

Exploring Argumentation Schemes Used in Discussing Controversial Social Issues

Sarah BOURSE^a, Marie GARNIER^{a,1} and Patrick SAINT-DIZIER^b

^a CAS, Université Toulouse 2 Jean Jaurès, Toulouse, France

^b CNRS-Institut de Recherche en Informatique de Toulouse, Toulouse, France

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1. Aims and motivations

Argumentation schemes aim at representing the structure of common types of arguments used in everyday discourses. In addition to identifying a type of argumentation (e.g. "Argument from analogy," "Argument from expert opinion"), they also indicate generic version of the premise(s) and conclusion for each scheme. One of the most significant features of argumentation schemes is the inclusion of critical questions, that enable a respondent to question the content put forward by the proponent, and therefore lead to the validation or defeat of the argument; for example, for the scheme Argument from expert opinion, one of the critical questions is: "How credible is the expert cited as an expert source?". Modern research on argumentation schemes include defeasible arguments, i.e. arguments that are not strictly speaking logically valid, but are strong enough for their conclusion to be temporarily accepted, until further evidence can be put forward. These types of arguments are especially common in natural language. [1]

The last two decades have seen a dramatic increase in the creation and availability of written content due to the development of communication technologies, and a large proportion of it is argumentative, from news pieces and opinion blogs to comments on various contents and products, for which authors are encouraged to provide arguments to back their opinions.

In this work we propose to study the argumentation schemes used in articles discussing controversial social issues. Our objective is to document the types of schemes used when dealing with social issues, which may appear fuzzier, such as the effects of affirmative action and whether gender parity will be reached soon, and validate their specificities by comparing them with the argumentation schemes used for example when giving an opinion about a product or service [2] [3] [4]. We also aim at identifying their specific realizations in these texts, in terms of format (e.g. subtypes of common argumentation schemes) and linguistic expression in natural discourse.

This research is part of a larger project in the domain of argument mining; one of the challenges of argument mining is to accurately identify supports and attacks for a given claim, which is made difficult by the variety of expressions used in natural discourse [5]. Finding out which argument schemes are more likely to be used when

¹Marie Garnier, Corresponding author, Equipe CAS, Université Toulouse Jean Jaurès, 5 allée Antonio Machado, 31058 Toulouse, France; E-mail: mgarnier@univ-tlse2.fr.

discussing social issues could help tailor argument mining for these topics and therefore render it more effective. A long-term goal is to enable the appreciation of the quality, strength and source of various arguments put forward on controversial social issues, and serve as a complement to critical thinking tools in a context of "post-truths" and "alt-facts". As a further step, the annotation scheme developed for this project allows the inclusion of specific information depending on the argumentation scheme used, such as the strength of the attack or support, or the source or authority providing the statement.

2. Corpus

For this work we have compiled a small corpus of roughly 10,000 words, with texts taken from online newspapers (e.g. *The Washington Post*, *The New York Times*, *The Spectator*), blogs of associations or foundations (e.g. *She Runs It*, *Foundation for Economic Education*) and more official sources (e.g. *NATO Association of Canada*).

We focus on two main domains, affirmative action and gender parity. More specifically, we have selected texts that give attacks or supports for the following claims: "Affirmative action is good for the economy," "Affirmative action is good for minorities," "Gender parity is beneficial," "Gender parity is reachable."

Attacks and supports for these claims are identified and annotated manually using an innovative annotation scheme based on XML frames (which will be presented in detail and made available).

3. Results

The initial study of the corpus indicates a prevalence of certain types of argumentation schemes. Unsurprisingly, argumentation schemes from the "Source-Based Arguments" class are frequent, with higher numbers of "Argument from expert opinion" and "Argument from popular opinion" schemes. This is consistent with the type of texts included in our corpus, which generally come from quality publications and thus strive to provide a credible source for their statements. Arguments from popular opinion are often used for more general statements that are less controversial (e.g. "The idea that persistent gender inequality has very large economic costs is increasingly accepted"). Schemes from the "Reasoning" class are also found, more specifically "Argument from consequences" and "Argument from alternatives".

We also observed that argumentation schemes are often combined in the attacks and supports. The most frequent combinations are those where a source-based argument is combined with one from the "Reasoning" class (e.g. "In a 1999 working paper, the professors concluded that "the empirical case against affirmative action on the grounds of efficiency is weak at best.", combining "Argument from expert opinion" and "Argument from alternatives").

We note that the selection of argumentation schemes is very likely to depend on a multitude of factors in addition to the type of social issue addressed. The genre of the text or the formulation of the initial claim may also be predictive of the type of schemes used.

References

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