Sustainable production as the dominant value of environmental discourse

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Abstract. The environmental policy of modern enterprises aims to reduce the anthropogenic impact on the environment, to preserve natural resources, to create safe jobs, and to produce environmentally friendly products. All these elements combined are included in the concept of “sustainable production”. The formation of the value bases of this concept is carried out in the process of communication which becomes the main way of introducing ideas of sustainable production into the consciousness of people, so this determines the relevance of our study.

The purpose of the present study is to establish key concepts that represent the idea of sustainable production as the dominant value. To achieve it, the rationale for distinguishing the industrial environmental discourse within the broader concept of “environmental discourse” was substantiated. Based on discourse analysis and content analysis of English texts of websites of companies engaged in production, as well as publications in high-ranking English-language journals on production ecology, the basic values of industrial environmental discourse and its key concepts were established.

The results show that sustainable production is the dominant value of modern industrial environmental discourse. This concept is verbalized in various naming units and correlates with the broader concept of environmental discourse – "sustainable development".

1. Introduction

Environmental communication can be distinguished into a separate type on the basis of at least two criteria: the topic of communication and the presence of the agent. In the topic of environmental communication in addition to the production and technical aspects associated with the presence of engineering and technological solutions to prevent and / or reduce pollution of nature, the social dimension plays a significant role. It is associated with the social responsibility of humanity for the state of the environment; therefore, environmental communication serving the sphere of production reveals an axiological component. The foregoing determines the relevance of the study, the purpose of which is to establish value bases that realize the idea of sustainable production in modern communication on environmental issues.

Russian scientists have begun to discuss the concept of “environmental communication” relatively recently, primarily in connection with the consideration of environmental media discourse [1]. American scientists have been developing environmental communication studies as an interdisciplinary scientific field based on the achievements of sociology, ecology, environmental management, and communication theory since the mid-1980s [2]. However, despite more than thirty years of scientific discussion about what should be understood by environmental communication, there has not been a unified approach to the interpretation of this concept among scientists yet.

According to A. J. Flor, environmental communication is a set of communication strategies and methods that regulate the rational use of natural resources and compliance with the requirements of...
environmental protection [3]. M. Meisner interprets eco-communication as the process of information exchange on environmental issues, which brings together its interpretation with a broad understanding of environmental discourse [4]. Such an interpretation is quite appropriate, since discourse and communication can be equated if the language is studied in its natural habitat, that is, in the process of communication. R.J. Cox sees pragmatic and constitutional functions in eco-communication. According to the author, the essence of the pragmatic function of environmental communication is the implementation of education, prevention, persuasion and cooperation in the process of environmental activities. The constitutional function is realized in the process of forming the environmental awareness of the society. The constitutional function is aimed to introduce the systems of ecological values, ideologies, and views into people’s consciousness through communication [5]. It is important to emphasize that the constitutional function is relevant for industrial environmental discourse, which can be considered as part of environmental discourse. Environmental discourse is a very wide communicative phenomenon. It is represented by such types as scientific, popular science, journalistic, legal, artistic, educational discourses, and discourse of environmental non-commercial advertising. Without a doubt, it is possible to distinguish the industrial type that serves the sphere of working relations, ensuring the verbalization of the environmental policy of modern enterprises. In this article, the industrial environmental discourse is used to refer to the communication on environmental topics between social actors generated by working relations.

2. Methodology
The study of industrial environmental discourse was based on advances in the field of discourse (K. Aijmer [6], D. Bolinger [7], J.P. Gee [8], M. Jung [9], D. Schiffrin [10], M. Stubbs [11]), ecological discourse (R. Alexander, A. Stibbe [12]; S. Chen [13], A. Stibbe [14]), ecolinguistics (A. Fill [15], E. Haugen [16], N.L. SHamne [17], S.V. Steffensen [18]), axiology (M. Reale [19], M. Rokeach [20], S. H. Schwartz [21]).

Standard methods of discourse analysis were used. Content analysis was also used, which was based on the study of relevant environmental publications in well-established scholarly journals over the past 5 years and environmental publications posted on the websites of well-known international environmental organizations and leading enterprises and holdings of various industries (manufacturing, mining, agricultural, construction) (DEA Deutsche Erdolie AG). Special attention was paid to the websites of WIPRO, TCS, Tech Mahindra Ltd., Essar Oil Ltd w Larsen and Toubro Ltd. These companies are among the global leaders in green manufacturing technology.

The classification of values by M. Rokeach [20] which proposes the division of human values into terminal (personal and social) and instrumental (moral values and competence values) was used to analyze the value content of texts. Based on the analysis of axiologically oriented argumentation, including the mention of the most important value concepts [22], key concepts relevant to the industrial environmental discourse were identified.

3. Results and discussion
The growing rates of production are accompanied by increasing depletion of natural resources and increasing anthropogenic load on nature as a whole. Humanity has already faced the growing scale of natural hazards and disasters and should understand in the near future the long-term consequences of the intensive production activities of the previous decades. Under such circumstances, maintaining the relative balance of social and ecological systems is becoming increasingly problematic. One of the ways out of this situation is to implant a system of environmental values in the minds of people. These values are actively created in the environmental communication.

3.1. Values of environmental communication through the prism of M. Rokeach’s classification
The typology of the values that underlie environmental communication is correlated with so-called basic values, which are not a kind of complement to economics or politics. The basic values are the generalized ideas of people about the norms of behaviour based on historical experience and
containing the cultural signs of each ethnic group separately and of humanity as a whole. To analyze the value content of the ecological discourse texts, the classification of values proposed by M. Rokeach, who divided the values into terminal (basic) values-goals and instrumental values-means, was used. The researcher considered the fact that values affect the functioning of a number of social phenomena studied by various social sciences and humanities. M. Rokeach divided terminal values into personal and social, and among instrumental values he distinguished values of morals and values of competence. In connection with the given typology of values, it should be noted that this division is relative, since the distinction between terminal and instrumental values may become blurred in different situations due to the fact that the same value can act as both terminal and instrumental. The values of industrial environmental communication correspond in general to terminal (security, harmony, comfortable life) and instrumental (responsibility, helpfulness) values according to M. Rokeach’s classification. The environmental policy of modern enterprises aims to reduce the anthropogenic load on the environment, to preserve natural resources, to create safe jobs, and to produce environmentally friendly products that ensure a comfortable, safe life. All these elements combined correspond to the terminal and instrumental values listed above and are included in the concept of “sustainable production”.

3.2. Terminal and instrumental values of industrial environmental discourse
The present study focuses on the analysis of nominations that realize the idea of sustainable production in industrial environmental discourse. As already mentioned, we distinguish industrial environmental discourse taking into account two criteria: 1) industrial environmental topics (sustainable production, sustainable materials and technologies, recycling) and 2) composition of subjects or agents of discourse. Representatives of business, industrial, mining, agricultural, and construction companies can act as subjects of industrial environmental discourse. In contrast to the industrial type, environmental discourse demonstrates a wider thematic diversity and a wider composition of subjects, including governments, environmental governmental and non-governmental organizations, communities of scientists, experts, eco-activists, advocates of environmentalism philosophy, eco-journalists. Environmental discourse verbalizes terminal values (fairness, nonviolence, safety, equality, partnership), as well as instrumental values (donation, helpfulness, responsibility). These values are reflected in slogans of environmental organizations and texts written by leading experts, scientists, eco-activists.

In the industrial environmental discourse, the most important terminal value is verbalized by such word combination as Protection & Safety. The concept of Sustainability is an instrumental value that ensures the preservation of the biosphere as a condition for survival of mankind.

There are several meanings of the lexeme sustainability in modern dictionaries of the English language:
1) the quality of being able to continue over a period of time
2) environment: the quality of causing little or no damage to the environment and therefore able to continue for a long time
3) the idea that goods and services should be produced in ways that do not use resources that cannot be replaced and that do not damage the environment [23].

Many authors argue that there is no common and unified understanding of what “Sustainability” is. One of the reasons behind the large number of definitions is the many different interpretations of the “sustainability” concept: e.g., seeing sustainability as an environmental initiative; as a goal or a process; as an integration of different aspects; or as a compromise between pillars, etc. Researchers claim that the large number of terms and definitions in the sustainable manufacturing research field is a barrier to sharing knowledge, particularly between academia and industry [24]. The most common understanding is the following: Sustainability – meeting the needs of society in ways that can continue indefinitely into the future without damaging or depleting natural resources. In short, meeting present needs without compromising the ability of future generations to meet their own needs [25]. However, it also needs to be defined more clearly. Let us give an example posted on a resource for
manufacturers and industry experts on key manufacturing topics in the USA, which clarifies the conceptual component of the term “Sustainability” by comparing it with the term “Going Green”: “Going green” is not the same thing as sustainability, albeit they are related. Although the terms are often used interchangeably, green is more frequently associated with a singular product or process. Examples include improving a specific operation so that it does not harm the environment or creating a product made entirely out of recycled materials. Sustainability is typically more associated with an organization’s holistic approach; it takes the entire production process and logistics into consideration. For example, you may purchase a green product made out of recycled goods. However, if that product was made overseas, and environmentally harmful methods were used to transport that product to the United States, this would not be adhering to sustainable principles. In the manufacturing world, it is advantageous to focus on both green and sustainability [26].

For manufacturers and managers of the industrial sector, the same resource reveals the potential value of the concept of Sustainability, which is concisely reflected in the heading “Boost Workforce Morale and Innovations”: Sustainability improvements are a collaborative effort. When employees work together to identify and implement green and sustainable initiatives, it fosters a culture of teamwork and continuous improvement. Employees work harder when they are engaged and have a sense of pride in their company. By internally communicating the importance of changes and the impact they are having on the business and environment, manufacturers will positively influence their corporate culture. Sustainability can also ignite innovation. For example, if you challenge your engineers and machinists to reduce material scraps or recycle more waste during the manufacturing process, it often leads to additional ideas for operational improvements [27].

3.3. Key concept of industrial environmental discourse
The instrumental value of Sustainability is concretized for the industrial environmental discourse by the key concept of Sustainable production. In environmental texts, this concept acts as the dominant value which unites such lexical units with the common semantics as “natural environment”, “long time”, “minimization of damage”. These lexical units are related to the meanings of the lexeme “sustainable”:
1) able to continue over a period of time
2) environment: causing little or no damage to the environment and therefore able to continue for a long time [28].

The key concept of Sustainable production verbalizes the notion that “until now, all human activities have been based on the paradigm of unlimited resources and unlimited world’s capacity for regeneration; from now on, the awareness of the termination of this assumption means that all related behavioural models must be changed” [29].

In industrial environmental discourse, the linguistic representation of the key concept of “Sustainable production” is achieved through synonymy and metaphor which reveal its conceptual, figurative and evaluative components. The concept of “Sustainable production” is verbalized by such synonymous terminological combinations as Sustainable manufacturing, Sustainable manufacture, Manufacturing sustainability, Eco-Friendly Production, Environmentally Friendly Production, Sustainable and eco-friendly production, Sustainable approach to manufacturing.

Metaphorization is present in such nominations as Green production, Green manufacturing, Clean production. In the industrial environmental discourse, there is a desire to distinguish the meaning of synonymous terminological combinations, for example: “The use of the term green production rather than sustainable manufacture emphasises operational processes economic effectiveness within industry and their inter-relationship with the society. Green production is implicitly linked to product design as innovations in product and process transform the overall manufacturing system” [30].

The key concept of Sustainable production becomes the basis for the creation of a number of terminological nominations which includes hyphenated compounds (eco-friendly, environment-friendly), words in the semantic field of “management”, “industrial production”: Sustainable & environment-friendly industrial production; Eco-friendly Production Systems; Sustainable Materials
and Technologies, Eco-friendly oil production, Water and Energy Sustainability, Sustainable approach to manufacturing, Sustainable construction, Green production technology, Green manufacturing technology; Sustainable management, Sustainable strategies.

The idea of sustainable production in the industrial environmental discourse contributes to a change in thinking based on sustainable manufacturing values, which become crucial for sustainable production and sustainable management [31]. Moreover, the change in values that accompanies green production also challenges conventional thinking on production operations design and management [30].

4. Conclusion
The paper concludes that industrial environmental discourse can be distinguished within the framework of environmental discourse on the basis of two criteria, such as environmental topics and the composition of subjects or agents of discourse. It also establishes terminal (Protection & Safety) and instrumental (Sustainability) values and shows that the dominant value of environmental discourse is the concept of Sustainable production which is verbalized in various naming units.

In this way, value potential of industrial environmental discourse, focused on the dominant value “sustainable production”, promotes the creation of environmentally friendly technologies, which allows us to look to the future of the planet and humanity with a certain degree of optimism.

References
[1] SHarkova E A 2014 Environmental communication as the informational and the communactive component of environmental political process. Vlast’ 7 43–48.
[2] Littlejohn S W, Foss K A 2003. Encyclopedia of Communication Theory (New Mexico: Sage Reference Publishing)
[3] Flor A G 2003 Environmental Communication (Quezon City: University of the Philippines Diliman)
[4] Meisner M 2009 What is environmental communication? Retrieved December 7. http://www.esf.edu/ecn/whatisec.htm
[5] Cox R 2010 Environmental communication and the public sphere (Los Angeles [etc.]: SAGE Publications)
[6] Aijmer K 2004 Pragmatic markers in spoken interlanguage Nordic Journal of English Studies 3(1) 173–190.
[7] Shamne N L, Shishkina E V 2017 German popular scientific medical online media: structural and functional aspects. Vestnik Volgogradskogo gosudarstvennogo universiteta-seriya 2-Yazykoznanie. 16(2) 143-151
[8] Gee J P 1996 Social Linguistics and Literacies: Ideologies in Discourses (London) 97–121
[9] Jung M 1996 Linguistische Diskursgeschichte, Öffentlicher Sprachgebrauch. Praktische und historische Perspektiven. Georg Stötzel zum 60. Geburtstag gewidmet. K. Böke, M. Jung, M. Wengeler (Hrsg.) (Opladen: Westdeutscher Verlag)
[10] Schiffrin D 1994. Approaches to Discourse (Cambridge, MA: BlackwellPublishers Inc.) 1994
[11] Stubbs M 1983 Discourse Analysis: the Sociolinguistic Analysis of Natural Language (Oxford: Blackwell)
[12] Alexander R & Stibbe A 2014 From the analysis of ecological discourse to the ecological analysis of discourse. Lang. Sci. A. 41 104–10
[13] Chen S 2016 Language and ecology: A content analysis of ecolinguistics as an emerging research field Ampersand. 3 108–16
[14] Stibbe A 2015 Ecolinguistics: Language, Ecology, and the Stories We Live by (London: Routledge)
[15] Fill A 2018 Introduction. The Routledge Handbook of Ecolinguistics. Routledge 29–41.
[16] Haugen E 1972 The Ecology of Language (Stanford University Press)
[17] Shamne N L 2010 EHkolingvistika: teoreticheskie i prikladnye aspekty. Language, person,
[18] Steffensen S V, Fill A 2013 Ecolinguistics: the state of the art and future horizons. *Lang. Sci.* 41. pp. 6–25.

[19] Kushneruk S P 2018 Peculiarities of the official communication in professional communities. *Vestnik Volgogradskogo gosudarstvennogo universiteta-seriya 2-Yazykoznanie*. 17(2) 170-173

[20] Rokeach M 1973 *The Nature of Human Values* (N.Y).

[21] Schwartz S H 1992 *Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries*, In: M. Zanna, Ed., Advances in Experimental Psychology, (Academic Press: Orlando), pp. 1-65

[22] Valeeva N G, Ivanova N V 2011 Procedural issues of discourse analysis. *Vestnik RUDN, seriya Voprosy obrazovaniya: yazyki i special’nost’*. 3 20–24

[23] Cambridge Dictionary: https://dictionary.cambridge.org

[24] Moldavska A, Welo T 2017 The concept of sustainable manufacturing and its definitions: A content-analysis based literature review *Journal of Cleaner Production*. 166 744–55.

[25] Green Technology: green-technology.org

[26] NUSTBlogs: https://www.nist.gov/blogs/manufacturing-innovation-blog/five-benefits-embracing-sustainability

[27] NISTBlogs: https://www.nist.gov/blogs/manufacturing-innovation-blog/five-benefits-embracing-sustainability-and-green-manufacturing

[28] Cambridge Dictionary: https://dictionary.cambridge.org

[29] Garetti M, Taisch M 2012 Sustainable manufacturing: trends and research challenges. *Production Planning and Control*. 23(2–3) 83–104

[30] Baines T, Brown S, Benedettini O, Ball P 2012. Examining green production and its role within the competitive strategy of manufacturers. *Journal of Industrial Engineering and Management*. 5(1) 53–87.

[31] Abdul Rashid S H, Evans S, Longhurst P 2008 A comparison of four sustainable manufacturing strategies. *International Journal of Sustainable Engineering*. 1(3) 214–29.