation (OSSA)*, 1–12.

