ESSAY ON METHODOLOGY OF LANGUAGE RESEARCH

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Science and technical development reveals new prospects for both technical researchers and humanists. The article deals with the issue of methodology base to study linguistic phenomena in general and from the diachronic point of view in particular. The key attention is paid to a corpus research of languages as a new promising trend in linguistics, which corresponds to time demands and is not temporary. Corpus methods and approaches not only enhance researches of language phenomena, but also significantly upgrade effectiveness, authenticity and check of processed-data results. They allow settling issues that were not practically researched by the last-century linguistics because of their voluminous character. Aspects are analyzed that show practical future relevance of corpus methodology for settling linguistic issues.

Key words: corpus research, quantitative analysis, methods.

Defining the research challenge and its topicality. Science and technical development reveals new prospects for both technical researchers and humanists. Modern information technologies get broadly applied within linguistic researches in the form of different electronic resources (electronic dictionaries, databases, text corpora), which promotes quick and objective processing of linguistic data. Thus, the presence of electronic automatically processed linguistic databases not only significantly upgrades a voluminous process of collecting language materials, but also leads to changing the scientific paradigm in linguistics [1]. Today such tasks are successfully completed by corpus linguistics – a branch of computer linguistics that comprises developing general principles of constructing and applying computer-processed linguistic corpora (text corpora). This allows gaining quicker results of processing large text arrays, which previously took quite a long time. Corpora not only make it possible to improve language researches and increase effectiveness, authenticity and check of processed-data results. They also let researchers settle those issues that were not practically studied by the last-century linguistics because of their voluminous character. Within these issues one can discern, for example, different statistical and other quantitative researches of a language. Moreover, corpus linguistics is not only a tool for quantitative and statistical aims, but also “a peculiar research strategy or methodology” [2, c. 19]. A necessity of getting objective quantitative data, a demand for many examples and a need to have a broad “geography” of sources presupposes totally another methodology approach to settling issues as well, which conditions the topicality of our research.

Corpus linguistics proceeds from a point when a researcher, on the one hand, is an outside spectator of language phenomena and, on the other hand, spontaneously sets parameters for selecting and analyzing corpus data. Thus, corpus linguistics integrates theoretical linguistics principles with empirical ones.

The research object comprises ideas of modern home and foreign researchers concerning ways of applying corpus methodology in modern linguistics.

The research subject consists in analyzing works of home and foreign scientists who cover issues of researching linguistic phenomena by means of methods and approaches of corpus linguistics.

The research aim is revealed as producing arguments that prove relevance of applying corpus methodology for settling linguistic issues.

Reaching the above-mentioned aim presupposes settling following tasks:
to determine the role and place of corpus methodology within modern science linguistics paradigm;

– to compare arguments “for” and “against” in terms of applying corpus technologies for describing linguistic phenomena;

– to provide aspects that prove relevance and prospects of corpus research methodology for settling linguistic issues.

**Exposition of main research materials and analysis of research results.** The definition of the notion “corpus” is ambiguous and quite multi-faceted. Thus, let us sort out the interpretation of the term “corpus”:

– an approximate whole set of expressions selected for analysis and represented in the form of written texts, records, etc;

– a whole set of speech works created by native speakers of a certain language [3, с. 209].

There is a great variety of definitions of the term “linguistic corpus” as well. From our perspective, as a basic definition we can regard the following one: “linguistic corpus (language corpus) is a large electronic philologically competent set of language resources which are unified, structured and annotated as well as applied for settling certain linguistic issues” [4, p. 8].

Within corpus linguistics one singles out following types of corpora: illustrative, researching, dynamic, statistic ones. Researching corpora are usually applied for studying different aspects of language-system functions. This type of corpus resources is mainly directed for a broad range of linguistic tasks. The key demands raised by researchers to this corpus type are predominantly representativeness, fullness, economy, self-sufficiency, computer-based support, material structuring [5, p. 118–119].

A peculiar corpus feature distinguishing corpus sets from random text sets also consists in presence of additional information about initial-text properties contained within corpus resources (markup, or annotation). Each text should have linguistic and extralinguistic markups. The information about a text should also include data reporting about addressees, time and place of text recording, certain communicative situation, used dialects, etc. Meta-text information has to be universal and typical for linguistic corpora of different types for not to restrict search parameters and make a corpus available for many researches who have own aims, approaches and initial hypotheses.

A significant voluminosness and completeness is peculiar to national-language corpora (for example, among such corpora one can discern the Russian National Corpus, the Braun Corpus of the American-English Variant, the British National Corpus, etc.). Researchers of many countries develop corpora in separate language branches (dialect corpora, oral-language and written-language corpora, SMS-language corpora, child-language corpora, journalism corpora, etc) [6, p. 113–123]. A broad information system is the German Oral-Language Corpus (Datenbank Gesprochenes Deutsch (DGD des DSav)) developed by Mannheim Institute of the German Language.

Researchers develop dialect corpora as well. Dialect corpora are a peculiar type of linguistic corpora that differ from national oral-speech corpora in a certain way because a dialect language system is distinguished from standard literary norms and even speech norms by many parameters (various phonetic variants of the same lexeme, unique dialect vocabulary that cannot be translated by simple methods into a literary language, etc). Constructing a dialect corpus is complicated by a range of difficulties:

– system language differences from a literary language;

– exclusively oral character of dialect communication that makes it impossible to base oneself on written sources;

– variability on all levels, which produces certain difficulties for identifying corpus units;

– absence of uniformity in the process of registering a dialect language and different ways of arranging information.
It is these difficulties that are the cause of still a small amount of dialect and region corpora within both home-language and foreign-language spaces. Technical and methodological issues are quite similar. Thus, developers of dialect corpora define necessary parameters for clear corpus conception. Within these parameters they sort out:

– principles of selecting dialect material and criteria of dialect-corpus representativeness;
– principles of dividing language continuum in a corpus;
– parameters of gaining text fragments;
– forms of reproducing dialect texts in a corpus;
– types and rules of annotating a corpus text base;
– parameters of meta-layout of dialect texts;
– representativeness of extra-linguistic information in a dialect corpus;
– optimal possibilities for users’ queries in the process of dialect researches [4].

European corpora of oral and dialect speech use the EXMARLDA system (the Extensible Markup Language for Discourse Annotation system), namely an advanced markup system of oral-language annotation. This is a system of programs and tools for constructing, managing annotating and processing oral-speech corpora. The basic program for initial construction and annotation of text corpora is the Partitur Editor (the Score Editor) program whose name itself defines a peculiar type of entering information – partitur, or score, notation. As opposed to the so-called drama notation including a vertical text layout, the score notation is regarded as more appropriate. It is built as a music score but instead of musical instrument one discerns communication participants. It helps to produce a clearer reflection of communication process in absolute dimension (on the time scale) and in relative dimension that characterizes speech of communication participants in comparison with one another (simultaneous speaking, pauses, remarks). From the technical perspective, the score notation demands more accuracy and is more difficult in terms of performing. However, applying special means of computer-based support helps to simplify generating score transcripts of speech [5, p. 124].

Thus, electronic corpora of dialect texts are a completely new source that promotes engaging dialectology to modern science linguistics paradigm where studying main linguistic features of dialect units becomes automatic, which provides cross-researches of texts of different dialects, simplifies searching for and selecting necessary data and allows conducting diachronic researches within a long period of several decades.

Researching and developing corpora goes on. Let us stop to sort out the issue of corpus-methodology role and place within modern science linguistics paradigm. It is worth saying that expedience of applying corpus methods for describing linguistic phenomena is accompanied by both doubts and skepticism concerning reliability of such an information source as corpora.

Today among linguists there is the following question: what is a corpus language research – a time demand as a new linguistics trend or a temporary but popular preference of linguistic schools? Modern linguistics has different perspectives as to estimating functionality and relevance of the corpus approach to language researches. A range of researchers regard this approach as one that has a status of basic empiric linguistics paradigm, while other linguists say that corpora should be used only as a source of examples for illustrating statements of researched theories and hypotheses.

N. Khomskyi, a pioneer and leader of generative linguistics, says that the corpus approach boils down just to observing voluminous data, is not a method of science cognition and cannot provide neither settling cognitive and practical issues successfully nor enlarging one’s knowledge [7].

A broad range of modern corpus researches is shown by opponents of generative linguists, by corpus linguists from Cambridge University in the textbook “Corpus Linguistics: Method, Theory and Practice” where researchers define limits between two
main approaches to studying linguistic phenomena – corpus-driven and corpus-based ones - proving their parallel character [8].

If in the process of a certain research based on corpus data (corpus-based study) a researcher tries to check validity of a theory or hypothesis by applying corpus methods, then a researcher according to corpus data (corpus-driven study) builds his own theory completely relying on corpus material. In such a way a researcher describes usage. As we see, within foreign linguistics one researches no issue of applying corpora. Instead of that a predominant issue consists in approaches to this linguistic resource. However, the given difference is quite relative. Representatives of the cognitive trend in foreign linguistics incorporate empiric methods into linguistic description equating experiment with corpus data.

Among home linguists there is also no unanimous attitude to corpora. Some researchers regard corpus data as instruments, which quite resembles the corpus-based approach to linguistic description, while other researchers regard corpora as ideology and prefer methodology and terminology of the corpus-driven approach.

Linguists also state the following opinions: “A corpus revolution occurred in linguistics. After corpora appeared, linguistics became totally different, and even if we omit this exaggeration, corpus relevance will remain anyway. Corpus researches are more than analysis methodology” [9]. Nowadays home researchers not only apply corpus methods and data in their works but also construct and annotate corpus resources. That is why it is worth saying that modern linguistics has to become linguistics of corpora when research-material selecting will be based not on dictionary data but on properly entered search queries.

There are also researchers who are rather skeptical in terms of applying corpus technologies within linguistics. They believe that applying corpus resources for linguistic description is only a tribute to fashion. As it was popular to research concepts, scripts, frames and other structures derived from the Western linguistics at the turn of the century, so too it is today popular to apply corpus data, perform quantitative and statistical analyses, establish frequency of language-unit use and research units functioning in certain constructions. Thus, skeptics suppose that such a corpus interest will gradually disappear like the previous popular fashion of describing concepts.

Finally, let us recall the heritage of Russian cognitive linguists who search for ways of integrating cognitive linguistics with corpus linguistics “to develop an integrated methodology within modern cognitive and corpus paradigms” [10]. You can acquaint yourself with results of such an integration in the collective monograph “Methods of Cognitive Analysis of Word Semantics: A Computer-Corpus Approach”, which provides word-semantics analysis on the base of corpus data [10].

Following О. Boryskina, the supporter of corpus methodology in researching linguistic problems, we will also consider the arguments of linguists who keep to a non-corpus linguistic analysis.

The intensive development of information technologies seems not to arouse doubts about the necessity and prospects of corpus linguistics and corpus-based language studies. However, skeptics believe that it is silly to talk about prospects of this field which is not even UDC-classified. And this formal feature is not the only one that discredits the importance of corpus methodology for researching linguistic phenomena.

Another argument, common for the skeptically disposed part of linguistic community, is a doubt about the appropriateness of giving special status to corpus-based researches, because in any field of linguistics a researcher shapes a data file of the material. This is a mandatory stage of any scientific research – whether it is a linguistic experiment or researches in a semantic field. Corpus, in their opinion, is a buzzword that supplants a domestic concept – a data file. Obviously, here we face the substitution of concepts._corpus (with a mark-up and annotation) is not a data file in terms of its scale, functionality and opportunities.
Supporters of a balanced careful handling of corpus data, especially when referring to Wikipedia Corpus or Google Books, believe that some linguists blindly follow “the fashion on corpora” and such a fashion often leads to fraud and quantity data misuse. “Crude” frequency counting of word usage can not be a genuineness criterion of statements concerning functionality of a linguistic object. These issues as to quality of obtained results entirely relate to researcher’s professional competence. Both unstable terminology and undeveloped methodology of corpus researches partly contribute to the dilettantism manifestations among scientists in the field of corpus linguistics. However, it should be emphasized that this fact does not diminish the importance of corpus technology.

The next argument indicating “the fashion on corpora” consists in that many electronic linguistic resources are not free of charge. In such a situation researchers who want “to be in trend” use demo versions, which is often hushed up in scientific literature. Such practice leads to outright schlock and to inauthenticity of results because such an analysis is based on incomplete and inaccurate information of demo data.

Usual nature of corpus that contains obscene and improper use also contributes to unreliable results of corpus researches, especially in the case of Internet resources. Such a state of things justifies supporters’ concerns as to traditional research methods and introspection about limitedness of the corpus approach. In fact, results of such a research are limited to the description of usage, which, according to skeptics, cannot allow drawing conclusions about the theoretically important patterns of the language system.

Applying corpus technologies provides acquaintance with basics of corpus and IT terminology, possession of skills of forming a search request that is optimal for research purposes and knowledge of methods of quantitative and statistical data processing. Work of a corpus linguist is also complicated by imperfection of search tools, which generates skepticism. Search by request may produce hundreds and even thousands of results (contexts of word use) that are physically impossible to review within a limited time frame. This provokes skeptics to feel critical about claims of revolutionary and romantic scientists that corpus technology saves time and that search engines help solve problems of architectonics and language development. Improving search engines and search techniques is one of the most important tasks that corpus linguistics is currently facing.

At present we should consider the question why corpus linguists are so convinced that the modern study of language cannot dispense with corpus linguistics. Firstly, corpus researches of language are notable for their data representativeness, which provides for both soberly quantitative and statistical researches [11; 12]. However, the issue of balance and representativeness of corpora is still open. [13] Secondly, corpus researches are getting to be more and more successful attempts of making something unavailable (e.g. oral discourse) become available (discourse presented in annotated texts that you can study [14]). In addition, corpus technologies give an opportunity to begin observing rare linguistic phenomena and to follow the dynamics of language changes within a small time interval. In the corpus research of language both frequency and occasional phenomena are reflected and interpreted. Some research assignments involve using not just one but several resources. Comparison and competent analysis of data obtained by using different corpora enable the establishment of language variativity and language change patterns, the prediction of further development of a described phenomenon, and understanding of such occurrences which are contrary to established notions of a linguistic norm.

Unlike other research types (introspection, dictionary work), corpus methodology allows testing hypotheses about linguistic change and patterns. Using corpora also allows objectifying linguistics, finding stronger arguments as to facts, creating a situation of recurrence, which is an important part of science, because testing a corpus research ensures its efficiency, repeatability and reliability.

Another factor that demonstrates a demand for corpus researches is the fact that corpus technologies can get entirely new information regarding language evolution, architectonics and functioning.
In the 1980s of the 20th century, together with improved technical performance of computer technologies and increasing electronic versions of previous era's historical and literary texts, corpus studies within historical linguistics became significantly widespread. The possibility of obtaining a representative language sampling at different stages of history in a typewritten form has allowed historians to carry out their diachronic researches quickly and efficiently. The obtained results characterized by increased systematicality and comprehensiveness allow following the dynamics of language changes, establishing national-language patterns and revealing specifics of dialects functionality [15, p. 131]. For example, the Helsinki corpus is a well-known and commonly used corpus of texts of different periods. The Lampeter corpus of Early Modern English contains a selection of pamphlets published between 1640 and 1740. The Bonn corpus is formed from Early Modern High German texts, and the Bochum corpus contains manuscripts of Middle High German.

Therefore, it should be noted that corpus-oriented historic and linguistic studies are not only important in foreign linguistics, but they also gradually acquire the status of a top trend within Ukrainian germanistics. The corpus of authentic writings is a reliable primary source of historical researches of word formation, which lets you see the dynamics and variability of the word-formation system within different periods of language development [16, p. 61–86].

Research conclusions. Scientists warn about "the danger of novelty" in the modern science language paradigm calling it a paradox of its internal development. "We, linguists, can learn a lot but do we want to know it all? It turns out that not always and not all linguists wanted it, which is a very interesting fact. Huge amounts of data that are literally pouring on us may in many ways force a revision of notions about language, its existence and changes within it. It is clear that not everyone may like it; all ideas may have authors; these authors somehow exist in science; and then suddenly a corpus appears from which it turns out that it is not true, that we need new ideas and theories. It's better to stick to the old state of things. Psychologically this is quite understandable" [9], but in terms of practical significance of corpus methodology regarding linguistic phenomena it is unreasonable and inappropriate.

The novelty of the research results allows speaking about appropriateness of creating "corpus dictionaries" and "corpus grammars" of new generation, completed and verified in relation to a particular fixed corpus. A corpus character of dictionaries and grammars enhances their reliability and verification, allows avoiding subjectivity and incompleteness that are frequent defects of descriptions which are based solely on linguist's introspection. The creation of analyzers and specialized dictionaries for automated setting of corpus annotation (morphological, syntactic, semantic or thematic) is technologically possible but only within corpus linguistics. Another practical achievement of corpus technology is a significant decrease in time expenses for collecting and processing materials. It takes months or even years to get the same data manually (for example, by simply viewing texts and writing down examples on cards, as happened in the pre-computer era).

Therefore, the analysis of achievements of domestic and foreign researchers in the field of corpus linguistics methods and approaches application to solve linguistic problems allows pointing out their theoretical and practical significance, their principal novelty and prospects in the modern scientific language paradigm.

The considered advantages and disadvantages of corpus methodology regarding the language research indicate that corpus is an environment for obtaining new scientific data, the reflection of which is a priority for modern description of linguistic phenomena and is undoubtedly necessary in scientific researches of modern linguists.

The comparison of views and arguments of corpus linguists and traditional scientists as to need and appropriateness of corpus-research methodology in the scientific language paradigm makes it possible to conclude that using methods and approaches of corpus linguistics is an issue of great importance at present, which is associated with new linguistic reality and serves as a more objective and more important study of language phenomena
both at different stages of language development and from the intra-linguistic and extra-linguistic perspectives.

НАРИСІЗ МЕТОДОЛОГІЇ ДОСЛІДЖЕННЯ МОВИ

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Розвиток науки і техніки відкриває нові можливості для дослідників як технічної сфери діяльності, так і гуманітарної. У статті обговорюється питання методологічних засад студіювання лінгвістичних явищ. Основна участь фокусується на корпусно-комп’ютерному підході як новому та перспективному напрямку дослідження в лінгвістичній науковій парадигмі, що відповідає вимогам часу, а не в умовах неглибокого внутрішньо-гуманітарного колективу. Методи і підходи корпусної лінгвістики надають можливість прискорити дослідження мовних явищ, а також підкреслити ефективність, достовірність і переваги результатів обробки даних. Вони уможливлюють вирішення таких завдань, які лінгвістика останніх століть практично не ставила через об’ємність їх виконання. Оживається аспект, що відповідає значущість та перспективність критичних методів дослідження для вирішення проблем лінгвістики.

Ключові слова: корпусне дослідження, квантитативний аналіз, методи.

ОЧЕРК ПО МЕТОДОЛОГІЇ ИССЛЕДОВАНИЯ ЯЗЫКА

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Развитие науки и техники открывает новые возможности для исследователей как технической, так и гуманитарной отраслей. В статье рассматривается вопрос методологических оснований изучения лингвистических явлений. Первоочередное внимание уделяется компьютерно-корпусному подходу как новому и перспективному направлению исследований в лингвистической научной парадигме, что соответствует требованиям времени, а не является модной тенденцией. Методы и подходы корпусной лингвистики предоставляют возможность ускорить исследование языковых явлений, а также улучшить эффективность, достоверность и проверку результатов обработки данных. Они упрощают решение таких проблем, изучение которых лингвистика предыдущих веков практически не занималось в-за их объёма. Оживаются аспекты, которые подтверждают значимость и перспективность корпусных методов исследования для решения лингвистических проблем.

Ключевые слова: корпусное исследование, квантитативный анализ, методы, сленгобразование.

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