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D1.5. Media policy suggestions - DQI

Informed Deliberation and the Digital Age: A Question
of Quality of Media Texts

D1.5. Media Policy suggestions - DQI

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Executive Summary

This policy brief is a result of collaborative efforts that were focused to conceptualize a model to assess the quality of online deliberation. The conceptual prototype was developed by the team of DIGIRES researchers with media and communication, linguistics and machine learning backgrounds.

This report is structured in the following manner. First, it discusses the implications for deliberation and accountable communication as brought by contemporary information disruptions, namely the influx of propaganda and disinformation, abundance of information manipulations, instigations to conflict, radicalization of opinions, and other tensions. Second, based on the results from different (quantitative and qualitative) experimentations, it provides insights about the linguistic specificities of the two types of discourses – that of ‘truthful information’, and that of ‘false information’.

By identifying some of the most obvious linguistic features of the two types of discourses, results of the DIGIRES pilot project could lead far beyond linguistics and offer important broader implications about some key societal issues. In this report, we do not delve deeper into the analysis, and only suggest that linguistic properties of news media discourses can serve as diagnostic symptoms of such disrupting social processes as growing inequalities, social fragmentation, polarization, and miscommunication between the groups of people with differing standings.

Based on the gained experience, the recommendation part of the report suggests some strategies that must be undertaken by different stakeholders (policymakers, media, educators, citizen groups) to curb the conflicts and hostilities that arise between the producers of the two types of discourses. To achieve such an ambitious goal, the study theorizes about the contexts of emergence and functions of such texts.

The insights presented are developed based on the analysis of “static texts”, namely the Internet publications with false content and true content. More research is required to make informed conclusions about the potential for deliberative communication in “dialogic discourses”, namely social media texts.

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1. Introduction

In the time of growing information disorder, the need for accountable communication and informed deliberation is more pressing than ever.

An idealized (normative) view on democracy contends that deliberation has an inherent participatory and educational logic. Though different types of democratic participation and decision making can be found, the political and social arrangements that allow different forms for public deliberation to take place are prized among other types (of more reserved and representative aspects) in the public opinion formation process¹. The process of deliberation is initiated by participating citizens who engage in a civil discourse by identifying important issues to them. Furthermore, as proponents of deliberative democracy contend, through deliberation, citizens become “partners in arms”: they identify problems, share opinions, and come up with potential solutions.

Obviously, the role of news media is essential for deliberation to take place. It is the media and journalists who set the agenda, and frame issues that are important to people. The media also mediate, i.e. create a public arena for citizens to engage and discourses to evolve. Although interactive technologies are intensively used by people to access news, and it looks like journalists and journalism are facing serious professional challenges², from the point of view of democratic and deliberative communication it is journalists who must define the societal significance of news and what issues and whose voices will be heard³.

But for these ideals of inclusive, participatory, and deliberative communication to happen and become effective, certain contextual conditions must be met. First, citizens must access information sources from news media channels. Also, citizens must rely on trustful sources to form opinions.

Such idealized hopes and practices, however, are a sign from the past. With accelerating communication and expanding digital content offers, professional journalism is gradually

¹ Jesper Strömbäck (2005) In Search of a Standard: four models of democracy and their normative implications for journalism, *Journalism Studies*, 6:3, 331-345, DOI: [10.1080/14616700500131950](https://doi.org/10.1080/14616700500131950); Trappel j., and Nieminen, H. (2018). Media and democrcay: A couple walking hand in hand? <https://library.oapen.org/bitstream/id/c1e12e0c-fd25-4b4e-ab62-fc683d0bf85c/645611.pdf>.

² Carlson, M., & Lewis, S. (Eds.). (2015). *Boundaries of journalism: Professionalism, practices and participation*. Abingdon & New York: Routledge.

³ Brüggemann, M. (2017). Post-normal journalism: Climate journalism and its changing contribution to an unsustainable debate. In Berglez, P., Olausson, U., and M. Ots (Eds.). *What is Sustainable Journalism? Integrating the Environmental, Social, and Economic Challenges of Journalism*. New York: Peter Lang, pp. 57–73.

losing its previously dominant role as a meaningful agenda setter. For many groups, traditional news media is no longer the most important news provider. In addition, fewer and fewer people in Europe indicate that their first source of daily news comes from journalistic content. Often, it's the social media sites and feeds⁴.

Against this background, this Policy Brief discusses deliberation quality from the following perspectives:

- Deliberation as a constitutive quality of opinion formation process leading to democratic decision making;
- Quantitative linguistic features of mediated texts;
- Qualitative features, i.e. information verification strategies used in media texts;
- Recommendations towards the development of strategies and interventions such as media literacy and digital resilience development to restore the idea of informed citizenship.

The broader and more ambitious aim of this analysis is to identify strategies to overcome the crisis of growing polarization and declining trust, and to promote insights for the development of a meaningful dialogue in a post-truth era. However, due to the status of the pilot study performed in this project and limits of this Policy Brief, we will limit our task to presenting the proof of concept for an automatic multi-sided approach of DQI and recommendations to fill these gaps.

⁴ See EBU (2022). Trust in media 2022. Public version. European Broadcasting Union Media Intelligence Service; Eurobarometer (2022b). Standard Eurobarometer 97 – Summer Eurobarometer https://data.europa.eu/data/datasets/s2693_97_5_std97_eng?locale=en

2. Deliberation and Discourse Quality: A Multi-sided Approach

Deliberation in Informed Decision Making: How Can It be Revived?

Deliberative communication is advocated by all proponents of informed decision making⁵. To be successful such an idea requires an accessible knowledge structure, such as open and accessible media and education, and citizen engagement and willingness to take part in dialogue, critical thinking, and decision making. The ideal of media as representing and striving to achieve the state of an inclusive public sphere, where people would meet (physically or virtually) to engage in common matters, has been at the center of thinking of the current scholarship in media, political communication, as well as education. The idealistic side of such a public sphere rests on its social inclusion, which is far less obvious if measured against the current trends of mediated conflicts, radicalization of public discourse and online hate speech.

Though deliberation is widely suggested as a strategy for informed opinion making, its expectations are based on certain assumptions, such as access to information, inclusion, etc. Many of these assumptions are difficult to control and make relevant assessments. Also, deliberation is incorporated in many programs applied by policymakers, but the practicality and political significance still causes some doubts. Policymakers use deliberation mostly to justify political decisions. In short, deliberation is an idealized category, though the concept receives a growing popularity in contemporary scholarship and revival of discursive democracy.

Recently, deliberation has been proposed as a beneficial mechanism and intervention to overcome growing problems of (dis)misinformation. One of the findings is that deliberation reduces belief in false (but not true) news headlines. Research shows that the intuitive mode of processing dominates on social media (in those so-called “dialogic texts”), hence all interventions that promote deliberation may be effective, and encouraging people to think more might be effective⁶. On the other hand, “static texts”, namely the professional journalistic

⁵ Englund, T. (2006). Deliberative communication: a pragmatist proposal. *Curriculum Studies*. VOL. 38, NO. 5, 503–520.

⁶ Bago, B. et al. (in press). Fake news, fast and slow: Deliberation reduces belief in false (but not true) news headlines. *Journal of Experimental Psychology*. DOI: <http://dx.doi.org/10.1037/xge0000729>.

news genre, have an implicit system, which determines the deliberative aspects of news by framing and including those voices which should be heard because they matter to the story⁷. But, of course, problems arise when journalistic genres become exploited by different agents for harmful purposes.

All in all, disinformation is corrosive to democracy as it disrupts the informed decision making process. Research tells about anti-deliberative claims in disinformation texts contributing to the rise of anti-systemic cynicism⁸. These tactics go against policy's goals of deliberative communication that is built on facts and inclusiveness.

Adapting the Discourse Quality Index (DQI) for Assessing Fake News in Internet Media

A point of departure for our work was the 'discourse quality index (DQI)' outlined and developed in the seminal work of Steenbergen et al. (2003)⁹. Their study aimed to calculate the discourse quality of parliamentary proceedings, and for this purpose, they proposed **six quality indicators**: *participation, level of justification, content of justification, respect, counterarguments, and constructive politics*. Each indicator was assigned a maximum value of 1, 2, or 3 points, for a total DQI score of 14. In their demonstration of the methodology, the researchers who developed the original DQI hand-coded parliamentary speeches from the UK parliament, achieving an acceptable level of inter-coder reliability.

The model was originally developed for offline communication, but we try to adapt it to "static texts" (similarly to Fournier-Tombs and Di Marzo Serugendo 2020)¹⁰. This measure is established to assess observable behavior, which in our case is news reporting in Internet media (fake news as contrasted to factual news).

The quantitative and qualitative experimentation results that we present in this report are based on the assumption that identifying and filtering out texts that contain deliberately

⁷ Brüggemann, M. (2017). Post-normal journalism: Climate journalism and its changing contribution to an unsustainable debate. In Berglez, P., Olausson, U., and M. Ots (Eds.). *What is Sustainable Journalism? Integrating the Environmental, Social, and Economic Challenges of Journalism*. New York: Peter Lang, pp. 57–73.

⁸ McKay, S., & Tenove, C. (2021). Disinformation as a Threat to Deliberative Democracy. *Political Research Quarterly*, 74(3), 703–717. <https://doi.org/10.1177/1065912920938143>

⁹ Steenbergen, M., Bächtiger, A., Spörndli, M. et al. (2003) Measuring Political Deliberation: A Discourse Quality Index. *Comp Eur Polit* 1, 21–48. <https://doi.org/10.1057/palgrave.cep.6110002>

¹⁰ Fournier-Tombs, E., & Di Marzo Serugendo, G. (2020). DelibAnalysis: Understanding the quality of online political discourse with machine learning. *Journal of Information Science*, 46(6), 810–822.

falsified information may help to improve deliberation processes. In other words, we assume that if deliberately falsified information is removed from an arena of discussion then the debating parties may concentrate on issues other than refuting fake news and, consequently, deliberation quality indicators may improve.

Our approach incorporates interdisciplinary research methods and thus different techniques to develop the DQI model for the context of fake news this way ensures the triangulation of methods. The methodological-analytical frameworks applied in DIGIRES project include journalistic and media analytical approaches (including survey data and fact checking, interviews with journalists and experts, secondary data analysis), machine learning techniques, and discourse analysis (mainly critical discourse analysis rooted in the framework of linguistics).

In this report, we will refer to linguistic analysis approaches, namely machine learning and discourse analysis.

3. Automatic and Discourse Analytical Approaches to Disinformation Analysis

Since the DQI was first published, subsequent iterations of the index have sought to address some of its weaknesses, namely, subjectivity and validity. Eleonore Fournier-Tombs et al.¹¹ have used a modified version of the discourse quality index (DQI) (DQI 2.0) to illustrate how machine learning algorithms can be trained to accurately predict human coding behaviors, facilitating the possibility of processing huge amounts of unstructured data. Their focus was on using supervised machine learning techniques to code the deliberative quality of legislative speeches. Their index contains 12 indicators which are designed to measure both positive and negative aspects of deliberation.

Despite attempts to reconceptualize the original DQI and align it better with current deliberative theory, one major challenge persists: the attempt to adapt the deliberation measure to large amounts of data. This challenge further combines with other methodological issues. Recent and future research are and may be more interested in content (surface-level and lexical aggregation) assessment, internet-enabled deliberation assessment and context-specific sensitive assessments of deliberative quality, requiring that we focus on more variegated configurations of the various standards of deliberative quality¹².

The ‘unitary deliberator model’ of the original DQI has come under attack in the past decade. Several scholars have argued that deliberation should not be conceived of as a ‘single evaluative whole’¹³. According to Thompson, aggregating deliberative quality into a single indicator may obscure the distinct strengths and weaknesses of different deliberative standards.

Thus, following ideas of the previous studies we propose a multi-sided approach that can be divided into two distinct analysis parts: 1) quantitative, i.e. machine learning and content-based features distribution analysis (subsection 3.1); 2) qualitative, i.e. evaluation of a discourse by human experts (see subsection 3.2).

¹¹ Fournier-Tombs, E., & MacKenzie, M. K. (2021). Big data and democratic speech: Predicting deliberative quality using machine learning techniques. *Methodological Innovations*, 14(2).

¹² Bächtiger, A., and J. Parkinson. (2019) *Mapping and Measuring Deliberation: Towards a New Deliberative Quality* (Oxford, 2019; online edn, Oxford Academic, 24 Jan. 2019), <https://doi.org/10.1093/oso/9780199672196.001.0001>, accessed 17 Feb. 2023.

¹³ Thompson, D. F. (2008) *Annual Review of Political Science* 11:1, 497-520.

Machine Learning and Automatic Analysis of Content-based Features of Internet Media Texts: Important Lessons

For a long time, studying the processes of deliberation empirically was a highly demanding and time-consuming endeavor, requiring in-depth content analysis and extensive reliability testing. Computer-assisted textual analysis can help to speed up data collection and supersedes reliability testing. The automation of the DQI was taken recently with DelibAnalysis, which used machine learning to derive scores for online deliberations with politicians¹⁴, as well as an updated version for parliamentary deliberations in the three Canadian Territories¹⁵.

Considering the theoretical background of Deliberative Quality Indicators, Shin and Rask (2021) indicate that online deliberation research is an emerging strand of deliberation research that focuses on three aspects of internet-enabled deliberation: input, throughput, and output¹⁶. An input aspect sheds light on the preconditions of deliberation. Institutional arrangements (e.g., participatory budgeting), platforms (e.g., government-run platform), and socio-political elements (e.g., internet access rate and social strata) are examples of such. A second aspect is related to outcomes resulting from online deliberation—be they internal (e.g., knowledge gains and digital citizenship) or external effects (e.g., policy changes and side effects). A third aspect concerns processes through which multiple stakeholders participate and build consensus democratically. Shin and Rask rightly argue “that the online deliberative quality could be measured using automated computational methods to provide criteria-based quality information that helps stakeholders and managers of deliberative processes to identify ongoing problems and fix them during the process”.

Our automatic analysis is based on the distribution of content-based features in Lithuanian internet media texts. It is important to note that due to a relatively small Lithuanian training dataset, our approach does not ensure correct identification of misleading or false information in Lithuanian media texts, rather it can be seen as a tool for human analysts to identify texts that may contain false or misleading information.

¹⁴ Fournier-Tombs E, Di Marzo Serugendo G (2020) DelibAnalysis: Understanding online deliberation through automated discourse quality analysis. *Journal of Information Science* 46: 810–822.

¹⁵ Fournier-Tombs, E., & MacKenzie, M. K. (2021). Big data and democratic speech: Predicting deliberative quality using machine learning techniques. *Methodological Innovations*, 14(2).

¹⁶ Shin, B., and M. Rask. (2021) "Assessment of Online Deliberative Quality: New Indicators Using Network Analysis and Time-Series Analysis" *Sustainability* 13, no. 3: 1187. <https://doi.org/10.3390/su13031187>.

In order to develop a predictive model for detection of disinformation in Lithuanian media articles, we have tested a multi-aspect assessment approach, which consists of two different analyses: 1) machine learning based assessment approach, and 2) ensemble assessment approach, that takes into consideration analysis of the title and other content-based features evaluation (Linguistic, Style, Semantic).

The following sections give detailed descriptions of different aspects of our approach.

Dataset

The dataset for the analysis was obtained by scraping media articles from open access Lithuanian websites. The dataset is limited to media articles written in Lithuanian on the topic of COVID-19 and vaccination. Credible and non-credible sources were indicated by professional fact checkers: 1) media articles with fake news content were scraped from *www.minfo.lt*, *www.laisvaskrastis.lt*, *paranormal.lt* and other non-credible sources; 2) media articles with trustworthy content were scraped from *www.lrt.lt* and *www.delfi.lt*.

After the collection of textual material, it had to be preprocessed for the quantitative analysis, Title of the article was separated from the body text of articles by an empty line. After this, text is split into words and into sentences. For this task we have used our own tokenizer and sentence splitter with additional rules for abbreviations etc.

Additionally for the machine learning approach texts need to be vectorised. Given the specifics of our dataset, we have tested TF-IDF and Fasttext vectorisations (for details see D2.1 Report)

Machine learning based assessment approach

Vectorised texts have been passed to a machine learning algorithm to evaluate its veracity and to ensemble algorithms systems to evaluate other features. For text vectorization we have used methods described in D2.1 Report.

Machine/deep learning classifier for fake news detection in the body text of an article (described in D2.1 Report). The result of the classifier is in binary format: “0” for “OK” and “1” for “must be revised”. In such a way, the decision on veracity of text in consideration is left to a human analyst. Because of the small training set, our machine learning based solution achieved low precision rate (described in D2.1 Report). But it is enough for our proof of concept stage.

Ensemble assessment approach

The ensemble method is based on the comparison of distribution of different linguistic, style, and semantic features in credible and non-credible texts.

Analysis of titles. Due to the huge amount of daily information, the vast majority of readers read only titles of articles. For this reason, fake news creators use various techniques to attract the attention of readers. One of them: emotionally charged long titles (in Lithuanian case - longer than 12 words). It submits the binary conclusion: “0” for shorter than 12 words, “1” longer than 12 words. Our research results have identified a problematic situation. In the case of the tabloid source (www.laisvaslaiktrastis.lt), the analysis of the headlines clearly showed a tendency towards fake news. In the case of www.minfo.lt and, in most cases of www.sapereudire.lt, the analysis of the headlines did not show a tendency towards fake news. That indicate, that “bad” journalism in some cases tend to imitate “good” journalism.

Analysis of linguistic-based features. Linguistic-based features aim at capturing the overall intricacy of the news, both in the sentence and word level. They are morphology level features. Part of speech feature distributions can be calculated by using POS tools. POS tools analyze the basic grammar of a text and ‘label’ it with the appropriate parts of speech. Some studies show that particular distributions of parts of speech may reflect different text functions and might be important for text classification tasks. For example, when nouns prevail in texts, then texts are more informative. When verbs prevail in texts, then they tend to be more opinion based. Our research results have identified a problematic situation. In the case of www.minfo.lt and www.delfi.lt the analysis of the linguistic-based features did not show a tendency of www.minfo.lt towards fake news (see Fig. 1). That indicates that “bad” journalism in some cases tends to imitate “good” journalism. And goes in support of our conclusion that ‘single evaluative whole’ cannot be used.

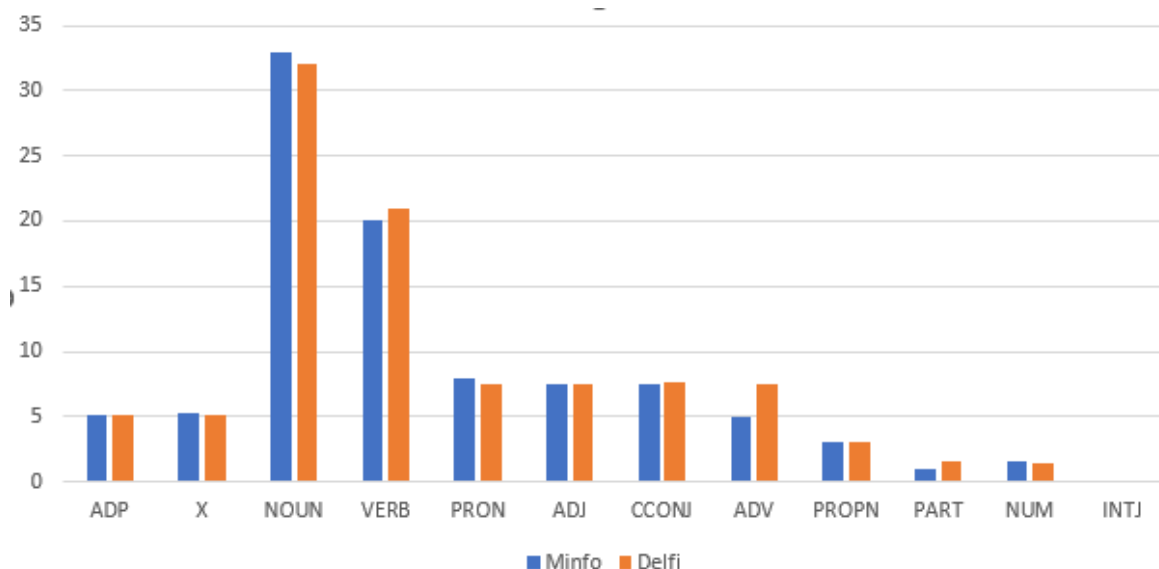


Fig. 1. Distribution of POS in Delfi.It vs. Mininfo.It

Analysis of style-based features. Style-based features use NLP techniques to extract grammatical information from each document, understanding its syntax and text style. Sentence level features to quantify a reading difficulty score. Complexity metrics are inspired by readability indexes, such as Simple Measure of Gobbledygook (SMOG) Grade and Automated Readability Index, which use word and by counting the number of unique words divided by the total number of words, measuring the vocabulary variation of the document. Those textual statistics are intended to help the characterization of the complexity of differences between news classes. Type-Token Ratio (TTR) is also extracted. The Stylometric features take into account more advanced NLP techniques to extract grammatical and semantic characteristics from the text. Both of them use computational linguistic methods and are content based. Our research results have identified a problematic situation. In the case of the non-credible source (www.laisvaslaiktrastis.lt), the analysis of the headlines clearly showed a tendency towards fake news. In the case of www.minfo.lt and, in most cases of www.sapereudire.lt, the analysis of the headlines did not show a tendency towards fake news. That indicate, that “bad” journalism in some cases tend to imitate “good” journalism

Analysis of semantic-based features. Semantic-based features use NER and sentiment analysis techniques to extract named entities (persons, locations etc.) and classify emotion level in the text (neutral, positive, negative). NER analyser supplies the number of persons and geographical locations in relation to the total number of words in an article. In general, in real news the number of named entities is greater than in fake news. That is a signal that real news has more argumentations and indications to external sources. Our research results

have identified a problematic situation. In the case of the tabloid source (www.laisvaslaikrastis.lt), the analysis of the headlines clearly showed a tendency towards fake news. In the case of www.minfo.lt and, in most cases of www.sapereudire.lt, the analysis of the headlines did not show a tendency towards fake news. That indicates that “bad” journalism in some cases tends to imitate “good” journalism. In real news sentiment must be prevalently “neutral” (indication of fact statement), avoiding emotional involvement of author/reader. But also in this case our research results have identified a problematic situation. In the case of the tabloid source (www.laisvaslaikrastis.lt), the analysis of the headlines clearly showed a tendency towards fake news. In the case of www.minfo.lt and, in most cases of www.sapereudire.lt, the analysis of the headlines did not show a tendency towards fake news. That indicate, that “bad” journalism in some cases tend to imitate “good” journalism

Results

Based on the machine-learning and ensemble method classifiers, the level of veracity of a given article may be judged as follows:

- the article stays at a High Level of veracity, when the article is classified as “real” according to evaluations of all automatic measures;
- the Level of veracity of the article is changed from High to Low, when the article is classified differently by the machine-learning and ensemble methods. In this case the article is passed to a human analyst;
- the article stays at a Low of veracity, when the article is classified as “fake” by evaluations of all automatic measures. In this case the article is passed to a human analyst.

Limitations

Our research results show that the evaluation of content-based features does not suffice. Additional features must be considered to acquire the possibility to identify fake news that are generated by robots based on large language models (e.g. GPT3, GPT4, chatGPT, Bard, etc.). The quality of so generated texts is very similar to the quality of human generated texts.

We can predict that in order to evaluate the veracity of automatically generated articles, we will be forced to use neural language models, because the texts generated by SOTA robots are very similar to ones on which the robot was trained. The entire evaluation will be based

on discourse analysis and thesis-argumentation (rhetorical) analysis. That will be the next step in Natural Language Understanding.

Discourse Analytical Approach to Text Analysis: How does Modality Matter?

For the qualitative part, the six quality indicators proposed by Steenbergen et al. (2003) - namely, *participation*, *level of justification*, *content of justification*, *respect*, *counterarguments*, and *constructive politics* - were considered and modified by adapting them on the basis of our results. In our model, we regard counterarguments as being part of justification, and thus this criterion is not considered autonomously but is integrated in the category of 'justification'.

We therefore propose five quality indicators, which are outlined below.

Participation

Our focus in this project was on news media texts where interruptions, overlapping speech, or other disruptive behavior cannot occur just technically (in contrast to parliamentary debates in Steenbergen et al. 2003)). Thus, restrictions on participation were assessed by considering the spectrum of viewpoints covered in disinformation texts and mainstream news. The results revealed that a larger diversity of views is represented in mainstream media, and in disinformation texts there is evident polarization: two views are explicitly opposed, one being right (anti-vax) and the other one (pro-vax) being wrong. The use of quotes also supports this trend: a larger diversity of external sources is quoted in mainstream media and the references to the sources are more specific than in disinformation texts.

Respect

Implicit and to some extent explicit disrespect toward opponents (fact checkers, mainstream media, experts in healthcare and academia, etc.) appears in fake news. Disrespect manifests itself predominantly through the use of irony and sarcasm (e.g. references to fact checkers are made by using inverted commas to indicate that they are not real or trustworthy) and scare tactics (e.g. scholars, doctors, and pharmacists developing vaccines are framed as a threat to society, as being corrupt, and having vicious goals).

Level of justification

This measure is primarily quantitative; to assess the level of justification, the frequency of different linguistic categories and argumentative strategies was compared in the two datasets (fake and factual news). The results show that overall, both types of texts extensively use justification (or legitimation) strategies. When it comes to the language of information and that of disinformation, there is no clear-cut distinction. The conventions of the genre of news reporting are adhered to in both factual news articles and fake news articles, and the

distinction between the two lies in some subtleties of the way some conventional features are used (cf. Mahyoob et al. 2021). Disinformation texts are texts in disguise, which are based on simulation/imitation of “serious” genres and blended with more popular genres (cf. *metamimesis* in Horbyk et al. 2021; see also Molina et al. 2021). That is, similarly to factual news reports, disinformation texts mimic informative style and tend to take a pseudo-scientific stance, but at the same time they also tend to have features of argumentative style (more characteristic of debates, not news articles, although they may appear in opinion pieces).

Content of justification

Just like the level of justification is similar in disinformation and factual texts, so is the content: the two text categories again differ just in some subtleties and the frequency of some properties rather than some distinctive, straightforward, and definitive properties. Automated text analysis at the micro-level focusing on some specific surface-level linguistic properties (such as sentence length, word length, the use of quotation marks, etc.) has revealed that there are no *categorical* criteria to distinguish disinformation and factual texts, but there are some noteworthy differences in the frequency of these categories.

At the level of discourse analysis, it appears that disinformation is masqueraded as factual information through the use of some specific legitimization strategies¹⁷, which also appear in mainstream news. These strategies are often based on some predictable, archetypal narratives in the broad sense, and some specific linguistic resources forming very complex inventories. The main differences between the two datasets emerge when larger argumentation constructs are considered.

Both disinformation and information use the following legitimization strategies:

- refer to authorities and quote them (authorisation strategy),
- resort to moral evaluations through references to value systems (the strategy of moral evaluation),
- use rational or supposedly rational arguments (the strategy of rationalisation achieved by (a) focusing on the purpose or effectiveness of some practice and (b) by providing some theoretical grounding through definitions, explanations, and predictions of activities),
- use narratives/storytelling whose outcomes reward legitimate actions and punish non-legitimate actions.

¹⁷ For the purposes of this study van Leeuwen’s (2007, 2008) categories were applied: authorisation, moral evaluation, rationalisation, and mythopoesis (or storytelling, (re)production of moral tales and cautionary tales).

Though these strategies occur in both datasets, their frequency differs, but the most dramatic differences manifest in terms of the storytelling technique, or the use of some myths or tales in van Leeuwen's terms. Disinformation texts employ this strategy considerably more frequently than mainstream news.

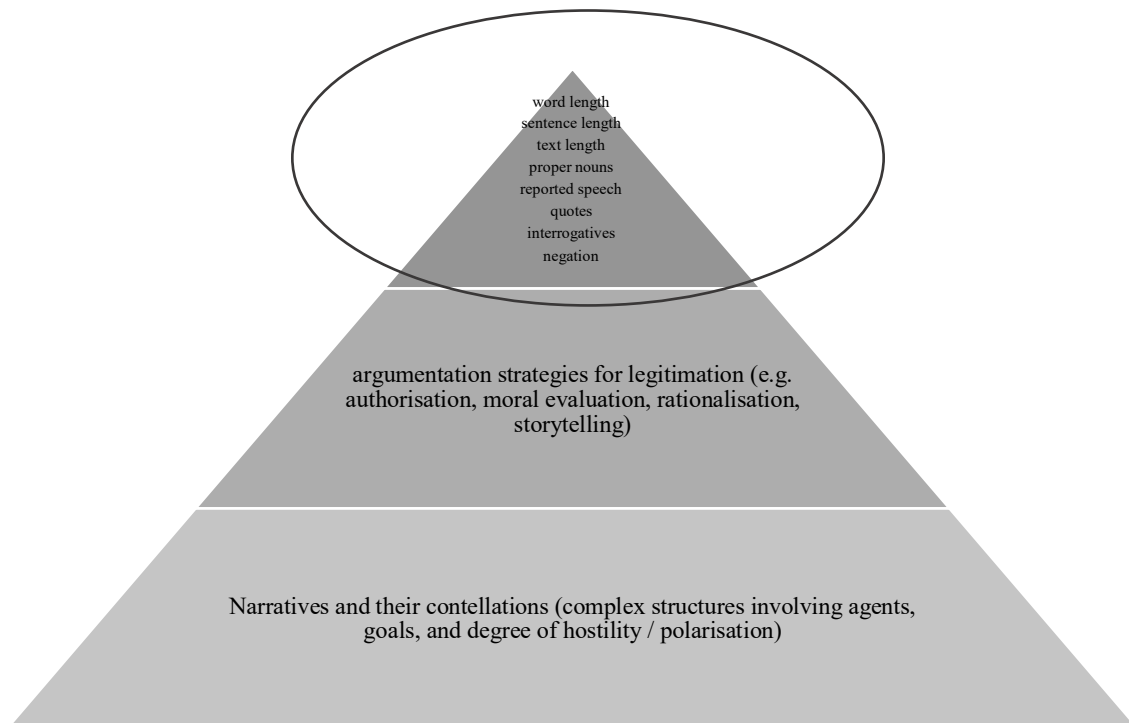
The results show that both disinformation and factual information share a number of commonalities at the micro-level (the smaller the unit of analysis, the less evident the differences are), but the larger the categories, the more definitive differences emerge. **Based on our results, it can be argued that disinformation texts differ from mainstream news mainly in terms of:**

- **agents:** US/the good (those resisting the government, the rich, scientists, mainstream journalists) vs. THEM/sinister agents/the evil,
- **goal:** disinformation is enemy-oriented in contrast to mainstream media being primarily solution-oriented,
- **orientation towards consensus:**
 - disinformation is hostility-driven and hostility-oriented,
 - disinformation narratives are centered around the Enemy (Us vs. Them): they deliberately produce polarising discourses and kindle animosity.

The above-mentioned features are typical properties of hostile discourses in general and as such characterise discriminatory discourses, hate speech, and stereotypes. Thus, we argue that it is important to consider not only surface-level and micro-level features, since larger units of analysis (such as argumentation techniques or strategies, larger constellations of narratives) can help to avoid topic-specific features, which also emerged in this project, but their applicability is limited to the scope of the topic. Importantly, larger units lead to constructs that are not imitated in fake news. The micro-level properties are easier to mimic and are predominantly used to masquerade disinformation, but the macro-level properties are not for imitation – they are the foundation of the discourse.

4. Discussion: The Agentive Element in Constructive and Deliberative Politics

Schematically, the overlapping and distinct properties identified in both quantitative and qualitative analysis can be represented as follows (see the illustration below):



The tip of the pyramid is where imitation takes place the most, and the bottom layer is where the texts diverge in some fundamental ways and where the value systems and ideologies emerge. More specifically, imitation, or mimicry, manifests itself in the use of quotations and reported speech, nominalisations, numerical references, proper nouns, (pseudo-)scientific arguments, and other surface-level features. Larger structures such as narratives and storytelling are more value-driven and value-based and thus diverge in fake and factual news (for examples from the empirical materials and a more detailed commentary, see Ruzaité’s paper in the Deliverable **D1.4. Scholarly articles**).

It is easiest, though, to observe surface-level features (therefore, disinformation texts are so manipulative), but for the larger constructs at the bottom of the pyramid, critical reading skills and a more holistic (all-inclusive) approach are required.

Critical reading thus should develop the skills of noticing both similarities and differences between texts as both are indicators of disinformation. **Disinformation, in broad terms, is marked by two important properties:**

- **imitation of serious genres,**
- **and a distinct ideological agenda based on a specific conflicting value system.**

Following Cohen (1989: 23), *constructive politics* is understood as the goal “to arrive at a rationally motivated consensus”, which is possible only in ideal deliberation but still should be an important aspiration in constructive communication (see also Steenbergen et al. 2003). Considering the high degree of categoricity, predominance of binary distinctions, and an explicit dichotomy of views in disinformation texts, it is unlikely that there is space for consensus in such discourses. In disinformation, hostility seems to be the backbone of their discourse; the enemy is consciously constructed and maintained, so consensus is not welcome.

On the other hand, the mainstream media tries to be more representative, i.e., by setting agendas and framing news to meet the aims of common interest. Still, it is questionable if there is a possibility for reconciliation there either: there is a chasm between the two groups in terms of the overall goal and the value systems (e.g. value and authority of science, which disinformation texts categorically undermine).

Thus, constructive and deliberative politics seems to be possible only within each group but not between them, which is a main challenge when countering disinformation.

To address a challenge and a problem of such scale, a much more focussed scholarly attention towards critical reasoning, which runs on *agentive features* of the meaning making processes is required.

Definition of ‘human agency’ refers to the capacity of the individual to rationally respond to practical situations, which arise based on the individual’s contact with reality, for example, with mediated and non-mediated messages. In digitally mediated confrontations with reality, such as accessing content on social networks, the agentive aspect of one’s mental actions is dependent on the association between motivation and knowledge (arousal and other reactions), on the one hand, and changing media conditions, on the other. Besides, human capacities are instigated and driven by differing norms: just the mere fact that an agent’s act

is based on false belief does not constitutively impair his or her ability to make decisions and act (O'Brien & Soteriou, 2009). Like it was revealed in the pilot survey¹⁸ conducted within the DIGIRES project and also in other comparatives analyses¹⁹: generally, people tend to overestimate their ability to recognize false information. Over two thirds of respondents confirmed that they are confident and trust their ability to discern false information. Furthermore, more than half of those who said they noticed such false information were inclined to share fake news with others. Even though different reasons were listed to justify such a behavior (sharing disinformation because it looks like real information, or sharing for fun), such an act of spreading disinformation further does not constitute resilient and responsible behavior. Contrarily, an agent sensitive to epistemic indicators of the text should be able to grasp these signals and discern these from mere instrumental norms signaling appraisal (and, potentially, manipulations). In other words, a critical thinker must recognize and carefully follow not only the outcomes of his or her mental actions, but also the epistemic norms involved in the process.

Human agency is constituted by one's capacity and responsiveness to reality by adjusting one's behavior considering the evaluative judgments made by one's practical reasoning. If we contend that agency is the capacity to make decisions based on one's own judgments (knowledge), beliefs, and values, and to respond to digitally mediated situations, then it is critically significant to assess how people reflect on such a capacity. In other words, the question is whether people feel empowered by the surrounding media-rich reality and motivated to participate and act responsibly (not only responsively!) in mediated circumstances, or, on the contrary, they feel deprived. And if so, who (which institutions - media, education, and policymakers) should take the lead in resolving such a situation?

To conclude, agency is a complex concept, involving both personal and collective aspects. It is important to consider how people's agency is being shaped by the digitalized reality, which is and what is the role of media, education, and policymakers in supporting people's capacity and motivation to act responsibly and to take informed decisions. As indicated, more data and knowledge is required to understand the ways in which people interact with and are shaped by digital media: what choices they make and whether they feel empowered by their digital

¹⁸ See report 'State-of-the-art: A report on current issues, methodologies, and needs in anti-disinformation actions in a small state' (<https://digires.it/en/testtt>).

¹⁹ See EBU (2022). Trust in media 2022. Public version. European Broadcasting Union Media Intelligence Service; Eurobarometer (2022b). Standard Eurobarometer 97 – Summer Eurobarometer https://data.europa.eu/data/datasets/s2693_97_5_std97_eng?locale=en

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surroundings (texts, images, sounds) and motivated to participate and act responsibly in mediated circumstances.

5. Conclusions and Recommendations

Though this study was defined as a pilot project, it provides interesting findings. More research is required to assess the potential of public deliberation in the time of multiple information disruptions. Applications of the DQI methodology is a good starting point for deeper enquiries of discursive aspects of mediated texts. Although the DQI (Steenbergen et al., 2003) was originally developed to analyze parliamentary speeches, it has been used in other fora such as minipublics (Marcus et al., 1993), deliberative blogs, and social media (Fournier-Tombs and Di Marzo Serugendo, 2020). Similarly, our methodology could be applicable to any deliberative article.

It is our hope that this methodology will enable researchers to more effectively analyze deliberative quality and many other features of media articles.

By identifying some of the most obvious linguistic features of the two types of discourses, DIGIRES research results lead far beyond linguistics and offer important broader implications about some key societal issues. This report thus exposes how linguistic properties of news media discourses can serve as diagnostic symptoms of such disrupting social processes as growing inequalities, social fragmentation, polarization, and miscommunication between the groups of people with differing standings and demonstrates.

Based on the research results, the recommendations part of the report suggests some strategies that must be undertaken by different stakeholders (policymakers, media, educators, citizen groups) to curb the conflicts and hostilities that arise between the producers of the two types of discourses. To achieve such an ambitious goal, the study theorizes about the contexts of emergence and functions of such texts.

Once again, it is important to remember that the insights presented are developed based on the analysis of “static texts”, namely the Internet publications with false content and true content. More research is required to make informed conclusions about the potential for deliberative communication in “dialogic discourses”, namely social media texts.

Recommendations for policy

False content can also have a damaging effect for the rise of communicative inequalities. With diversification of media channels, it is more likely that certain communities and individuals may be exposed to different types and different quality of content. Policymakers must provide support and interventions (access to different media, lifelong learning, culture programs) to the most vulnerable groups to build required epistemic capacities for resilience development.

Policy makers must promote collaborative governance strategies to foresee the development of a resilient society. For such a purpose, it is vitally important to seek new forms (networks, platforms) for collaborations among the different institutions engaged in knowledge development and transfer, such as media, schools, libraries, museums, creative industries. These institutions should focus on community and civic engagement, participate in the formations of public policy, and the development of social capital.

Recommendations for research

First and foremost, future research should unify fragmented approaches to the analysis of disinformation and develop a collective effort to enhance a multi-dimensional set of criteria for (automated) identification of disinformation. The current research shows that different approaches can usefully inform researchers on different levels forming multidimensional maps of linguistic properties salient in different discourses.

Secondly, since disinformation is not completely homogeneous, there is also a need to explore different types of fake news, which was not accounted for in the present analysis.

Another potential field of research that is largely unexplored is contrastive analysis of disinformation (the project *Fakespeak – the language of fake news*²⁰ is one of the few recent attempts to compare several languages – English, Norwegian and Russian).

Importantly, considering that disinformation (and supposedly disinformation in other lesser used languages) predominantly includes republished materials from English sources (80% of the data collected for the research based on discourse analysis), it is also of paramount importance to consider methodologically how such texts should be approached. It is questionable whether it is likely that some distinct language-specific features can emerge in fake news published in lesser used languages, but to answer this question not just hypothetically, a more systematic analysis is needed. For the time being, it can be presumed that when analysing such fluid phenomena as disinformation, the role of language arguably becomes just instrumental: English texts are generated fast and profusely, can be easily translated by fake news producers into different languages and disseminated in fluid media spaces, often making it impossible for the researcher to know the original source, the translation tool, or the author's personal input into the output text. When large amounts of data are collected for corpus analysis, this meta-information can be difficult to control, but in contrastive (socio)linguistics these are central variables.

²⁰ <https://www.hf.uio.no/ilos/english/research/projects/fakespeak/>

Finally, another major concern is the very size of disinformation corpora. When lesser used languages like Lithuanian are studied, the number of texts available is highly restricted, and this means that perhaps only small opportunistic corpora are possible.

Recommendations for media and fact-checking

Journalism is an important part of a functioning democracy. But journalism needs to take radical action to protect its professional boundaries. As revealed in DIGIRES analyses, false information texts are copying stylistic and linguistic features of journalistic products, which makes it difficult for readers to discern truth from fake attributes.

Recommendations for educators and citizen groups

It is imperative to:

- foster the understanding that imitation of serious genres is an important indicator of disinformation and information manipulations;
- develop immunity to disinformation and manipulation by systematically following / consuming different information sources, especially the ones that represent opinions diverging from the person's standpoint;
- focus on value systems in addition to media literacy skills.