

LATIP 2021**International Conference on Language and Technology in the Interdisciplinary Paradigm****COMPARATIVE CHARACTERISTICS OF INFORMATION
SOURCES IN ENGLISH AND GERMAN ARCTIC MEDIA
DISCOURSE**

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(a) Northern (Arctic) Federal University, Arkhangelsk, Russia
t.astahova@narfu.ru**Abstract**

Problems of the Arctic region are often covered in the media of different countries of the world. The article focuses on comparative characteristics of references to information sources in English and German arctic media discourse. The markers of categories “evidentiality” and “quotation” provide references to information sources and increase the credibility of media texts. The purpose of this research is to reveal differences in the way of introducing information sources and in their semantics. Arctic media texts devoted to the environmental issues of the Arctic region served as the material for this study. The media texts were taken from online versions of English and German newspapers. The continuous sampling method, the statistical method, the semantic and comparative analyses were used. The study results show that evidential meaning “quotative” most often occurs in German arctic media discourse, whereas full quotation prevails in English arctic media discourse. The examples of direct evidentiality, hearsay and fragmentary quotation are scarcely represented in both languages. Particular researchers and experts are the most frequent information source in arctic media texts in both languages. There are also references to generalized designation of researchers and experts, specialists, documents, results of research and media in English and German arctic media discourse.

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1. Introduction

The Arctic possessing huge reserves of natural resources is a region of crucial importance for both the Russian Federation and other states of the world. Therefore, the Arctic is prone to anthropogenic impact; in this connection ecological problems of this region have acquired considerable significance in recent years. As a result, ecological issues of the Arctic are often covered in the media of different countries.

Media texts devoted to problems of the Arctic region are called arctic media discourse. Avdonina and Dolgoborodova (2018) understand under arctic media discourse “the interpretation in the public consciousness of information about the Arctic region, its development and involvement, and the empowerment of this phenomenon with the direct participation of the media” (p. 152). Bulatova (2016) defines this term as verbal and cognitive activity in mass media space focused on issues of the Arctic exploration (p. 88).

Fake news damage credibility of modern media texts (Edson et al., 2017), hence it is highly important to take into account features of reliable information. One of the features of media texts credibility is the presence of references to information sources (Baum & Rahman, 2021; Soto-Escobar & Espejo-Cala, 2019).

2. Problem Statement

The linguistic category with the general meaning “reference to information source” is called evidentiality (Aikhenvald, 2004; Fetzer & Oishi, 2014). Evidentiality does not cover all the cases of references to information sources, therefore another linguistic category should be considered in this article – quotation. Thus, it is reasonable to consider the differences between these categories.

Evidentiality includes two meanings: direct and indirect evidentiality. Direct evidentiality shows that the speaker has obtained information by means of sensory perception. The perception can be visual or other sensory (acquired through hearing, smell, taste or touch). Indirect evidentiality consists of two meanings: inferred and reported evidentiality. Inferred evidentiality is based on visible or tangible evidence, or on logical reasoning (Plungian, 2001; Willett, 1988).

Reported evidentiality consists of hearsay and quotative. Hearsay means that information was reported and this is marked in the text, but there is no reference to the particular information source. By quotative, there is an overt reference to the information source in the text (Aikhenvald, 2004, pp. 63-65).

The main aim of quotation is also providing a reference to the information source (Baker et al., 2017; Nádraská, 2017). But the structure of this category is of another type. Quotation includes the following types: full quotation, indirect quotation, fragmentary quotation and generalized quotation. Full quotation means that direct quote is given in the text. By indirect quotation, words of the information source are given in the form of an indirect quote. Fragmentary quotation means that the direct quotation is partially presented in the sentence. Generalized quotation implies that the generalized form of a quote is given (Tibin'ko, 2018, p. 27).

Hence these two categories overlap because they have one general area – reported evidentiality and indirect quotation.

Evidentiality in English and German language is a functional-semantic category, because it is expressed through means of different levels of the language: lexical, grammatical and lexico-grammatical (Astakhova, 2015; Kobrina, 2003). Quotation is considered as an intertextual category (Varchenko, 2012).

References to information sources in modern media increase the level of information credibility. It should be noted that different information sources correlate with various levels of credibility. Thus, the research shows that social media are perceived as the least credible, online media are perceived as moderately credible and traditional offline sources are considered being the most credible (Kruikemeier & Lecheler, 2018).

The attempt was made to connect the type of newspapers with the credibility of the information source. Previous research has established that online papers use more transparent-credible sources and objective verbs while traditional offline papers contain less transparent-credible sources and unobjective verbs (Lee, 2017).

3. Research Questions

The results of this study will answer the following questions:

- What types of references to information sources are there in English and German arctic media discourse?
- Are these references included in the category “evidentiality” or “quotation”?
- What are the information sources which English and German arctic media texts refer to and how can they be classified?
- What are the most frequent information sources in arctic media discourse?

4. Purpose of the Study

The purpose of this study is to analyse and compare references to information sources in English and German arctic media discourse devoted to environmental issues.

5. Research Methods

Modern media texts published in online English newspapers “The Independent”, “The Guardian”, “The Telegraph” and in online German newspapers „Die Tageszeitung“, „Die Zeit“, „Süddeutsche Zeitung“, „Frankfurter Allgemeine Zeitung“ served as the material for this study. All analysed media texts are devoted to the environmental issues of the Arctic region. The first step in this research was to select 300 English and 300 German utterances with references to information sources by the continuous sampling method.

At the next stage the statistical method was employed. All the utterances with information sources were to undergo the classification process according to the type of expressing the information source. Utterances with different evidential meanings and with quotation were counted. In the next phase of the study the semantic analysis was carried out: information sources were classified according to their

semantics. At the final stage the comparative analysis was used to compare the obtained results from English and German arctic media discourse.

6. Findings

6.1. Types of references to information sources

The results of the quantitative analysis show that direct evidentiality is scarcely represented in arctic media texts: the number makes up 1,6 % in English media texts and 2,6 % - in German media texts. We consider the following examples:

*In Greenland, **satellite images** this month **revealed** fires stretching across an area 380 km wide, adding to the pressures of an Arctic heatwave that caused a record melt-off of the world's second biggest ice sheet* (The Guardian).

*Und je dünner das Packeis wird, **hat Moores Gruppe beobachtet**, desto schneller bewegt sich offenbar auch das Eis auf dem Wasser – was seinerseits die Wahrscheinlichkeit erhöht, dass immer mehr von dem alten Eis in wärmere Gebiete driftet* (FAZ). / *And the thinner the pack ice gets, **Moore's group has observed**, the faster the ice on the water apparently moves - which in turn increases the probability that more and more of the old ice drifts into warmer areas.*

In the first example, satellite images serve as an information source which contains a hyperlink to the official Twitter page of World Meteorological Organization. In the second example, the information source is a group of researchers that has got information through visual perception.

The evidential meaning “hearsay” also rarely occurs in German arctic media texts (only 2,6 %), for example:

*Seit Ende der siebziger Jahre **soll** das älteste Eis statistisch gesehen anderthalb Meter im Schnitt verloren haben* (FAZ). / *Since the end of the seventies, the oldest ice **is said** to have lost an average of one and a half metres.*

In English arctic media texts this meaning does not occur at all. Examples of inferential evidentiality were not found in analysed texts.

Table 01 presents the results obtained from the analysis of other information sources in English and German arctic media discourse.

As we can see, evidential meaning “quotative” in German arctic media discourse occurs more often (58 %) than that in English (38,8 %). As it has been mentioned before, this meaning coincides with an indirect quotation. This meaning is illustrated in the following examples:

*However, with the melting of Arctic sea ice and permafrost, the huge stores of methane that have been locked away underground for many thousands of years might be released over a relatively short period of time, **Dr Shakhova said*** (The Independent).

*Vor diesem Hintergrund stelle das Verschwinden des alten Eises das polare Ökosystem vor große Probleme, **sagt Polarmeeresforscherin Anya Waites*** (Die Tageszeitung). / *As a result of this, the disappearance of the old ice poses major problems for the polar ecosystem, **says polar sea researcher Anya Waites.***

Table 1. Information sources in English and German arctic media discourse

Information Sources	Evidentiality (Quotative)		Full Quotation		Fragmentary Quotation	
	English	German	English	German	English	German
Particular researchers and experts	11 %	24 %	39 %	17,8 %	2 %	4,9 %
Researchers, without specification (generalized designation)	6 %	2,9 %	-	-	3 %	-
Specialists with specification	3,6 %	8 %	-	0,3 %	-	-
Specialists without specification	-	0,3 %	-	-	-	-
Specialists with specification	1 %	2,9 %	6 %	2,6 %	1,3 %	0,3 %
Documents	3 %	7,8 %	0,6 %	2,3 %	0,3 %	1 %
Organizations	4,6 %	7,4 %	1,3 %	1,3 %	0,6 %	-
Results of research	7,3 %	3,5 %	-	0,3 %	1,3 %	0,6 %
Media	0,3 %	0,6 %	-	0,3 %	0,3 %	-
Scientific sites in Internet	-	0,6 %	-	-	-	-
People from different social groups	1 %	-	3,6 %	1,3 %	-	-
Politicians	1 %	-	0,3 %	-	-	-
Total	38,8 %	58 %	50,8 %	26,2 %	8,8 %	6,8 %

The cases of full quotation are more frequent in English (50,8 %) than that in German arctic media discourse (26,2 %). This meaning is found in the following examples:

“Cases of cannibalism among polar bears are a long-established fact, but we’re worried that such cases used to be found rarely while now they are recorded quite often”, said Ilya Mordvintsev, a polar bear expert, quoted by Interfax news agency (The Guardian).

“Jenes Eis, welches heutzutage die Framstraße erreicht, wird zum größten Teil nicht mehr in den Randmeeren gebildet, sondern stammt aus der zentralen Arktis”, sagte Thomas Krumpen, ebenfalls Awi-Forscher (SZ). / “Most of the ice that reaches the Fram Strait today is no longer formed in the marginal seas, but comes from the central Arctic”, said Thomas Krumpen, also an AWI researcher.

The occurrences of fragmentary quotation are scarce in both languages: 8,8 % - in English and 6,8 % - in German.

This meaning is exemplified in the following sentences:

Dr Peter Gleick, president of the Pacific Institute in California, said there was a growing body of “pretty scary” evidence that higher temperatures in the Arctic were driving the creation of dangerous storms in parts of the northern hemisphere (The Independent).

Einige Bären würden Menschen „regelrecht jagen“, sagte der Chef der örtlichen Verwaltungsbehörde, Schiganscha Musin (Die Tageszeitung). / Some bears would “literally hunt” people, said the head of the local administrative authority, Shigansha Musin.

Therefore, it can be concluded that the level of credibility of information is higher in English arctic media discourse than that in German, because the information presented as the direct quotation is much reliable.

6.2. Characteristics of information sources

Table 01 also provides the summary statistics for information sources both in English and in German arctic media discourse. The results of this study show that the most frequent information sources in both languages are particular researchers and experts who study the climate and ecology of the Arctic region. It should be noted that in English arctic media discourse references to British, American and Russian researchers and experts are more frequent while in German arctic media discourse German, other European and American researchers and experts are referred to, for example:

one of the study's authors Dr Tracey Goldstein, from the University of California, Davis; another Russian scientist, Vladimir Sokolov, who has led numerous expeditions with the Arctic and Antarctic Research Institute, based in St Petersburg; Marine biologist Tim Gordon of Exeter University;

der AWI-Meereis-Experte Christian Haas / the AWI sea ice expert Christian Haas; Torben Røjle Christensen, Professor am Institut für arktische Ökosysteme der dänischen Universität Aarhus / Torben Røjle Christensen, Professor at the Institute of Arctic Ecosystems at the Danish University of Aarhus; David Benton, Fischfangexperte und Mitglied der US Arctic Research Commission / David Benton, fisheries expert and member of the US Arctic Research Commission.

Results of the analysis show that references to the generalized designation of researchers and experts are present by evidential meaning quotative, whereas they scarcely or do not occur both by full quotation and by fragmentary quotation both in English and in German arctic media discourse. Besides references with the specification are more often in German media texts than in English.

Information sources of this type are given in the following examples:

- without specification: scientists, researchers;

Polarforscher / polar explorer, Arktisforscher / Arctic explorer;

- with specification: scientists at Nasa; more than 75 scientists working in 12 different countries; the team, made up of German and Swiss scientists; authors from the American scientific agency;

die Sprecher des Forschungsnetzwerks Future Ocean / die spokesperson of the research network Future Ocean; wie das Team im Fachblatt "Remote Sensing" schreibt / as the team writes in the journal "Remote Sensing"; Forscher unter Führung der Technisch-Naturwissenschaftlichen Universität Norwegens (NTNU) / researchers led by the Norwegian University of Science and Technology (NTNU); Russische Experten / Russian experts.

References to specialists rarely occur in the analysed arctic media texts (under specialists are understood people of different professions). Besides, it should be noted that in most cases particular specialists are mentioned, for example:

airport maintenance worker Ruslan Prikazchikov; Eduard Davletshin, the head of the patrol; postal worker Nadezhda Kireyeva;

Unternehmenssprecherin Etminan / spokesperson of the Company Etminan; der Polizeibeamte Malmo / the police officer Malmo; der Chef der örtlichen Verwaltungsbehörde, Shiganscha Musin / the head of the local administrative authority, Shigansha Musin.

This type of references is more frequent by full quotation than that by quotative and fragmentary quotation in both languages.

References to documents, organizations and results of research occur by realization of quotative more often than by other meanings both in English and in German arctic media discourse. Information sources of this type are given in the following examples:

- documents: a United Nations report on global warming; a US government agency report; the Arctic Resilience Report;

WOR – World Ocean Review; der Bericht „Global Linkages“, den das UN-Umweltprogramm UNEP veröffentlicht hat / the report "Global Linkages" published by the UN Environment Programme UNEP;

- organizations: defence ministry; the World Wildlife Fund; the Chukotka district government; the Russian Defence Ministry; the Russian Geographical Society; Woods Hole Research Institute; Greenpeace; NASA;

der Kreuzfahrt-Veranstalter (Hapag-Lloyd) / the cruise operator (Hapag-Lloyd); WWF;

- results of research: a new study; a US study; The - new study, published in Nature Communications; two new studies published last week by the Woods Hole Research Center in Massachusetts; the team's research;

eine Studie der US-Klimawissenschaftlerin Jennifer Francis / a study by the US climate scientist Jennifer Francis; ein Ergebnis des „Arctic Resilience Report“, den 11 Organisationen, unter ihnen Forschungsinstitute und der Arktische Rat, unter Führung des Stockholm Environment Institute veröffentlicht haben / a result of the "Arctic Resilience Report" published by 11 organisations, including research institutes and the Arctic Council, led by the Stockholm Environment Institute.

English and German arctic media discourse rarely refers to media, for example:

Tass; die „Tagesschau“ / the "Tagesschau", die FAZ (Frankfurter Allgemeine Zeitung) / the FAZ (Frankfurter Allgemeine Zeitung).

References to scientific sites on the Internet („Faktencheck“ der Internetseite „CarbonBrief“ / "Fact check" of the website "CarbonBrief") scarcely occur only in German arctic media discourse by the realization of meaning quotative.

Another important finding was that references to documents, organizations, results of research, media and scientific sites on the Internet are often given in the text with hyperlinks, which provide the reader with credible information. For example, in this sentence there is a hyperlink (<https://onlinelibrary.wiley.com/doi/full/10.1111/ecog.02109>) to the article in the scientific journal "Ecography". It is published on "Wiley Online library" and indexed by the largest scientometric databases such as "Scopus", "Science Citation Index" etc.: "**Studies show that polar bears now swim for an average of three days to find seals, or search for less energy-dense terrestrial food sources, forcing them to travel greater distances**" (The Guardian).

People from different social groups are mainly referred to by full quotation, but the percentage of them is quite low:

some residents; Anastasia Popovich, now 15;

Nadeschda Wolf (wohnt seit sieben Jahren in der Siedlung Beluschja Guba auf Nowaja Semlja am Nordpolarmeer) / Nadezhda Wolf (has lived for seven years in the settlement of Belushya Guba on Novaya Zemlya in the Arctic Ocean); (schreibt) ein Mann auf der Facebookseite von Hapag-Lloyd

Cruises / (writes) a man on the Facebook page of Hapag-Lloyd Cruises; (schreibt) eine Nutzerin auf Facebook / (writes) a user on Facebook.

From the data in Table 01 we can see that politicians are used as information sources only in English arctic media discourse by realization of quotative and full quotation, for example *Hege Njaa Aschim, from the Norwegian government; Kimmo Tiilikainen, Finland's environment minister.*

To conclude, English and German arctic media discourses have significant differences in ways of introducing information sources, but types of information sources are quite similar.

7. Conclusion

The conducted research shows that direct evidentiality is scarcely represented both in English and German arctic media texts. The evidential meaning “hearsay” also rarely occurs in German arctic media texts, while in English it is not present at all.

Evidential meaning “quotative” in German arctic media discourse occurs more often than in English, whereas the cases of full quotation are more frequent in English than in German arctic media discourse. Fragmentary quotation is scarcely represented both in English and in German arctic media discourse. Therefore, the level of information credibility is higher in English arctic media discourse than in German.

Types of information sources are quite similar in both languages. The most frequent information sources are particular researchers and experts who study the climate and ecology of the Arctic region. References to the generalized designation of researchers and experts, to specialists, documents, organizations, results of the research also occur in English and German arctic media discourse. Percentage of these information sources depends on the meaning which they express and on the language of discourse. References to media, scientific sites on the Internet, people from different social groups and politicians are scarcely represented both in English and in German arctic media discourses.

Further work needs to be done to establish whether ways of introducing information sources and types of information sources are similar or different in other varieties of English and German media discourse.

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