Ecolinguistic Aspects of the Topical Arrangement of the Cultural Content of the Regional Media Environment

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Abstract: The paper touches upon the issues of ecolinguistic parameters of media texts. A topical group is considered to be the unit of investigation. The main aim of the study was to figure out the ecological impact of the topical groups of the media texts containing cultural content. The material for the research was texts from the 'Culture' section on the Orenday Internet portal (the Orenburg region, Russia) in the 2017 – 2020 period. According to the frequency of the topical groups of the cultural content on the regional Internet portal, they are divided into the core and peripheral zones. The study revealed non-ecological state of the media environment: disproportion of the number of groups presented in the media environment in different years of the analyzed period; imbalance of the core and peripheral zones; asymmetry of the lexical explicators that verbalize culture-containing information both in the core and peripheral zones.

1 INTRODUCTION

Since the mid-20 century when mass media were recognized as a special force that could influence all social institutions and affect individuals' lives, a number of socio-cultural transformations have been registered. Firstly, a new environment has developed, precisely, the symbolic, informational environment that got different denotations: 'infosphere' (the term given by D Rashkoff), 'media culture' (N Kirillova's phrase) (Kirillova, 2006), 'hyperreality' (the term introduced by J Baudrillard). Secondly, media have been acknowledged as an ecosystem, i.e. as an information environment that lacks the binary opposition 'media vs a passive audience', but has a lot of interrelated active producers and consumers of the content who operate simultaneously. Thirdly, the productive society has turned into the information society in which machine technologies have been replaced by intelligent technologies. All these changes have brought about the concept of media ecology (Vorobyev & Stepanov, 2011, p. 87).

The external environment of mass media is the social reality that consists of cultural, political and economic elements and varies at different stages of its development. This external environment affects mass media content, conditions, values, and trends of their development. The media environment is a reflection of the social reality at all its levels – international, national, regional, the factors influencing the national media system and all its peculiarities being taken into account. The media and the social reality are a dialectical unit where the social environment influences the media and the media in their turn, affect the society (Misyurov, 2016, p. 19).

Media ecology is a domain where information assumes special attention. Information in the media environment is of a dualistic nature: on the one hand, it is constantly updated, and on the other hand, it is fixed. As the information is classified and stored in the media environment, it helps display information

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pictures of a day, a week, a month, a year, a decade. The media environment systematizes the variability of life, performs the functions of reference and representation (Zubanova, 2008, pp. 6-7).

The information environment of the society is understood as a complex of information resources, systems for shaping, dissemination and use of information, and information infrastructure. And a part of the information environment is the textual information environment. The main problem that media ecology intends to solve is to determine if the textual environment is ecofriendly or non-ecofriendly to a person; if the relations between a person and his/ her textual environment can be described as harmonious or disharmonious (Ionova, 2011, p. 89).

So, a mediatext is the main unit of the media environment. A media text is defined as "a kind of text belonging to the mass media, characterized by a special type of author, a specific textual modality, and addressing to a mass audience" (Solganik, 2005, p. 15). Since a text is a language unit as well, it is considered to be a subject of ecolinguistic investigations that try to find the criteria for determining ecological / non-ecological textual media environment.

Being a branch of linguistics, ecolinguistics deals with the language as a system and at the same time it has worked out its own conceptual and terminological basis. Being a branch of ecology, it follows ecological axiomatic principles. In ecolinguistics two approaches are distinguished. The first one introduced by E Haugen metaphorically transfers ecological concepts to language studies, e.g. concepts of ecology, environment, ecosystem, etc. (Haugen, 1966). The second approach founded by M Halliday is language ecology that describes languages and their units from the viewpoint of their 'environmental friendliness' for an individual and the society (Halliday & Matthiessen, 2014). This approach combined with systemic functional linguistics (SFL) has turned out to be a solid theoretical background for present-day studies of ecological discourse (Wei, 2021), of transitivity in articles about ecological issues (Ali, 2019).

Our research is based on the ideas of language ecology and takes into consideration the cultural content of the regional media environment. In Russia, regional mass media are defined as registered mass media spread in one, two or three areas of the Russian Federation. So, regional mass media are characterized by a certain area of distribution, targeting a certain audience, government control; these peculiarities limit the scope of regional media activities and their impact sphere. The media environment of the Orenburg region includes print media, electronic publications, and information agencies in Russian and national languages.

Mass media in general and regional media in particular are an important part of culture both in its material and spiritual sense. Newspapers, magazines, posters, ads, i.e. mass media products form a certain cultural layer. Simultaneously, mass media reflect cultural phenomena, cultural values, and shape thoughts, feelings, and emotions of a wide audience. There is a point to mention French philosopher A A Moles's idea that for numerous society members, culture is a product of the impact of mass media on the social field that is enriched with a great deal of messages (Moles, 1967).

This research deals with the cultural content of mass media texts which form the media environment. Mass media cultural content is distinguished as ideas, facts, opinions related to culture in its broad meaning and contained in all mass media products – texts, videos, images, etc.

The main indicators of the ecofriendly media environment containing cultural content are reliability, completeness, and diversity of the information related to spiritual and material culture of the society. In this paper we concentrate our attention on the topical groups of the 'Culture' section of a regional Internet portal in regard to their ecological impact on the media environment.

2 RESEARCH PROCEDURE

The algorithm for the ecolinguistic study of the topical arrangement of the cultural content of the regional media environment includes several stages described below.

2.1 Material selection

The material for the ecolinguistic investigation is texts from the 'Culture' section of the Orenday Internet portal (the Orenburg region, Russia) in the 2017 – 2020 period. The entire representative sample accounts 325 texts: 133 texts published in 2017; 78 texts published in 2018; 48 texts published in 2019; and 66 texts published in 2020.

2.2 Selection of topical groups

In the paper, a topical group is defined as a set of words belonging to different parts of speech and forming one group according to their reference to one topic singled out on the basis of extralinguistic factors

(Zherebilo, 2010, p. 401). When identifying topical groups, we should bear in mind that the words reflecting certain phenomena of the reality are interrelated in the language and the phenomena that they display are interwoven in the reality as well [Shmelyov, 2008, p. 9].

Judging by the content of all news media texts from the 'Culture' section on the regional Internet portal they cover 14 topical groups: 1) museum; 2) religion; 3) concert; 4) theatre; 5) movie; 6) monument; 7) holiday; 8) exhibition; 9) history; 10) celebrity; 11) competition; 12) library; 13) language; 14) problem.

2.2 Identification of core and peripheral topical groups, analysis of their distribution in the media environment

News media texts are considered to be the main elements of the media environment; core and peripheral groups are identified according to the number of the elements included in the topical group.

A core topical group is understood as a group in which the relative frequency of elements (news media texts) is equal to or higher than the average relative frequency of the elements from the entire sample. A peripheral topical group is recognized as a group in which the relative frequency of elements (news media texts) is lower than the average relative frequency of the elements of the entire sample.

The relative frequency of topical groups is calculated by the formula:

$$\sum_p(e_1) / \sum(e_1 + \sum(e_2) + \sum(e_3) + \sum(e_4) + \sum(e_5) \qquad (1)$$

where $\sum$ is the summation notation of the number of media texts;
e is the number of media texts belonging to a certain group;
p is the topical group under calculation.

The relative frequency of topical groups denotes what proportion a certain topical group occupies in the entire representative sample of topical groups.

The average relative frequency gives general characteristics of the topical groups in the media environment of the Internet portal during the entire period of 2017 – 2020.

The average relative frequency of the topical groups is calculated by the formula:

Example:

$$ARFtg = (RFt_1 + RFt_2 + RFt_3 + \ldots RFt_{14}) / n \qquad (2)$$

where ARFtg is the average relative frequency of topical groups;
RFt_1 is the relative frequency of topical group 1;
RFt_2 is the relative frequency of topical group 2;
RFt_3 is the relative frequency of topical group 3, etc.;
n is the number of all topical groups.

2.4 Collecting and analyzing the key words of each topical group

The Miratext online platform was used to select and collect the keywords expressing the content of topical groups. The extraction of keywords from a media text is an operation, the input of which is amedia text. The output is the result of processing the media text consisting in a compiled list of keywords and phrases.

2.5 Identification of the average indicators of the topical arrangement of the media environment on the Internet portal for the entire analyzed period

The average relative frequency of a topical group for the entire analyzed period is calculated by the formula:

$$ARFtg = (RFtg1 + RFtg2 + RFtg3 + RFtg4)/4 \qquad (3)$$

where ARFtg is the average relative frequency of a certain topical group;
RFtg1 is the relative frequency of a certain topical group in 2017;
RFtg2 is the relative frequency of a certain topical group in 2018;
RFtg3 is the relative frequency of a certain topical group in 2019;
RFtg4 is the relative frequency of a certain topical group in 2020;
4 is the number of the analyzed years.

The procedures given above were used to study the topical arrangement of the mass media environment of the Culture section on the Orenday Internet portal.

3 FINDINGS

According to the content, the news media texts from the 'Culture' section of the Orenday Internet portal are divided into 14 topical groups. According to

formula (1), the relative frequency of topical groups in 2017, 2018, 2019, 2020 was calculated. The results were recorded in the table (Table 1).

Table 1: Relative frequency of the topical groups of the media texts of the 'Culture' section on the Orenday Internet portal.

Topical group	Example column 2			
	2017	2018	2019	2020
Museum	0.19	0.16	0.14	0.2
Religion	0.07	0.06	0.04	0.03
Concert	0.09	0.07	0.12	0.06
Theatre	0.02	0.01	0.08	0.08
Movie	0.05	0.04	0.08	0.03
Monument	0.02	0.14	0.08	0.31
Holiday	0.18	0.17	0.2	0.08
Exhibition	0.05	0.05	0.02	0.03
History	0.05	0.04	0.04	0.06
Celebrity	0.06	0.05	0.02	0.05
Competition	0.10	0.17	0.04	0.02
Library	0.03	0.01	0.08	0
Language	0.02	0	0	0
Problem	0.07	0.03	0.06	0.05

Formula (2) was applied to the obtained data of the relative frequency of topical groups to determine the core and peripheral zones of the media environment of the 'Culture' section on the Orenday Internet portal.

The comparison of the relative frequency of each group with the average relative frequency of the given year's groups helps identify core and peripheral topical groups. The average relative frequency of a topical group is 0.07. This number is a reference point for classifying the topical groups: if the relative frequency is higher than 0.07, the group is in the core zone, and vice versa, the topical group belongs to the peripheral zone if the relative frequency is lower than 0.07.

In 2017, the cultural content of the media environment is represented by 14 topical groups.

The repertoire of core topical groups in 2017 embraces 6 groups: Museum (0.19); Holiday (0.18); Competition (0.1); Concert (0.09); Religion (0.07); Problem (0.07).

The peripheral topical group zone in 2017 is formed by 8 groups: Celebrity (0.06); Theater (0.02); Movie (0.05); Monument (0.02); Exhibition (0.05); History (0.05); Library (0.03); Language (0.02).

In 2018, the cultural content of the media environment of the Orenday Internet portal covers 12 topical groups. The 'Language' and 'Problem' topical groups are not outlined in the media environment.

The inventory of core topical groups in 2018 lists 5 groups: Holiday (0.17); Museum (0.16); Monument (0.14); Competition (0.17); Concert (0.07).

The range of peripheral topical groups in 2018 is 6 groups: Theater (0.01); Movie (0.04); Exhibition (0.05); History (0.04); Library (0.01); Religion (0.06); Celebrity (0.05).

In 2019, the cultural content of media environment of the regional Internet portal is signified by 13 topical groups. The 'Language' topical group finds no expression in the media environment of 2019.

The set of core topical groups in 2019 consists of 7 groups: Museum (0.14); Concert (0.12); Theater (0.08); Movie (0.08); Holiday (0.2); Monument (0.08); Library (0.08).

The inventory of peripheral topical groups in 2019 embodies 6 groups: Religion (0.04); Exhibition (0.02); History (0.04); Celebrity (0.02); Competition (0.04); Problem (0.06).

In 2020, 12 topical groups are involved in the cultural content of the media environment. The 'Language' and 'Library' topical groups are not represented in the media environment of 2020.

The core topical zone in 2020 comprises 4 groups: Monument (0.31); Museum (0.2); Theatre (0.08); Holiday (0.08).

The scope of peripheral topical groups in 2020 includes 8 groups: Religion (0.03); Concert (0.06); Film (0.03); Show (0.03); History (0.06); a Celebrity (0.05); Competition (0.02); Problem (0.05).

So, the number of topical groups in the core and peripheral zones of the 'Culture' section on the regional Internet portal varies from year to year.

To identify the average indicators of the topical arrangement of the cultural content of the media environment, the average relative frequency of each topical group for the entire analyzed period was calculated with the help of formula (3). Here is an example of calculating the average relative frequency of the 'Museum' topical group.

$$ARFtgM = (0.19 + 0.16 + 0.14 + 0.2) / 4 = 0.17$$

where ARFtgM is the average relative frequency of the 'Museum' topical group;
RFtg1 is the relative frequency of the 'Museum' topical group in 2017;
RFtg2 is the relative frequency of the 'Museum' topical group in 2018;
RFtg3 is the relative frequency of the 'Museum' topical group in 2019;
RFtg4 is the relative frequency of the 'Museum' topical group in 2020;

4 is the number of the analyzed years.

The average relative frequency for each topical group of the media environment on the Orenday Internet portal was calculated in the same way. The results of the calculations are shown in the figure (Fig. 2).

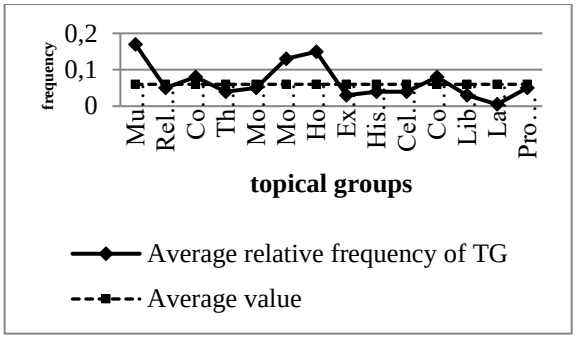

Figure 1: This caption has more than one line so it has to be set to justify.

The cultural content of the media environment on the regional Internet portal is represented by all 14 topical groups.

To identify the invariant core and peripheral zones, it was necessary to determine the average relative frequency of all topical groups of the 'Culture' section on the Orenday Internet portal in the 2017 – 2020 period with the help of formula (2). The average relative frequency of topical groups is 0.06.

The invariant core topical group zone of the 2017-2020 period coves 5 groups: Museum (0.17); Holiday (0.15); Monument (0.13); Concert (0.08); Competition (0.08).

The invariant peripheral topical group zone in the period under study consists of 9 groups: Religion (0.05); Movie (0.05); Problem (0.05); Theater (0.04); Exhibition (0.03); History (0.04); Celebrity (0.04); Library (0.03); Language (0.005).

The structure of each core topical group deserves special consideration.

1 Museum (0.17). This core topical group functions in the entire 2017 – 2020 period.

In the structure of the 'Museum' topical group, 4 topical subgroups are identified: 1) museum items on display; 2) historical buildings; 3) the museum activities; 4) the conditions of the regional museums.

The semantic analysis of the media texts included in this topical group figures out the following keywords: museum (7.87%); Orenburg (6.51%); Orenburzhye the Orenburg region (3.37%); Chernomyrdin (2.25%); Orenburg citizen (2.25%); Gagarin (2.25%), history (2.06%); a discovery (2.04%); exhibit (2.03%); open (2.02%); again (2.01%); to close (1.03%).

The morphological analysis of the keywords shows that they belong to different parts of speech: nouns (8 words), adjectives (2), a verb (1), and an adverb (1). The word 'Orenburg' is used both as a separate noun and in the position of an adjective with other nouns. Proper nouns (4) take the leading position among other grammatical and lexical classes of nouns (concrete nouns – 3, abstract – 1).

2 Holiday (0.15). This core topical group also operates in the entire period from 2017 to 2020. The 'Holiday' topical group includes 6 subgroups: 1) calendar holiday; 2) international holiday; 3) public holiday; 4) city holiday; 5) professional holiday; 6) public events.

The keywords of the 'Holiday' topical group are: Orenburg (10.61%); Christmas tree (3.79%); day (3.03%); summer (2.78%); poster (2.63%); today (2.27%); invite (2.17%); city (2.17%); celebrate (2.14%); laser (2.11%); half a million (2 %), New Year (1.52%). The main components of the keywords and phrases relate to the following grammatical classes: nouns (8), verbs (2), and an adverb (1). The proper noun 'Orenburg' is on top of the keyword list.

3 Monument (0.13). Within the 'Monument' topical group, 5 topical subgroups are observed: 1) the type of the monument; 2) the erection of a monument / memorial; 3) the dismantling of buildings of historical significance; 4) the return of monuments; 5) the maintenance of monuments.

The following key lexemes form the 'Monument' topical group: monument (7.5%); appear (5%); Orenburg (6.66%); Lenin (2.94%); heritage (2.5%); city council (2.5%); cultural (2.4%); dismantling (2.3%); Orenburzhye (2.35); object (2%); find (1.25%); restoration (1.23 %); Dahl (1.58%); install (1.4%); carry (1.3%); memory (1.28%); place (1.25%). The keywords refer to nouns (12), adjectives (1), verbs (3). Proper, concrete, and abstract nouns are in the same proportions in the 'Monument' topical group.

4 Concert (0.08). The 'Concert' topical group is divided into 2 subgroups:

1) performances of pop singers; 2) performances of musical groups.

The ‘Concert’ topical group is shaped by the keywords: Orenburg (8.33%); concert (5.45%); sing (2.44%); stage (2.4%); come (1.72%); super (1.72%); group (1.72%). The keywords fall on the fallowing classes: nouns (5), verbs (2). Proper (1 word), concrete (3) and abstract (1) nouns are distinguished within the nominative keywords.

The ‘Concert’ topical group functioned as a core group in the period from 2017 to 2019. In 2020 it moved to the peripheral zone. A decrease in the frequency of this topical group is coursed by worsening the epidemiological situation connected with COVID-19 and closing the concert halls. However, the indicator of the average relative frequency for the entire analyzed period made it possible to include it in the core group zones of the media environment on the Orenday Internet portal.

5 Competition (0.08). The ‘Competition’ topical group covers 3 subgroups: 1) type of competitions; 2) participants of competitions; 3) awards.

The main lexical units implicated in the topical group are: Orenburg (11.55%); voice (4.72%); show (3.77%); project (2.78%); TV project (2.78%), participant (2.78%); become (2.78%); sing (2.83%); children (2.83%); young (1.89%).

The keywords are classified as follows: nouns (7), adjectives (1), and verbs (2). In this topical group concrete nouns are the most numerous among the substantives.

This topical group was in the core zone in 2017 and 2018. In the 2019 – 2020 period it became a peripheral group. The reason of this change is connected with the pandemics. However, the high rate of relative frequency of this topical group in the 2017 – 2018 period makes it possible to include it in the core zone of the cultural context of the media environment on the Orenday Internet portal.

Thus, the results of the analysis of the topical arrangement of the cultural content of the media environment on the Orenday Internet portal in the period from 2017 to 2020 drive to the following conclusions:

1 In the structure of the media environment, there is an imbalance of the core and peripheral topical groups: the core zone consists of only 5 groups, while the peripheral zone is nearly 2 fold larger (9 groups).

2 The core of the media environment contains the lexical explicators expressing the information about: performances of invited pop singers and musical groups; competitions of different levels; museum exhibits, historical buildings, the activities and conditions of museums; holidays of various statuses; the erection, dismantling, return and maintenance of monuments of historical significance.

3 The core zone of the media environment is asymmetrical in regard of the number and frequency of the lexical explicators that verbalize culture-containing information about events geographically related to the administrative center and about events in other municipal districts of the Orenburg region.

4 The core of the media environment is formed by the keywords related to nouns (60.3% of the total number of the keywords), adjectives (20.6%), verbs (15.9%), adverbs (3.2%). More than half nouns are concrete names (55.3%), abstract names are almost 4 fold less (13.2%), proper names are a large group (28.9%). Adjectives are three fold less than nouns (20.6%).

5 The periphery of the media environment is formed by the topical groups that combine the media texts informing about theatrical and cinematographic activities, exhibition and library activities, book presentations, historical facts, and religious holidays.

6 Like the core zone, the peripheral zone of the media environment is dissonant in the number and frequency of the lexical explicators of cultural content in the texts about events geographically related to the administrative center and about events in other municipal districts of the Orenburg region.

7 In the periphery of the media environment, the topical groups combining the media texts that enlighten readers on various beliefs and rituals of the peoples of the multicultural region, as well as about language diversity are not stable, as they are not presented in the media environment in some years.

The study showed that the ecological markers of the media environment are a proportional number of the topical groups of the core and peripheral zones and within the zones, symmetry in texts covering the information about events in the administrative center and other districts and places of the region. Taking into account the markers of the topical arrangement of the cultural content the media environment of the

Orenday Internet portal is characterized by non-ecological trends.

4 CONCLUSIONS

The media environment today is viewed upon as a part of the ecosystem surrounding an individual in particular and the society in general. We cannot but admit that media texts are the most significant element of the media environment; they influence reader's phycosphere in both positive and negative way, so they tend to be concerned from ecofriendly / non-ecofriendly aspects. Media texts being a part of not only material, but also of spiritual culture, explicitly or implicitly affect people's ideas, thoughts, emotions, feelings and shape their cultural preferences. The mass media cultural content is the most vivid in the 'Culture' section of a news Internet portal. Ecolinguistic methods are the best tool for discovering ecological properties of media texts. The ecolinguistic study can be based on consideration of topical groups of the cultural content contained in media texts. A topical group reflects a fragment of extralinguistic reality and is expressed by linguistic means.

The results of the study reveal non-ecological state of the media environment of the regional Internet portal; hence the portal can receive exact recommendations to improve their textual environment.

The algorithm for identifying the ecological or non-ecological nature of the topical arrangement of the media environment can be used further investigations connected with other contents and other types of media texts, social networks environment.

REFERENCES

Ali, J. H. M., 2019. Ecolinguistics and Systemic Functional Linguistics (SFL): Transitivity in 'Climate Change in Egypt' by Ali Masria. *BSU Intrnational Journal of Humanities and Social Sciences, 1* (1), 9-38.

Halliday, M.A.K., Matthiessen, C.M.I.M., 2014. *An Introduction to Functional Grammar (4th Edition).* London and New York: Routledge.

Haugen, E., 1966. The Ecology of Language. In *Haugen, E. Essays: (pp.159-190).* Stanford, CA: Stanford University Press. Originally published in W. Bright (Ed.).

Ionova, S.V., 2010. The main directions of ecolinguistic research: foreign and domestic experience. *Bulletin of Volgograd State University. Series 2, Linguistics, 1* (11), 86-93.

Kirillova, N. B., 2006. *Media Culture: from Modern to Postmodern.* Moscow: Academic Project.

Misyurov, D. A., 2016. Media ecology as the science of the dialectical development of the media environment: modeling using dialectical schemes and formulas based on binary notation. In*: Ecology of the media environment: problems of security and rational use of communicative resources. Materials of the Second International Scientific and Practical Conference (pp.19-22).* Moscow: Faculty of Journalism of Moscow State University.

Moles, A. A., 1967. *Sociodynamique de la culture.* Paris: Mouton.

Shmelev, D. N., 2008. *Problems of semantic analysis of vocabulary.* Moscow: LKI Publishing House.

Solganik, G. Ya., 2005. To the definition of the concepts "text" and "media text*". Bulletin of the Moscow University. Series 10. Journalism, 2*, 7-15.

Vorobyev, V. P., Stepanov, V.A., 2011. The problematic field of media ecology: the experience of demarcation of the scientific direction. *Vesnik BSU, Series 4 Philology. Journalism. Pedagogy. 2*, 86-90.

Wei, R. R., 2021. An interpersonal framework of international ecological discourse. *Journal of World Languages, 7(*2), 305-333.

Zherebilo, T. V., 2010. *Dictionary of linguistic terms*. Nazran: LLC "Pilgrim".

Zubanova, L. B., 2008. Modern media space: approaches to understanding and principles of interpretation. *Bulletin of the Chelyabinsk State Academy of Culture and Arts, 2* (14), 6-17.