



ORIGINAL RESEARCH ARTICLE

Lexis of climate phenomena in social sciences students' daily discourse

Waldemar Tłokiński*

Ateneum-University in Gdańsk, Poland

Received 12 November 2019; accepted 6 March 2020

Available online 8 April 2020

KEYWORDS

Ecology;
Climate;
Lexical analysis;
Environmental responsibility;
Social science students

Summary An academic degree gained in the field of social sciences also means more extensive knowledge of the surrounding world understood as the natural environment crucial in defining the position and development of humankind. Interpersonal communication, apart from the colloquialisms related to climate phenomena (weather), shows an evolving state of knowledge of the topic, changing attitudes, and possible stances formulating the need for change. Opinion polls conducted among 150 social science students comprise the source material for the lexicological analysis in the areas of the knowledge, time, and responsibility (related to environmentalism and climate) indicating that attitudes towards the natural environment are present in communicative behaviours.

© 2020 Institute of Oceanology of the Polish Academy of Sciences. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

The decision to acquire higher education in the field of social sciences is also related to the desire to gain a more extensive knowledge of the surrounding world crucial in

defining the position of development of the humankind. Humans place their social relations within a value system ontologically defining them and their need for coexistence. The consequences of obtaining a prospective academic degree are tied to a temporal perspective: the past, the present, and the future. The past time is synonymous with progressing towards developmental maturity, also meaning the decision to apply to university. The present time determines all experiences of the candidates, including those related to the realisation of their decision. The future time means a vision of the practical operationalisation of acquired qualifications. Since the justification of attitudes and actions related to environmentalism and climate lies within the temporal perspective, it uniquely emphasises how essential is the ability to comprehend and define future time.

* Corresponding author at: Ateneum-University in Gdańsk, 3 Maja 25A, 80–802 Gdańsk, Poland.

E-mail address: komwt@ug.edu.pl

Peer review under the responsibility of the Institute of Oceanology of the Polish Academy of Sciences.



Production and hosting by Elsevier

Students' attitudes towards such issues may be researched indirectly through lexical analysis of their daily discourse, the presence and quality of the lexis used by the students to describe not only climate phenomena but also their present and future roles in the surrounding world. The research will enable to assess how critical climate-related issues are for students concerning their future and the responsibility for future generations. The research assumes that interpersonal communication, apart from the colloquialisms related to climate phenomena (weather), shows an evolving state of knowledge of the topic, changing attitudes, and possible stances formulating the need for change. Questionnaire surveys comprise the source material for lexical analyses aimed to reveal attitudes towards the natural environment present in communicative behaviours.

1.1. The future time as a temporal category: interpretation

This part presents remarks interpreting the category of the future time, which are affected by the psychological approach permeating popular self-help books. Pragmatic aspects have indeed been chosen based on the pragmatic angle revealed in the results of the conducted questionnaire surveys, since the resulting image of the environmental awareness of social science students is to enable the choice of the level, range, and strategies for communicative interactions possibly shaped by demographic aspects, especially by education and age. Barbara Fredrickson offers the approach which is crucial for this paper in her book *Positivity* (2009; Polish edition: Fredrickson, 2017). It is also worth mentioning Katarzyna Skowronek conducted an interesting analysis of the stances establishing the concept of the future time adopted by such authors as Bhagwan Shree Rajneesh (2009), Deepak Chopra (2018), and Barbara Fredrickson mentioned above (Skowronek, 2013). Skowronek's strategy was to analyse works offering three discrete approaches to the construct of the future time presented in best-selling popular psychology self-help books offering motivational and inspirational messages, translated into numerous languages. Skowronek offers the conclusion that, while the authors define and evaluate the future time in different ways, they offer two common concepts: change (or renewal) and the present as the future of a creative individual is determined (changed) in the present. Skowronek asserts that the vision of the future promoted by the self-help guides blends individualism and individual creativity characteristic of the Western culture with the Oriental world view; she characterises the modern "spiritual individual" as possessing significant self-awareness, the autonomy of choices, individualism, and a dislike for forced solutions (Skowronek, 2013).

Fredrickson bases her concept of the understanding of the future time construct on change (transformation) and choice. The quality of human life in the future is determined by the correct choice and conscious completion of present tasks. The tasks are understood as activities aimed at self-change: "If you want — change your f u t u r e r i g h t n o w" (Skowronek, 2013, p. 258). An individual has two options to choose from: either flourishing or stagnation, which is possible due to a conscious effort and not wishful thinking. The

quality of the future is foreseen in the present. Fredrickson proposes to treat the future as a therapeutic method: the list of twelve tools she created aims to increase the effect of positivity.

1.2. Environmental responsibility of the individual in the perspective of the temporal category

Human fate involves a fundamental choice: to be a responsible individual or to shirk responsibility and to break the bond between the world and oneself. This ambivalent freedom of choice points unambiguously to the conditions of real humanity, which cannot exist without responsibility (Kirkegaard, 1982; Ingarden, 1972). When relating the category of responsibility to the temporal perspective, Picht argues that human responsibility is the responsibility for the future as the direction and boundaries result from the essence of time (Picht, 1981). Marek-Bieniasz uses this epistemological genesis for environmental responsibility (2015). Environmental responsibility possesses all characteristics of human responsibility in general. Invoking the care of the ecosystem as a fragment of the biosphere in the global and local perspective expresses a particular human responsibility whose duties add to its environmental perspective. Relating environmental responsibility to the temporal perspective means the human is currently shaping the future state of the natural environment. This seems the source of Ingarden's claim that human responsibility is possible and realisable in the temporal structure of the world. Simultaneously, it means the responsibility for future generations, namely responsibility for the continued existence of humankind, responsibility for biological health of humankind, or responsibility for the environmental awareness of future generations (Marek-Bieniasz, 2015). The implementation of this vision requires extensive knowledge of the environment and an awareness of the unique role of humankind in the community actions for the good of all beings on Earth. All this establishes the axiology of human activities anchoring environmental responsibility on the planet.

2. Data and methods

Data used in the study come from an original questionnaire filled by Social Science students of Ateneum-University in Gdańsk in 2019. The questioned group consisted of 97 women and 53 men, the average age amounting to 29.7. Fifteen questions were grouped into three problem modules: **Knowledge, Time, Responsibility**. **Knowledge** module contained the following questions: How do you understand the word "environmentalism"? What do you know about climate change? What is the cause of climate change? Under which circumstances do you use vocabulary connected with climate? What type of vocabulary do you use when adverting to climate? **Time** module took cognisance of the following issues: What period do you advert to most frequently when talking about climate? How distant time perspective do you apply when talking about climate? While talking about climate, do you only think about the present or also about the past and the future? Is time perspective of the future important to you, and how important is it? Do you notice the connection between climate issues and the category of time (of

which one mainly)? **Responsibility** module comprised of the following questions: What place in the importance ranking do you assign to environmental responsibility? Do you fear a global climate crisis? Do you feel responsible for climate change? Which of the scales (local or global) would be closer to you were you to act for the climate? What type of vocabulary is usually used when talking about environmental responsibility? The aforementioned problem modules were interlinked by a common question about contemporary social science students' stance on climate phenomena expressed by the lexis used in their responses. Of primary interest were both conceptual range of words and their terminological relevance, as well as period placement, understanding the duties to self and others, and, more broadly, to the ecosystem. Simultaneously, the modules allowed for noticing axiological characteristics attributed to climate issues by students participating in the study. The present study, analysing stances of young generation's intelligentsia, fits into the global current of alarming against societies' and governments' indifference towards the nearest future of humankind and the planet.

3. Results and discussion

The first problem module involved the type and range of knowledge about environmentalism and climate change possessed by social science students. Analysing the conceptual range of the term "environmentalism" allowed to draw attention to three methods of interpretation, the content of this word (single lexemes, expressions, locutions). The first method combined interpretation with different forms of activity, e.g. *caring for the environment and wildlife, limiting harmful substances, rational managing of waste, eliminating plastic, caring about nature, protecting the Earth from destruction, preventing global warming, fighting with pollution, caring for the climate*. The number of such answers amounted to 47.5%. The next group of interpretation (35%) related to a specific discipline, sciences, e.g. *Earth system science and its existence, biodiversity science, environment science and its influence on surroundings, a field of science referring to wildlife and natural environment, environmental protection and cooperation science, ecology, ecosystem protection science, approach to the world, the environment*, and more. The last type of interpretation activities associated environmentalism with different forms of natural resources (17.5%), e.g. *what surrounds me, wildlife, the climate, people, the world, a healthy environment, the future, lifestyle, clean, well-maintained, litter-free environments*, and more. The given answers prove that only 1/3 of students possess linguistic awareness and consider the formal aspects of lexis, in this case morphological (for instance: eco-logy), almost half of them concentrate on the prevailing content, overlooking the coexisting grammatical information. The last group demonstrates the knowledge not by definitions but by the wording, quoting the names of fragments of reality functionally combined with environmentalism. Generally, it may be stated that a practical aspect related to activity dominates amongst the interpretations, overlapping a theoretical, definitional aspect.

Knowledge about climate change and its causes divides the students' linguistic conceptualisation into several sub-

groups, although only three references may be indicated concerning the content: wildlife (47.5%), the human factor (42.5%), and technological development (10%). Were human activity and technological development to be combined, students would claim both wildlife and humankind responsible for climate change almost to the same extent. Referring to wildlife, students isolated linguistically two groups of reasons: global warming (35%) and the atmosphere, wildlife (12.5%).

Giving the circumstances under which words connected with climate were applied, students pointed to the context of words' appearance (60%), the place of words' usage (25%) or they admitted to not talking about climate at all (15%). Regarding the context, they suggested the topic of weather, advertising campaigns, political slogans, education, climate change, being an activist for climate, choosing a holiday destination, changing of seasons, environmental development, global warming, and other topics. Home and workplace were mentioned among the places where words connected with climate appear.

In the talks referring to climate issues, students enumerated examples which could be conventionally placed within three groups: phenomena and general concepts (65%), phenomena and specific concepts (20%), occasional lexis (15%). Amidst the general phenomena were: *seasons, global warming, ecosystem, environmentalism, the environment, weather, pollution*, and more. The group of specific phenomena contained: *eliminating plastic, saving water, the ozone hole, recycling, air purity*. An example of occasional lexis could be such lexemes as *glaciers, coal, dangers, changes, health*, and more. The second module referred to the category of tense (past, present, future) and its combination with the content of lexis applied to climate. In the talks about climate, the students pointed mainly to present tense (44%), subsequently to future tense (36%), and lastly to past tense (20%). Defining time perspective crucial for climate phenomena, the students decided to apply periods such as: one year, a few years (30%), 10–20 years (15%), 20–30 years (22%), 50–60 years (13%), 100 years (6.9%), hundreds of years (10.5%), whole life (2.6%). As it is effortlessly noticeable, the most frequently chosen period of perspective is the time up to 30 years, equalling one subsequent generation.

Commenting on climate, students willingly applied future tense (42%), then present tense (34%), and, relatively rarely, past tense (24%). For students, future perspective seems to be the most optimal when addressing climate issues, which was proven by the answers ascribed to three categories: important (73.5%), averagely important (16%), unimportant (10.5%). A similar division may be observed in responses pointing to students' noticing the relation between climate issues and future tense category (44%), then present tense (31%) and lastly past tense (25%). Although time perspective concerns mostly one generation, the students claim future tense to be a category most related to thinking and talking about climate issues.

The third module concerned the sense of environmental responsibility. Establishing the ranking of importance of these issues, students claimed them to be priorities, primary (70%), second (13%), third (5%), fourth (3%), penultimate (3%), ultimate (6%). Students described their having concerns about the global climate crisis as: yes (74%), a lit-

tle (5%), no (21%). 82% of students admitted to being responsible for climate change, the remaining refrained from such responsibility (18%). The next question concerned the choice of scale (local or global) as an area of prospective activity for the climate. Students prominently favoured the local scale (72.5%), and the global scale was chosen by 27.5% of them.

When questioned about vocabulary appearing in their discussions concerning responsibility for climate, the students referred to the following lexemes (and expressions): *environment protection, waste segregation, global warming, ozone hole, environmental responsibility, future, development, logging, renewable energy, frugality, animal protection, air pollution, carbon dioxide, sea levels, chimney filters, solar panels, climate education, greenhouse gases, consumerism, neglect of the environment, smog, and more.*

As stated before, time perspective uniquely indicates the importance of understanding and defining the future tense category, since it is precisely the sphere where justifications of stances and activities concerning environmentalism and climate issues are included. The study confirmed that future tense has developed into a dominating perspective for students wishing to locate their responsibility for climate and the environment. Such a stance is related to the pragmatics of activities for the climate, which was indicated in the form of expressions and locutions. Linguistic formulations present in students' utterances confirm a relatively high level of the sense of responsibility attributed to humankind which, along with its increasing technological development, is leading to environmental disaster. In the importance ranking, care for climate issues was expressed by 3/4 of students, simultaneously almost equal number evinced their concern connected to the global climate crisis. What is also captivating is students' realisation of a need for action for the local environment, as this is the place where they wish to start accomplishing their environmental responsibility. A local perspective means focusing on the place of abode rather than on the whole country.

The conducted lexical analyses of social sciences students' statements indicate the material pragmatism of used expressions and utterances, which combines their method of expressing issues concerning environmentalism (the climate) with the need for action. Opting for the future tense perspective resulted in reaching for wishfully formulated activity, e.g. *necessary elimination of plastic, essential saving water, prohibiting to burn coal for heat at home*, and more. The students also proved to possess knowledge which, through the size of the conceptual range of given lexemes, enabled to determine the extent of issues and realities included in necessary activity for the climate. It does not mean that educating by raising environmental awareness, knowledge, and responsibility, as well as by taking cognisance of recent research and global trends in care for the climate and the environment, should not be continued. It can be stated that current information activities spread about all the media have substantially developed pro-environmental thinking, with climate issues being brought to the forefront. It is also crucial to notice in the vocabulary used by the students that the main objective of reducing the greenhouse effect was concern about health

and future generations, though attention was also paid to the high cost of this activity.

4. Conclusion

Due to the fact that increasing consequences of climate change hold a leading position on the list of the most important tendencies in the repertory of environmental issues, which was also noted in the editing of the National Environmental Policy of Poland 2030, concerns about raising the level of young generations' environmental awareness should remain closely connected to monitoring the state of this very awareness among various populations of citizens. Social science students constitute a group which is particularly aware of civic duties, including concern about wise government, social prosperity, and the environment in a broad sense. The perspective applied to consider these issues should depict the connection between climate and the interim state of the economy, as well as, more broadly, between climate and biodiversity, including species distribution. The tasks awaiting countries, concerning a just and solidary transformation, remain related to pending global energetic transformation, which in turn is connected to environmental policies. It is noticeable that a broad spectrum of climate issues requires a unique type of education. Most frequently, the media reporting on these issues are television and the Internet. The broadcast publicistic and popular science materials define a lexical range acquired by the receivers, as well as the method of understanding the words-terms and the importance of the necessary activity. An opinion poll from 2019 carried out among the social science students focused on the lexis associated with three aspects acting as indicators of stances on the awaiting environmental changes, climate change included. The mentioned indicators are knowledge, time and responsibility. Linguistic forms describing the term "ecology", resulting from the knowledge being the function of students' individual linguistic experience, possess mainly the form of figures of speech, marked by the functioning. It is only after this process that the linguistic formulation of knowledge on this topic takes the form of a definition. Such a system, attributing a crucial role to activity for climate, becomes an essential characteristic of contemporary youth's stance on this matter.

The second indicator is the time perspective. The students clearly gravitated towards the future tense perspective, though they extraordinarily associated it with present tense perspective. Due to the present change of existing reality, future perspective can be created; as it results from the study, the students evidently realise this.

In terms of responsibility, a high rate of students (82%) notice their individual responsibility for the environment, express concern for the future, and postulate that the governments take action not only on a local scale. It is evident from the study that the issues of the environment and the necessity to act in order to save it from progressive biological degradation caused by humankind are noticed and accepted by the young generation, though the instigated activity is mainly of a local scale. It is then indispensable to educate people on a significantly broader, global scale, as it will allow to understand better and improve everything

which, on a local scale, is progressively done for the ecosystem, more broadly – for the biosphere. The consciousness of a relation between local activities and global effects is explained as the very nature of wildlife treated as functional integrity. The students' pointing to the local scale is understandable, as such perspective is appropriate for environmental responsibility, which, in result, co-creates reality of global meaning.

References

- Chopra, D., 2018. Zatrzymaj czas. Helion, Gliwie, 392 pp.
- Fredrickson, B., 2017. Pozytywność. Naukowe podejście do emocji, które pomagają zmienić jakość życia, (polish translation J. Gilewicz). Zys i S-ka, Poznań, 329 pp.
- Ingarden, R., 1972. Książeczka o człowieku. Wydawnictwo Literackie, Kraków, 176 pp.
- Kierkegaard, S., 1982. Albo, albo, 1–2. PWN, Warszawa, 521+493 pp.
- Marek-Bieniasz, A., 2015. Odpowiedzialność ekologiczna jako istotny obszar ludzkiej odpowiedzialności – wymiar lokalny i globalny. *Studies in Global Ethics and Global Education* 3, 16–28. <https://doi.org/10.5604/23920890>.
- Picht, G., 1981. Odwaga utopia. PIW, Warszawa, 280 pp.
- Rajneesh, B.S., 2009. Świadomość. Klucz do życia w równowadze. Garmond, Częstochowa, 232 pp.
- Skowronek, K., 2013. Konstrukcje przyszłości w popularnych poradnikach psychologicznych (typu *self-help*), *Prace Kulturoznawcze XV. Acta Universitatis Wratislaviensis* 3487, 257–269.