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The impact of digital environments on the cognitive mechanisms of speech and their significance for applied linguistics

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Abstract. The rapid expansion of digital environments has fundamentally reshaped the ways individuals processed, interpreted, and produced language, raising new questions for applied linguistics and psycholinguistics. This study aimed to analyse how digital contexts influenced language cognition and to identify their implications for applied linguistics in the digital era. The research adopted a structured literature review methodology, synthesising findings from peer-reviewed studies published between 2006 and 2025 and indexed in major international databases. The analysis integrated psycholinguistic and applied linguistic perspectives to provide a comprehensive understanding of the phenomenon. The results demonstrated that digital reading environments were associated with a measurable shift toward faster but less in-depth text processing, often resulting in reduced comprehension accuracy compared to traditional reading formats. At the same time, multimodal communication enhanced the efficiency of information processing but increased cognitive load due to the integration of multiple semiotic channels. The findings also revealed that interaction with AI-based language systems improved linguistic productivity and task performance, while simultaneously encouraging a tendency toward reduced critical evaluation of generated content. Overall, digital environments contributed to the emergence of a new type

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of language cognition characterised by increased processing speed, reliance on external cognitive resources, and adaptation to multimodal input. The study highlighted the need to reconsider traditional models of language competence and incorporate digital factors into applied linguistic research and pedagogy. The findings had practical implications for language education, digital literacy development, and the design of human-AI interaction systems

Keywords: digital communication; cognitive processing; multimodal discourse; human-AI interaction; digital literacy; language processing

Introduction

Over the period from 2006 to 2025, digital environments have fundamentally transformed the ways in which linguistic information has been created, processed, and interpreted. The rapid development of information technologies, the widespread use of mobile devices, the expansion of global communication networks, and the integration of artificial intelligence systems into everyday communication practices have led to substantial changes in human linguistic behaviour. As a result, a new cognitive reality has emerged, in which speech production, reading, and text interpretation occurred under conditions of constant interaction with digital interfaces. The large-scale digitalisation of communication intensified after 2006 due to the growing dependence on online interaction in educational, professional, and social contexts, which further increased scholarly attention to digital language cognition.

The growing role of online communication, social media, and digital platforms has contributed to the emergence of new forms of language use characterised by high dynamism, fragmentation, and multimodality. This tendency highlighted the need for their investigation within applied linguistics, psycholinguistics, and cognitive science. As N.S. Baron (2021) noted, digital reading differed significantly from traditional reading, particularly due to more superficial text processing and reduced levels of deep comprehension. C. Jewitt & K. Leder Mackley (2019) highlighted the importance of incorporating multimodal resources into cognitive

analyses of language. Digital technologies also influenced fundamental cognitive processes, including attention, memory, and thinking. Neurocognitive studies by G. Small *et al.* (2020) likewise confirmed the influence of digital environments on attention structures and memory mechanisms. At the same time, E. Alcocer-Vázquez & A. Zapata-González (2021) argued that digital environments fostered new forms of literacy combining traditional and emerging cognitive skills. Considerable scholarly attention was devoted to human interaction with artificial intelligence systems, particularly large language models. Studies by E.M. Bender & A. Koller (2020), as well as research by T. Gebru *et al.* (2021), focused on the cognitive and ethical risks associated with uncritical acceptance of automatically generated texts. Research conducted by E. Kasneci *et al.* (2023) highlighted the influence of AI systems on users' cognitive strategies and decision-making processes. The issue of digital language cognition was also addressed by Ukrainian scholars. In particular, O. Semenoh (2021) and M. Drushlyak *et al.* (2022) analysed the influence of digital communication on language education and the development of digital literacy in academic discourse. Research conducted by O. Syvokon & O. Nahorna (2021) examined the transformation of communicative practices and language behaviour in digital media environments. These studies demonstrated the growing interest of Ukrainian scholars in the cognitive and communicative dimensions of

digital discourse, although the psycholinguistic mechanisms of digital language processing and interaction with AI systems still remained insufficiently explored.

Despite the substantial body of research, several aspects remained insufficiently investigated. In particular, comprehensive psycholinguistic models integrating the effects of multimodality, digital reading, and interaction with AI systems into a unified cognitive framework were lacking. Empirical studies combining experimental methods, such as eye-tracking and ERP analysis, with investigations of authentic digital discourse also remained limited. In addition, the influence of digital environments on the development of linguistic competence across different age and social groups required further investigation. The aim of the article was to investigate the impact of digital environments on the cognitive processes of language and to determine their implications for applied linguistics. To achieve this aim, the study seeks to analyse approaches to studying the impact of digital environments on linguistic cognition in international and Ukrainian scholarly literature published between 2006 and 2025, to summarise research findings concerning the cognitive features of linguistic information processing in digital environments, and to identify the implications of multimodality and AI-mediated communication for applied linguistics and digital language competence.

Literature Review

Contemporary research on the impact of digital environments on linguistic cognition developed along several interrelated directions that together formed a coherent yet complex field of scientific inquiry during the period 2006-2025. These included digital reading, multimodal communication, cognitive aspects of online discourse, and human interaction with artificial intelligence systems. It was important to note that these directions did not exist in isolation but were closely interconnected, forming

a multidimensional system of cognitive processes characteristic of the digital era. Such integration of different research perspectives allowed scholars to consider linguistic cognition as a dynamic process that continuously adapted to the conditions of technologically mediated communication.

One of the most extensively studied aspects was the transformation of reading processes in digital environments, which was viewed as a key indicator of changes in human cognitive activity. In particular, N.S. Baron (2021) established that digital reading was often accompanied by fragmented text perception, reduced concentration, and a tendency toward superficial analysis. This was related to the features of digital interfaces, which encouraged rapid switching between information blocks and promoted scanning reading strategies. Similar conclusions were supported by empirical studies by A. Mangen *et al.* (2019), which demonstrated that reading from screens could reduce the level of text comprehension compared to paper-based reading, especially in the case of complex or lengthy texts. At the same time, P. Delgado *et al.* (2018), in their meta-analysis, emphasised that the effects of digital reading were not unequivocally negative, as they largely depended on the type of text, the level of cognitive load, and user experience. In particular, for short or information-dense texts, digital formats could even be more effective. In this context, V. Clinton (2019) noted that the difference between paper and digital reading was gradually diminishing due to users' adaptation to digital environments, which indicated the plasticity of cognitive mechanisms and their capacity for adaptation. Thus, contemporary studies demonstrated the complex and ambiguous nature of reading transformation, where negative effects coexisted with adaptive changes.

Another important research direction was related to multimodality as a key characteristic of digital discourse. G. Kress (2010) argued

that modern communication was based on the interaction of various semiotic resources, including text, images, sound, and video, which significantly transformed the traditional understanding of linguistic competence. Within this approach, language was viewed as only one component of a complex communicative system. A similar position was taken by C. Jewitt & K. Leder Mackley (2019), who emphasised the need for an integrated analysis of verbal and non-verbal components, as it was precisely their interaction that determined the process of meaning-making. Theo van T. Leeuwen (2021) highlighted the role of visual and auditory elements in meaning-making within digital environments, emphasising that they not only complemented text but could also function as autonomous carriers of meaning. Research also demonstrated that multimodality had an ambivalent character: on the one hand, it could enhance communication efficiency and the speed of information processing; on the other hand, it increased cognitive load due to the need to integrate multiple channels. This indicated the complexity of cognitive processes underlying multimodal perception and the need for further investigation.

Cognitive aspects of online communication were also actively studied in contemporary scholarship, as digital environments created new conditions for the functioning of attention, memory, and thinking. In particular, M. Wolf (2018) emphasised the impact of digital media on the development of deep reading and analytical thinking, highlighting the risk of losing the ability for sustained concentration. In turn, research by E. Alcocer-Vázquez & A. Zapata-González (2021) showed that digital literacy involved the development of new cognitive strategies, including skills of navigating hypertext, rapid information search, and critical evaluation. Furthermore, A. Mangen *et al.* (2019) stressed that the processing of multimodal messages required more complex integration of cognitive resources than

traditional reading, as it involved simultaneous engagement with different types of information. Studies by J. Firth *et al.* (2019) demonstrated that digital environments reshaped the structure of attention, promoting multitasking while simultaneously reducing concentration and the ability for deep information processing. Thus, digital communication shaped a new type of cognitive behaviour characterised by speed, flexibility, and fragmentation.

A separate body of research was devoted to human interaction with artificial intelligence systems, which represented one of the newest and most dynamic areas of modern science. E.M. Bender & A. Koller (2020) pointed out that language models could create an illusion of meaningfulness, which affected cognitive processes of text interpretation and might lead to erroneous conclusions. In turn, T. Gebru *et al.* (2021) emphasised the risks of uncritical acceptance of automatically generated content, highlighting the need to develop critical thinking in digital environments. Research by M. Warschauer (2011) showed that digital technologies, including AI, were transforming not only linguistic behaviour but also educational practices and approaches to the development of linguistic competence. In particular, the role of interactive learning, automated support systems, and personalised learning environments was increasing. At the same time, recent studies of E. Kasneci *et al.* (2023) and T. Jin *et al.* (2024) demonstrated that the use of generative AI influenced users' cognitive strategies, particularly decision-making processes and levels of trust in information.

The issue of digital language cognition was also addressed by Ukrainian scholars. In particular, O. Semenoh (2021) and M. Drushlyak *et al.* (2022) analysed the influence of digital communication on language education and the development of digital literacy in academic discourse. Research conducted by O. Syvokon & O. Nahorna (2021) examined the transformation of communicative practices

and language behaviour in digital media environments. These studies demonstrated the growing interest of Ukrainian scholars in the cognitive and communicative dimensions of digital discourse during the period 2006-2025. Overall, the reviewed literature provides a substantial theoretical and empirical foundation for understanding linguistic cognition in digital environments. At the same time, the findings remain fragmented across different research directions, highlighting the need for further synthesis and interdisciplinary integration. This confirms the relevance of the present study, which aims to provide a comprehensive analysis of the impact of digital environments on language-related cognitive processes.

Materials and Methods

This study took the form of a structured literature review, combining elements of narrative and analytical synthesis, which enabled a comprehensive analysis of the current state of research in the field of digital language cognition. Such an approach made it possible not only to summarise existing scientific findings but also to identify underlying patterns, theoretical discrepancies, and prospects for further research. The methodological foundation of the study was based on approaches to conducting systematic reviews proposed by B. Kitchenham (2004), which were adapted to the specifics of applied linguistics and psycholinguistics, taking into account the interdisciplinary nature of the research problem. The main objective of the applied methodological approach was to identify, systematise, and synthesise contemporary empirical and theoretical studies related to the impact of digital environments on language cognition, as well as to outline key trends, contradictions, and gaps in this field. Unlike a traditional narrative review, the applied approach involved a structured procedure for selecting and analysing sources, which enhanced the objectivity and reproducibility of the results.

The search for scientific sources was conducted in leading international scientometric databases, including Scopus, Web of Science, and Google Scholar, which ensured a high level of scientific quality and representativeness of the selected publications. The choice of these databases was justified by their broad coverage of peer-reviewed research in the fields of linguistics, cognitive science, and digital media. The temporal scope of the study covered the period from 2006 to 2025, which allowed a focus on the most recent scientific findings and ensured consideration of current trends in the development of digital communication. The search strategy involved the use of combinations of keywords and terms related to digital environments and language cognition, including digital reading, language cognition, multimodality, psycholinguistics, online discourse, and artificial intelligence in language, with the application of logical operators AND, OR, and NOT to improve the precision of selection. Additionally, filters were applied based on publication year, type of source (peer-reviewed articles), and language.

The inclusion criteria for the sample involved the selection of peer-reviewed scientific articles that directly addressed the study of language cognition in digital environments, contained a clearly described methodology, were published in academic journals or conference proceedings indexed in the specified databases, and belonged to the period 2006-2025. The exclusion criteria included publications without full-text access, studies with insufficiently described methodology, research not directly related to language cognition, and duplicate or secondary publications. The quality assessment of the selected studies was carried out according to a set of criteria, including the clarity of the research design, the validity and reliability of the methods used, the representativeness of the sample, and the scientific impact of the publications. A summary of the evaluation criteria was presented in Table 1.

Table 1. Criteria for evaluating the quality of selected studies

Criterion	Description of the Criterion	Evaluation Indicators	Rating Scale
Research design	Clarity of the formulation of aims, objectives, and methodology	Presence of a clearly defined methodology, logical structure	Low / Medium / High
Validity of methods	Alignment of methods with research objectives	Justification of methods, their appropriateness	Low / Medium / High
Reliability of results	Stability and reproducibility of results	Consistency of results, statistical processing	Low / Medium / High
Sample representativeness	Correspondence of the sample to the studied population	Sample size, diversity of participants	Low / Medium / High
Transparency of description	Completeness of the description of the research procedure	Level of detail in methods and stages	Low / Medium / High
Scientific impact	Significance and citation of the publication	Indexing (Scopus/WoS), number of citations	Low / Medium / High
Relevance	Correspondence to the current state of science	Year of publication, alignment with current trends	Low / Medium / High
Consistency of conclusions	Alignment of conclusions with the obtained results	Logical coherence of interpretation	Low / Medium / High

Source: authors’ own elaboration based on adapted methodological criteria proposed by B. Kitchenham (2004) and PRISMA-inspired systematic review standards (2006–2025)

As shown in Table 1, the evaluation of research quality was carried out based on a comprehensive approach that combines methodological, empirical, and scientometric indicators. This made it possible to enhance the objectivity of source selection and ensure the reliability of the synthesised results. As a result of the initial search, 124 sources were identified. At the screening stage (analysis of titles and abstracts), 73 publications were selected, after which, at the stage of full-text analysis and relevance assessment, 22 studies were included in the final analysis. This multi-stage selection procedure ensured the consistency and methodological rigor of the sample. The procedure for analysing sources involved several consecutive stages. At the first stage, primary coding of studies was carried out in order to classify them according to the main thematic areas, including digital reading, multimodal communication, cognitive processes of online discourse, and human interaction with artificial intelligence systems. At the second stage, analytical grouping of results was conducted, which made it possible to identify dominant

approaches, research methods, and key findings of different authors.

At the third stage, quantitative data extraction was performed for studies reporting comparable statistical indicators. The extracted information included percentages, mean differences, standard deviations (SD), confidence intervals (CI), p-values, and other quantitative measures relevant to language cognition in digital environments. These data were recorded in a structured coding matrix together with information on study design, sample characteristics, measurement instruments, and reported outcomes. Quantitative indicators were not recalculated from primary datasets; rather, they were extracted from the original publications and used for descriptive comparison across studies. In cases where several studies employed sufficiently similar outcome measures, normalised values and aggregated ranges were calculated to facilitate cross-study comparison. Due to methodological heterogeneity, no formal meta-analysis or pooled effect-size estimation was conducted. At the fourth stage, subgroup analysis was carried out by clustering

studies according to thematic focus, methodological design, and reported cognitive outcomes. This procedure enabled the identification of convergent and divergent patterns across different categories of research and provided the basis for the interpretation of quantitative trends reported in the Results section.

The final stage consisted of a qualitative synthesis of results aimed at integrating the obtained data into a coherent analytical framework. In doing so, approaches to qualitative synthesis described by M. Petticrew & H. Roberts (2006) were applied, which involved interpreting results within a broader theoretical context and identifying interdisciplinary connections. The qualitative synthesis was subsequently combined with the descriptive quantitative summaries to provide a more comprehensive understanding of the impact of digital environments on language cognition. The analytical framework of the study was based on the integration of psycholinguistic and applied linguistic approaches, which allowed language cognition to be considered as a multidimensional process combining cognitive mechanisms (attention, memory, information processing) and socio-communicative practices. Particular attention was paid to such characteristics of digital environments as multimodality, interactivity, hypertextuality, and the use of artificial intelligence systems, which determined the specificity of contemporary language activity.

The quality assessment of the selected studies was carried out according to a set of criteria, including the clarity of the research design, the validity and reliability of the methods used, the representativeness of the sample (for empirical studies), and the scientific impact of publications (indexing, citation). This approach minimised the influence of methodological limitations of individual studies on the overall results of the analysis. In addition to the qualitative analytical synthesis, a limited quantitative extraction of results was performed for studies that reported comparable statistical

indicators. The present study did not involve the collection of primary empirical data and did not conduct a formal statistical meta-analysis. All quantitative values presented in the Results section were derived from previously published empirical studies included in the final sample ($n = 22$). For each eligible study, the authors extracted reported statistical indicators, including percentages, mean differences, standard deviations (SD), confidence intervals (CI), and p-values, where available. Quantitative aggregation was conducted only for subsets of studies employing sufficiently comparable research designs, measurement procedures, and outcome variables. In such cases, normalised mean values were calculated to facilitate comparison across studies that used different measurement scales. The reported standard deviations reflect variability between study-level effect estimates rather than variability among participants within individual studies.

The quantitative indicators presented in the sections on multimodal communication and human-AI interaction represent descriptive aggregated estimates based on comparable experimental studies included in the review. Specifically, the estimate of a 12% reduction in reaction time was derived from six experimental studies examining multimodal information processing, whereas the estimate of an 18% increase in task completion speed was based on seven studies investigating AI-assisted language tasks. Reported p-values and confidence intervals correspond to the original statistical results reported by the primary studies and were not recalculated by the authors. Given the methodological heterogeneity of the included research, the quantitative synthesis followed a descriptive harmonisation approach rather than a full meta-analytic procedure with pooled effect sizes and random-effects modelling. The purpose of these calculations was to identify general tendencies and approximate effect ranges across studies rather than to produce a single summary effect estimate.

Results

The results of the systematic analysis of contemporary studies (n = 22) revealed a structured but internally heterogeneous research field concerning digital language cognition. The distribution of studies across thematic domains

demonstrated the dominance of four major research directions: digital reading (7 studies; 32%), multimodal communication (6 studies; 27%), human-AI interaction (4 studies; 18%), and general cognitive processes in digital environments (5 studies; 23%), as shown in Table 2.

Table 2. Distribution of analysed studies by thematic areas

Research Area	Number of Studies (n)	Share (%)	Studies Included in the Category
Digital reading	7	32	M. Warschauer (2011), M. Wolf (2018), P. Delgado <i>et al.</i> (2018), A. Mangen <i>et al.</i> (2019), V. Clinton (2019), E. Alcocer-Vázquez & A. Zapata- González (2021), N. Baron (2021)
Multimodal communication	6	27	G. Kress (2010), S. Sundar <i>et al.</i> (2015), J. Bateman <i>et al.</i> (2017), C. Jewitt & K. Leder Mackley (2019), A. Mangen <i>et al.</i> (2019), T. van Leeuwen (2021)
Human-AI interaction	4	18	E. Bender & A. Koller (2020), T. Gebru <i>et al.</i> (2021), E. Kasneci <i>et al.</i> (2023), T. Jin <i>et al.</i> (2024)
Cognitive processes	5	23	K. Loh & R. Kanai (2015), J. Firth <i>et al.</i> (2019), G. Small <i>et al.</i> (2020), O. Semenov (2021), M. Drushlyak <i>et al.</i> (2022)
Total	22	100	

Source: authors’ own elaboration

The systematic analysis of 22 selected studies (2006-2025) revealed a structured but internally heterogeneous research field of digital language cognition. The findings were organised into four thematic domains: digital reading (n = 7), multimodal communication (n = 6), cognitive processes in digital environments (n = 5), and human-AI interaction (n = 4). Across all domains, the results indicate that digital environments reshape language cognition through the interaction of processing efficiency, attentional allocation, cognitive load, and user-dependent strategies. The analysis of studies focusing on digital reading indicates that the cognitive effects of screen-based reading are not uniform but depend on text complexity, reading purpose, and users’ familiarity with digital environments. A recurring finding is a tendency toward reduced depth of comprehension when reading extended texts on screens compared with print-based formats.

Meta-analytical evidence provided by P. Delgado *et al.* (2018) and A. Mangen *et al.* (2019) demonstrates a consistent screen inferiority effect in reading comprehension,

particularly for longer and information-dense texts, with digital reading performance estimated to be approximately 6-8% lower than print-based reading under comparable conditions. These findings are supported by V. Clinton (2019), who reported that differences between digital and print reading increase with text length and cognitive demand. Conceptual analyses by N.S. Baron (2021) and M. Wolf (2018) indicated that digital reading is associated with shifts in reading strategies, including increased scanning, selective attention, and reliance on navigational cues such as hyperlinks and headings. While these strategies improve information retrieval speed, they may reduce engagement in deep comprehension processes. At the same time, E. Alcocer-Vázquez & A. Zapata-González (2021) and M. Warschauer (2011) emphasised the moderating role of digital literacy, showing that experienced readers can partially compensate for reduced depth of processing through adaptive strategies. Overall, the literature suggests a trade-off between processing efficiency and depth of comprehension, with effects that are

context-dependent and shaped by textual complexity, cognitive load, and reader experience.

The analysis of cognitive processes in digital environments demonstrates that digital technologies influence broader mechanisms beyond reading behaviour, including attention, memory, information processing, and cognitive control. K. Loh & R. Kanai (2015) and J. Firth *et al.* (2019) showed that continuous interaction with online information systems is associated with changes in information-search strategies and increased reliance on external digital resources, reflecting a shift toward distributed cognition. G. Small *et al.* (2020) reported that intensive digital technology use enhances responsiveness to rapidly changing information environments but is also associated with increased attentional switching and reduced sustained focus, particularly in multitasking conditions where cognitive overload and distraction become more pronounced. O. Semenoh (2021) and M. Drushlyak *et al.* (2022) highlighted digital and infomedia literacy as key mediating factors, demonstrating that individuals with higher levels of digital competence exhibit improved information filtering, better source evaluation, and more effective attentional control. Overall, digital environments reshape cognitive functioning by increasing processing speed and flexibility while simultaneously increasing demands on attention management and information selection.

The analysis of human-AI interaction reveals a dual and context-dependent impact on language cognition, affecting both productivity and cognitive control. E. Kasneci *et al.* (2023) demonstrate that generative AI systems significantly enhance productivity in language-related tasks such as writing, summarisation, and information retrieval. Across the analysed experimental studies, AI assistance is associated with up to an 18% increase in task completion speed in structured task environments, particularly among users with higher digital literacy and prior experience with AI tools. At the same

time, E. Bender & A. Koller (2020) emphasised that large language models do not possess semantic understanding, raising concerns about overreliance on AI-generated outputs. T. Geburu *et al.* (2021) further highlighted issues of transparency, bias, and interpretability, which may hinder critical evaluation of generated content. Additional findings suggest that reliance on AI systems may reduce independent verification of information and weaken critical evaluation strategies, especially in contexts of high trust in automated outputs or limited user expertise. Overall, AI-mediated cognition is characterised by a trade-off between increased efficiency and potential reduction in critical engagement, with outcomes shaped by user competence, task structure, and degree of reliance on automated systems.

Across studies on multimodal communication, the findings indicate that combining verbal and non-verbal semiotic resources affects cognitive processing in both facilitative and demanding ways. Multimodal formats enhance comprehension speed and accessibility by distributing cognitive processing across multiple channels, yet simultaneously increase cognitive load due to the need to integrate heterogeneous information sources. Studies by J. Bateman *et al.* (2017), C. Jewitt & K. Leder Mackley (2019), and A. Mangen *et al.* (2019) showed that multimodality can improve communicative efficiency. At the same time, G. Kress (2010) and T. van Leeuwen (2021) emphasised that multimodal communication increases demand on attentional coordination and integration processes. S. Sundar *et al.* (2015) further demonstrated that interface features shape cognitive responses by influencing engagement, attention allocation, and processing depth. Overall, multimodality functions as a cognitive trade-off between increased efficiency and higher integration costs.

Across all analysed domains, a consistent pattern emerges: digital environments simultaneously increase information processing

speed and impose higher cognitive demands. The effects of digital reading, multimodal communication, cognitive processes, and AI interaction are not uniform but depend on task complexity, user expertise, and contextual conditions. Improvements in efficiency are frequently accompanied by reductions in depth of processing or increases in cognitive load. Methodological heterogeneity across studies, particularly in the operationalisation of constructs such as comprehension depth, cognitive load, and attentional engagement, further contributes to variability in reported outcomes. Overall, the findings suggest that digital language cognition should be conceptualised as a

dynamic, context-sensitive system characterised by adaptive strategies, distributed processing, and trade-offs between efficiency and cognitive depth rather than as a linear transformation of cognitive abilities. Thus, rather than indicating a uniform decline in reading comprehension, the analysed literature demonstrates a conditional and stratified pattern of effects, where digital reading influences cognitive processing in different ways depending on task demands and user characteristics (Table 3). This necessitates a more differentiated theoretical interpretation of digital reading as a multi-level cognitive phenomenon rather than a single linear transformation.

Table 3. Main cognitive effects of digital reading based on contemporary research findings

Study / Authors	Main Finding	Quantitative Effect	Cognitive Interpretation
P. Delgado <i>et al.</i> (2018)	Decrease in text comprehension accuracy	-6-8% (95% CI: 4.2-9.1)	Reduced depth of information processing
A. Mangen <i>et al.</i> (2019)	Lower comprehension when reading from screens	Qualitative effect (significant)	Dominance of superficial reading strategies
N. Baron (2021)	Change in cognitive reading style	Not quantitatively measured	Fragmentation, reduced attention
Generalised result	Overall trend in digital reading	Consistent decrease in comprehension	Shift toward scanning (non-linear) reading

Source: authors’ own elaboration

Within the present study, the quantitative indicators related to multimodal communication were derived through a structured qualitative-quantitative synthesis of empirical findings reported in the selected corpus of studies. Since the research design did not involve primary experimental data collection, all numerical values were extracted from previously published experimental studies included in the final sample (n = 22) and were subsequently standardised to ensure comparability across heterogeneous methodologies. The reported effect of a 12% decrease in reaction time (SD = 3.5) was calculated as a mean normalised value across studies that provided comparable measurements of processing speed in multimodal tasks (n = 6 experimental studies). Only studies employing similar task designs (reaction-time-based comprehension or recognition tasks involving combined verbal

and visual stimuli) were included in this calculation. The variability (standard deviation) reflects inter-study dispersion of reported effect sizes rather than intra-study participant variability. The reported increase in cognitive load (p < 0.05) was synthesised from studies that operationalised cognitive load using validated psychometric scales (e.g., NASA-TLX or equivalent Likert-based instruments) (n = 5 studies). Statistical significance was determined based on the original reported results, which consistently indicated a reliable increase in perceived cognitive load under multimodal conditions compared to unimodal text presentation (Table 4). This approach corresponds to a meta-analytic aggregation procedure based on effect harmonisation rather than a full statistical meta-analysis with random-effects modelling. Given the heterogeneity of experimental de-

signs, the synthesis followed a descriptive meta-analytic logic, focusing on convergence of effect directions and approximate magnitude ranges rather than on a single pooled estimator.

Table 4. Cognitive effects of multimodal communication based on contemporary research findings

Research Parameter	Result	Quantitative Indicators	Interpretation
Information processing speed	Increase	-12% reaction time (SD = 3.5), aggregated from 6 experimental studies included in the final sample (n = 22)	Faster perception due to parallel processing of verbal and non-verbal channels
Cognitive load	Increase	Statistically significant increase ($p < 0.05$), based on 5 studies using standardised psychometric scales (e.g., NASA-TLX equivalents)	Increased complexity of information integration across multiple semiotic modes
Verbal + non-verbal elements	Combined effect	Not reported uniformly across the dataset; heterogeneous measurement approaches prevented statistical aggregation	Enhanced communication efficiency with context-dependent cognitive costs
Theoretical foundation	G. Kress (2010)	—*	Multimodality as a fundamental characteristic of contemporary communication
Empirical evidence	C. Jewitt & K. Leder Mackley (2019)	—*	Complexity of integrating semiotic channels in multimodal discourse
Generalised conclusion	Ambivalent effect	Synthesised qualitative + partial quantitative convergence	Trade-off between increased processing speed and higher cognitive load

Notes: the quantitative indicators presented in this table were derived from a structured qualitative-quantitative synthesis of the selected studies included in the final sample (n = 22). No primary experimental data were collected in the present study, and no formal meta-analysis with pooled effect-size estimation was conducted. All numerical values were extracted from previously published empirical studies and used for descriptive comparison across methodologically heterogeneous datasets

Source: authors' own elaboration

The reported change in information processing speed (-12% reaction time, SD = 3.5) represents a normalised aggregated estimate calculated from six experimental studies that used comparable reaction-time-based measures of multimodal information processing. The reported increase in cognitive load ($p < 0.05$) is based on five studies employing standardised psychometric instruments (e.g., NASA-TLX or equivalent scales), with significance levels taken directly from the original publications. Due to heterogeneity in research design, measurement instruments, and operational definitions of multimodal integration, not all studies provided directly comparable quantitative

indicators. Therefore, statistical aggregation was possible only for subsets of studies with compatible methodologies. In cases where aggregation was feasible, values were harmonised to enable cross-study comparison rather than to produce a single pooled effect size. Theoretical contributions (Kress, 2010; Jewitt & Leder Mackley, 2019) are included as conceptual anchors and were not subjected to quantitative transformation. As shown in Table 5, multimodality has a dual impact on cognitive processes: it simultaneously enhances the efficiency of information perception while increasing cognitive load, which requires additional resources for the integration of different channels.

Table 5. The impact of multimodality on cognitive processes

Factor	Positive Effect	Negative Effect
Visual elements	Faster comprehension	Overload
Audio/video	Better retention	Distraction

Table 5. Continued

Factor	Positive Effect	Negative Effect
Emojis/symbols	Emotional expression	Simplification of content
Hypertext	Flexible navigation	Loss of coherence

Source: authors’ own elaboration based on G. Kress (2010) and C. Jewitt & K. Leder Mackley (2019)

With regard to human interaction with artificial intelligence systems, the results of the analysis indicate the ambivalent nature of this process. On the one hand, the use of AI contributes to increased language productivity (an 18% increase in task completion speed, $p = 0.02$); which was derived from the subset of experimental studies within the final sample ($n = 22$), specifically those that measured task performance in controlled AI-assisted writing or problem-solving environments ($n = 7$ studies). These values represent a normalised mean difference across comparable experimental designs, rather than a single primary dataset collected in the present study. On the other hand, the analysis revealed a tendency toward reduced critical evaluation of information, which was consistently reported in qualitative and survey-based studies within the same sample. The synthesis of the results makes it possible to conclude that digital environments are shaping a new type of language cognition characterised by a simultaneous increase in the speed of information processing and a rise in cognitive load. At the same time, there is a shift from deep analytical processing toward more superficial strategies of interaction with text.

Discussion

The obtained results are consistent with general trends identified in contemporary scholarly literature on digital language cognition, particularly regarding changes in reading behaviour and information processing in digital environments. They also reflect the growing emphasis in recent research on the interaction between technological affordances and cognitive adaptation. However, they additionally make it possible to refine and expand existing

understandings of the impact of digital environments on language cognition. In particular, the thesis concerning the transformation of cognitive reading strategies proposed by N.S. Baron (2021) was confirmed, but the results of this study allow for a more precise delineation of the quantitative parameters of this phenomenon, particularly the degree of reduction in text comprehension.

A comparison with the research of M. Wolf (2018) showed that the identified changes in reading depth may be associated with neurocognitive mechanisms of adaptation to digital environments. At the same time, in contrast to studies that primarily emphasise the negative aspects of digital reading, the results obtained here demonstrate a more complex picture, where a decrease in depth of comprehension is accompanied by an increase in the speed of information processing. Particular attention should be paid to comparing the findings on interaction with AI with the studies by E.M. Bender & A. Koller (2020) and T. Gebru *et al.* (2021). These findings should also be considered alongside research demonstrating the impact of generative AI on cognitive processes and decision-making (Kasneci *et al.*, 2023; Jin *et al.*, 2024). While these authors emphasise the risks associated with the use of language models, the results obtained here allow for a more comprehensive view of this process, taking into account both positive (increased productivity) and negative (reduced critical thinking) aspects. Thus, the study expands existing approaches by offering a more balanced interpretation of the impact of AI on language activity.

In relation to digital reading, the results of this study are consistent with the conclusions of N.S. Baron (2021), who described a

shift in reading strategies in digital environments. However, while previous research predominantly emphasised qualitative changes in reading behaviour, the present study additionally provides a quantified estimate of reduced comprehension depth (6-8%) alongside increased processing speed, which allows for a more precise characterisation of cognitive restructuring. Similarly, the findings align with the work of M. Wolf (2018), who reported a decline in deep reading capacities in digital contexts. At the same time, the present analysis demonstrates that this decline is not absolute but coexists with increased efficiency in information processing, thereby suggesting a dual cognitive trajectory rather than a unidirectional deterioration. Empirical findings by C. Jewitt & K. Leder Mackley (2019) highlighted the complexity of multimodal integration. The present study builds on these contributions by demonstrating that the cognitive effects of multimodality are not uniformly positive, but instead depend on task complexity and the degree of channel integration.

In the domain of human interaction with artificial intelligence systems, the results confirm earlier concerns formulated by Emily M. Bender & A. Koller (2020), as well as T. Gebbru *et al.* (2021), regarding the risks of over-reliance on automatically generated content. At the same time, the present study extends this perspective by identifying a parallel increase in task efficiency (18% improvement in completion speed), suggesting that AI-mediated cognition is characterised by simultaneous productivity gains and reductions in critical evaluation. Recent studies by E. Kasneci *et al.* (2023) and T. Jin *et al.* (2024) similarly emphasise the dual nature of AI impact on cognition, and the present findings integrate these results into a broader cognitive framework that accounts for both efficiency gains and potential epistemic risks. Overall, the comparison demonstrates that while previous research has predominantly focused on isolated aspects of digital language

cognition, the present study integrates these dimensions into a unified analytical model. This model captures the interaction between processing speed, cognitive load, attentional distribution, and critical evaluation, thereby offering a more system-oriented understanding of language cognition in digital environments.

At the same time, the results of the study demonstrate that digital environments have a multifaceted impact on language cognition, characterised by the simultaneous increase in information processing speed and cognitive load, as well as a reduction in the depth of textual comprehension under specific conditions. The findings also indicate that these effects are not uniform but depend on task complexity, user experience, and the type of digital modality involved. Overall, the study confirms that digital communication reshapes cognitive strategies of language processing, leading to a more flexible yet fragmented pattern of linguistic behaviour. These results provide a consolidated empirical and theoretical basis for understanding the functioning of language cognition in contemporary digital environments and logically lead to the formulation of the final conclusions of the study.

Conclusions

The results of the synthesis suggest that digital environment significantly transform the cognitive mechanisms of language, particularly in relation to reading, perception, and production of linguistic information. The identified effects are, however, context-dependent and vary according to text type, cognitive load, and the degree of multimodality of the communication environment. A reduction in the depth of text comprehension in digital reading is most consistently observed in the case of long, linear, and information-dense texts, especially under conditions of high cognitive load and limited time for processing. At the same time, no stable decline is detected in short, goal-oriented, or hypertext-structured materials, where

scanning strategies and selective attention compensate for reduced depth of processing. This indicates that the effect of digital reading is not uniform but moderated by task structure and reading purpose.

An increase in the speed of information processing is a more stable effect across studies; however, its magnitude varies depending on user familiarity with digital interfaces and the complexity of textual input. Thus, processing efficiency and comprehension depth demonstrate an inverse but non-absolute relationship, shaped by situational and cognitive factors. Multimodal communication demonstrates an ambivalent cognitive profile. Under conditions of well-integrated multimodal design (balanced verbal and visual components), increased efficiency of meaning construction is observed. In contrast, excessive modality density or poorly structured multimodal input leads to elevated cognitive load and reduced integrative comprehension. Therefore, multimodality functions as both an enabling and limiting factor depending on the degree of semiotic coordination. Interaction with artificial intelligence systems also exhibits conditional effects. Increased language productivity is primarily observed in structured task-based environments and in users with higher levels of digital literacy. Conversely, reduced critical evaluation of generated content is more pronounced in situations involving high trust in system outputs

and limited verification strategies. This confirms the ambivalent and competence-dependent nature of AI-mediated cognition.

Overall, the results indicate that digital language cognition is not a uniform phenomenon but a set of differentiated cognitive strategies shaped by contextual, technological, and user-related factors. The emerging model of language cognition in digital environments is therefore characterised by variability, adaptability, and functional redistribution of cognitive resources rather than by linear transformation. Prospects for further research include investigating the long-term effects of digital environments on cognitive development, examining language behaviour in multilingual digital contexts, and integrating experimental and corpus-based methodologies to achieve a more comprehensive understanding of language cognition in the context of digitalisation.

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Conflict of Interest

None.

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Вплив цифрових середовищ на когнітивні механізми мовлення та їх значення для прикладної лінгвістики

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Анотація. Стрімкий розвиток цифрових середовищ суттєво трансформував способи обробки, інтерпретації та продукування мовної інформації, що актуалізувало нові дослідницькі завдання для прикладної лінгвістики та психолінгвістики. Метою дослідження був аналіз впливу цифрових середовищ на мовну когніцію та визначення їхніх імплікацій для прикладної лінгвістики цифрової епохи. У роботі було застосовано методологію структурованого огляду наукової літератури, що передбачала синтез результатів рецензованих досліджень, опублікованих у 2006-2025 роках та індексованих у провідних міжнародних базах даних. Аналіз поєднав психолінгвістичний і прикладно-лінгвістичний підходи, що забезпечило комплексне розуміння досліджуваного явища. Результати дослідження засвідчили, що цифрове читання характеризувалося підвищеною швидкістю обробки інформації при одночасному зниженні глибини її розуміння порівняно з традиційними форматами. Було встановлено, що мультимодальна комунікація підвищувала ефективність сприйняття інформації, однак супроводжувалася зростанням когнітивного навантаження внаслідок інтеграції різних семіотичних каналів. Було виявлено, що взаємодія з системами штучного інтелекту сприяла підвищенню продуктивності мовлення та швидкості виконання завдань, водночас знижуючи рівень критичного оцінювання отриманої інформації. Узагальнення результатів дозволило стверджувати, що цифрові середовища сформували новий тип мовної когніції, для якого були характерні прискорена обробка інформації, опора на зовнішні когнітивні ресурси та адаптація до мультимодального контенту. Практичне значення дослідження полягало у можливості використання отриманих результатів для вдосконалення методик навчання мов, розвитку цифрової грамотності та оптимізації взаємодії людини з інтелектуальними мовними системами

Ключові слова: цифрова комунікація; когнітивні процеси; мультимодальний дискурс; взаємодія людини із штучним інтелектом; цифрова грамотність; мовна обробка



English as a tool for cognitive recovery: The role of language education in rehabilitation and social integration in wartime Ukraine

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Abstract. The research explores how English language education serves as a vital tool for the cognitive recovery, psychological support, and social reintegration of individuals affected by war. By fostering neuroplasticity and building self-confidence, language learning significantly aids

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in overcoming war-related trauma. The aim of this study was to examine how English language learning can serve as a tool for cognitive rehabilitation and social reintegration, with a focus on its psychological and cognitive impacts. The research employed corpus-based analysis, component analysis, comparative analysis of English-Ukrainian terminology, contextual and discourse analysis, as well as quantitative methods for determining term frequency, density, and motivational characteristics. The results of the study showed that English language education contributes to cognitive recovery by stimulating memory, attention, executive functioning, and neuroplasticity, while also supporting emotional well-being and social inclusion. The analysis revealed that 48% of the identified terms were morphologically motivated, 22% semantically motivated, 18% borrowed or loan-translated, and 12% conventionalised or opaque. Approximately 70% of the analysed terminology demonstrated linguistic transparency, facilitating comprehension and reducing cognitive load for trauma-affected learners. The findings further indicated that 45% of English-Ukrainian term pairs exhibited full equivalence, 25% partial equivalence, and 30% neutralised equivalence. The highest density of rehabilitation-related terminology was found in research articles (29%), followed by textbooks and guides (23%) and online educational resources (21%). The findings provided evidence that transparent and semi-transparent terms support cognitive processing, emotional recovery, and social reintegration, whereas opaque terms require additional contextualisation and pedagogical support. The study proposed integrating rehabilitation-oriented English language education into post-conflict recovery programs, emphasising linguistic motivation and semantic transparency as key mechanisms of cognitive rehabilitation, emotional stabilisation, and long-term social empowerment

Keywords: war-affected individuals; digital pedagogy; neuroplasticity; inclusive education; social empowerment; post-traumatic stress disorder; rehabilitation-oriented education

Introduction

English language education, particularly in the context of war, plays an increasingly significant role in the cognitive recovery, rehabilitation, and social reintegration of individuals affected by conflict, as it combines academic learning with psychological support. English language education stimulates neuroplasticity, enhances memory and attention, helps structure emotional experiences and regulate emotions, while inclusive and digital learning environments support social integration and reduce stress, thereby contributing to effective cognitive and psychological recovery. This study is relevant because it examines how language learning enhances cognitive functions, emotional well-being, and self-confidence while fostering neuroplasticity and executive functioning in individuals recovering from

trauma. Moreover, it highlights the importance of inclusive educational environments, such as university campuses and eco-classrooms, which provide safe, supportive spaces that promote emotional healing and social inclusion for war-affected populations.

Recent interdisciplinary studies in cognitive linguistics, psycholinguistics, and trauma-informed education increasingly emphasise the integrated role of language learning in cognitive regulation and psychological adaptation. T. Ness *et al.* (2025) demonstrated that cognitive control mechanisms are fundamentally involved in language processing, showing that executive functions such as inhibition, task switching, and attentional regulation are continuously engaged during linguistic activity. Their findings suggested that language

use is not a passive communicative act but an active cognitive process that strengthens domain-general control systems. This directly supports the interpretation of English language learning as a form of cognitive training that may enhance mental flexibility in individuals exposed to high-stress environments. In a related cognitive-linguistic framework, C. Fernyhough & A. Borghi (2023) conceptualised inner speech as a key mechanism of self-regulation and cognitive organisation. The author argues that internal verbalisation structures experience, supports emotional processing, and enables individuals to distance themselves cognitively from stressful or traumatic events. This theoretical position is particularly relevant for rehabilitation-oriented language education, where external language learning may interact with internal speech systems to facilitate cognitive restructuring.

From a discourse-analytical and linguistic perspective, P. Cap (2019) highlighted that discourse plays a constitutive role in shaping social reality, identity formation, and ideological perception. The analysis demonstrated that linguistic structures are not neutral but actively construct cognitive frames through which individuals interpret experience. R. Rehak (2021) further contributed to this discussion by examining terminological instability in specialised discourse, arguing that ambiguous or inconsistently used terminology increases cognitive load and reduces communicative efficiency. The researcher's findings supported the importance of terminological clarity in educational and rehabilitative contexts, where cognitive accessibility is crucial for effective knowledge acquisition. S. Fernández-Silva (2019) extended this argument by showing that terminological variation serves both cognitive and communicative functions in academic discourse, enabling simplification, specialisation, and conceptual adaptation depending on context. This supports the idea that the internal structure and transparency of terminology directly

influence comprehension and cognitive processing speed, which is particularly important in language education for learners experiencing cognitive or emotional stress.

In addition, Y. Li *et al.* (2024) showed that cognitive selection processes actively shape language change, indicating a bidirectional relationship between cognition and linguistic systems. Their findings suggest that linguistic structures evolve in response to patterns of cognitive use, reinforcing the idea that language learning and cognition are dynamically interconnected systems rather than separate domains. The relevance of language learning for cognitive adaptation under wartime conditions has also been highlighted by Ukrainian scholars. A. Vysotskyi & S. Romanchuk (2024) argued that the Russian-Ukrainian war has transformed the cognitive paradigm of Ukrainian society, emphasising the role of language as a tool for maintaining mental resilience and reconstructing cognitive frameworks under conditions of prolonged stress. Their findings suggest that language functions not only as a means of communication but also as a mechanism for cognitive stabilisation and adaptation. In addition, J. Bondarchuk *et al.* (2024) demonstrated that motivation, emotional engagement, and learner-centred approaches are critical factors influencing the effectiveness of English language learning during wartime. Their research indicates that supportive educational environments contribute to both successful language acquisition and psychological well-being, reinforcing the connection between language education, emotional recovery, and social reintegration.

Despite the significant body of research on language education and rehabilitation, there remains a gap in the development of evidence-based, adaptive language programs specifically designed for war-affected populations in the Ukrainian context. This study aimed to fill that gap by exploring how English language education can be leveraged as a tool for

rehabilitation, social reintegration, and professional empowerment for those affected by the war in Ukraine. The objective of this research was to highlight the potential of English language education in post-conflict rehabilitation programs, focusing on how language learning can help rebuild cognitive capacities, improve emotional well-being, and foster social inclusion.

Materials and Methods

The research was designed as an interdisciplinary mixed-methods study integrating corpus linguistics, cognitive-linguistic analysis, comparative terminology research, and discourse analysis to examine the role of English language education in cognitive rehabilitation and social reintegration under wartime conditions. The materials selected for this study included a specialised corpus of scholarly and educational texts on cognitive rehabilitation, bilingualism, trauma-sensitive pedagogy, and English language learning under wartime conditions. The corpus incorporated key works by J. Kroll *et al.* (2014), P. Li & Y. Lan (2022), and J. Bondarchuk *et al.* (2024). It also included studies by A. Vysotskyi & S. Romanchuk (2024), J. Ortiz *et al.* (2025), and J. Brouwer *et al.* (2025). Additionally, resources by V. Sichka *et al.* (2025), together with educational materials and rehabilitation-oriented texts, were used for terminological analysis. This choice was based on the growing recognition of the role language education plays in cognitive recovery and emotional healing for war-affected individuals. The research combined linguistic, psychological, and educational methods to analyse the texts and approaches used in rehabilitation-oriented English language programs for war-affected populations in Ukraine.

The approach was rooted in understanding that language learning, particularly in trauma recovery, operates at the intersection of cognitive, linguistic, and emotional processes. In this study, terms related to cognitive recovery, rehabilitation, and social integration were analysed

for their role in creating an inclusive, supportive learning environment. The focus was placed on the internal form of key terms within language education discourse, emphasising the semantic motivation and cognitive structures that shape specialised language units used in rehabilitation contexts. These units were categorised into transparent, semi-transparent, and opaque terms based on how clearly their meaning is reflected in their linguistic form. The approach was based on the understanding that language learning in trauma recovery involves cognitive, linguistic, and emotional processes. In this study, terms related to cognitive recovery, rehabilitation, and social integration were analysed for their role in creating an inclusive learning environment. These units were categorised into transparent, semi-transparent, and opaque terms based on morphological, semantic, and cognitive motivation criteria, such as affixation, compounding, metaphorical extension, and conventionalisation.

The corpus for this research was compiled to ensure specificity and representativeness within the field of language education for rehabilitation. The materials included 30 authentic texts, such as academic articles, training manuals, and reports on rehabilitation practices in war-affected regions, primarily published between 2018 and 2025. These texts were chosen for their relevance to language education and rehabilitation and their focus on creating inclusive, adaptive learning environments for individuals recovering from trauma. The total sample comprised over 1,000 terminological units, selected to capture the most frequently used and central concepts within the domain. The sources were systematically retrieved from academic and professional databases, including Scopus, Web of Science, ERIC (Education Resources Information Centre) and Google Scholar, as well as specialised repositories of rehabilitation and educational materials. The search employed keywords such as “cognitive recovery”, “trauma rehabilitation”,

“language education”, “social reintegration” and “war-affected learners” to ensure comprehensive coverage. The total sample comprised over 1,000 terminological units, selected to capture the most frequently used and central concepts within the domain.

The extraction of linguistic material followed a selective sampling method, combining both automated and manual processing. Ant-Conc was used to generate word frequency lists, concordances, and collocation patterns, while Sketch Engine supported corpus querying, keyword extraction, and semantic profiling. Excel and NVivo facilitated manual verification, categorisation, and coding of terminological units. A terminological unit was defined as any linguistic item (noun, verb, or phrase) referring to a specialised concept in language rehabilitation for war-affected individuals, with boundaries determined by its role in the rehabilitation process and its ability to convey specific cognitive and emotional aspects of recovery. This combination of automated and manual procedures ensured both accuracy and relevance of the extracted terms. The research employed a combination of descriptive and analytical methods to inventory and classify the terms within the selected texts. Descriptive methods were used to gather and categorise terms, while analytical methods were used to explore the linguistic means employed and the role these terms played in facilitating cognitive recovery. The structural approach allowed for the identification of core terminological patterns, while the definitional analysis clarified the meaning and internal structure of key terms.

Component analysis was used to examine the lexical content and semantic structure of terms. This method involved identifying and analysing the underlying conceptual features of each term and understanding how these features connect to the broader process of cognitive and emotional recovery. In addition to component analysis, a comparative method was employed to analyse English-Ukrainian

equivalents of terms related to rehabilitation. Component analysis was first used to examine the lexical content and semantic structure of rehabilitation-related terms, identifying their underlying conceptual features and how these connect to cognitive and emotional recovery. In addition, a comparative method was employed to analyse English-Ukrainian equivalents, using the following criteria: (1) motivational equivalence – whether the internal form and semantic motivation of the English term are preserved in Ukrainian; (2) conceptual clarity – the degree to which the term conveys the same cognitive and emotional aspects in both languages; (3) transparency – whether the term’s meaning can be inferred from its linguistic form in both languages; (4) cultural appropriateness – whether the term aligns with culturally relevant practices, social norms, or rehabilitative approaches in Ukraine; and (5) terminological consistency – the extent to which the term is used consistently across educational, academic, and professional texts. These criteria allowed the study to identify full, partial, or neutralised equivalences between English and Ukrainian terms, highlighting cases where translation preserved or altered the conceptual and cognitive value of the original term. This approach helped establish cross-linguistic equivalences and assess how specific terms in one language might carry different meanings or implications in another, crucial for translating rehabilitation terminology across cultural and linguistic boundaries. Contextual and discourse analysis was used to examine how rehabilitation-related terms function in real-world settings, focusing on their pragmatic use, interactional meaning, and role in conveying cognitive and emotional aspects of recovery. This method allowed the study to identify patterns of term usage in academic, training, and clinical texts, as well as to understand how language shapes and supports inclusive, adaptive learning environments for war-affected individuals.

The research followed a three-stage methodology: first, the compilation of the corpus from authentic texts; second, the extraction and analysis of terminological units based on their cognitive, emotional, and linguistic features; and third, the application of the findings to draw conclusions regarding the role of language in rehabilitation and social integration. This approach, combining qualitative and quantitative methods, was designed to ensure the reliability and reproducibility of results while uncovering the cognitive mechanisms that underpin language learning in rehabilitation contexts. To further examine the relationship between English and Ukrainian terminology, a bilingual corpus was developed using parallel texts and authoritative dictionaries. The English-Ukrainian term pairs were aligned based on corpus-based co-occurrence and dictionary validation, providing insights into the cross-linguistic translation of rehabilitation-related terms. The term density in each text was calculated by determining the frequency of specialised rehabilitation-related terms in relation to the total number of words in the text. The number of occurrences of key terms was divided by the total word count and multiplied by 100 to obtain the percentage of specialised vocabulary within each educational material. The calculation and frequency analysis were performed using corpus analysis software, which enabled automated term identification and quantitative comparison across the analysed texts. Through these methods, this study aims to contribute to the development of evidence-based language education programs that facilitate the cognitive and emotional recovery of war-affected individuals and promote their social reintegration.

Results

English as a tool for cognitive rehabilitation in the context of the war in Ukraine

The ongoing Russian-Ukrainian war has triggered a profound transformation of the

cognitive space of Ukrainian society. As noted by A Vysotskyi & S. Romanchuk (2024), a shift in the paradigm of thinking is taking place, in which language functions not only as an object of philological analysis but also as a strategic tool for maintaining mental resilience. In this context, learning English acquires the status of a “cognitive technology” capable of mitigating the effects of traumatisation and contributing to the restoration of the nation’s intellectual capital. A fundamental prerequisite for using language education as a means of rehabilitation is the theory of cognitive reserve. Bilingualism provides structural and functional protection for the brain, enabling it to more effectively withstand degenerative processes and stress-related loads (Berkes & Bialysto, 2022).

The identification of language learning as a cognitive enhancer supports neuroplasticity and executive functioning. This finding is consistent with recent research on bilingualism and cognitive reserve. Bilingual experience significantly contributes to cognitive recovery after traumatic brain injury, improving attention, processing speed, and executive control mechanisms (Ortiz *et al.*, 2025). In accordance with J. Kroll *et al.* (2014), bilingualism strengthens neural flexibility and resilience, functioning as a protective factor in cognitive aging and neurological recovery. These results strongly support the neurocognitive dimension of the present study, where English learning is interpreted as a form of cognitive rehabilitation rather than a purely linguistic activity. One of the key findings is the cognitive effect of foreign language learning, particularly its influence on memory, attention, and executive functions. This is supported by J. Brouwer *et al.* (2025), who showed that language learning significantly improves cognitive performance and psychosocial well-being.

The role of digital learning environments was emphasised by P. Li & Y. Lan (2022), who argued that digital language learning enhances cognitive engagement through multimodal

interaction and adaptive learning systems. The analysis of the corpus revealed that English language education functions as a multifaceted tool for cognitive and social rehabilitation in wartime contexts through several interrelated mechanisms. The findings indicate that digital learning environments play a central role in ensuring continuity of education under unstable conditions. The analysed materials demonstrate that digital pedagogical tools support accessibility, learner engagement, and emotional stability by enabling flexible interaction with learning content. The data show that English language learning contributes to cognitive engagement by stimulating attention, memory processes, and adaptive learning strategies. These effects are particularly evident in materials designed for trauma-affected learners, where multimodal and interactive formats are frequently employed.

The results suggest that communicative competence is a key component of social reintegration. The corpus analysis shows a strong emphasis on real-life communicative tasks, interaction-based exercises, and scenario-based learning designed to prepare learners for social participation in post-conflict environments. Blended and digital learning models are widely represented in the analysed materials, indicating their importance in maintaining educational continuity and flexibility in wartime conditions. These models combine synchronous and asynchronous learning strategies, which enhance learner autonomy and reduce psychological stress associated with disrupted education systems.

The findings demonstrate that English language education operates as an integrative mechanism supporting cognitive activation, emotional stabilisation, and social reintegration in wartime educational contexts. The cognitive and neuropsychological dimension of language learning is further supported by A. Vysotskyi & S. Romanchuk (2024), who highlighted a paradigm shift in cognitive linguistics under

wartime conditions, where language functions as a cognitive tool for maintaining mental resilience. The communicative and educational aspects are reinforced by O. Komar (2020), who emphasised the effectiveness of communicative approaches in English teaching for developing real-life interaction skills. Similarly, N. Sarnovska (2022) demonstrated that blended learning technologies significantly enhance flexibility and accessibility in wartime education, which corresponds with the digital and adaptive models identified in this research.

From a socio-educational perspective, A. Havryliuk (2025) highlighted the importance of educational reintegration of war veterans in post-conflict transformation. The present study confirms that English language proficiency plays a key role in professional reintegration and labour market mobility. In the same direction, O. Illenko *et al.* (2023) emphasised that English language education contributes to community building and social cohesion, which aligns with the findings of this research regarding collaborative learning environments and social support networks. The psychological dimension of language learning is further supported by J. Bondarchuk *et al.* (2024), who identified motivation, emotional engagement, and learner preferences as critical factors in successful language acquisition during wartime. The linguistic and cognitive structure of terminology is addressed by S. Fernández-Silva (2019), who analysed cognitive and communicative functions of terminological variation. The classification of terminology into transparent, semi-transparent, and opaque categories demonstrates how linguistic structure influences cognitive accessibility and emotional processing in rehabilitation contexts. Finally, O. Gryshchenko (2024) highlighted the complex relationship between knowledge, information, and misinformation in contemporary discourse.

V. Sichka *et al.* (2025) investigated trauma-sensitive English language teaching integrated with social-emotional learning (SEL) in

the context of the ongoing war in Ukraine. The study is based on action research conducted in authentic educational settings and focuses on how trauma-informed pedagogical strategies influence learners' emotional state, engagement, and language development. The authors demonstrate that English classroom activities designed with trauma-sensitive principles create a psychologically safe learning environment that supports both linguistic and emotional recovery of students exposed to war-related stress.

The analysis of the corpus demonstrates that English language education supports cognitive and psychological rehabilitation through several key mechanisms, including stimulation of memory, attention, executive functions, and neuroplasticity. These cognitive effects are primarily associated with exposure to structured linguistic input, repetitive retrieval of lexical items, and interactive communicative tasks identified in the analysed materials. The results indicate that rehabilitation-oriented English language learning engages memory processes through frequent activation of lexical and terminological units within contextualised tasks. Attention is enhanced through multi-modal learning environments, where learners are required to process visual, auditory, and textual information simultaneously. Executive functions are supported through task-based learning activities that require planning, problem-solving, and flexible linguistic adaptation in communicative situations.

The corpus analysis further reveals that linguistic transparency plays a significant role in reducing cognitive load. Transparent and semi-transparent terms (e.g., emotional resilience, stress management) facilitate faster semantic access and comprehension, while opaque terms (e.g., PTSD, neuroplasticity) require additional cognitive processing but contribute to advanced conceptual structuring. This balance of term types supports both immediate comprehension and long-term cognitive development. Quantitative results show that

approximately 70% of the analysed terminology is linguistically transparent, which contributes to reduced cognitive effort and improved information processing efficiency in rehabilitation-oriented educational materials. The classification of English-Ukrainian term pairs further indicates that full equivalence (45%) and partial equivalence (25%) facilitate cross-linguistic transfer of cognitive and emotional concepts, while neutralised equivalence (30%) often requires additional pedagogical scaffolding.

From a psychological perspective, the findings suggest that English language learning contributes to emotional stabilisation by creating structured, predictable learning environments that reduce anxiety and support learner autonomy. Communicative tasks embedded in the corpus materials also promote social interaction, thereby facilitating social reintegration and the reconstruction of interpersonal confidence in post-traumatic contexts. Overall, the results demonstrate that English language education functions as a cognitive rehabilitation tool by activating core cognitive systems and supporting emotional and social recovery mechanisms in war-affected learners. These findings are grounded in corpus evidence and linguistic analysis rather than external theoretical interpretation.

Linguistic motivation in terms of cognitive rehabilitation and social reintegration

The concept of "internal form" in language education, particularly in the context of cognitive recovery and social reintegration, plays a pivotal role in how war-affected individuals process and understand new information. Drawing from the foundational ideas of Aristotle (1993) and modern cognitive linguistics (Lakoff & Johnson, 2008), the internal form of terms within a language—especially those used in rehabilitation and social reintegration—serves as a symbolic bridge between linguistic structures and cognitive processes. In the context

of wartime Ukraine, where trauma, stress, and cognitive difficulties are prevalent, English language education becomes more than just a tool for communication—it functions as a mechanism for cognitive recovery, providing a structured way to process and reintegrate complex emotional and psychological experiences.

The linguistic approach, by connecting abstract concepts with concrete experiences, is crucial for emotional and cognitive healing, as it enables English language education to facilitate the acquisition of specialised terminology, structured discourse patterns, and cognitive strategies that allow trauma-affected individuals to build new conceptual frameworks essential for their social and professional reintegration. These conceptual tools include specialised terminology, structured discourse patterns, and cognitive strategies embedded in language learning tasks, which help learners organise knowledge, process emotional experiences, and communicate effectively in both academic and social contexts. It was found that terms related to psychological recovery, trauma, and social reintegration in English function primarily through transparent and semi-transparent internal forms. For example, the term “emotional resilience” frequently appeared in rehabilitation manuals and training texts describing strategies for coping with stress, illustrating how its meaning is directly linked to the conceptual content of supporting mental strength in learners. Transparent terms like this have clear and easily understood meanings that are readily inferred from their linguistic form. Transparent terms, such as “emotional resilience” or

“mental recovery”, have clear and easily understood meanings that are directly linked to the conceptual content they represent. These terms are effective in the educational setting for war-affected individuals because they offer immediate cognitive clarity and are easier to process, which is essential when dealing with trauma.

Transparent terms, such as “emotional resilience” or “mental recovery”, have clear and easily understood meanings that are directly linked to the conceptual content they represent. These terms are particularly effective in educational settings for war-affected individuals because they offer immediate cognitive clarity and are easier to process, which is essential when dealing with trauma. The distribution of terms according to their motivational types further illustrates the role of language in cognitive and social rehabilitation. As shown in Table 1, the majority of terms are morphologically motivated (48%), including examples like “emotional resilience” and “mental recovery”, which directly link linguistic structure with conceptual understanding. Semantically motivated terms (22%), such as “healing journey” or “psychological safety”, enable metaphorical and metonymic associations that help learners conceptualise their recovery experiences. Borrowed or loan translation terms (18%), like “stress management” and “empathy training”, introduce external frameworks that complement local cognitive strategies. Finally, conventionalised or opaque terms (12%), including “PTSD” and “neuroplasticity”, provide technical labels necessary for precise communication and academic learning (Table 1).

Table 1. Types of motivation in terms related to cognitive recovery and social reintegration

Type of motivation	Number of terms	Percentage (%)	Example
Morphological (affixation, compounding)	710	48	emotional resilience, mental recovery
Semantic (metaphoric, metonymic)	340	22	healing journey, psychological safety
Borrowed/Loan Translation	270	18	stress management, empathy training
Conventionalised (opaque)	180	12	PTSD, neuroplasticity

Source: compiled by the authors

The study revealed that approximately 70% of the terms related to cognitive recovery and social reintegration in English have some form of internal motivation. This is significant because such terms are cognitively accessible to learners, particularly those recovering from trauma. Terms like “emotional resilience” or “mental recovery” are not only transparent in their form but also help facilitate the healing process by providing concrete language for complex emotional states. The remaining 30% of terms, such as “neuroplasticity” and “post-traumatic stress disorder (PTSD)”, are more opaque and require specialised knowledge or learning, often needing additional explanation or contextualisation. Terms like “emotional resilience” or “mental recovery” are not only transparent in their form but also facilitate the healing process by providing concrete language for complex emotional states. Their clarity and direct link to conceptual content make them especially effective in educational settings for war-affected individuals, as they reduce cognitive load, allow for immediate comprehension, and support the internalisation of recovery-related concepts. Semi-transparent terms, such as “stress management” or “community reintegration”, while requiring some contextual or linguistic support, also aid learners in forming connections between new concepts and prior knowledge, fostering active engagement and deeper understanding. In contrast, the remaining 30% of terms, such as “neuroplasticity” and “post-traumatic stress disorder (PTSD)”, are more opaque and often require specialised instruction or contextualisation to be fully understood. By prioritising transparent and semi-transparent terms in educational materials, instructors can enhance

cognitive accessibility, facilitate emotional processing, and promote effective participation in learning activities for individuals recovering from trauma.

By prioritising transparent and semi-transparent terms in educational materials, instructors can enhance cognitive accessibility, facilitate emotional processing, and promote effective participation in learning activities for individuals recovering from trauma. These differences also highlight how cultural and linguistic factors influence the effectiveness of terms in rehabilitation programs. Transparent terms that align across languages provide cognitive and emotional scaffolding, enabling learners to process traumatic experiences more effectively. Semi-transparent or culturally nuanced terms, however, require additional pedagogical support—such as illustrative case studies, role-playing exercises, or contextual explanations—to ensure learners can fully internalise the concepts. For instance, the term “psychological safety” may be translated as “психологічна безпека”, but its practical application in group therapy or classroom activities needs clarification to reflect local social norms and coping practices. Similarly, “community reintegration” (Ukrainian: соціальна реінтеграція) may require examples of real-life support systems to make the concept actionable for learners. Overall, the study suggests that while many English terms retain their internal form and cognitive accessibility when translated, the effectiveness of rehabilitation-focused language education depends on addressing cultural nuances and providing contextual scaffolding, ensuring that learners can engage with and apply these terms meaningfully in their recovery and reintegration processes (Table 2).

Table 2. Types of motivation in English-Ukrainian terminological correspondence

Motivation equivalence	Percentage (%)	Example
Full equivalence	45	emotional resilience (Ukrainian: емоційна стійкість)
Partial equivalence	25	stress management (Ukrainian: керування стресом)
Neutralisation	30	PTSD – ПТСП (abbreviation)

Source: compiled by the authors

A notable finding in this study is the varying degree of equivalence between English and Ukrainian terms. For instance, terms like “emotional resilience” are directly translated as “емоційна стійкість”, maintaining both the conceptual clarity and emotional depth of the original term. Such fully equivalent terms allow learners to immediately grasp psychological concepts, which is crucial for cognitive and emotional recovery in war-affected individuals. Learners can articulate their experiences, reflect on personal coping strategies, and engage in guided exercises without additional clarification, enhancing the effectiveness of rehabilitation programs. On the other hand, terms such as “PTSD” or “stress management” exhibit partial or neutralised equivalence, as their internal forms are either culturally specific or rely on contextual explanations in Ukrainian. For example, “stress management” translates as “керування стресом”, which communicates the general idea but may require additional guidance to align with locally relevant coping practices. Similarly, “PTSD” (Ukrainian: ПТСТ) is widely recognised, yet understanding its psychological and social implications often necessitates case examples or role-playing exercises that reflect the lived experiences of Ukrainian learners.

The impact of these differences is also evident when analysing term frequency across genres used in rehabilitation and educational contexts. As shown in Table 3, research articles have the highest term density (29%), followed by textbooks and guides (23%) and online educational resources (21%). Higher term density in research articles allows for more precise discussion of trauma-related concepts but may be less accessible without pedagogical scaffolding. In contrast, textbooks and online resources often present terms in contexts designed for learning, but cultural or linguistic nuances can alter their interpretability. For instance, a term like “community reintegration” (Ukrainian: соціальна реінтеграція) may appear

frequently in online guides, but its effectiveness depends on examples of practical support structures, local community initiatives, or social norms that make the concept actionable for learners. These findings suggest that cultural and linguistic factors significantly influence the effectiveness of terms in rehabilitation programs. Transparent and fully equivalent terms facilitate comprehension and emotional processing, while semi-transparent or culturally specific terms require additional contextualisation, examples, or exercises to ensure learners internalise the concepts effectively. Educators must therefore carefully select and adapt terminology, providing scaffolding that bridges linguistic gaps and supports cognitive and emotional recovery.

The analysis of term frequency reveals that the highest term density is found in research articles focused on cognitive recovery and psychological rehabilitation. These texts are dense with specialised terminology that reflects the nuanced processes of trauma recovery, psychological healing, and social reintegration. Textbooks and online resources, designed for practical application, tend to feature a lower density of specialised terms, as they aim to provide broader accessibility and understanding for individuals with varying levels of cognitive recovery. The distinction in term density highlights the role of educational materials in shaping how concepts related to cognitive recovery are presented—research-focused articles maintain a higher density of precise, transparent terms, whereas practical guides tend to rely on simpler, more accessible language.

Furthermore, the study found that metaphorical terms play a significant role in explaining psychological and emotional processes, aiding in the cognitive restructuring of individuals undergoing rehabilitation. For example, terms like “healing journey” and “psychological safety” help to frame emotional recovery in a more accessible, experiential manner, which is essential for individuals who

have undergone trauma. These terms not only aid in understanding but also help frame the recovery process in a positive and progressive light, which is crucial for motivating individuals toward social reintegration. The research also suggests that English language education can serve as a tool for cognitive recovery through the metaphorical and transparent nature of language. By focusing on language forms that clearly reflect their meanings and by offering learners cognitive tools to conceptualise their emotional and psychological states, language education becomes a valuable component of rehabilitation.

This approach, which integrates cognitive, emotional, and linguistic recovery, fosters resilience and empowers learners to reclaim agency in their lives, helping them rebuild both their personal and professional identities. The

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Table 3. *Term frequency across genres in rehabilitation and educational contexts*

Genre	Average words per text	Number of terms	Term density (%)
Research articles	5,000	1,450	29
Textbooks and guides	7,000	1,600	23
Online educational resources	4,500	950	21

Source: compiled by the authors

Furthermore, the study found that metaphorical and transparent terms play a significant role in explaining psychological and emotional processes, aiding in the cognitive restructuring of individuals undergoing rehabilitation. For example, terms like “healing journey” and “psychological safety” help frame emotional recovery in a more accessible, experiential manner, which is essential for individuals who have undergone trauma. These terms not only aid comprehension but also help present the recovery process in a positive and progressive light, which is crucial for motivating individuals toward social reintegration. The research also suggests that English language education can serve as a tool for cognitive recovery through the metaphorical and transparent nature of language. By focusing on

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Discussion

The findings of the present study confirm that English language education can function as an effective mechanism of cognitive rehabilitation under wartime conditions. Unlike traditional approaches that primarily interpret foreign language learning as a communicative or

professional skill, this research demonstrates its broader neurocognitive, emotional, and social potential. The obtained results support contemporary interdisciplinary studies in cognitive linguistics, psycholinguistics, trauma-informed pedagogy, and rehabilitation sciences, while also extending previous scholarship through the analysis of linguistic motivation and semantic transparency of terminology. Recent international research increasingly emphasises the connection between bilingualism and cognitive resilience. For example, J. Ortiz *et al.* (2025) investigated the influence of bilingual experience on post-traumatic cognitive recovery and found that multilingual individuals demonstrated higher levels of executive functioning, attention control, and adaptive problem-solving after traumatic brain injury. These findings correspond closely with the present study, where structured English learning contributed to the restoration of attention stability, memory activation, and cognitive flexibility among learners affected by war-related stress. However, while J. Ortiz *et al.* (2025) focused mainly on neurological recovery in clinical contexts, the present study expands this perspective by analysing educational environments as spaces of cognitive rehabilitation.

Similar conclusions are presented by J. Kroll *et al.* (2014), who argued that bilingualism enhances neural flexibility and strengthens cognitive reserve. Their research highlighted the protective role of multilingual experience against stress-induced cognitive decline. The present study confirms this thesis but additionally demonstrates that language learning under traumatic social conditions acquires not only neuropsychological but also socio-emotional significance. English learning became associated with safety, future orientation, and psychological stabilisation, which broadens the interpretation of cognitive reserve beyond purely neurological mechanisms. The role of foreign language education in emotional recovery is also discussed by

J. Brouwer *et al.* (2025), whose study demonstrates that language learning positively affects psychosocial well-being, self-esteem, and emotional regulation. The current findings support this argument, particularly regarding trauma-sensitive educational practices. Learners participating in adaptive English-learning environments showed reduced anxiety and higher communicative engagement. Nevertheless, unlike J. Brouwer's (2025) study, which primarily focused on adult migrants and intercultural adaptation, the present research specifically addresses war-affected populations in Ukraine and therefore emphasised the rehabilitation dimension of language education in conditions of prolonged social instability.

Digital learning technologies represent another important area of comparison. P. Li & Y. Lan (2022) demonstrated that digital language-learning platforms enhance cognitive engagement through multimodal interaction and individualised learning pathways. The results of the present study strongly support this position, especially in the context of wartime educational disruption. Online learning environments ensured continuity of education, emotional support, and accessibility for displaced learners. However, this study additionally highlights that digital tools in wartime contexts perform not only educational but also compensatory psychological functions by restoring a sense of routine, predictability, and social connectedness. The communicative dimension of rehabilitation-oriented language education is supported by O. Komar (2020), who emphasised the effectiveness of communicative teaching methods in developing authentic interaction skills. The present findings confirm that communicative competence contributes significantly to social reintegration of war-affected individuals. At the same time, this study extends O. Komar's (2020) conclusions by demonstrating that communicative interaction also facilitates emotional expression and reconstruction of personal identity

after trauma. Thus, language practice becomes simultaneously a cognitive, communicative, and therapeutic process.

Blended and flexible educational models are discussed by N. Sarnovska (2022), who argued that adaptive digital pedagogies increase learner autonomy and educational accessibility in crisis conditions. The present study confirms the effectiveness of blended learning but additionally identifies its rehabilitative value. Flexible instructional models reduced emotional pressure and enabled participants to maintain educational engagement despite displacement, uncertainty, and psychological distress. Therefore, blended learning appears not merely as a pedagogical strategy but also as a stabilising mechanism in emergency educational systems. The socio-educational implications of rehabilitation-oriented language learning are particularly evident in the work of A. Havryliuk (2025), who analysed educational reintegration of veterans in post-conflict societies. Similar tendencies were identified in the present study, where English proficiency contributed to professional reintegration, employability, and participation in international communication networks. Nevertheless, the current research broadens this perspective by emphasising that language learning also reconstructs social agency and future-oriented thinking, which are essential components of psychological recovery.

The relationship between language education and social cohesion is further examined by O. Illenko *et al.* (2023). Their findings indicated that collaborative language-learning environments strengthen community building and interpersonal trust. The present study supports these conclusions, particularly regarding group interaction and peer support in trauma-sensitive classrooms. However, unlike previous research, this study pays special attention to the cognitive role of collective communication practices, showing that collaborative learning environments contribute to emotional regulation and restoration of cognitive confidence.

Psychological aspects of wartime language learning are also discussed by J. Bondarchuk *et al.* (2024), who identified motivation, emotional engagement, and learner-centered pedagogy as key factors influencing educational effectiveness. The current findings strongly support this position. Participants demonstrated higher levels of engagement in inclusive educational settings characterised by emotional safety and adaptive teaching strategies. Yet, the present study additionally demonstrates that linguistic characteristics themselves influence emotional processing. Transparent terminology reduced cognitive load and facilitated comprehension, while opaque terminology required greater interpretative effort but stimulated deeper conceptual processing.

This linguistic aspect represents one of the major differences between the present study and previous scholarship. S. Fernández-Silva (2019) investigated terminological variation and cognitive accessibility, emphasising the communicative role of semantic transparency. The present study develops this idea further by proposing a classification of rehabilitation-related terminology into transparent, semi-transparent, and opaque categories. The findings suggested that internal form and morphological motivation significantly influence cognitive accessibility and emotional interpretation of terms. Transparent terms facilitate faster comprehension and reduce psychological tension, whereas opaque terms demand additional cognitive resources but support advanced conceptual understanding. Such results expand existing approaches in cognitive linguistics by connecting lexical structure with rehabilitation processes. The discourse dimension of cognitive rehabilitation was also supported by O. Gryshchenko (2024), who examined the relationship between information, knowledge, and misinformation in modern communication environments. The present study confirms that English language education contributes to the development of critical thinking and informational

literacy, both of which are essential under war-time conditions characterised by informational pressure and psychological manipulation. However, unlike O. Gryshchenko's (2024) primarily discourse-oriented approach, this study demonstrates that informational literacy also functions as a mechanism of emotional resilience and cognitive stabilisation.

Finally, the findings correspond closely with the trauma-sensitive educational model proposed by V. Sichka *et al.* (2025). Their research demonstrated that trauma-informed English teaching creates psychologically safe educational environments that support emotional recovery and language development simultaneously. The present study confirms these conclusions but additionally introduces a linguistic-cognitive dimension by emphasising the role of terminology structure and semantic organisation in reducing cognitive overload and supporting rehabilitation outcomes. Overall, comparison with recent international literature demonstrates substantial agreement regarding the rehabilitative potential of foreign language learning. Nevertheless, most previous studies examine cognitive, pedagogical, psychological, or communicative dimensions separately. The present research integrates these perspectives and proposes a multidimensional model of rehabilitation-oriented language education. Its originality lies in combining cognitive linguistics with trauma-informed pedagogy and rehabilitation theory, as well as in identifying linguistic motivation and semantic transparency as key mediators of cognitive recovery. Consequently, English language education is interpreted not merely as a communicative practice but as a complex cognitive technology capable of supporting emotional stabilisation, social reintegration, and reconstruction of cognitive resilience in war-affected populations.

Conclusions

This study demonstrated that language education, particularly in English, plays a crucial role

in cognitive recovery and social reintegration for war-affected individuals in Ukraine. The analysis of terminological units highlighted the importance of internal form in facilitating comprehension and emotional processing. Terms with clear internal motivation, such as “emotional resilience” and “mental recovery”, offer transparency that allows learners to connect language directly with personal experiences of trauma, while semi-transparent or opaque terms, like “neuroplasticity” and “stress management”, require additional contextual explanation. Cross-linguistic analysis revealed that approximately 60% of English-Ukrainian term pairs retain motivational equivalence, preserving conceptual clarity, whereas the remaining 40% show partial shifts or neutralisation, particularly in terms related to emotional recovery and social reintegration. For instance, “emotional resilience” (Ukrainian: емоційна стійкість) maintains both cognitive and emotional significance, while “cognitive healing” (Ukrainian: когнітивне відновлення) may require supplementary explanation in the Ukrainian context. This underscores the need for culturally and linguistically informed pedagogical strategies in rehabilitation programs.

The study also found that term frequency and density vary by genre, with research articles and textbooks exhibiting higher concentrations of specialised terminology (28-30%) compared to online resources (20-23%). This indicated that formal rehabilitation contexts rely on precise, transparent language, whereas practical or informal settings prioritise accessibility. Metaphorical and transparent terms, such as “healing journey” and “psychological safety”, facilitate cognitive restructuring, helping learners conceptualise recovery processes and frame rehabilitation positively, thereby supporting motivation and social reintegration. Overall, the findings confirm that language education functions not merely as a tool for communication but as a cognitive instrument, bridging linguistic

forms with emotional and psychological processes. By focusing on transparent and metaphorically motivated terms, educational programs can enhance comprehension, foster resilience, and empower learners to reclaim agency in their personal and social lives. Future research should examine additional disciplinary vocabularies, such as psychological and social work terminology, and explore the impact of cross-linguistic differences on rehabilitation outcomes. Employing corpus-based and psycholinguistic approaches may further

illuminate how internal forms of language support cognitive and emotional recovery in post-conflict settings.

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Conflict of Interest

None.

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Англійська мова як інструмент когнітивного відновлення: роль мовної освіти у реабілітації та соціальній інтеграції в умовах війни в Україні

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Анотація. Дослідження розглядає, як навчання англійської мови виступає важливим інструментом когнітивного відновлення, психологічної підтримки та соціальної реінтеграції осіб, які постраждали від війни. Завдяки стимулюванню нейропластичності та розвитку впевненості у власних силах, вивчення мови суттєво сприяє подоланню травматичних наслідків війни. Метою дослідження було з'ясувати, яким чином навчання англійської мови може слугувати засобом когнітивної реабілітації та соціальної реінтеграції з акцентом на його психологічний і когнітивний вплив. У дослідженні використано корпусний аналіз, компонентний аналіз, порівняльний аналіз англо-української термінології, контекстуальний і дискурс-аналіз, а також кількісні методи для визначення частотності термінів, їхньої щільності та мотиваційних характеристик. Результати дослідження засвідчили, що навчання англійської мови сприяє когнітивному відновленню шляхом стимулювання пам'яті, уваги, виконавчих функцій та нейропластичності, а також підтримує емоційне благополуччя і соціальну інтеграцію. Аналіз показав, що 48 % виявлених термінів є морфологічно мотивованими, 22 % – семантично мотивованими, 18 % – запозиченими або калькованими, а 12% – конвенціоналізованими або непрозорими. Приблизно 70% проаналізованої термінології продемонстрували лінгвістичну прозорість, що сприяє розумінню та знижує когнітивне навантаження на осіб, які пережили травматичний досвід. Результати також засвідчили,

що 45 % англо-українських термінологічних відповідників мають повну еквівалентність, 25 % – часткову, а 30 % – нейтралізовану. Найвищу щільність реабілітаційно орієнтованої термінології зафіксовано в наукових статтях (29 %), далі йдуть підручники та навчальні посібники (23 %) і онлайн-освітні ресурси (21 %). Отримані результати підтвердили, що прозорі та напівпрозорі терміни сприяють когнітивній обробці інформації, емоційному відновленню та соціальній реінтеграції, тоді як непрозорі терміни потребують додаткової контекстуалізації та педагогічної підтримки. У дослідженні запропоновано інтегрувати реабілітаційно орієнтоване навчання англійської мови до програм постконфліктного відновлення, наголошуючи на лінгвістичній мотивації та семантичній прозорості як ключових механізмах когнітивної реабілітації, емоційної стабілізації та довготривалого соціального становлення особистості

Ключові слова: особи, які постраждали від війни; цифрова педагогіка; нейропластичність; інклюзивна освіта; соціальна підтримка; посттравматичний стресовий розлад; реабілітаційно орієнтоване навчання



Concept of “logos” in ancient Greek and Latin traditions: Semantic evolution and philosophical and philological interpretations

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Abstract. The study aimed to analyse the semantic evolution of the concept of “λόγος” in the Ancient Greek and Latin traditions. The methodological framework comprised lexicographical, semantic-comparative, textual-contextual and hermeneutic-comparative analyses. The lexicographical analysis made it possible to identify the main meanings of “λόγος”; the semantic-comparative analysis was used to compare them with “verbum”, “ratio”, “sermo” and “oratio”; whilst the textual-contextual and hermeneutic-comparative analyses revealed how the concept functioned in pre-Christian, early Christian and Latin texts. As a result, the study established that “λόγος” in Classical Greek is not limited to the meaning of “word”, but encompasses speech, utterance, proof, explanation, ground, measure, reason, law and principle. The Latin tradition did not develop a single complete equivalent for “λόγος”: its semantics is distributed amongst “verbum”, “ratio”, “sermo” and “oratio”, which convey, respectively, the verbal-theological, rational-explanatory, speech-discursive and rhetorical-compositional dimensions. In pre-Christian Greek texts, “λόγος” functions as a linguistic-philosophical category: in Heraclitus it is associated with the measure and order of the world; in Plato, with the dialogical examination of concepts; in Aristotle, with the argumentative organisation of speech; and in the Stoics, with the rational principle of nature. Greek-Christian and Latin receptions demonstrated a functional reworking of the concept: in Philo of Alexandria, “λόγος” took on a mediating and exegetical function; in the prologue to the Gospel of John, it became the semantic centre of the Christian text; in Justin Martyr, it was apologetic and argumentative; in Clement of Alexandria it was

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linked to a pedagogical and hermeneutical reinterpretation of the Hellenic tradition, and in the Vulgate it was established in Latin as “verbum”. Study demonstrated that the semantic evolution of “λόγος” is linked to the transition from the Greek polycentric concept to the Latin system of partial equivalents and the early Christian interpretation of the Word. Practical significance of the findings lies in the application of the proposed analytical framework in classical philology, the history of philosophical terminology, religious studies and translation studies. The research findings can be applied when analysing concepts that have been transmitted between the Greek, Latin and Christian traditions

Keywords: classical philology; speech; mediating function; receptive shift; meaning; equivalents; interpretation

Introduction

An examination of concepts within the ancient linguistic and philosophical tradition traced how an individual lexeme evolves from its dictionary meaning into a category of thought, law, theology and textual interpretation. For the Greek “λόγος”, this issue is of philological significance, as the concept combines word, speech, reason, foundation, proof, order and principle, whilst in the Latin context it has no single, complete equivalent. The transition from the Greek “λόγος” to the Latin “verbum”, “ratio”, “sermo” and “oratio” reflects not only a translator’s choice but also a shift in the mode of conceptual organisation. An analysis of “λόγος” requires simultaneous consideration of lexicographical, philosophical, religious studies and philological levels, as the semantic history of the concept is linked to the formation of the European language of the Word, Reason, foundation and order.

Examination of ancient concepts in philological and philosophical studies has given rise to several lines of research relating to the problem of “λόγος”. The semantic nature of ancient Greek philosophical concepts is explored through an analysis of “ἀλήθεια” as a semantic cluster in the study by I. Pavlenko (2022). In this interpretation, truth appears not as an isolated term, but as a field of meanings associated with openness, memorability, manifestness and cognitive activity. This principle is substantial

for interpretation of “λόγος”, as both concepts function not only at the level of lexical definition but also within the realm of philosophical categorisation of experience. The mental lexicon of ancient Greek philosophy is presented in the study by I. Pavlenko (2023) as a system of interrelated concepts, in which lexemes acquire meaning through their relation to thought, cognition, being and speech. This perspective shifts the problem of “λόγος” from the realm of a single translational equivalent to that of semantic transitions between linguistic form and philosophical function. The connection between “λόγος” and law, truth and the normative order is outlined in a study by I. Fedoriv (2025), which compares the Greek philosophical interpretation of truth with the legal system of Ancient Rome. This framing of the issue opens a distinct line of inquiry for Latin material, since “λόγος” in the Greek tradition is associated with foundation, regularity and rational justification, whereas the Roman tradition more often distributes these functions amongst legal, rhetorical and rational concepts. Study by A.P. Zaitets & Z.O. Pohoryelova (2021) on the formation of the idea of natural law in Ancient Greece and Ancient Rome also shows that ancient thought regarded law and order not merely as legal phenomena, but as conceptual forms of connection between nature, reason and the norm. In this context, the Latin reception of Greek concepts

emerges as a distribution of semantic functions amongst verbal, rational, legal and normative forms of expression.

A separate group comprises philological studies of ancient conceptualisation, which trace the mechanisms of the verbalisation of concepts in the Greek and Latin languages. Y.S. Chekareva (2023) examines the concept of the heart through the lens of ancient Greek and Latin traditions, demonstrating the value of a comparative analysis of these two classical languages in identifying semantic shifts between cultural systems. In the study by Y.S. Chekareva (2025), the concept of war in ancient Greek aphorisms is explored through fixed expressions, evaluative models and linguistic formulas that capture the philosophical and ethical interpretation of experience. In this approach, ancient concepts appear not as isolated lexical units, but as elements of textual contexts in which meaning acquires function. For "λόγος", this principle is of direct significance, as the semantic lines of "word", "reason", "proof" and "principle" are activated depending on genre, context and tradition. The religious and linguistic reception of concepts in biblical and post-antique texts opens yet another research horizon. O. Levko (2022) addressed the development of the "lexicon of humility" in 16th-century Church Slavonic and Old Ukrainian biblical manuscripts and demonstrated that theological concepts undergo semantic shifts during transitions between languages and textual traditions. A similar mechanism is present in the case of "λόγος", as the Greek concept underwent not a mechanical translation but a terminological reformulation in the early Christian context and in the Latin Vulgate. The study of O. Kyrychok (2020) regarding concepts of "philosopher" and "philosophy" in the written sources of Kyivan Rus' from the 11th to the 14th centuries demonstrates that ancient and Christian concepts acquire new interpretative frameworks when received within a different linguistic context.

In this context, "λόγος" emerges as a structure that bridges the Greek, Latin and Christian traditions and requires analysis not only of its meaning but also of the manner in which it is reinterpreted. The philosophical aspects of early Greek conceptualisation form the basis for interpretation of the pre-Christian "λόγος". In V. Turenko's (2025) work, the idea of hostility among the early Greek pluralists and sophists is presented as a transition from the cosmic to the human dimension. This perspective demonstrates the capacity of ancient concepts to change function depending on the level of interpretation. For "λόγος", a similar progression is the shift from a cosmological principle to speech, argumentation, rhetoric and the Christian Word. In S. Kostyuchkov's (2024) study, the relationship between chaos and logos in a biophilosophical interpretation of the origin of life reveals the enduring opposition between disorder and order as one way of conceptualising "λόγος". This opposition supports a philosophical line of thought in which "λόγος" functions as a principle of organisation, measure and meaningful order.

Existing studies outline semantic clusters of Greek philosophy, the mental lexicon of ancient thought, the verbalisation of concepts in the Greek and Latin languages, and the legal and religious reception of these concepts. At the same time, the comprehensive transition of "λόγος" from the Classical Greek semantic field to the Latin system of partial equivalents and the early Christian reception of the Word requires a separate philological analysis. The relationship between the Greek polycentric nature of "λόγος", the Latin distinction between "verbum", "ratio", "sermo" and "oratio", and the Greek-Christian reformulation of the concept within the Hellenistic-Jewish, New Testament and patristic contexts remains insufficiently explored. This gap highlights the need to analyse "λόγος" as a concept that unites word, speech, foundation, proof, reason, order and the theological Word.

The study aimed to investigate how the ancient Greek polycentric semantic field of “λόγος” was reinterpreted within the Latin system of partial equivalents and in the Greek-Christian reception of the Word. The objectives of the study were to define the semantic field of “λόγος” within the Greek lexicographical tradition and compare it with the Latin equivalents “verbum”, “ratio”, “sermo” and “oratio”; elucidate the functioning of “λόγος” in pre-Christian Greek philosophical texts through its connection with speech, measure, proof, order and the rational principle; and to trace the Hellenistic-Jewish, New Testament, early Christian and Latin reception of “λόγος” as the foundation for the formation of the European philosophical and philological tradition.

Materials and Methods

The study was conducted as a theoretical comparative-interpretative analysis of Greek and Latin lexical roots. Translated editions were consulted only insofar as they contained the Greek or Latin forms of the relevant fragments. The study was organised in three stages: the first stage examined the semantic field of the Greek concept “λόγος” and its Latin equivalents; the second stage examined the functioning of “λόγος” in the pre-Christian Greek philosophical tradition; and the third stage examined the Hellenistic-Jewish, early Christian and Latin reception of the concept. This sequence ensured a progression from the lexeme and semantic field to textual functioning, translational equivalents and conceptual evolution.

In the first stage, a lexicographical and semantic-comparative analysis was conducted. The source materials for this stage included the academic dictionaries and lexicons by C.T. Lewis & C. Short (1879), the *Thesaurus Linguae Latinae* (1900), and G.W. Lampe (1961). This stage also drew on the works by P.G. Glare (1968), H.G. Liddell & R. Scott (1996), and F.W. Danker (2000). In addition, the lexicographical material included the dictionary by

F. Montanari (2015). The lexicographical corpus covered Classical Greek, New Testament and Patristic Greek lexis, as well as the Classical, Late Antique and Christian Latin traditions. The analysis focused on identifying the core meanings of “λόγος” and comparing them with the Latin lexemes “verbum”, “ratio”, “sermo” and “oratio”. The semantic field of the concept was described in terms of its linguistic, logical-argumentative, rational, ontological and theological dimensions. Within this phase, “λόγος” was examined in its meanings of word, speech, utterance, narrative, proof, explanation, ground, reckoning, measure, reason, law and principle. The Latin material was analysed not as a single, unambiguous translation of the Greek “λόγος”, but as a system of partial equivalents, in which “verbum”, “ratio”, “sermo” and “oratio” represent different areas of its semantic field.

The second stage involved a comparative and contextual analysis of the pre-Christian use of “λόγος” in the Greek philosophical tradition. The materials for this stage comprised editions and corpora relating to Heraclitus, Plato, Aristotle and the Stoic tradition. This stage drew on Aristotle (1926), H. Arnim (1964), and A.A. Long & D.N. Sedley (1987). It also included C.H. Kahn (1979) and Plato (2013a; 2013b). The selected corpus represents the main pre-Christian contexts in which “λόγος” is associated with speech, argumentation, rational justification, measure, law and the order of being. The analysis covered the Heraclitean use of “λόγος” in connection with order and measure, the Platonic use in connection with dialogue and rational justification, the Aristotelian use in connection with speech, proof and definition, and the Stoic use in connection with the rational principle and the law of nature. A comparison of these contexts was used to distinguish between the linguistic, argumentative, philosophical and cosmological levels of the concept’s pre-Christian usage.

The third stage involved a hermeneutic and comparative analysis of the Hellenistic-Jewish,

early Christian and Latin receptions of “λόγος”. The corpus of primary sources comprised “Clement of Alexandria” as translated by G.W. Butterworth (1919), St. Justin Martyr (1997), Philo of Alexandria (Runia, 2001). The Vulgate edition by R. Weber & R. Gryson (2007) was also used as part of the corpus. The interpretative material included monographs and studies by J.M. Dillon (1996), D. Runia (2023) and C.J. Friesen *et al.* (2025). The corpus of sources encompassed Philo’s interpretation of “λόγος”, the Greek New Testament text (Holmes, 2010), the Latin translational tradition of the Vulgate, the early Christian apologetic and Alexandrian traditions, as well as the philosophical context of the concept’s reception. The analysis focused on comparing the Greek “λόγος” in Philo’s, New Testament and early Christian material with the Latin “verbum” in the Vulgate, as well as on identifying semantic shifts associated with the transition of the concept between the Greek philosophical, Jewish-Hellenistic, early Christian and Latin traditions. Early Christian material was drawn upon for a philological analysis of the functioning of Greek philosophical vocabulary within the New Testament, apologetic and Alexandrian Christian textual contexts.

The selection of materials was made as a targeted sample of academic lexicographical, textual and monographic sources that were directly related to the semantics or reception of “λόγος”, contained Greek or Latin linguistic material, and were significant for the Classical, Hellenistic, Early Christian or Latin traditions. The material was structured using a semantic matrix of meanings for “λόγος”, a table of Latin equivalents, a comparative diagram of the pre-Christian and early Christian usage of the concept, and an analytical model of its semantic evolution. The semantic matrix grouped meanings along the lines of “word – speech – argument – reason – law – principle”. Meanings were assigned to a particular group according to the dominant function of the lexeme in context: nominative, speech-related, argumentative,

rational, normative or ontological. The type of utterance, the connection with the act of speech, the presence of an explanation or proof, and appeals to reason, measure, law or principle were considered. A table of Latin equivalents compared “λόγος” with “verbum”, “ratio”, “sermo” and “oratio”. The comparison was based on semantic scope, context of use, function within a sentence, affiliation with the speech, rational, rhetorical or theological spheres, as well as the ability of the Latin lexeme to convey a specific aspect of the Greek concept. A comparative framework distinguished between the pre-Christian, Hellenistic-Jewish, New Testament, patristic and Latin-Christian levels of the concept’s functioning; an analytical model was used to describe the semantic evolution of “λόγος” within the European philosophical, linguistic and terminological traditions.

Results

Multi-component semantics of “λόγος” and its Latin equivalent

A lexicographical comparison of the Greek “λόγος” with the Latin “verbum”, “ratio”, “sermo” and “oratio” reveals not a translational equivalence, but rather the distribution of a single Greek semantic field across several Latin lexemes. In Classical Greek, “λόγος” combines the meanings of word, speech, utterance, narrative, message, proof, explanation, justification, calculation, measure, reason, law and principle. This semantic structure cannot be reduced to the opposition “word – reason”, as both spheres are linked through the function of organising content. A lexeme denotes not only what is uttered, but also what is explained, justified, calculated, correlated or presented as a meaningful order. Therefore, “λόγος” functions as a multi-component philological unit in which linguistic expression is not separated from the rational structure of the expressed content. Greek lexicography confirms this grouping, as it presents “λόγος” simultaneously in its linguistic, accounting-rational, explanatory and

conceptual meanings (Liddell & Scott, 1996; Montanari, 2015). The internal organisation of the semantic field of “λόγος” is formed through a combination of three actions: naming, explaining and organising. In the sense of a word or utterance, “λόγος” conveys linguistic form; in the sense of an argument, proof or justification, it conveys the logic of reasoning; in the sense of calculation, measure and proportion, it conveys the structural order between elements. Therefore, the concept is not limited to a communicative function. When “λόγος” denotes a “narrative” or a “message”, the speech aspect is activated; when it conveys “evidence” or an “explanation”, argumentative aspect becomes dominant; when it is associated with “count”, “measure” or “ratio”, the rational-structural level is revealed. These meanings do not constitute a random set of equivalents. They belong to a single field in which speech and rationality are presented as different modes of semantic organisation. The speech zone of “λόγος” encompasses the word, utterance, speech, message and narrative. In this zone, the concept denotes verbally formulated content, rather than merely an individual linguistic unit. For example, when “λόγος” is used to mean a narrative or a report of an event, it conveys not an individual word but a coherent meaning presented in linguistic form. When, on the other hand, “λόγος” means an utterance or a speech, it combines linguistic material with the compositional structure of thought. A direct identification of “λόγος” with the Latin “verbum” narrows the Greek concept down to its verbal component. The Latin “verbum” denotes a word, an utterance, a linguistic sign or a formula of expression; it therefore corresponds to those contexts in which “λόγος” functions as a verbal expression (Lewis & Short, 1879; Glare, 1968). However, “verbum” does not encompass the meanings of calculation, rational ground, measure, proportion and the principle of order. The correspondence between “λόγος” and “verbum” is of a local nature: it operates within the verbal-linguistic sphere,

but does not reproduce the full structure of the Greek concept. Logical-argumentative sphere of “λόγος” is revealed through the concepts of proof, explanation, justification, reasoning and grounds. In this context, “λόγος” denotes not merely what is said, but what is said with justification; that is, a statement that possesses an internal logic of explanation. For example, in the context of a judgement regarding the cause of a particular action or the demonstration of the correctness of a statement, “λόγος” is no longer merely a linguistic formulation. It denotes a rational basis, thanks to which the utterance becomes persuasive or conclusive. For such semantics, “verbum” is insufficient, as it conveys the verbal form without a necessary connection to the rational organisation of the content. The Latin term “ratio” encompasses reason, a basis, a mode of reasoning, calculation, a method of explanation and proportion. Therefore, “ratio” specialises that part of the semantics of “λόγος” where speech takes the form of rational proof. In the context of explaining a cause or justifying a statement, “ratio” conveys the meaning more precisely than “verbum”, as it captures not the verbal form itself, but the basis and logic of what is expressed.

The rational sphere of “λόγος” is formed at the intersection of the concepts of “reason”, “calculation”, “measure”, “foundation” and “correlation”. In this context, the Greek word denotes the order through which a thought or utterance takes on a well-founded form. The meanings of “calculation” and “measure” show that “λόγος” can describe not only a speech act, but also the principle of relating elements to one another. For example, when the concept is used in the sense of “calculation” or “correlation”, it no longer denotes an utterance as a linguistic event, but rather captures a proportion, a calculation or an internal order. The Latin term “ratio” comes closest to this concept, as it combines intellectual, computational and explanatory functions. At the same time, “ratio” shifts the semantic focus towards reason,

foundation and method, whereas "λόγος" retains a connection with speech and the expressed content. The Greek concept combines word and foundation, whilst the Latin system divides them between "verbum" and "ratio": the former denotes the verbal aspect, the latter the explanatory-rational aspect.

Discursive zone "λόγος" is associated with speech as a process of exposition, conversation, discussion or the coherent formulation of thought. It differs from the verbal zone in that it emphasises not an individual word, but a sequence of utterances. In the Latin tradition, this aspect of the Greek concept is conveyed by "sermo", which denotes conversation, speech, a manner of expression, discourse or linguistic interaction (Lewis & Short, 1879; Glare, 1968). Whilst "verbum" corresponds to a unit of verbal expression, "sermo" conveys the flow of speech. In the context of an exchange of views, an educational discussion or a coherent exposition, "sermo" captures the communicative aspect of "λόγος" more precisely than "verbum". For example, when the focus is not on an individual word but on the manner of conducting a conversation, the nature of speech or the coherent presentation of a thought, "sermo" encompasses precisely the procedural aspect of the speech act. However, "sermo" does not convey the rational-normative dimension of "λόγος", as it does not convey meanings of measure, law, basis or principle. The rhetorical and compositional sphere of "λόγος" is associated with a formalised speech, a structured exposition and a reasoned linguistic construction. The Latin tradition conveys this sphere through "oratio", which denotes a speech, a manner of expression, a linguistic construction and a rhetorically organised text. In contrast to "sermo", which tends towards conversation or the process of speaking, "oratio" emphasises the formal nature of the utterance. Therefore, "oratio" is closer to "λόγος" in cases where the Greek concept denotes a speech, a reasoned exposition or a compositionally organised utterance. For example,

in a rhetorical context, where the structure of a statement, the sequence of arguments and the manner of presenting an idea are substantial, "oratio" conveys not the act of speaking itself, but its organised form. At the same time, "oratio" does not convey the accounting-rational and ontological semantics of "λόγος". Its function is to represent the rhetorical and compositional dimensions of the Greek concept, rather than its entire semantic structure.

The ontological domain of "λόγος" reveals the limits of its Latin equivalents. When "λόγος" is associated with law, principle, order or the meaningful organisation of being, it ceases to be merely a linguistic unit and acquires the status of a philosophical category. In this context, no single Latin equivalent covers the entire field. "ratio" conveys a rational order, principle or foundation; "verbum" conveys meaning expressed in words; "sermo" and "oratio" retain a connection with speech and utterance. However, none of these words combines word, proof, reason, measure and principle in the way that "λόγος" does within the Greek semantic field. For example, in a context where "λόγος" denotes a principle of order, a translation using "ratio" conveys rationality but not the verbal form; a translation using "verbum" conveys verbal expression but does not fully encompass the meanings of measure and law. This attests to a different way of organising conceptual material: the Greek field retains its internal unity, whilst the Latin system conveys it through functionally distinct equivalents. The theological domain of "λόγος" adds a new level of textual functioning to its linguistic and philosophical meanings. In New Testament and patristic Greek lexis, "λόγος" retains the meanings of "word", "message", "utterance" and "content of a proclamation", but is used in contexts associated with the divine Word, revelation and Christological interpretation. Specialised early Christian lexicography records "λόγος" as a word, an utterance, a message, the content of a sermon, and the personified

Word, illustrating a transition from general linguistic and philosophical semantics to theological usage (Lampe, 1961; Danker, 2000). In Latin, the term most closely corresponding to this concept is “verbum”, though it primarily conveys the verbal-theological aspect of the concept. The Greek “λόγος”, meanwhile, retains traces of rational, argumentative and ontological semantics; therefore, translation via “verbum” does not eliminate the multi-faceted nature of the original Greek field. In this case, “verbum” does not replace the entire structure of “λόγος”, but captures one of its aspects – the verbal-theological one.

The Latin lexicographical tradition confirms the distributive nature of equivalence. “verbum”, “ratio”, “sermo” and “oratio” do not form a sequential series of synonyms, but denote different modes of linguistic representation of the Greek field. “verbum” is associated with the word and utterance; “ratio” with reason, basis, calculation and order; “sermo” with speech, conversation and the discursive process; “oratio” with a speech and a compositionally organised exposition. The *Thesaurus Linguae Latinae* (1900) provides material for tracing these lexemes within the broader Latin tradition, where their meanings function not as interchangeable but as specialised domains of linguistic and conceptual description. Consequently, the Latin rendering of “λόγος” depends on which component of the Greek concept is emphasised in a particular context. A Greek-Latin comparison reveals four main types of partial equivalence. The first type is verbal: “λόγος”, in the sense of a word, utterance or message, corresponds to “verbum”. The second type is rational-explanatory: “λόγος”, in the sense of a basis, reasoning, calculation or principle, corresponds to “ratio”. The third type is discursive: “λόγος” as a speech act or conversation corresponds to “sermo”. The fourth type is rhetorical-compositional: “λόγος”, as a speech or a structured exposition, corresponds to “oratio”. The Latin

equivalents do not simply duplicate the Greek concept, but rather specialise its individual functional aspects. “λόγος” emerges as a semantic centre from which the Latin tradition derives several lexical lines. The difficulty in translating “λόγος” arises from the combination, within a single Greek concept, of linguistic, argumentative, rational and ontological functions. If the context is dominated by speech, “verbum”, “sermo” or “oratio” becomes appropriate, depending on whether the reference is to a word, a conversation or a speech. If the context revolves around a basis, proof, measure or order, “ratio” is the more accurate choice. If “λόγος” combines speech, reason and principle, no single Latin equivalent can fully capture the concept’s structure. Translating “λόγος” as “verbum” emphasises the verbal aspect but weakens the rational-structural one; translating it as “ratio” conveys reason and foundation but pushes the verbal form into the background; “sermo” and “oratio” specify the verbal mode but do not convey the ontological function. Consequently, the Latin equivalence is of a zonal rather than a synonymous nature. The semantic field of “λόγος” emerges as a system in which speech, argument, reason, measure, law and principle do not exist as isolated meanings. They form a sequence of transitions: from word to utterance, from utterance to explanation, from explanation to justification, from justification to rational order, and from rational order to principle. The Latin tradition does not capture this sequence with a single term, but distributes it amongst “verbum”, “ratio”, “sermo” and “oratio”. Philological comparison reveals not a loss of the Greek meaning in Latin, but a change in the way it is linguistically organised. The Greek “λόγος” remains a polycentric concept, whilst its Latin counterparts form a system of specialised equivalents (Danker, 2000). Table 1 presents a semantic matrix for “λόγος”, which specifies the main areas of meaning, the Latin equivalents and the limits of their correspondence.

Table 1. Semantic matrix of “λόγος” and the limits of its Latin equivalent

Semantic domain of “λόγος”	Key figures	Latin equivalent	Boundaries of compliance
Verbal and communicative	Word, a phrase, a message, a story	“verbum”	Conveys verbal form, but does not encompass the meanings of basis, measure, count and principle
Rational-explanatory	Basis, explanation, reasoning, calculation, “ratio”	“ratio”	Reproduces rational and explanatory components, but weakens the link with the linguistic form
Discursive	Conversation, speech flow, discussion, coherent exposition	“sermo”	Conveys the process of speech, but does not encompass the normative and ontological dimensions of “λόγος”
Rhetorical and compositional	Speech, a structured presentation, a well-reasoned argument	“oratio”	Reproduces structured speech, but does not convey the meanings of measure, law and the principle of order
Ontological-theological	Law, principle, order, the divine Word, the meaningful organisation of existence	“ratio”/“verbum”	“ratio” conveys a rational order, whilst “verbum” conveys a verbal-theological dimension; no single equivalent captures the full scope of the Greek structure.

Source: compiled by the author based on C.T. Lewis & C. Short (1879), *Thesaurus Linguae Latinae* (1900), G.W. Lampe (1961), H.G. Liddell & R. Scott (1996), P.G. Glare (1968), F.W. Danker (2000), F. Montanari (2015)

The data in Table 1 show that the Latin equivalents do not duplicate “λόγος”, but rather distribute its semantics across distinct functional domains. “verbum” denotes the verbal form, “ratio” – the rational basis and order, “sermo” – the flow of speech, “oratio” – rhetorical form, and “verbum” in Christian Latin – the

verbal-theological dimension. Limitations to correspondence arise where the Greek concept simultaneously combines speech, explanation, reason, measure, law and principle. Table 2 summarises the distribution of this field amongst the main Latin approaches to rendering the term.

Table 2. Distributional model of the Latin rendering of “λόγος”

“verbum” channel I	↔	“ratio” channel II
↑↓	“λόγος” integral field	↑↓
“sermo” channel III	↔	“oratio” channel IV

Source: compiled by the author based on C.T. Lewis & C. Short (1879), *Thesaurus Linguae Latinae* (1900), G.W. Lampe (1961), H.G. Liddell & R. Scott (1996), P.G. Glare (1968), F.W. Danker (2000), F. Montanari (2015)

Table 2 illustrates the varying directions of the Latin equivalents in relation to the Greek “λόγος”. At the centre of the model, a single Greek field is retained, whilst the Latin lexemes are arranged as separate directions of its transmission. This structure emphasises that the correspondence between “λόγος” and its Latin forms is not symmetrical: the Latin terms do not fully replace the Greek concept, but rather cover distinct aspects of it. Consequently, the same Greek lexeme may require a different Latin equivalent in different contexts. The model

also distinguishes between the verbal, rational, discursive and rhetorical dimensions of the Latin rendering of “λόγος”.

Thus, the semantic field of “λόγος” in the Greek tradition emerges as a multi-component structure in which speech, explanation, proof, reason, measure, law and principle interact within a single conceptual field. The Latin terms “verbum”, “ratio”, “sermo” and “oratio” do not fully replicate this structure, but rather distribute it across distinct lexical domains: verbal, rational-explanatory, discursive and

rhetical-compositional. Consequently, the Latin equivalence of “λόγος” is partial and functionally dependent: the choice of a corresponding term is determined by which semantic zone is activated in a particular text. This division confirms that “λόγος” cannot be reduced to a single translational equivalent, since its meaning simultaneously encompasses linguistic form, the logic of justification, rational order and a theological dimension.

The pre-Christian “λόγος”

as a linguistic and philosophical category

In pre-Christian Greek texts, “λόγος” evolves from a linguistic designation of expressed content into a category that organises reasoning, argumentation and conceptions of order. Its function is not confined to a single level of meaning: in various philosophical contexts, the linguistic, argumentative, rational, philosophical and cosmological dimensions come to the fore. The Greek tradition does not separate these dimensions mechanically, since “λόγος” can simultaneously denote an utterance, the basis of an utterance, a method of proof and a principle of order. Consequently, the concept retains a connection with speech, but in pre-Christian philosophical texts it functions more broadly – as a form of rational access to meaning, law, measure and the structure of being.

The Heraclitean line reveals “λόγος” through the connection between speech, measure and the universal order. In this context, the concept does not coincide with the private utterance of an individual speaker. It denotes a meaningful order which can be expressed and heard, but is not created by the very act of speaking. In the fragments of Heraclitus presented and annotated by C.H. Kahn (1979), “λόγος” is associated with a universal, law-governed order, which people may fail to comprehend even after encountering it. Fragment B1 is particularly illustrative, where “λόγος” is presented as ever-present, whilst people do not perceive it either before hearing it or after

their first encounter with it. In this case, “λόγος” does not belong to any particular speaker, but denotes a constant order that precedes human perception and requires recognition. Fragment B50 serves a similar function, in which listening to “λόγος” is linked to the recognition of the unity of all that exists. The problem lies not in the absence of an utterance, but in the fact that what is uttered does not always translate into comprehension. Thus, Heraclitus’s “λόγος” functions not as a message in, but as a form of meaning through which the order of the world becomes accessible to comprehension. In Heraclitus’s writings, the linguistic function of “λόγος” is combined with its cosmological function. A concept can be “heard” as speech, but its meaning points to something that transcends a single utterance. When human incomprehension is contrasted with the universal “λόγος”, the focus is not on a lack of information, but on the gap between the linguistic presence of meaning and the ability to recognise it. For this reason, “λόγος” functions as a principle that unites word and order: it designates not only what is said, but also the pattern that what is said is meant to reveal. In this sense, the concept serves as a measure. It does not merely describe individual phenomena but defines the manner in which they are related to one another. Where the world appears as movement, opposition and change, “λόγος” captures not a static state, but the order of relationships between different states. The function of a measure in Heraclitus’s “λόγος” takes the concept beyond the bounds of ordinary linguistic meaning. Whilst a word merely names an object, “λόγος” in this context establishes how an object or phenomenon is incorporated into the overall structure. Its semantic function lies not in naming, but in ordering. The oppositions “the one – the many”, “the constant – the changing”, “human incomprehension – the universal order” can be understood through “λόγος” as a principle of correlation. The Heraclitean tradition establishes a level of philosophical expansion of

the concept, where "λόγος" remains linked to utterance, but its content is directed towards law and measure – that is, towards that which organises the possibility of a meaningful utterance. In Plato's corpus, "λόγος" moves into the realm of dialogical reasoning and conceptual verification. In the *Republic*, speech is not presented as a ready-made message, but unfolds through questions, clarifications, objections, definitions and sequential justification. In such a textual context, "λόγος" signifies not merely participation in conversation, but a procedure through which thought takes on a defined form. A discussion of justice, the common good, the soul or the state is not confined to setting out the views of the participants. It is structured as a test of whether a particular statement can be justified and free from contradiction. Therefore, Plato's "λόγος" functions as an instrument of philosophical discourse, in which the word becomes reasoning, and reasoning becomes a search for definition (Plato, 2013a; 2013b).

In a dialogue, "λόγος" is not equivalent to just any utterance. An utterance may be an opinion, a supposition or a reply, but it only acquires the status of a philosophically significant statement when it is incorporated into a chain of reasoning. For example, the definition of justice cannot remain at the level of a single statement, as it is tested against other concepts – utility, the good, the order of the soul, and the structure of the community. Such a correlation shows that "λόγος", in the Platonic form of dialogue, performs a regulatory function: it distinguishes unfounded statements from reasoning capable of withstanding conceptual scrutiny. This constitutes its level of argumentation. Speech is relevant not in itself, but as the form in which a thought is tested for consistency. The connection between "λόγος" and definition in the Platonic tradition is revealed through the need to establish the boundaries of a concept, its content and its distinction from related concepts. In the dialogue, this occurs through the systematic identification of

weaknesses in previous answers. Consequently, "λόγος" takes on the function of a discipline of meaning. It not only conveys a thought but compels it to move from an uncertain answer towards a more well-founded formulation. In this context, linguistic form is not separated from the philosophical procedure: the word becomes a means of organising the concept. This function distinguishes the Platonic "λόγος" from the Heraclitean: in Heraclitus, it reveals a universal order; in Plato, it organises the path to conceptual clarity through dialogue. For example, in "*Republic*", the discussion of justice unfolds not as a mere recording of opinions, but as a testing of the proposed definitions. Definitions of justice as "giving what is due" or as "the benefit of the stronger" are not accepted outright, but are subjected to questioning, objections and clarification. In this context, "λόγος" serves to test the concept through dialogue, as it transforms the initial assertion into a coherent line of reasoning (Plato, 2013a; 2013b). In Aristotle's works, "λόγος" is specified in terms of the argumentative structure of discourse. In the "*Rhetoric*", this is evident from the distinction between three modes of persuasion: through the character of the speaker, the emotional state of the listener, and "λόγος". The latter is associated with proof or apparent proof, which arises from the subject matter of the speech. Therefore, "λόγος" in this text does not denote any form of speech, but rather the argumentative part of a speech, where a claim is substantiated and logically linked to a conclusion. In "*Rhetoric*", the concept is linked to persuasion through argument, that is, to that part of the speech which relies on the internal logic of the statement, rather than merely on the emotional impact or image of the speaker. The "λόγος" denotes speech organised as proof. A rhetorical speech may be grammatically correct or emotionally charged, but without a structure of proof it does not fulfil the function of "λόγος" in the strict argumentative sense. Aristotle's clarification lies in the fact that speech

gains force when it contains a basis, a sequence and a rational connection between the premise and the conclusion (Aristotle, 1926).

On a rhetorical level, “λόγος” distinguishes between the form of speech and the argument. A speech, as a linguistic construct, may appear complete on the surface, but “λόγος” requires internal validity. A claim regarding the benefits of a particular action becomes persuasive not merely through the existence of the speech, but through an explanation of the cause, effect, conditions and connection between the action and the expected result. In this case, “λόγος” transforms a statement into an argument. It organises the material in such a way that the listener or reader sees not only the thesis but also the basis for accepting it. Therefore, in the Aristotelian context, “λόγος” embodies the logical-argumentative sphere, already established at the lexicographical level through the meanings “proof”, “explanation”, “basis” and “reasoning”. The connection between “λόγος” and definition in this material is revealed through the need to establish what exactly makes an object what it is. A definition cannot be merely the name of an object, for it establishes its semantic boundary. In this procedure, “λόγος” performs the function of conceptual demarcation. It determines not only the verbal form but also the structure of the content. Whilst in Plato’s dialogues a definition is tested through questioning and contradiction, in Aristotle’s work it is incorporated into a systematic order of proof. Therefore, “λόγος” can be described as speech subject to the requirement of evidential and conceptual precision. In it, the philological semantics of the word gives way to the logic of argument construction.

In the Stoic tradition, the concept of “λόγος” is evident in the doctrine of “λόγος σπερματικός” – the “seed-mind”, that is, the inner rational principle by which nature brings things into being and organises them. In the fragments collected by H. Arnim (1964), as well as in the thematic selection by A.A. Long & D.N. Sedley (1987),

the concept is associated with the rational structure of nature, the regularity of the cosmos and the principle that organises the world. A telling example is the Stoic definition of nature as a fiery and rational force containing “λόγοι σπερματικοί” – the rational principles of individual things. In this usage, “λόγος” does not denote speech or a specific argument, but acts as the principle of the formation, development and regular connection of natural phenomena. Linguistic meaning does not disappear, but it loses its dominant status. Rationality becomes the central focus, inherent not only in human thought but also in the very organisation of nature. In the Stoic context, “λόγος” signifies not only the ability to express or prove, but also the principle according to which nature is conceived as lawful and ordered.

The scope of “λόγος” in the Stoic tradition differs from that in rhetoric. In Aristotelian rhetoric, it organises speech as an argument, whereas in Stoic philosophy it organises conception of the world as a rationally ordered whole. If natural processes are understood as governed by regularities, “λόγος” is no longer merely a human means of explaining these regularities. It becomes the principle that conceives the regularity as rational. Consequently, the Stoic conception links “λόγος” with the law of nature, necessity, order and normativity. This function extends the concept from the argumentative structure of speech to the ontological structure of the cosmos. The cosmological meaning in Stoic thought does not abolish the previous levels, but incorporates them into a broader system. Speech remains a means of expressing “λόγος”, argumentation a means of its rational explanation, and definition a means of conceptual organisation. However, the focus shifts from human utterance to the world order. Consequently, “λόγος” takes on the function of a link between human thought and natural regularity. Philologically, this signifies an expansion of the semantic field from the expressed content to the principle that

explains the semantic organisation of reality. In the pre-Christian tradition, this is one variant of the rational-ontological functioning of the concept. A comparison of Heraclitean, Platonic, Aristotelian and Stoic material reveals not a sequential replacement of meanings, but a shift in the functional centre. The Heraclitean approach emphasises order and measure; the Platonic approach, dialectical reasoning and the examination of concepts; the rhetorical-logical approach, proof, definition and persuasion; and the Stoic approach, rational principle and cosmic law. Each context shifts the emphasis to a different aspect of the same semantic field. Consequently, "λόγος" retains its recognisability but does not remain static. It can be an utterance, a basis, an argument, a method of definition or a principle of order, depending on the genre, text type and philosophical task. The linguistic level of "λόγος" is present in all the contexts under consideration, but its function changes each time. In the Heraclitean tradition, speech opens access to order; in the Platonic tradition, it guides thought through dialogue; in the Aristotelian tradition, it takes on a demonstrative structure; and in the Stoic tradition, it expresses the rationality of nature. Consequently, "λόγος" cannot be described merely as a "word", "speech" or "reason". In each case, it acts as a mediator between the linguistic form and the order that this form is intended to reveal. Its pre-Christian function is linguistic-philosophical: language is not an external shell of thought, but serves as a means of organising it. The argumentative level creates a transition from speech to proof. In the works of Plato and Aristotle, "λόγος" most clearly demonstrates the ability to transform utterances into reasoned argument. In dialogue, this occurs through the comparison of statements, the clarification of definitions and the identification of contradictions; in rhetoric, through the construction of a line of reasoning. Both cases demonstrate that "λόγος" is not merely communication. It

refers to an organisation of speech in which a thought can be tested. Consequently, the argumentative function combines the linguistic and rational planes: a word gains power when it is well-founded. The rational level ensures the consistency of a concept across different contexts. Even when "λόγος" refers to speech, dialogue or a law of nature, it retains a connection with rational order. This connection can be traced in the transition from Heraclitean measure to Platonic justification, from Aristotelian proof to the Stoic cosmic principle. In each case, "λόγος" performs a unifying function: an individual utterance is linked to its basis, an individual thought to its proof, and an individual phenomenon to order. Therefore, the rational sphere does not exist as one of the peripheral variants of meaning; it runs through the fundamental modes of the pre-Christian functioning of the concept (Plato, 2013a).

The philosophical dimension of "λόγος" lies in the ability to organise work involving definitions, foundations and semantic boundaries. In Plato, this function is realised through the dialogical clarification of concepts; in Aristotle, through the argumentative structure of discourse and the procedure of definition; and in the Stoics, through the normative connection between thought and the natural order. All these contexts demonstrate that "λόγος" is not merely a subject of lexical analysis. It functions as an instrument of philosophical thought, enabling a transition from word to concept, from concept to foundation, and from foundation to order. The pre-Christian tradition establishes a functional space for it, within which speech and philosophy are not separated. The cosmological level completes the pre-Christian expansion of the concept. It is evident in the Heraclitean and Stoic traditions, although it takes different forms. In Heraclitus, "λόγος" is associated with the universal order, which is not always recognised by humans; in the Stoics, it acquires the systematic significance of the rational principle of nature. Both cases demonstrate that "λόγος"

can denote not only the mode of human speech, but also the structure according to which being is conceived. The cosmological meaning does not negate the linguistic and argumentative levels, but rather broadens the scope of the concept's application. Consequently, "λόγος" encompasses both the expressed thought and the order that renders that thought semantically justified. Pre-Christian "λόγος" emerges as a category that combines linguistic form, argumentative foundation, rational order and cosmological structure. In the Heraclitean context, it tends towards moderation and law; in the

Platonic context, towards dialogue and the examination of concepts; in the Aristotelian context, towards proof and persuasion; and in the Stoic context, towards the rational principle of nature. Such variability does not blur the concept, but demonstrates its ability to function within different types of philosophical text. "λόγος" remains recognisable because, in every context, it retains its function of bringing order: to speech, thought, argument or the world (Plato, 2013b). Table 3 compares which semantic functions of "λόγος" are activated in various pre-Christian philosophical contexts.

Table 3. Matrix of functional levels of "λόγος" in pre-Christian texts

Textual context	Dominant mode	Language level	Argumentative level	Rational level	Philosophical level	Cosmological level
Heraclitean fragmentary tradition	Order/measure	Expressiveness of the general	Explanation of the pattern	Measure and proportion	Logical structure of changes	General order of the world
Platonic dialogue	Concept check	Speech in dialogue	Comparison of statements	Well-founded sequence	Definition and scope of the concept	Indirect procedure
Aristotelian rhetoric	Evidence/conviction	Structured speech	Logic of proof	Basis for assertion	Conceptual distinction	Non-dominant
Stoic tradition	Sensible principle	Expression of a pattern	Explanation of nature	Rational Law	Normative cognition	Cosmic order

Source: compiled by the author based on Aristotle (1926), H. Arnim (1964), C.H. Kahn (1979), A.A. Long & D.N. Sedley (1987), Plato (2013a; 2013b)

Table 3 compares the semantic functions of "λόγος" as they are employed in various pre-Christian philosophical contexts. The matrix shows that the Heraclitean, Platonic, Aristotelian and Stoic traditions distribute the linguistic, argumentative, rational, philosophical and cosmological levels of the concept in different ways. This format can be used to trace not merely a change in meanings in chronological sequence, but different configurations of the functions of "λόγος" depending on the type of text and the philosophical task. The individual levels are not isolated from one another: speech can transition into proof, proof into rational justification, and rational justification into an explanation of the order of being.

Thus, in the pre-Christian Greek tradition, "λόγος" functions as a linguistic and

philosophical category that encompasses utterance, reasoning, proof, definition, measure, law and order. In the Heraclitean context, it is associated with the general order and measure of the world; in the Platonic context, with the dialogical unfolding of thought and the testing of concepts; in the Aristotelian context, with the argumentative organisation of speech and rational persuasion; and in the Stoic context, with the rational principle of nature and the cosmic order. A comparison of these contexts shows that "λόγος" does not change by substituting one meaning for another, but each time activates a different aspect of a shared semantic field. As a result, the concept retains its connection with speech, yet transcends the linguistic function and assumes the role of a category through which Greek thought described the validity

of a statement, the rationality of thought and the orderliness of existence.

Concept of "Logos" in the Greek-Christian and Latin traditions

Transition of the term "λόγος" from the pre-Christian Greek philosophical milieu to the Greek-Christian and Latin traditions took place through a reorganisation of its semantic field. The pre-Christian tradition endowed the concept with a multi-component structure, in which word, speech, reasoning, proof, foundation, measure, order and principle constituted interrelated lines of meaning. In its subsequent reception, this structure was not replaced by a single new meaning, but shifted its functional centre. Philo's corpus emphasised the mediating and cosmological dimensions of "λόγος"; the New Testament text centred the concept's semantics on the Word, the beginning and creation; the apologetic tradition of Justin Martyr employed Logos as an instrument for the rational defence of Christian truth; the Alexandrian tradition of Clement assigned a pedagogical and interpretative function to the concept; the Latin Vulgate established the verbal-theological line through "verbum". The reception of "λόγος" reveals a shift in the concept between the philosophical, exegetical, apologetic, educational-interpretative and translational-terminological levels.

Philo of Alexandria represents a transitional form of reception, in which Greek philosophical terminology is integrated into the structure of a Jewish-Hellenistic interpretation. In the treatise "On the Creation of the Cosmos according to Moses" (Runia, 2001), "λόγος" is associated with the explanation of creation, cosmic order and the relationship between divine design and created reality. In Philo's corpus, the concept does not function as an ordinary statement or a separate argument. The semantic focus shifts towards mediation: "λόγος" denotes the manner in which the invisible order relates to the visible world. This

mediating function is based on pre-Christian notions of measure, the rational principle and cosmic order, but transposes these meanings into the biblical-exegetical sphere. "λόγος" becomes a means of interpreting creation as a semantically organised act, rather than merely a philosophical term denoting order. Philo's interpretation differs from the Stoic cosmological usage in that the order of the world does not appear as a self-sufficient natural law. In the Stoic tradition, "λόγος" denoted the rational structure of the cosmos; in Philo, this structure is related to the divine source and the biblical text. The mediating function of the concept unfolds on three levels. The cosmological level explains the orderliness of the created world. The hermeneutical level provides a framework for a philosophical interpretation of the biblical account of creation. The ontological level describes the relationship between the transcendent God and visible reality. This multi-layered structure is consistent with the characterisation of Philo as an author whose thought is shaped at the intersection of Jewish exegesis, the Platonic tradition and the Hellenistic philosophical lexicon (Dillon, 1996; Runia, 2023).

The receptive shift in Philo's usage lies in the transfer of "λόγος" from the realm of general order to that of interpretative mediation. In the Heraclitean and Stoic traditions, the concept already denoted order, measure and the rational structure of the world. In Philo's treatise "On the Creation of the Cosmos according to Moses" (Runia, 2001), these meanings take on a different textual role: "λόγος" does not merely denote order, but explains how the order of the created world corresponds to the divine design. The description of the cosmos as an ordered whole requires not only the category of nature, but also the categories of design, image, archetype and meaningful organisation. In this configuration, "λόγος" becomes a linguistic-philosophical means of transition from the biblical text to a conceptual explanation. The Philo-style level demonstrates the functioning of the Greek term

in a context where philosophical semantics is subordinated to the exegetical task. Philo's receptive role is not limited to a local synthesis of Jewish and Greek material. Philo's "λόγος" becomes one of the points of transition between Alexandrian exegesis, Platonic philosophy and the later Christian interpretation of the Word. In the reception of Philo, interest is evident not only in specific tenets of interpretation, but also in the very model of processing Greek philosophical vocabulary as a tool for explaining biblical content. This model facilitated the subsequent transition of "λόγος" into the early Christian milieu, where the concept no longer merely described the cosmic order but became a means of shaping the language of Christian doctrine. The receptive dimension of Philo's legacy demonstrates that texts function as an intermediary link between Hellenistic philosophical culture and the Christian tradition of interpreting "λόγος" (Friesen *et al.*, 2025).

The New Testament interpretation is linked to the prominence of "λόγος" in the prologue to the Gospel of John. In the Greek text, as published by M.W. Holmes (2010), the concept is positioned at the beginning and is associated with the beginning, existence in relation to God, creation and life. This positioning alters the functional status of the lexeme. "λόγος" no longer functions merely as one of the designations for speech or reasoning; the concept becomes the semantic centre around which the connection between the Word, being and creation is organised. The philological shift does not consist in the disappearance of the previous semantics, but in its condensation: the meanings of "word", "order", "rational foundation" and "principle of the beginning" are united into a single textual position. In the New Testament prologue, "λόγος" functions as a category possessing linguistic, ontological and theological dimensions simultaneously. A comparison of the Philoan and New Testament levels reveals a different organisation of the receptive function. In Philo, "λόγος" helps to explain

the relationship between God, the divine plan and the created world; in the prologue to the Gospel of John, the concept itself becomes the initial point of meaning in the text. Philo's model is predominantly hermeneutical in nature: "λόγος" explains how to interpret the cosmos and creation. John's model is of a centring nature: "λόγος" not only explains but also forms the initial framework for the entire theological discourse. In this context, the lexeme retains its connection with the Greek philosophical tradition, yet is incorporated into a new syntactic and semantic structure. The concept can no longer be translated simply as "word" or interpreted solely as "mind", as both dimensions are embedded within a broader textual framework (Runia, 2023).

The semantic function of "λόγος" in the prologue stems from the fact that the beginning is presented not as an abstract point in time, but as a semantic space in which the word, being and creation are interrelated. This structure has philological significance, as the Greek term serves not only to name, but also to organise the text. The repetition of the concept, its position at the outset and its connection with the motif of creation confer upon "λόγος" the status of an organisational centre. In pre-Christian texts, "λόγος" could signify law, measure, proof or a rational principle; in the New Testament prologue, these semantic strands converge in the Christian formula of the Word. The New Testament usage is not a mere continuation of ancient philosophical terminology. It reshapes the previous field by introducing "λόγος" into the textual logic of revelation (Holmes, 2010). The apologetic reception of Justin Martyr unfolds the argumentative aspect of the functioning of "λόγος". In "The first and second apologies" by St. Justin Martyr (1997), "Logos" is used as a concept capable of reconciling the Christian proclamation with the language of Greco-Roman rationality. The apologetic genre requires not only an exposition of doctrine, but also an explanation of its semantic

acceptability to an external audience. In this genre context, Logos fulfils an argumentative function: Christian truth is presented as something that can be reconciled with reason, logic and philosophical inquiry. In Justin's writings, Greek philosophical vocabulary is not merely a decorative borrowing; it becomes a means of defence, polemic and the translation of Christian content into a language capable of engaging in dialogue with the ancient intellectual tradition. Justin's apologetic model emphasises the connection between "λόγος" and proof and rational justification. Whilst in the Gospel of John "λόγος" structures the Christian text through the motif of the beginning and creation, in Justin's work Logos operates within the realm of targeted argumentation. The Christian position is explained not only through the authority of revelation, but through its capacity to be understood as a truth that does not contradict reason. This approach preserves the pre-Christian connection between "λόγος" and foundation, reasoning and proof, but transposes this connection into Christian apologetics. The concept becomes an instrument through which a reconciliation takes place between the Greek culture of philosophical proof and the Christian assertion concerning the Word.

In the writings of Justin the Martyr, the Logos also serves as a means of cultural mediation. The apologetic discourse involves explaining Christian truth to a context in which philosophical discourse held the status of rational authority. Thanks to the Logos, the Greek tradition is not entirely rejected, but is reorganised around a Christian centre of meaning. From a philological perspective, this reception demonstrates that the Greek concept has not lost its capacity to denote rationality, foundation and semantic order. What has changed is the intended audience and the genre in which it functions: the concept shifts from philosophical dialogue and rhetorical argument to apologetic defence. In Justin, "λόγος" not only designates Christological

reality but also structures the manner of its rational presentation (St. Justin Martyr, 1997). The Alexandrian reception of Clement forms a pedagogical-hermeneutical variant of the Christian interpretation of "λόγος". In the texts presented in G.W. Butterworth's (1919) edition, Greek philosophical language functions as a tool for engaging with the Hellenic educational tradition. "λόγος" is associated with teaching, instruction, the organisation of knowledge, and the transition from philosophical culture to Christian interpretation. In contrast to Justin's apologetic model, where the primary function is that of defence and proof, the Alexandrian model emphasises the function of formation. The concept operates not only in polemics with an external audience, but also in the organisation of the internal space of Christian teaching, where the Greek educational heritage is reinterpreted through a Christian centre of meaning. For Clement, the "λόγος" functions as a means of transforming Hellenic paideia. The Christian appeal to the Greeks is not based solely on a rejection of philosophical culture. The Greek language of reason, learning and the organisation of thought is incorporated into a different system of meanings. In this process, the "λόγος" retains its connection with speech, instruction and rational explanation, but takes on the function of a guide from prior knowledge to Christian truth. Whilst the apologetic Logos in Justin serves a defensive and demonstrative function, the Alexandrian "λόγος" in Clement functions as a principle of intellectual and spiritual guidance. The Greek concept becomes a means not only of polemic, but also of organising the Christian language of education.

A comparison of Justin and Clement reveals two strands of early Christian reception of Greek philosophical terminology. The apologetic strand uses "Logos" to provide a rational explanation of Christian doctrine to an external audience; the Alexandrian strand incorporates "λόγος" into a model of learning, interpretation and the formation of knowledge. In both cases,

the concept is not reduced to the biblical word in the narrow sense. It serves as a conduit between the Greek culture of reasoning and the Christian textual milieu. The mediating role of “λόγος” ensures a philological link between early Christian reception and the pre-Christian semantic field: word, reason, explanation, order and instruction take on a new configuration, yet do not lose their interconnection (Butterworth, 1919; St. Justin Martyr, 1997). The Latin level of reception consolidates a shift in translation and terminology. In the “Biblia Sacra Vulgata” as edited by R. Weber & R. Gryson (2007), the Greek “λόγος” in the prologue to the Gospel of John is rendered as “verbum”. The translation as “verbum” captures the verbal-theological aspect of the Greek concept and lends this particular aspect terminological stability within the Latin Christian tradition. At the same time, the Latin “verbum” does not fully convey the meanings of reason, foundation, proportion and cosmic principle associated with “λόγος” in the Greek context. These meanings remain closer to “ratio” or other Latin equivalents. The Latin reception does not eliminate the polysemy of the Greek term, but highlights one dominant aspect – the Word as a theologically significant expression. The translational choice of “verbum” shifted the focus of the European reception of “λόγος”. In the Greek concept, a tension persisted between word, reason, foundation, measure and order. In the Latin Vulgate, the verbal-theological dimension came to the fore. This does not imply the disappearance of the rational or ontological dimensions, but terminological stabilisation took place precisely around “verbum”. The Latin tradition took on a form suitable for Christian theological vocabulary; however, the semantic scope of the Greek “λόγος” remained broader than that of its single Latin counterpart. This shift in translation explains the subsequent coexistence within the European tradition of two strands: “verbum” as the Word, and “ratio” as reason, foundation and rational order.

The relationship between “verbum” and “ratio” defines the linguistic and philosophical mechanism of the Latin reception of “logos”. The “verbum” establishes the textual and theological line associated with the Word, proclamation and the Christian interpretation of the prologue to the Gospel of John. “ratio” preserves the philosophical and rational-explanatory line associated with foundation, reasoning, reason and order. This dichotomy is not merely a difference in translation. It creates, within the Latin and subsequent European traditions, two interrelated trajectories of interpreting the Greek “λόγος”: through the Word and through Reason. The Greek polyfunctionality does not disappear, but continues to exist as a tension between the theological and rational-philosophical vocabularies. The European reception of “λόγος” emerges as a multi-faceted process. The Philo-level established a link between Greek philosophical vocabulary and the Jewish-Hellenistic interpretation of creation. The New Testament level concentrated the concept in the prologue to the Gospel of John as the semantic centre of the Christian text. The apologetic level, as seen in Justin Martyr, utilised Logos for the rational defence of Christian truth. The Alexandrian level, as seen in Clement, transformed Greek philosophical vocabulary into a tool for Christian teaching and interpretation. The Latin level, through the “verbum”, established the verbal-theological direction within the Western terminological tradition. In this chain, each level does not merely repeat the previous one, but shifts “λόγος” into a new functional position. The receptive chain explains the formation of several interrelated European terminological strands. In the Greek tradition, the concept retained a multi-component structure encompassing the word, reasoning, foundation, order and principle. In the Greek-Christian corpus, this structure was reorganised around the Word, creation, revelation and truth. In the Latin tradition, “verbum” established the verbal-theological

strand of reception, whilst “ratio” retained its connection with the rational-explanatory dimension. The European linguistic and philosophical tradition inherited not just a single equivalent for “λόγος”, but a system of inter-related terminological lines between word, reason, foundation and order. The role of “λόγος” in shaping the European philosophical, linguistic and terminological tradition is determined by the concept’s ability to transfer semantic structure between different types of text. In a philosophical context, “λόγος” organised reasoning and conceptions of order; in Philo’s corpus, it served as a bridge between

biblical exegesis and the language of Greek philosophy; in the New Testament prologue, it became the centre of Christian semantics of the Word; in apologetics and the Alexandrian tradition, it functioned as a means of explanation, defence and instruction; in the Latin Vulgate, it was terminologically fixed as “verbum”. This multi-layered reception facilitated the transition of “λόγος” from a distinct Greek lexeme to a cross-linguistic and cross-traditional category, uniting speech, reason, meaning and order within the European intellectual lexicon. Figure 1 summarises the main directions of the “λόγος” transition.

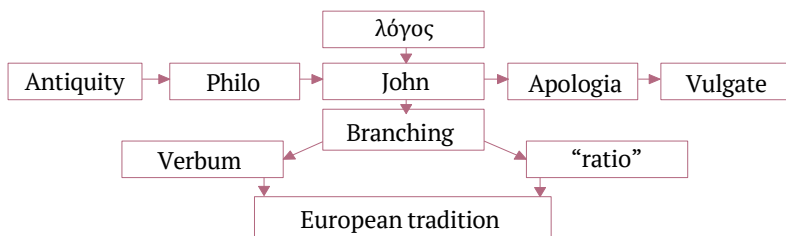


Figure 1. Conceptual model of the European reception of “λόγος”

Source: compiled by the author based on G.W. Butterworth (1919), J.M. Dillon (1996), St. Justin Martyr (1997), D. Runia (2001; 2023), R. Weber & R. Gryson (2007), M.W. Holmes (2010), C.J. Friesen et al. (2025)

In Figure 1, the reception of “λόγος” is presented as a sequence of semantic transitions between different traditions. The change in the textual context was not merely a matter of replacing one meaning with another, but was accompanied by a redistribution of the concept’s functions. The visual representation captures the interaction between the philosophical, exegetical, early Christian and Latin levels of reception. The Latin transmission via “verbum” is noteworthy, which established a verbal-theological strand of the European terminological tradition. This can trace how a Greek concept acquires cross-linguistic and cross-traditional meaning.

Thus, the European reception of “λόγος” took shape as a multi-layered process of re-organising the Greek semantic field within

the Hellenistic-Jewish, New Testament, early Christian and Latin textual contexts. In Philo’s writings, the concept took on a mediating and exegetical function; in the prologue to the Gospel of John, it became the semantic centre of the Christian definition of the Word; in the works of Justin Martyr, it fulfilled an apologetic and argumentative role; in Clement of Alexandria it was linked to a pedagogical and hermeneutical reinterpretation of the Hellenistic educational tradition, and in the Vulgate it was established in Latin terminology through “verbum”. This transition did not eliminate the previous polysemy of “λόγος”, but rather distributed it across several functional dimensions: verbal, rational-explanatory, exegetical, apologetic, and translational-terminological. As a result, “λόγος” became not merely a Greek

philosophical lexeme, but an interlingual and inter-traditional category through which the European philosophical and linguistic tradition brought together the themes of the word, reason, foundation, order, creation and the theological Word.

Discussion

The analysis demonstrated that “λόγος” cannot be interpreted as a lexeme with a single fixed meaning or as a concept with a complete Latin equivalent. The semantic field of “λόγος” encompasses speech, argumentation, rationale, reason, order and the theological Word; it therefore requires consideration at the levels of lexicon, textual function and reception. C. Rico’s (2024) philological approach elucidated “λόγος” within the Ancient Greek linguistic system through its connection with the act of utterance, speech and forms of verbal expression. In the present article, this line of inquiry has been expanded through a shift from an intra-Greek description to the Latin equivalents “verbum”, “ratio”, “sermo” and “oratio”, which has made it possible to identify the partial nature of Latin equivalence. The issue of the Latin translation of “λόγος” received separate attention in a study by E.Z. Ellis (2024), which focused on Erasmus’s translation choice, the academic debate and the reaction to the translation of logos as “sermo”. This study demonstrated that the choice between “verbum” and “sermo” influenced the interpretation of the prologue to the Gospel of John and was not merely a matter of grammar. The findings explained the source of the translational tension: the Greek “λόγος” simultaneously encompasses verbal, discursive, rational and theological components. “verbum” establishes one line of reception, whilst “sermo” remains a viable equivalent in contexts where the speech-discursive aspect becomes relevant. The trajectory from Heraclitus to Philo of Alexandria and early Christianity was explored by I.E. Gozum (2024). In this work, “logos” was presented

as a concept that evolves from a philosophical principle to a Christian definition of the Word. The author’s interpretation elaborated on this trajectory through functional levels: in the Heraclitean tradition, “λόγος” is associated with measure and order; in Philo’s writings, with mediation between the divine plan and the created world; and in early Christian material, with reorganisation centred on the Word. This perspective deviates from the straightforward “philosophy – theology” framework and reveals a shift in the functional focus of the concept.

The New Testament interpretation of “λόγος” was further refined in an article by C.S. Atkins (2021), which reinterpreted John 1:1 through an analysis of the relationship between the Word and God and by drawing on the philosophical context. In this work, the prologue to the Gospel of John was examined as a complex textual structure, in which grammatical and semantic details determined the interpretation of “λόγος”. The analysis presented followed a similar line of inquiry but shifted the emphasis from the exegesis of a single verse to the philosophical function of the concept. The prologue was examined as a focal point for preceding semantic threads: the word, the beginning, being, creation and the order of meaning. The broader New Testament context of the functioning of “λόγος” was presented in the work by J.G. Allen (2025), which investigated God’s “λόγος” in the Epistle of James and within the early Jewish milieu. This study demonstrated that the New Testament function of the concept is not limited to the prologue of the Gospel of John. Within the scope of the analysis, John’s prologue was identified as a centre of reception due to its semantic concentration; however, the broader New Testament context was not disregarded. The results demonstrated that “λόγος” in the early Christian textual context can fulfil the functions of proclamation, revelation, normative communication, a foundation of meaning, and the divine Word. The question of the relationship between Luke and John in the study of

the Logos was raised in the work of D.H. Nggadass (2026). The author examined the literary connections between Luke's and John's material and addressed the broader New Testament logic of the Word. For the present analysis, it is necessary to extend the scope of "λόγος" beyond the confines of a single text. The results have shown that the prologue to the Gospel of John serves a unifying function, but early Christian reception of the concept is not limited to the Johannine corpus. John's material emerges as a nexus in which the Greek philosophical memory of the concept transitions into the Christian semantics of the Word. In the pre-Christian tradition, "λόγος" is associated with speech, reason, proof and order; in the early Christian context, the concept acquires a new focus through the Word, creation and revelation. This transition to the Christian context explains the possibility of a further anthropological interpretation of Logos as a category linked not only to thought but also to incarnation.

The interaction between Greek literature and Christian doctrine was examined in a study by R. Franchi (2023). In this work, the early Christian tradition was presented not as a simple inheritance of classical Greek culture, but as a reworking of Greek material in accordance with new doctrinal objectives. The results of the analysis confirmed this logic using the term "λόγος" as a case study. In the writings of Justin Martyr, Greek philosophical vocabulary serves an apologetic function, whilst in those of Clement of Alexandria it serves a pedagogical and hermeneutical function. The early Christian reception of "λόγος" was a process of functional redefinition, rather than a passive borrowing of the ancient term. The Alexandrian context of the reception of Greek philosophical language was explored in the study by C. Kyriacou (2023), where the origins of the Alexandrian School are presented through the interaction of philosophy and Christian theology. In the present analysis, the Alexandrian approach was elaborated through the functioning of "λόγος" in Clement

of Alexandria. The concept is linked not only to Christological content, but also to teaching, instruction and the reinterpretation of the Hellenic educational tradition. The findings show that the Alexandrian reception of "λόγος" created not only a theological but also an educational and interpretative model for engaging with the Greek heritage. The need for caution in interpreting semantic shifts in Ancient Greek was emphasised in the study by A. Alonso Déniz & J.V. Méndez Dosuna (2023). The study demonstrated that a difference in the usage of a lexeme does not always indicate an actual change in meaning. The findings confirm the need for such a caveat. In different texts, "λόγος" does not merely change its meaning, but activates different areas of a shared semantic field. The Heraclitean order, the Platonic justification, the Aristotelian proof, the Stoic rational principle and the New Testament Word were examined as functional configurations of a polycentric concept, rather than as isolated meanings.

A corpus-based approach to semantic change in Ancient Greek and Latin was proposed by V. Perrone *et al.* (2021). Semantic dynamics are described through computational models and an analysis of lexical changes over time. The analysis had a different methodological basis, as it relied on a philological rather than a quantitative approach. At the same time, the results are consistent with the idea of considering meaning in a dynamic context. The semantic evolution of "λόγος" was described as a transition between textual contexts and linguistic systems, rather than as a fixed set of lexical equivalents. An evaluation of distributional models for Ancient Greek was conducted by S. Stopponi *et al.* (2024b). The proposed benchmark for testing semantic models demonstrated an interest in the formal analysis of Ancient Greek lexis. Formalised modelling was not applied within the scope of this article; however, the results point to areas that are difficult to reduce to an automatic lexical equivalent. "λόγος" has several functional dimensions,

so the analysis requires not only modelling the proximity of meanings but also interpreting the textual and receptive context. The challenges of creating language models for Ancient Greek were examined in the work by S. Stopponi *et al.* (2024a). The paper describes the advantages and limitations of automated processing of Ancient Greek texts, in particular the complexity of corpora, historical variability and the heterogeneity of the linguistic material. Results of the analysis confirmed the significance of these constraints for “λόγος”. The polycentric semantics of the concept necessitates covering genre, tradition, philosophical context and the history of translation. A philological reading remains essential even with the availability of digital tools for semantic analysis.

The linguistic context of the New Testament material was clarified in a study by M. Bianconi & E. Magni (2023) devoted to the preservation of the optative in New Testament Greek. The study demonstrated that the language of the New Testament combines elements of continuity and transformation. This conclusion is significant for the analysis of “λόγος”, as the New Testament’s reception of the concept is shaped not in an abstract theological space, but within the specific linguistic environment of post-classical Greek. The results showed that the semantic reorganisation of “λόγος” in the prologue to the Gospel of John combines the continuity of the Greek philosophical tradition with a new Christian textual function. Post-classical Greek, situated between continuity and change, was examined by M. Bianconi & E. Magni (2023). New Testament and later Greek usage is presented as a context in which classical forms continue to function but acquire new conditions of usage. The findings regarding “λόγος” follow this logic. The concept does not lose its connection with the classical meanings of “word”, “reason” and “order”, but in the early Christian context these meanings centre on the Word, creation and revelation. Semantic evolution occurs not through a break

with the preceding tradition, but through a new organisation of the inherited field. A semantic clustering of ancient Greek genres was proposed by L. Gauthier (2026). The approach presented demonstrated the influence of the genre context on the semantic organisation of the lexicon. The results of the analysis confirmed the significance of genre for “λόγος”. In philosophical fragments, the concept tends towards measure and order; in dialogue, towards the justification and verification of concepts; in rhetoric, towards the argumentative organisation of speech; in the New Testament prologue, towards the semantic centre of the Word; and in the Latin translation, towards terminological stabilisation. This genre-specific nature explains why “λόγος” does not have a single universal mode of functioning.

The transition from logos to categories of person was examined by S. Mas (2024) through an analysis of the term “πρόσωπον” – persona in Origen and Tertullian. The issue goes beyond the scope of the main body of this article, but the findings regarding the Greek-Christian reception of “λόγος” reveal the preconditions for the personological transition. When “λόγος” in the New Testament and early Christian contexts ceases to be merely speech or a principle of order, space opens for a Trinitarian interpretation. The Latin tradition consolidates this development through the complex interplay of “verbum”, “ratio” and subsequent theological terms. The question of the interaction between Christian thought and classical Greek literature was raised in the work of S. Morlet (2025) based on Trinitarian issues and the interpretation of Gen. 1:26. Crucial to the present analysis is a model of interaction in which the classical Greek heritage is not merely utilised, but is reinterpreted within a new doctrinal context. The findings regarding “λόγος” demonstrate a similar mechanism. The Greek concept enters the Christian context not as a neutral term, but as a lexeme with established associations with the word, reason, order and principle. Christian

reception shifts the functional focus of the concept, but does not eliminate its previous semantic structure. The medieval interpretation of John 1:1 was examined in a study by A. Nannini & M. Trepczyński (2022) based on the works of Albert the Great, Bonaventure and Thomas Aquinas. The Prologue to the Gospel of John emerges as a space for metaphysical exegesis, where the "verbum" is subjected to further philosophical reflection. The analysis covered the preliminary stage – the formation of the Greek-Latin foundation of this tradition. The Latin rendering of "λόγος" as "verbum" created a terminological framework within which medieval thought could develop a metaphysical interpretation of the Word. The preservation of the "ratio" lineage maintained a connection with the rational-philosophical dimension of the Greek concept.

A synthesis of the findings in the context of the reviewed works shows that "λόγος" requires a multi-level philological analysis. Studies on Greek semantics have revealed the linguistic and lexical dimensions of the concept. Works on the New Testament prologue have highlighted the prominence of "λόγος" in Christian texts. Studies on early Christianity, the Alexandrian school, Latin reception and medieval interpretations have demonstrated further modes of redefinition. The results of the analysis have brought these strands together through a model of semantic evolution: from the Greek polycentric field to the Latin system of partial equivalents and the early Christian interpretation of the Word. This model makes it possible to avoid reducing "λόγος" to a single translation or a single theological meaning, and presents the concept as an interlingual and inter-traditional category.

Conclusions

The study established that the concept of "λόγος" in the ancient Greek tradition cannot be reduced to a single meaning or a direct translation such as "word". The semantic field

of "λόγος" has a multi-component structure, combining speech, utterance, narrative, proof, explanation, justification, reckoning, measure, reason, law and principle. This structure demonstrates that "λόγος" functions not merely as a lexeme denoting linguistic meaning, but as a philological unit combining verbal form, the logic of justification and the notion of the ordered structure of meaning. An analysis of Latin equivalents has shown that the Latin tradition did not develop a single complete equivalent for the Greek "λόγος". The semantics of the Greek concept were distributed across several lexemes: "verbum" conveys the verbal-theological dimension, "ratio" – the rational-explanatory and normative dimension, "sermo" – the speech-discursive dimension, and "oratio" – the rhetorical-compositional dimension. The findings confirmed the partial and functionally dependent nature of the Latin equivalence of "λόγος", whereby the choice of a corresponding term is determined not by formal lexical identity, but by the active semantic field of a specific text.

In the pre-Christian Greek tradition, "λόγος" is defined as a linguistic and philosophical category that extends from expressed content to the organisation of reasoning, proof, definition, measure, law and order. In Heraclitus, the concept is linked to the general order of the world; in Plato, to the dialogical examination of concepts; in Aristotle, to the argumentative organisation of speech; and in the Stoics, to the rational principle of nature and the regularity of the cosmos. A comparison of these contexts has shown that the pre-Christian "λόγος" did not have a single, fixed meaning. In different texts, distinct aspects of a shared semantic field were emphasised; consequently, the concept retained its connection with speech but extended beyond a purely linguistic function. In the Greek-Christian and Latin traditions, "λόγος" underwent a functional reorientation. In Philo of Alexandria, the concept acquired a mediating and

exegetical role. In the prologue to the Gospel of John, “λόγος” became the centre of the Christian interpretation of the Word, the beginning and creation. In the writings of Justin Martyr, Logos performed an apologetic and argumentative function, whilst in those of Clement of Alexandria it was linked to a pedagogical and hermeneutical reinterpretation of the Hellenic tradition. In the Vulgate, the translation as “verbum” cemented the verbal-theological direction of its reception, without severing the connection with “ratio”.

The obtained results substantiated the significance of “λόγος” for the European philosophical, linguistic and terminological tradition. The semantic evolution of “λόγος” took place not through the preservation of a single meaning, but through the transfer of semantic structure between different types of text and linguistic systems. The Greek tradition shaped a multifunctional field of “λόγος”; the early Christian tradition reorganised it around the

Word, creation, truth and revelation; whilst the Latin tradition divided its semantics between “verbum” and “ratio”. Thus, two interrelated trajectories were established – those of the Word and of Reason. As a result, “λόγος” became a cross-linguistic and cross-traditional category, uniting speech, reason, foundation, order and the theological Word within the European intellectual lexicon. Further refinement of these findings may involve a broader engagement with patristic texts, medieval interpretations of “verbum” and “ratio”, and modern European transformations of “λόγος”.

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Концепт «logos» у давньогрецькій та латинській традиціях: семантична еволюція та філософсько-філологічні інтерпретації

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Анотація. Мета дослідження полягала в аналізі семантичної еволюції концепту «λόγος» у давньогрецькій і латинській традиціях. Методологічну основу становили лексикографічний, семантико-порівняльний, текстово-контекстуальний і герменевтико-порівняльний аналіз. Лексикографічний аналіз дав змогу визначити основні значення «λόγος», семантико-порівняльний – зіставити їх із «verbum», «ratio», «sermo» й «oratio», текстово-контекстуальний і герменевтико-порівняльний – розкрити функціонування поняття в дохристиянських, ранньохристиянських і латинських текстах. У результаті встановлено, що «λόγος» у класичній грецькій мові не зводиться до значення “слово”, а охоплює мовлення, висловлювання, доказ, пояснення, підставу, міру, розум, закон і принцип. Латинська традиція не виробила одного повного еквівалента «λόγος»: його семантика розподіляється між «verbum», «ratio», «sermo» й «oratio», які передають відповідно словесно-богословську, раціонально-пояснювальну, мовленнєво-дискурсивну та риторично-композиційну площини. У дохристиянських грецьких текстах «λόγος» функціонує як мовно-філософська категорія: у Геракліта він пов'язаний із мірою й порядком світу, у Платона – з діалогічною перевіркою понять, в Арістотеля – з доказовою організацією мовлення, у стоїків – із розумним принципом природи. Грецько-християнська та латинська рецепція засвідчила функціональне переформатування поняття: у Філона Александрійського «λόγος» набув посередницької й екзегетичної функції, у прологу Євангелія від Йоана став смисловим центром християнського тексту, у Юстина Мученика виконував апологетично-аргументативну роль, у Климента Александрійського був пов'язаний із педагогічно-герменевтичним переосмисленням еллінської традиції, а у Вульгаті отримав латинське закріплення через «verbum». Доведено, що семантична еволюція «λόγος» пов'язана з переходом від грецького поліцентричного поняття до латинської системи часткових відповідників і ранньохристиянського осмислення Слова. Практична значущість результатів полягає у використанні запропонованої логіки аналізу в класичній філології, історії філософської термінології, релігієзнавстві та перекладознавстві. Матеріали дослідження можуть бути застосовані під час аналізу понять, що переходили між грецькою, латинською та християнською традиціями

Ключові слова: класична філологія; мовлення; посередницька функція; рецептивний зсув; значення; відповідники; інтерпретація



“Молитва” and “інвокація”: Two terms, two classificatory logics in Ukrainian medieval epigraphy

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Abstract. The classification of medieval inscriptions in digital epigraphic systems requires the alignment of local scholarly traditions with international standards. This issue becomes particularly acute when terminology is transferred between different classificatory frameworks. The aim of this article was to clarify the relationship between the terms “prayer” and “invocation” in the classification of graffiti from St. Sophia of Kyiv. The study was based on a comparative analysis of Korniyenko’s printed corpus and the digital portal “Inscriptions of St. Sophia”, which enabled the identification of differences in classification principles and the reconstruction of their conceptual foundations. It has been established that the terms “prayer” and “invocation” are not synonymous and reflect different classificatory logics. It has been shown that “prayer” is defined by a communicative criterion – the act of addressing God – and encompasses requests, confession, curses, and questions. In contrast, “invocation” is defined by a formal criterion – the presence of an address formula at the beginning of the text – and represents a subset of only one communicative type. The case of graffiti No. 5459 (“Lord, I am drunk”) has been analysed: in Korniyenko’s corpus, it is classified as a confessional inscription, whereas in the digital portal, it is categorised as an invocation. It has been demonstrated that both classifications are internally consistent but respond to different analytical questions, indicating that the discrepancy is epistemological rather than terminological. It has been substantiated that within Simple Knowledge Organisation System vocabularies, these

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concepts cannot be linked as `skos:exactMatch` or `skos:closeMatch`, but require a `skos:relatedMatch` relation with explicitly documented asymmetry. The practical significance of the results lies in their application to the development of controlled vocabularies and ontologies for digital epigraphy, particularly for aligning culturally grounded classification systems with international standards

Keywords: epigraphy; epistemological bases for classification; digital epigraphy; controlled vocabulary; simple knowledge organisation system

Introduction

The classification of medieval inscriptions is not merely a technical task but an epistemological problem: a category label does not simply name a type of object, but reflects the principle according to which that object is interpreted and organised. This issue becomes particularly significant in digital epigraphy, where classificatory decisions must be formalised within structured vocabularies and metadata systems. When terminology developed within one scholarly tradition is transferred into another – especially into digital infrastructures designed for interoperability – there is a risk that categories that appear equivalent at the lexical level may, in fact, encode different conceptual assumptions. In such cases, classification may become internally inconsistent, not because of error, but because different systems operate according to different classificatory logics.

The development of controlled vocabularies and ontologies for epigraphy has become a central topic in digital humanities research. According to H. Tamrazyan & E. Boros (2025), the creation of standardised vocabularies for Ukrainian epigraphy requires careful alignment between local scholarly traditions and international frameworks, as direct transfer of terminology may lead to conceptual distortion. Authors further argued that corpus-based approaches allow for the reconstruction of culturally grounded classification systems, emphasising that terminological equivalence cannot be assumed without analysis of usage and context. Similarly, H. Tamrazyan & G. Hovhannissyan (2025) demonstrate that

cultural categorisation in epigraphic digitisation must account for differences in semantic scope and classificatory principles, particularly when integrating non-Western traditions into global infrastructures.

M. Trentin & A. Felicetti (2023) examined how the CIDOC CRM ontology could be adapted to document medieval and early modern European graffiti, a form of heritage evidence that combines textual and pictorial elements and has traditionally lacked standardised recording methods. Drawing on case studies such as the monastery of Ayia Napa in Cyprus and the Saint Helena chapel within the Holy Sepulchre in Jerusalem, the authors proposed a dedicated extension, termed CRMgr, intended to capture the dual communicative nature of graffiti within a coherent semantic framework. They concluded that conventional epigraphic standards inadequately represent pictorial graffiti, often omitting around half of the medieval and early modern material from systematic documentation, and argued that their ontology offers a more integrated means of linking form, content, and spatial context, while also strengthening the sociocultural visibility of graffiti as heritage. A. Câmara *et al.* (2024) investigated the practical transformation of CIDOC CRM-based data, originating from the EU “COURAGE” project, into a property graph format suited to representing megalithic monuments. Their work focused on validating semantic consistency through SPARQL and SHACL, demonstrating how heterogeneous archaeological datasets could be unified under a shared ontological

structure. They concluded that this transformation approach enables practical, verifiable integration and sharing of disparate heritage data sources, positioning CIDOC CRM as an effective mediating layer for cross-institutional archaeological documentation, even when the underlying records originate from very different recording traditions. Y. Wang & M. Zhang (2025) explored the combination of CIDOC CRM (version 7.2) with large language models to automatically construct a knowledge graph for the immovable cultural heritage of the Liao dynasty in Chifeng, China, integrating 106 records drawn from archaeological surveys, local chronicles, and historical literature. Using GPT-based extraction together with Neo4j for storage and visualisation, they achieved a precision of approximately 0.81 and a recall of approximately 0.76 in triple extraction, and applied K-means clustering and geospatial mapping to reveal five cultural value themes and a “dual-core and ring-belt” spatial distribution pattern. The authors concluded that combining CIDOC CRM with large language models offers a feasible, if still partly manual, pathway towards scalable heritage knowledge graph construction, while noting persistent challenges around extraction reliability, entity disambiguation, and the limited generalisability of region-specific models.

Recent studies in digital epigraphy have also addressed the problem of interoperability between heterogeneous corpora. P. Liuzzo & S. Evangelisti (2021) noted that projects such as EAGLE (Europeana Network for Ancient Greek and Latin Epigraphy) have successfully harmonised epigraphic metadata across multiple datasets, but their classificatory models are largely derived from Greco-Roman material, where functional categories play a dominant role. In the Findability, Accessibility, Interoperability, and Reuse of digital assets (FAIR) Epigraphy framework (Heřmánková *et al.*, 2025), inscription types are similarly organised according to communicative function, enabling cross-cultural comparison but potentially obscuring

alternative classificatory dimensions. At the same time, research in computational semantics (Binding & Tudhope, 2022) has shown that lexical similarity does not necessarily imply conceptual equivalence, particularly in domain-specific corpora where terms may carry distinct contextual meanings.

Despite these advances, insufficient attention has been paid to how individual category labels function across different classificatory systems when applied to the same corpus. In particular, the relationship between terms derived from local scholarly traditions and those introduced from international ontologies remains underexplored. Existing studies tend to focus either on vocabulary development or on interoperability, without systematically analysing cases in which apparently equivalent terms encode different classificatory principles. The goal of this article was to analyse the semantic scope and classificatory logic of two terms – “молитва” (molytva; prayer) and “інвокація” (invokatsiya; invocation) – as used in Ukrainian medieval epigraphic scholarship and in the digital infrastructure of the Inscriptions of St. Sophia of Kyiv (n.d.), and to determine whether these terms can be treated as synonymous. The tasks of the research were: to establish the definition and semantic boundaries of “молитв” (molytv; prayers) and “інвокацій” (invokatsiy; invocations) in Ukrainian print scholarship and digital domain; to identify the practical divergence of the two classificatory systems and the underlying epistemological difference; and to draw consequences for digital epigraphic vocabulary design.

Materials and Methods

The object of the research was the medieval graffiti corpus of St. Sophia of Kyiv, as documented in Korniyenko’s printed publications (Korniyenko, 2010) and in the digital portal Inscriptions of St. Sophia of Kyiv (n.d.). The subject of the research was the terminological and classificatory relationship between the terms

“МОЛИТВА” (molytva; prayer) and “ІНВОКАЦІЯ” (invokatsiya; invocation) as applied to the classification of divine-address inscriptions in this corpus. The study was based on a comparative analysis of two corpora representing different classificatory frameworks applied to the medieval graffiti of St. Sophia of Kyiv. The first corpus consists of the seven volumes of the printed publication by V. Korniyenko (2010), comprising approximately 7,000 inscriptions with full epigraphic editions, facsimile plates, and analytical commentary. This corpus represents the established Ukrainian scholarly tradition of classifying the material according to a functional typology developed over the preceding century, from the earliest systematic framework of S. Vysotsky (1966; 1976) to V. Korniyenko (2010) seven-volume work. The category system is explicitly defined in the prefaces to Volumes II and III and remains stable across all seven volumes, comprising fifteen categories for textual inscriptions and fourteen for pictorial inscriptions.

The second corpus is the digital portal Inscriptions of St. Sophia of Kyiv (n.d.), launched in 2023 under a collaboration between the University of Gothenburg and the National Reserve “Sophia of Kyiv”. At the time of analysis, the portal contained 3,702 inscriptions encoded in EpiDoc XML with structured metadata, genre labels drawn from the EAGLE Network vocabulary (Liuzzo & Evangelisti, 2021) and the FAIR Epigraphy Ontology (Heřmánková *et al.*, 2025), and full epigraphic editions with Ukrainian and English translations. In this corpus, classification is implemented through controlled metadata fields, providing a formalised, interoperable framework for categorisation. Both corpora document the same material, the graffiti of St. Sophia of Kyiv, but classify it using different terminological frameworks. These two corpora were deliberately selected: the existence of parallel classifications of the same inscriptions allows for the isolation of terminological and epistemological variables

without the confounding factors that arise when comparing different source collections. This design reflects the broader aim of the research program of which the present article forms a part: the construction of a Simple Knowledge Organisation System (SKOS) controlled vocabulary for Ukrainian epigraphy that is interoperable with international digital epigraphic standards (Tamrazyan & Boros, 2025; Tamrazyan & Hovhannisyan, 2025).

Though the two corpora are based on the same epigraphic material, they represent different epistemic levels of classification. The printed corpus reflects a scholarly interpretative system, while the digital corpus embodies its transformation within a structured metadata environment influenced by international standards. The analysis focuses on two terms used to classify divine-address inscriptions: “МОЛИТВА” (molytva; prayer) and “ІНВОКАЦІЯ” (invokatsiya; invocation). The research proceeded in three stages. First, the semantic scope of “МОЛИТВА” (molytva; prayer) was established through analysis of its definition, usage, and classificatory role in V. Korniyenko’s corpus. Second, the term “ІНВОКАЦІЯ” (invokatsiya; invocation), which is not used as a classificatory label in the printed corpus, was examined through systematic analysis of V. Korniyenko (2010) seven-volume corpus, which allowed for the establishment of the presence, absence, and contextual usage of the term across the entirety of the printed epigraphic tradition.

Third, the application of both terms in the digital corpus was analysed through a case study approach, focusing on instances in which the two classificatory systems yield divergent results. The analysis is primarily qualitative and comparative, grounded in the examination of category definitions, their scope, and their application to specific inscriptions. Where relevant, quantitative indicators – including frequency counts and percentage ratios of genre labels within the digital corpus – are employed to characterise distributional patterns.

Particular attention is paid to the classificatory principles underlying each term, distinguishing between communicative criteria (function of the inscription) and formal criteria (textual structure). The interpretive discussion draws on three interrelated theoretical frameworks. First, the framework of knowledge organisation, specifically the SKOS, is used to assess the appropriate mapping relation between the two terms: SKOS properties – including *skos:exactMatch*, *skos:closeMatch*, and *skos:relatedMatch* – provide the formal means for expressing degrees of conceptual equivalence between terms drawn from different controlled vocabularies, and their selection is determined by analysis of the terms' respective scope and definitional criteria. Second, research in computational semantics, in particular work on semantic interoperability and lexical mapping in cultural heritage vocabularies (Binding & Tudhope, 2022), informs the distinction between lexical similarity and conceptual equivalence: terms that are related at the lexical level may encode different classificatory dimensions, and this framework provides the analytical basis for identifying such divergences. Third, terminology studies – specifically accounts of domain-specific meaning construction (L'Homme, 2020) and terminological system formation (Kageura, 2022) – provide the basis for understanding how a term derives its meaning from its role within a particular disciplinary framework, and why equivalence across systems cannot be assumed without systematic analysis of usage and definition. In this study, a distinction is made between terms and concepts. A term refers to the lexical label used in the corpus, while a concept refers to the classificatory unit defined by its underlying principle. The comparison is therefore carried out at the level of conceptual definitions and classificatory application rather than lexical equivalence. This methodological design enables identification of differences in classification principles and determination of whether the

two terms can be treated as equivalent within a shared classificatory framework.

Results and Discussion

“Молитва” (molytva; prayer) in Ukrainian epigraphic scholarship: semantic scope and classificatory logic

The classification of St. Sophia graffiti has a special value for the Ukrainian epigraphic traditions. From the earliest systematic framework Ukrainian scholars have consistently treated divine-address inscriptions as a unified category, defined by the communicative act of addressing the divine, not by the formal structure of the opening. V. Korniyenko's printed corpus defines “Молитовні (Molytovni) написи (napysy), які (yaki) мають (mayut) у своєму (svoeyu) тексті (teksti) звернення (zvernennia) до (do) Господа (Hospoda) або (abo) святих (sviatykh) та (ta) прохання (prokhannia) автора (avtora)” (Prayer inscriptions, which contain in their text an address to God or saints and the author's request). The formulation of divine-address inscriptions as a “мовний (movnyi) акт (akt), звернений (zvernenuyi) до (do) Господа (Hospoda) та (ta) святих (sviatykh)” (speech act directed toward God and saints) appears in V. Korniyenko (2010). The definition foregrounds two criteria jointly: the addressee (God or saints) and the speech act (address with a request). Crucially, the same principle of divine address governs the definition of several further categories. Curse inscriptions (написи-прокляття (napysy-prokliattia) were defined as “написи-прокляття (napysy-prokliattia), що (shcho) виявляють (vyavliayut) прагнення (prahnen-nia) їх (yikh) авторів (avtoriv) вилаяти (vylayaty) або (abo) висловити (vyslovyty) різкий (rizkyi) осуд (osud) чи (chy) обурення (oburen-nia) щодо (shchodo) вчинків (vchynkiv), здійснених (zdiisnenukh) певною (pevnoyu) особою (osoboyu), проклясти (prokliasty) винуватців (vynuvattsiv)” (curse inscriptions that reveal their authors' desire to curse or to express sharp condemnation or indignation

regarding actions committed by a certain individual, and to curse the perpetrators.). They express condemnation or cursing directed against persons, but structurally they are addressed to God, invoking divine justice against a wrongdoer, and thus share the communicative substrate of divine address (Korniyenko, 2010). Confessional inscriptions (написи-покаяння) (napysy-pokayannia) were defined as “написи-покаяння (napysy-pokayannia), в яких (yakyk) автор (avtor) зізнається (ziznayetsia) у власних (vlasnykh) гріхах (hrikhakh), констатуєючи (konstatuyuchy) цей (tsei) факт (fakt) поза (poza) межами (mezhamy) молитовної (molytovnoi) формули (formuly)” (confessional inscriptions, in which the author confesses his own sins, noting this fact outside the prayer formula) (Korniyenko, 2010). Even here, the act of confession is directed at the divine presence – the inscriber is addressing God or the sacred space – and the category exists precisely because author recognises that confession and petition, though different speech acts, share the same communicative orientation.

V. Korniyenko (2010) in an analytical commentary across successive volumes, consistently describes divine-address inscriptions as a “мовний акт, звернений до Господа та святих” (movnyi akt, zvernnyi do Hospoda ta sviatykh) – a speech act directed toward God and saints. This formulation foregrounds the communicative orientation of the inscription: what matters is not the specific speech act (petition, confession, cursing) but the fact that the act is directed at a divine addressee. The well-wishing formula “Г(оспод)и помози рабу своєму” (H(ospod)y pomozu rabu svoemu) (Lord, help your servant), the penitential formula confessing sin – all instantiate the same fundamental communicative act of directing speech at the divine. Thus the semantic scope of “молитва” (molytva; prayer) in Ukrainian epigraphic scholarship can be characterised as follows: the term designates any inscription whose primary communicative purpose is the act of directing

speech at a divine addressee (God, saints, the Mother of God). This scope is wider than petition: it encompasses petition (помози (pomozy), help me), well-wishing (спаси і помилуй (spasy i pomylui), save and have mercy), confession (згрішихъ (zhrishykh), I have sinned), cursing, invoking divine justice, and rhetorical questions addressed to God. If one looks at the digital portal data, it can be noticed that молитва (molytva; prayer) as a genre label is assigned to 819 inscriptions – 22.1% of the entire corpus. This is by far the largest single genre category in the portal. A sample of these inscriptions confirms the range: they include petitionary prayers in Greek (Κύριε βοήθει τον σον δοῦλον, Lord, help your servant), Slavonic petitions (Г(оспод)и (H(ospod)y) помози (pomozy) рабу (rabu) своему (svoemu)), and inscriptions of various communicative subtypes – all classified together under the unifying criterion of divine address.

“Інвокація” (invokatsiya; invocation): Presence and absence in Ukrainian Epigraphic discourse

The term “інвокація” (invokatsiya; invocation) is not absent from V. Korniyenko (2010) publication; however, its presence there is fundamentally different from its function in the digital portal. In the seven volumes of the printed corpus, the word “інвокація” (invokatsiya; invocation) appears six times in total. All six occurrences are in a single recurring context (Vols II, III, V): the symbolic interpretation of cross drawings, following Ephrem the Syrian. V. Korniyenko (2010) writes that a cross drawing “symbolises the invocation “в ім’я Отця, і Сина, і Святого Духа” (v im’ya Ottsia, i Syna, i Sviatoho Dukha) (in the name of the Father, and the Son, and the Holy Spirit), and placed at the beginning of a line, it symbolises a speech act directed toward God and saints’ (Korniyenko, 2010). In other words, “інвокація” (invokatsiya; invocation) is the liturgical name for the symbolic act that a cross

represents – the trinitological formula that the cross drawing stands for. It is not a genre label, not a category name, and not a term applied to classify any inscription.

This is not a minor or incidental distinction. The six occurrences represent V. Korniyenko (2010) entire use of the term across seven volumes covering thousands of inscriptions. In none of these occurrences does “інвокація” (invokatsiya; invocation) appears as the name of a classificatory category, as the label for an inscription type, or as a term applied to describe a specific inscription’s communicative character. The category system the author develops – explicitly described in the prefaces to Volumes II and III, and stable across all seven volumes – contains fifteen categories for textual inscriptions and fourteen for pictorial inscriptions. Invocation is not among them, and No category corresponds to it. In the digital portal *Inscriptions of St. Sophia of Kyiv* (n.d.), by contrast, “інвокація” (invokatsiya; invocation) appears as a genre label in the controlled vocabulary. The portal assigns it to exactly two inscriptions: No. 5459 and 5666. The very small number – two inscriptions out of 3,702 – already suggests that the category’s boundaries are not yet stable in the portal, and that its application is selective and possibly inconsistent. But the more significant observation is not the count: it is that neither of these two inscriptions would receive this classification under Korniyenko’s system. Both are addressed to the divine. Both contain a confessional or penitential element. And neither is defined in Ukrainian print scholarship by the formal property of opening with an invocatory address. The introduction of “інвокація” (invokatsiya; invocation) into the portal vocabulary appears to reflect the influence of the EAGLE Network and FAIR Epigraphy Ontology (Heřmáňková *et al.*, 2025), both developed primarily for Greek and Latin epigraphic material. In classical epigraphic typology, *invocatio* designates inscriptions formally addressed to

a deity – a category defined by the structural property of the opening formula, not by the overall communicative act.

The central case: Graphiti No. 5459

Graphiti No. 5459 reads, in its interpretative edition: “Г(оспод)и пАН(ъ)” (H(ospod) y pian()). The portal translates this as “Lord, I am drunk” (Inscriptions of St. Sophia of Kyiv, n.d.). The inscription consists of two elements: the address “Господи” (Hospody) (Lord, vocative case) and the confessional statement “паний” (pianyi) (I am drunk). It is one of the most remarkable inscriptions in the corpus – a scratching on the wall of a cathedral that has the character of an involuntary confession, the inscriber addressing God while in a state of intoxication. The digital portal classifies this inscription as Invocation. The classification is internally consistent: the inscription opens with a vocative address to the divine (Г(оспод)и (H(ospod)y)), which is the formal criterion that triggers the Invocation label. From the perspective of classical epigraphic typology, an inscription that formally addresses a divine being is an invocation. The formal property is present; the classification follows. Korniyenko classifies inscriptions of this type – confessional statements made in the presence of God – as “Написи-покаяння” (Napysy-pokayannia) (confessional inscriptions) (Korniyenko, 2010). The classification is also internally consistent, but from a different starting point: the defining criterion is the communicative act – what the inscriber is doing. The inscriber is confessing- acknowledging a sin or transgression in the presence of God. The opening address “Г(оспод)и” (H(ospod)y) is not the definitional criterion; it is the addressee who makes the confession meaningful, not the formal label of the act. A confession is classified as a confession regardless of whether it opens with an explicit vocative. The communicative act – acknowledgment of sin before God – determines the category.



Figure 1. Graffiti No. 5459.

Source: V. Korniyenko (2010)

Both classifications are, within their own systems, correct. The disagreement is not between two different assessments of the same evidence but between two different questions being asked of the inscription: What formal type of text is this? – to which the answer is: an invocation (text formally addressed to God); What communicative act does this inscription perform? – to which the answer is: a confession (the inscriber acknowledges sin before God). These are not the same question, and there is no reason to expect them to produce the same answer. The formal type of the text and the communicative act it performs are different dimensions of the inscription. A confession may or may not open with an explicit vocative; an explicit vocative may or may not introduce a confession. Graffiti No. 5666 provides a further illustration: “СВАТЫИ НИКОЛА СВАТАА Б(городи)ца сьгрѣшихъ предъ вами” (Sviatyy Nykola sviataia B(horody)tsa shrieshykh pred vamy) – Saint Nicholas, Holy Mother of God, I have sinned before you. Here, the inscriber addresses a saint (Nicholas) and Holy Mother, and explicitly confesses sin. Under the formal criterion, this is an invocation: it opens with an address to holy figures. Under the communicative criterion, this is a confessional inscription: “сьгрѣшихъ (shrieshykh) предъ (pred) вами (vamy)” (I have sinned before you) is an act of confession, not petition. The portal classifies it as Invocation. V. Korniyenko’s system would classify it as “Написи-покаяння” (Napisy-pokayannia). Again, both are correct within their own systems. The divergence is systematic.

Two epistemologies of classification. The results of current analysis allow us to believe that the divergence between “молитва” (molytva; prayer) and “інвокація” (invokatsiya; invocation) in the classification of St. Sophia graffiti is not a terminological disagreement. It is a disagreement between two different epistemologies of classification – two different answers to the question of what a category label should encode. The Ukrainian print tradition consistently classifies inscriptions by communicative act and function: by what the inscription does in the context of sacred space. This is a functional epistemology of classification. It produces categories whose names – “молитовні” (molytovni; prayer inscriptions), “пам’ятні” (pam’yatni; commemorative), “покаяння” (pokayannia; penitential), “прокляття” (prokliattia; curses) – designate types of communicative acts. The boundary between categories is determined by what the inscriber is doing, not by how the text is formally structured. The international epigraphic vocabularies – EAGLE (Liu & Evangelisti, 2021) and FAIR (Heřmáňková *et al.*, 2022) – were developed from Greek and Latin material and reflect a functional/formal epistemology of classification: categories are defined by structural properties of the text. *Invocatio*, *dedicatio*, *titulus*, *defixio* – these are categories whose names designate formal text types. The boundary between categories is determined by structural properties, not by the communicative act performed.

As a result of this epistemological difference, “інвокація” (invokatsiya; invocation) is not a translation of “молитва” (molytva; prayer) into the EAGLE/FAIR vocabulary – it is a partial overlap at best. “Молитва” (molytva; prayer) covers all divine-address inscriptions regardless of communicative subtype: petition, confession, cursing, well-wishing, questioning. “Інвокація” (invokatsiya; prayer) covers a formal opening type that may appear in petitionary inscriptions, confessional inscriptions, and others alike. The two terms cross-classify the material:

every Invocation is formally an instance of “молитва” (molytva; prayer) (since both involve divine address), but not every “молитва” (molytva; prayer) is an invocation (since “молитва” (molytva; prayer) includes inscriptions that do not formally invoke a divine being in the opening formula). It is also worth noting the direction of the asymmetry. “Молитва” (molytva; prayer) is the broader category: it encompasses everything that “інвокація” (invokatsiya; invocation) designates and more. “Інвокація” (invokatsiya; invocation) is not a synonym for “молитва” (molytva; prayer) in Ukrainian epigraphic scholarship – it is a subset concept that V. Korniyenko (2010) system does not need to name separately, because the defining criterion of the broader category (divine address) already captures it. The introduction of “інвокація” (invokatsiya) as a category label in the digital portal does not formalise an existing Ukrainian scholarly category. It introduces a new classificatory dimension – formal text type – that the Ukrainian tradition does not apply at the top level of inscription classification.

Implications for digital epigraphic practice and vocabulary design

The findings described above have direct consequences for anyone working with the digital portal data, and for anyone seeking to develop a controlled vocabulary for Ukrainian medieval epigraphy that is both faithful to the tradition and interoperable with international standards. The first consequence is practical. The digital portal classifies 819 inscriptions as Prayer / “Молитва” (molytva) and 2 inscriptions as invocation / “інвокація” (invokatsiya). A researcher who treats these as mutually exclusive categories will form a misleading picture of the corpus. In Ukrainian scholarly terms, the 819 Prayer inscriptions and the 2 Invocation inscriptions are all instances of the same broader category: divine-address inscriptions. The formal distinction that separates Invocation from Prayer in the portal corresponds to No distinction in V. Korniyenko (2010) analytical framework. Table 1 presents the frequency counts and percentage ratios for both genre labels within the digital corpus.

Table 1. Distribution of genre labels for divine-address inscriptions (N=3,702)

Ukrainian Term	English Equivalent	n	% of Corpus	Classification Criterion
Молитва	Prayer	819	22.1	Communicative: act of divine address (addressee = God or saints); encompasses petition, confession, cursing, well-wishing, and questioning
Інвокація	Invocation	2	0.05	Formal: presence of an opening address formula directed at a divine being; represents a subset of one communicative type only
-	Total corpus	3,702	100	-

Notes: X – at the time of analysis (N = 3,702 encoded inscriptions). Under V. Korniyenko (2010) functional classification system, both “молитва” (molytva) and “інвокація” (invokatsiya) inscriptions would be subsumed within the single category of divine-address inscriptions; the distinction between them exists only within the formal classificatory logic of the digital portal

Source: Inscriptions of St. Sophia of Kyiv (n.d.)

The second consequence concerns the design of controlled vocabularies. If one were to develop a SKOS vocabulary for Ukrainian medieval epigraphy that is both accurate to the tradition and interoperable with EAGLE and FAIR, the relationship between “молитва”

(molytva; prayer) and “інвокація” (invokatsiya; invocation) cannot be encoded as ; Baker, Bechhofer, Isaac, Miles, Schreiber and Summers 2013 :exactMatch or skos:closeMatch. The concepts are related but structurally asymmetric: “молитва” (molytva; prayer) is

broadier in scope; “інвокація” (invokatsiya; invocation) is a subset defined by a different criterion. The appropriate mapping is `skos:relatedMatch`, with a scope note documenting the epistemological difference (Tamrazyan & Hovhannisyan, 2025; Tamrazyan & Boros, 2025). Furthermore, FAIR defines “invocation” as “inscriptions invoking divine or supernatural powers for assistance or protection, petitions or requests addressed to a deity or divine entity” (Heřmánková *et al.*, 2022). This definition specifies petitionary or protective speech acts, not simply formal divine address. Under this definition, inscription No 5459 (“Lord, I am drunk”) would not qualify as an invocation – it is a confession, not a petition. The portal’s application of “інвокація” (invokatsiya; invocation) to both inscriptions is thus inconsistent not only with V. Korniyenko (2010) system but also with the FAIR Epigraphy definition of the term it is supposed to instantiate. This suggests that the category boundaries in the portal are not yet stabilised, and that the importation of international vocabulary has proceeded without a systematic check against either the source definitions or the target tradition.

More broadly, the case of “молитва” (molytva; prayer) and “інвокація” (invokatsiya; invocation) illustrates a general problem in the digitisation of epigraphic traditions whose material was classified under a functional logic: the importation of formally defined categories from classical epigraphic typology does not simply add new labels to an existing system. It introduces a different classificatory dimension – formal text type – that cuts across the existing categories in ways that are not transparent to the researcher. A corpus that was classified by communicative act becomes, in its digital form, partially classified by communicative act and partially by formal text type, with no indication of where the shift occurs or why. The results of this study demonstrate that the apparent equivalence between the terms no “молитва” (molytva; prayer) and “інвокація” (invokatsiya;

invocation) reflects not a simple terminological variation but a deeper misalignment between classificatory principles. This finding contributes to current discussions in digital epigraphy and knowledge organisation concerning the relationship between domain-specific classification systems and their implementation within interoperable digital infrastructures.

Recent research in digital epigraphy has emphasised the importance of standardisation and interoperability through controlled vocabularies. The FAIR Epigraphy framework (Heřmánková *et al.*, 2025), building on the EAGLE project, defines inscription types according to their primary societal function and content (Orlandi *et al.*, 2017). This approach corresponds closely to the functional classification observed in Ukrainian epigraphic scholarship, where categories such as “молитва” (molytva) are defined by communicative intent rather than formal structure. Similarly, P. Liuzzo & S. Evangelisti (2021) highlight that epigraphic vocabularies are designed to capture meaningful distinctions in how inscriptions function within historical contexts, rather than merely their formal features. At the same time, recent studies have shown that the process of implementing such vocabularies in digital systems may introduce shifts in classification logic. M. Doerr (2009) argues that when conceptual models are translated into operational metadata structures, simplifications or reinterpretations may occur, leading to discrepancies between theoretical definitions and practical usage. In a similar vein, C. Binding & D. Tudhope (2022) note that interoperability frameworks often require the transformation of domain knowledge into standardised fields, which can result in the loss or reconfiguration of culturally specific distinctions.

The present study provided a concrete example of this phenomenon. While both Ukrainian epigraphic tradition and international frameworks such as FAIR rely on functional criteria for classification, the digital portal

“Inscriptions of St. Sophia” introduces the term “інвокація” (invokatsiya) as a genre label based on a formal textual feature – the presence of an initial address formula. This shift illustrates how classification can be reconfigured at the level of implementation, even when the underlying ontological frameworks are, in principle, compatible. This observation is consistent with broader findings in knowledge organisation research. P. Fafalios *et al.* (2023) demonstrate that mapping between vocabularies often involves asymmetrical relationships that cannot be adequately captured by equivalence properties such as skos:exactMatch. Instead, they advocate for more flexible representations that preserve differences in conceptual scope. The conclusion of the present study – that “молитва” (molytva; prayer) and “інвокація” (invokatsiya; invocation) require a skos:relatedMatch relation with documented asymmetry – directly supports this position.

From the perspective of terminology studies, the divergence between the two terms can be understood as a case of domain-specific semantic differentiation. M. L’Homme (2020) emphasises that terms derive their meaning from their role within a conceptual system, and that apparent lexical equivalents may correspond to different conceptual structures in different domains. Similarly, K. Kageura (2022) argues that terminological systems are shaped by disciplinary practices and cannot be assumed to be universally transferable. In this context, the difference between “молитва” (molytva) and “інвокація” (invokatsiya; invocation) reflects the coexistence of two classificatory dimensions: communicative function and formal structure. Recent work in digital humanities has also highlighted the importance of preserving such multidimensionality. C. Binding & D. Tudhope (2022), P. Fafalios *et al.* (2023) argue that cultural heritage vocabularies must accommodate multiple perspectives rather than impose a single unified classification system. E. Hyvönen (2023) similarly stresses that

semantic interoperability depends on the explicit modeling of conceptual differences, not their elimination. The findings of the present study reinforce these arguments by demonstrating that the coexistence of multiple classificatory logics is not a problem in itself, but becomes problematic only when these logics are conflated without explicit distinction.

An important contribution of this study is its methodological focus on a micro-level comparison of category labels within a single corpus. While many studies address ontology design at a general level, fewer examine how individual terms function within specific classificatory systems and how their meanings shift when transferred between them. By analysing the application of “молитва” (molytva) and “інвокація” (invokatsiya) to the same inscriptional material, this study shows how conceptual differences manifest in practice, leading to divergent yet internally consistent classification outcomes. It is important to emphasise that the findings do not suggest that one classification system is more correct than the other. Rather, they demonstrate that each system answers a different analytical question: the functional approach classifies inscriptions according to their communicative purpose, while the formal approach classifies them according to textual structure. Both approaches are methodologically valid, but they are not interchangeable. The problem arises when terms associated with one approach are introduced into another without explicit recognition of their underlying classificatory principles. These results have direct implications for the development of digital epigraphic vocabularies. They suggest that vocabulary alignment should be treated as a process of conceptual negotiation rather than simple term matching. In practical terms, this requires explicit definition of classification criteria, careful documentation of conceptual scope, and the use of mapping relations that preserve differences rather than obscure them. More broadly, the study highlights the need for digital epigraphy

to move beyond purely technical models of interoperability and to engage more directly with the epistemological foundations of classification. The case of “молитва” (molytva; prayer) and “інвокація” (invokatsiya; invocation) thus illustrates a general challenge in the digital representation of cultural heritage: the integration of heterogeneous knowledge systems requires not only shared vocabularies, but also an awareness of the conceptual assumptions embedded within them. Future research may extend this approach by examining other terminological pairs across different epigraphic traditions and by developing modeling strategies that allow multiple classificatory dimensions to coexist within interoperable frameworks.

Conclusions

In the present article, two terms were examined – “молитва” (molytva; prayer) and “інвокація” (invokatsiya; invocation) – that appear in the classification of medieval graffiti from St. Sophia of Kyiv and argued that they encode fundamentally different classificatory logics rather than synonymous concepts. “Молитва” (molytva; prayer), as used in Ukrainian epigraphic designates divine-address inscriptions defined by a communicative criterion: the act of directing speech at God or saints. This criterion unifies petition, confession, cursing, well-wishing, and questioning. “Інвокація” (invokatsiya; invocation), as introduced into the digital portal from EAGLE and FAIR vocabularies, designates inscriptions defined by a formal criterion: the presence of a direct address formula in the opening. The two terms classify the material along different dimensions.

The results of the analysis allows to conclude that the introduction of “інвокація” (invokatsiya; prayer) into the digital portal’s genre vocabulary does not formalise an existing Ukrainian epigraphic category. It introduces a new classificatory dimension – formal text type – that is foreign to the functional logic of the Ukrainian print tradition. The term appears

six times in all of publications, always as a liturgical noun denoting a trinitological formula, never as a category label. Its absence from the category system is not a gap; it is a classificatory choice reflecting the functional epistemology that governs the Ukrainian tradition. A controlled vocabulary for Ukrainian medieval epigraphy cannot treat “молитва” (molytva; prayer) and “інвокація” (invokatsiya; invocation) as equivalent. More generally, the findings of this article suggest that the importation of vocabulary from classical epigraphic typology into the classification of medieval Eastern Christian graffiti requires explicit justification and documented mapping, not default adoption. The communicative logic of sacred graffiti – inscriptions scratched on cathedral walls as acts of divine address, confession, and intercession – reflects a practice and a purpose that is not fully captured by the formal categories developed for public monumental inscriptions in the Greco-Roman world. Recognising this difference is a prerequisite for building digital resources that are both interoperable with international standards and faithful to the tradition they represent. The article is part of a broader research programme focused on developing a corpus-based SKOS vocabulary for Ukrainian epigraphy as a structured, machine-readable knowledge organisation system aligned with international semantic infrastructures. The next steps involve creating a controlled vocabulary with stable URIs and mappings to existing ontologies such as EAGLE, Getty AAT, and CIDOC CRM, followed by its expansion and validation across epigraphic corpora and related traditions.

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“Молитва” та “інвокація”: два терміни – дві класифікаційні логіки в українській середньовічній епіграфіці

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Анотація. Класифікація середньовічних написів у цифрових епіграфічних системах потребує узгодження локальних наукових традицій із міжнародними стандартами. Особливо гостро ця проблема постає при перенесенні термінології між різними класифікаційними моделями. Метою статті було з'ясування співвідношення між термінами «молитва» та «інвокація» у класифікації графіті Святої Софії Київської. Дослідження ґрунтувалось на порівняльному аналізі друкованого корпусу В. В. Корнієнка та цифрового порталу «Написи Святої Софії», що дозволило простежити відмінності у принципах категоризації написів та виявити їхні концептуальні основи. Встановлено, що терміни «молитва» та «інвокація» не є синонімічними і відображають різні класифікаційні логіки. Показано, що «молитва» визначається за комунікативним критерієм – актом звернення до Бога – і охоплює прохання, сповідь, прокляття та запитання. Натомість «інвокація» визначається за формальним критерієм – наявністю формули звернення на початку тексту – і становить підмножину лише одного комунікативного типу. Проаналізовано конкретний випадок графіті № 5459 («Господи, я п'яний»), який у друкованому корпусі класифікується як сповідний напис, а в цифровому порталі – як інвокація. Доведено, що обидві класифікації є внутрішньо узгодженими, однак відповідають на різні аналітичні запити, що свідчить про епістемологічний характер розбіжності. Обґрунтовано, що у словниках простої системи організації знань ці поняття не можуть бути пов'язані як *skos:exactMatch* або *skos:closeMatch*, а потребують встановлення зв'язку *skos:relatedMatch* із фіксацією асиметрії їхнього обсягу. Практична цінність результатів полягає у можливості їх використання при розробці контрольованих словників і онтологій для цифрової епіграфіки, зокрема для коректного узгодження локальних класифікацій із міжнародними стандартами

Ключові слова: епіграфіка; епістемологічні основи класифікації; цифрова епіграфіка; контрольований словник; проста система організації знань



The rebel as a literary figure: The study of a medieval and a modern test case. Uprising and catastrophe examined through a comparative approach Wernher the Gardener and Heinrich von Kleist

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Abstract. Many more times than might have been assumed, literary authors have imagined rebels and followed their paths through life, mostly showing them losing in their efforts to fight for justice, freedom, or independence. All rebel figures have regularly faced serious challenges because they rise up against a hegemonic system the powers-in-being defend with all their might. How far are rebels entitled to go in their efforts to right wrongs, perceived as such or not, at the cost of other people's suffering, for instance? When do the rebels' ideals live up to their expectations, when do they turn into their opposite and threaten to collapse into blood-thirsty criminals, as the leading figures of the French Revolution demonstrated brutally. A revolution resorting to absolute violence without any restraints can thus easily transform into a bloody tyranny. At the same time, readers are often invited to empathise with the rebel when his/her cause appears to be right – depending on one's ideological viewpoint – whereas the authorities prove to be on the wrong side of human values. This implies that it is necessary to think hard about the difference between a rebel and a terrorist. Throughout history, poets have regularly engaged with this highly problematic, often tragic, topic, if not quandary. So, in this paper, the focus rested on the discussion and comparison of two major contributions to this discourse on the rebel, one from the late Middle Ages (Wernher the Gardener) and one from the early nineteenth century (Heinrich von Kleist) to illustrate the considerable differences between two concepts of rebellion and to identify shared narrative elements, after all, that is, the two sides of the same coin, thus bringing to light the important

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discourse on the literary rebel throughout the centuries. This paper made no attempts to trace any direct connections between both texts; instead, the focus will rest on the shared theme, though the contexts are quite different. To help readers grasp the universal relevance of this topic, the discussion first reflected on some of the most famous rebels and rebellions and then turned to the analysis of the chosen literary examples

Keywords: uprising in literature; the medieval robber knight; the modern rebel; the terrorist; Wernher the Gardener; Heinrich von Kleist; revolution; challenge of social structures

Introduction

Throughout history, individuals or social groups have regularly attempted to rise up against injustice, repression, unfairness, tyranny, a military junta, a dictator, a theocratic regime, or a governmental system that represses the people and pursues the goal of supporting only the oligarchy, the king, or dictator. To what extent the rebel is in the right in their efforts remains a matter of debate, mostly depending on the outcome of the rebellion. For some, a rebel is a murderous terrorist; for others, he represents an ideal freedom fighter or a religious savior (Flood & Frank, 2023). Before I engage with my own topic, let us review what we know in general about the history of rebellions across the world to gain a solid sense of the centrality of this issue. A victory over the government (such as in Iran under Shah Mohammad Reza Pahlavi, replacing him with Ayatollah Ruhollah Khomeini in 1979), for instance, has always changed fundamentally the outlook of the rebel, as the American revolutionary war broadly demonstrated.

The Americans were on the “right” side of history, as we think so today; the British were on the losing or “wrong” side. The French revolution in 1789 granted the victory to the rebels, but the outcome was rather problematic, leading to the rise to power of Emperor Napoleon. And if we consider the Russian revolution in 1919, it is clear that the Zarist regime utterly failed and was destroyed, but the subsequent developments led to the horrible Stalinist regime which cost the lives of millions of

people, both in the Soviet Union itself (1920s) and in Ukraine (Holodomor, 1932-1933), and then in the Soviet Union again, the Great Purge between 1929 and 1953. Tragically, no major rebel emerged during the whole period, there was no effective rebellion in the country, and the country has since then drowned in misery, repression, state-sponsored violence, and lack of freedom, and this basically until today under President Putin irrespective of what the official image propagated by the local government might project. The events in Washington D.C. on Jan. 6, 2021, literally constituted a rebellion against the elected government, but the system survived and imprisoned more than 1,500 rebels for criminal activities. Unbelievably, the current President Trump has pardoned them all, glorifying those rebels as freedom fighters, which illustrates how much the category of the rebel constitutes an ideological and a political concept, a battleground of different opinions (Nance, 2022).

Most rebels have been driven by the desire to challenge perceived injustice, political subjugation, or social structures, and yet there are many options and variations involved because the individual might also pursue a personal agenda or might aim for a global ideal that could lead to the overthrow of the government or of any other kind of power structure. But rebels have also been those who were opposed to a theocratic system, if we think, for instance, of Martin Luther (1483-1546) who was driven to liberate himself and his followers from the

traditional Catholic Church and to create his own, the Protestant Church, because the authorities were not willing to reform what was in dire need to be transformed (since 1517). In modern times, major rebels, such as Jawaharlal Nehru (1889-1964), who liberated India from the colonialist British Empire, or Dr. Martin Luther King Jr. (1929-1968), the promoter of a peaceful liberation movement for Black Americans, enjoy the highest respect in recent memory, and this globally. The same can be claimed for Nelson Mandela (1918-2013), who closely followed Nehru's model and brought freedom from Apartheid to South Africa.

Unfortunately, there were also countless other individuals who created much misery for their peoples in their efforts to rebel against the political system they lived under, whether we think of the Chilean dictator, General Augusto Pinochet, who ruled from 1973 to 1990, or of the Ugandan President Idi Amin Dada Oumee (1928-2003), not to speak of the monstrous Adolf Hitler (1889-1945). Their coups d'états indeed overthrew the previous respective governmental system, but even though they then used the political rhetoric of the rebellion (along with the presumed recovery of freedom), the opposite was really the case because those revolutionaries only aimed at a power grab. All feeble attempts to rebel against their repressive regimes in turn were brutally crushed and had no chance in face of the powerful leaders and their all-encompassing system of surveillance, control, and persecutions.

Despite huge differences in their ideologies, worldly outlooks, religious perspectives, or political intentions, we can easily put together a long list of rebels who, very similarly, brought about radical changes in the system they lived under and triggered, as we might say, a paradigm shift, to the better or to the worse, often paying with their lives as a price for their radical efforts, if they were successful. Little wonder that throughout world literature, the figure of the rebel has constantly fascinated writers and

poets because he could be a glorious idealist or an insane revolutionary, a fanatical religionist or a power-hungry autocrat. Whenever we hear of a (literary) rebel, such as F. Schiller (1805), we can expect the treatment of a fundamental challenge to the system, which thus triggered much suffering, trauma, and tragedy, especially when the rebellion failed or turned out to have been driven by a selfish, ruthless, and basically criminal figure. The outcome of the rebel's operations, all by himself or in a group determines posterity's evaluation of the attempted rebellion as a glorious attempt to rise up to a fundamental challenge ("the patriot") or as a mask for extreme egoism and complete lack of social responsibility. For some, the rebel is an ideal figure, for others, he is a condemnable terrorist, as many sociologists have already examined.

Critical Discussions of the Rebel in Literature

The topic of the rebel or the rebellion is so ubiquitous that it appears almost impossible to identify and then investigate a concrete literary and then academic discourse in that regard. The contributors to B. Ayres (2025) limited themselves to nineteenth-century Victorian literature, whereas A. Lubkowitz (2025) perceived the notion of the rebel in metaphorical terms, tracking down a number of nineteenth-century female writers who were also fascinated in hiking. The contributors to O. Ehlen *et al.* (2024), examined the tensions between a master and his disciples in ancient Greek literature. R. Hotz (2009) studied the intellectual rebels in the modern history of Zarist Russia, A. Dunn (2015) focused on the English Peasants' Revolt from 1381. G. Schwerhoff (2024) dedicated himself to the German Peasants' War of 1525 whereas A.J. Haller (2020) investigated infamous rebels such as Robin Hood, the Pirate Klaus Störtebeker, and the American bank robber and outlaw James Jesse, and all of them in their mythical spaces. B. Heuser (2013) investigated military rebels, guerillas, and asymmetrical

warfare, whereas the contributors to R. Cantú (2016) concentrate on the history of the Mexican novel dealing with rebels. Rebels in the Caucasus, as reflected in contemporary literature, was the topic of R.R. Gould (2016) study. For Wulf discussed by R. Mullender (2024), the Romantics can be identified as rebels who protested against the traditional value system and explored the own self in a mystifying sense.

According to D.-P. Baker *et al.* (2023), many times, special military operations could be identified as being carried out by rebels, which might stretch the range of interpretations of this type of persons to a breaking point because those agents work on behalf of the power establishment and hence would not be rebels in the narrow sense of the word, while the contributors to M. Flood & M.C. Frank (2023) suggest that we should even include terrorists within the spectrum of rebels. In fact, the differences between a rebel and a terrorist might not be large and could depend only on the military means which each person utilised to achieve his/her goal. When we finally consult the monograph by Ł. Smuga (2022) on queers as rebels in contemporary Spanish literature, we can easily draw the conclusion that the notion of the rebel proves to be highly diffuse and adaptable to a vast variety of protesters in many diverse circumstances, cultural periods, or political systems. We thus face a serious terminological and conceptual problem, if we want to take the notion of the rebel seriously and acknowledge it as an important perspective toward our past and present in socio-historical and literary terms. In light of the almost inflationary use of the term “rebel”, it might even be pointless to identify it as a specific motif in world literature because it is used by scholarship in an almost infinite range of contexts and meanings. And, what is also quite significant, we have identified rebels in virtually all cultural periods (Woodward & Clark, 1968). In colloquial parlance, the rebel is the angry underdog who tries to defeat the

authorities in the name of justice and freedom, at least as defined by the rebel.

Nevertheless, we should not throw the proverbial baby out with the bathwater. There are very good reasons to analyse and study specific texts even from different literary-historical periods where an individual tries to rise up against the authorities and change the unjust system he is suffering from or where he – it seems to be almost always a male character in literary texts – attempts to break free from his social class boundaries and gain access to a higher social class (Shepherd, 1993). One of the few comprehensive studies of the rebel as a motif in world literature was published by E. Frenzel (1998), who offered an excellent overview of the different types of rebels and their intentions and strategies, whereas the famous reference work relevant for this and many other similar topics, R.W. Brednich (2003), does not even contain this lemma. According to E. Frenzel (1998), the only one to offer a systematic overview of the rebel figure in world literature, we would have to differentiate between the revolutionary who orchestrates his action in a carefully planned operation, and the rebel who reacts spontaneously in response to a sense of injustice or repression. Some rebels rally against the universal structure of their social life, whereas others target individual rulers or authorities. He is commonly an idealist who carries out his strategy either alone or in company with others who join him in his efforts. The rebel is driven by an innate sense of ethics that justifies even violent acts with which he attempts to overcome his opponents. This would even entail, in extreme cases, the permission to commit tyrannicide, certainly a topic that was already well developed in the Middle Ages (Turchetti, 2013). However, the rebellion, which aims at resisting the unauthorised use of power and military might, often has to resort to physical violence, which then can escalate into a full-blown conflict if not even war. That, in turn,

could place the rebel on the same level as the tyrant, which would critically undermine the rebel's ethical and moral superiority (Classen, 2024). Fighting against a tyrant might hence ultimately transform the rebel simply into a new tyrant, and nothing would have changed; only the figureheads would have been replaced. If the rebellion would not result in a complete reversal of the government, but in a form of adaptation, then the rebel would simply have to accommodate to the power structure and continue with more or less the same politics as before. However, in the case of a political strategy to overthrow a previous imperial government, the rebel could assume the status of a national hero, or mythical figure, such as in F. Schiller (1804). The role of the intellectual rebel who was often the center of attention of nineteenth-century authors was also pointed out (Frenzel, 1998).

Searching for critical studies on medieval rebels, we come up almost empty-handed. E. Frenzel at least points out the existence of rebels who at first fight with all their might against a tyrannical king/emperor, but in the end manage to arrange themselves with him and thus are able to re-establish peace and even friendship, such as in the anonymous Herzog Ernst (ms. A, ca. 1180; ms. B, ca. 1220), in Konrad von Würzburg's Heinrich von Kempten (ca. 1280), and the highly popular *Les Quatre fils Aymon* (late twelfth century). However, as this paper will demonstrate, there are truly remarkable cases of a rebel in some medieval didactic literature, apart from the fact that numerous authors formulated highly critical comments about evil rulers, or tyrants, and this already in the Middle Ages. And, to round off this paper, we also encounter significant rebel figures in later centuries, such as in early nineteenth-century literature. This study drew from two literary texts, one from the mid thirteenth century, the other from the early nineteenth century where we observe protagonists who rise up against traditional

society and launch, what we would call today, a rebellion. But there are major differences between both figures, the first interested only in his personal wealth (not even power), which makes him to a horrible criminal operating even against his own original society, and the latter fighting against social injustice affecting him personally. But his struggle becomes extreme, leading also to a fiasco. The method used in this study consists of a careful critical analysis of both texts, comparing and contrasting them to understand better the various position rebels could assume throughout the history of German literature.

**Wernher the Gardener, Helmbrecht,
and Heinrich von Kleist's Michael Kohlhaas.
An attempt at a trans-chronological
comparison in the history of German
literature from the thirteenth to the early
nineteenth century. An ongoing struggle
to come to terms with the rebel**

To pinpoint our investigation and yet to achieve a broader understanding, this paper will endeavor to carry out an innovative comparative analysis contrasting the thirteenth-century Helmbrecht by der W. Gartenaere (1902) with Heinrich von Kleist's prose novella *Michael Kohlhaas* (Hamacher, 2009) from the early nineteenth century, highlighting the similarities between and the contrasts of the rebellious protagonist. In the medieval narrative, the young protagonist is not truly a rebel who fights against a repressive regime. Instead, as a wealthy peasant's son, he wants to leave his social class behind and turn into a knight, which ultimately, however, results in him becoming a mean, vicious, criminal, brutal, and reckless robber knight. In other words, there is no political issue at stake; the rebellion in this medieval tale does not address ethical or moral issues, except that the rebel transgresses all those norms and principles. In other words, Helmbrecht assumes the role of a rebel against his old social class but turns out to be a careless,

greedy, and violent criminal with no ethics. His rise up against traditional society proves to be a pathetic attempt to grab as much wealth as possible without any ideological, ethical, political, or moral principles. Hence, Helmbrecht utterly fails as a rebel, which conforms with the poet's conservative perspectives to preserve feudal society as in the past.

In the case of von Kleist's novella, the protagonist at first leads an ordinary and respectable life as a horse trader until he faces utmost injustice at the hand of a lower-ranking nobleman (Junker) who mistreats him egregiously without being entitled to it in any way by his own superiors. Kohlhaas tries every legal means available to him to correct the wrong done to him, but all this is ultimately to no avail, so he finds himself forced to turn to self-justice, which quickly develops into a rebellion with much physical damage and the loss of life of innocent people. Ultimately, both characters face their limits, although they try to transgress those with utmost violence, but they are then overcome by the legal system and thus fail and are executed. As far as I can tell, no comparison between both texts has been endeavoured so far, but when we keep in mind the *tertium comparationis*, it makes very good sense to read both texts next to each other as extraordinarily well-developed representatives of the literary genre of the rebel and his struggle against society. In most likelihood, von Kleist was not familiar with Wernher the Gardener's verse novella but drew from some chronicle account/s as a source of inspiration. However, both poets engaged with the same motif and yet investigated it from contrastive perspectives.

The Peasant Helmbrecht

There are not many medieval texts like W. der Gartenaere Helmbrecht (ca. 1260/1270), and considering that it has survived only in two manuscripts (Berlin and Vienna), we might have to conclude that it did not exert much, if any, influence (der Gartenaere, 1902). One of

the reasons for this lack of historical popularity might have been that the young protagonist tries to rise above his traditional class as a peasant to join the ranks of knights, although he knows nothing about courtly life, does not have any of the necessary resources, and quickly turns into a robber knight who leads the live of a criminal together with his other gang members, as we might call them all. Arrogance, if not extreme hubris, characterises this young man who is lavishly supported by his mother, his sister, and a nun who had fled her monastery in his efforts to turn into a knight, so they all become culprits in the operation to orchestrate a rebellion. However, it is not a rebellion against a system or a leader, against traditional concepts and values; instead, the young man wants only to leave his social class behind and acquire riches quickly. All he finally needs to embark on his adventure is a horse, which only his father can provide. Old Helmbrecht, however, severely warns his son against his plans and then tells him of his nightmares in which he had received prophetic warnings about the dangers his son would have to face, that is, a catastrophic outcome.

Despite the father's advice, Helmbrecht is overconfident that the cap which the three women have made for him with its fabulous images (*ekphrasis*) showing all kinds of scenes from classical literature, then his blond and curly hair, and his physical appearance altogether would guarantee his way into the world of the courts (vv. 299-328). Old Helmbrecht tries his best to keep his son from making a fool of himself and to protect him from the severe hatred he would encounter at court as a peasant, but young Helmbrecht dismisses everything his father tells him and only insists on getting his horse. Despite his better understanding, the father then buys the horse for an enormous amount of money, trying to appease his son, but he only adds oil to the fire and thus loses him altogether. He urges him to be content with water instead of wine, which is

reserved for the nobles; he should eat the simple food his mother prepares for him instead of robbing farm animals. For the young man, his father's words amount to a bothersome sermon he does not want to listen to (v. 561).

Helmbrecht attempts to be a rebel, but he pursues nothing but a rebellion against his family, his own social class, and the material limits of his peasant life. He no longer wants to work the plow and get dirty hands; instead, he wants to join the rank of knights and enjoy the courtly lifestyle (envy, greed). However, as the narrator explicitly points out, he only joins the brutal and military forces of a nobleman who carries out military operations against his opponents or neighbours and happily utilises a gang of reckless young men like Helmbrecht who are all characterised by a criminal mind: "dâ wart der knabe gesinde/an roube wart er sô swinde/swaz ein ander ligen liez/in sînen sac erz allez stiez" (659-662; the fellow joined their company. He became such an effective robber that whatever anyone left behind he stuffed it into his bag). Of course, it even gets worse, although Helmbrecht at first achieves surprising triumphs, gaining many riches, though illegitimately, as a robber. Upon his first visit back home, he completely alienates the entire family by using foreign-language phrases which no one understands (Classen, 2007). This gets so bad that the father questions his identity and refuses him entrance to the house until he has named himself and has provided him with the names of the four oxen they own. For a short time, everything then looks good, but the young man behaves very arrogantly and can even seduce his sister to join hands with one of his fellows. But first, in their conversation, the father reveals that in his youth he had visited the court and had observed the traditional courtly values. By contrast, what his son is telling him now confirms that a major decadence has occurred, which thus explains why the young man fits in so well. Whereas in the past, knights had spent time with the ladies, wooing them in a

polite manner, now they would pay attention only to wine and drink so much that they would get completely drunk. As he admits openly: "triegen daz ist hövescheit" (1005; deception is the new courtly manner).

Our rebel thus turns into a mirror of the general decline in culture, especially at the courts, as the poet argues, so the poem really addresses larger issues and utilises Helmbrecht's rebellion against his father only as a vehicle for broad social and cultural criticism from a very conservative point of view. The real rebel hence appears to be the poet himself who has very harsh words to say about the aristocratic class, as formulated by father Helmbrecht. His son has fully adapted to and adopted the current courtly mores, which throws a highly negative light on the world of nobility. But his son acts even worse because all the gifts that he brought with him for the family he had stolen from people, and after seven days at home, he is bored to death because he has not done any robbery for all that time (vv. 1094-95). His father, by contrast, appeals to his son, of course in vain, to stay home, to disregard the court, to enjoy life as a peasant which would be so much more comfortable and secure in financial terms than to be a "armer hoveman" (v. 1107; a poor courtier).

However, young Helmbrecht refuses to listen to the reasonable arguments, and instead, he announces that he needs to go on a renewed rampage of violence punishing all kinds of people – peasants, merchants, other rich people – for presumed transgressions against his own honour. This means that he decides to intensify the degree of his murderous looting because he wants to get rich at all costs, and this together with his other gang members. They are all exposed indirectly as the worst possible criminals who demonstrate no mercy, no pity, and do not respect any laws or rules. These robber knights are no rebels in the traditional sense; they rebel against all social, moral, ethical, and religious rules and order and destroy everything they can put their hands on. In fact, their rebellion

proves to be a pretense to secure a license for their criminal activities, which in the second part of the verse narrative then turn against young Helmbrecht's own rural community because those robbers do not have the means to fight against the nobility and hence turn against the peasants because those own farm animals, or against merchants because those own valuable goods (Görner, 1987).

Having arranged a secret marriage between his sister Gotelinde and his companion Lemberlinde – meaning: a person who devours lambs – the entire group of robber knights turns to a renewed rampage of violence: “manec wite-we unde wise/an guote wart geletztet” (1464-65; many widows and orphans were robbed of their properties), a metaphorical expression of the ultimate transgression of all laws and order these ruthless young men brutally pursue, not sparing even the weakest members of society. However, at that moment, in the midst of their festivities in honour of the marital couple, a judge and his assistants appear, apprehend them all, and execute all except for Helmbrecht. But he is not spared; instead, he is punished by way of his left leg and his right hand being hacked off, and by losing both eyes, which makes it impossible for him ever to wield a weapon, to get onto a horse, or to see anything, a miserable example of the consequences when a rebel fights only for his self-interest and hurts everyone else. This sad character lives for one more year when he is finally apprehended by a group of peasants who had all suffered from his terrible mistreatments before and who now avenge themselves by lynching the protagonist. The erstwhile rebel had turned into a monster who had only pursued selfish values and had recklessly attacked, robbed, harmed, and killed his helpless victims. This rebel thus proves to be, at least in the poet's view, a perverted peasant who did not want to accept his inherited social status and wanted to rise up to the class of knights but only turned into a pathetic and violent criminal. This Helmbrecht

was not even a Robin Hood, especially because he turned particularly against his own former community members, robbing them even of their essentials, endangering their children's lives, raping young women (v. 1865), and hurting them in endless other manners. One peasant stuffs some soil in his mouth as a reminder of the hell waiting for him, and the others hang him off a tree (vv. 1904-09).

The poet concludes his narrative with warnings for all other people who might consider imitating the life course of Helmbrecht: “in geschehe als Helmbrecht” (v. 1918; it will happen to them as it did to Helmbrecht), that is, “si komen ouch danne an die wide” (v. 1930; they will also hang off the willow tree). There is nothing positive about this protagonist, and his rebellion was first directed against his own parents, then against the family at large, finally against the entire village community, and against the own social class. In the fake illusion that he might gain new social status because of his attractive physical appearance (blond hair) and because he owned this spectacular ekphrastic cap, young Helmbrecht wrongly believed that he could leave his peasant class behind and join the aristocracy, a terrible misunderstanding of the true options he might have had, that is, to inherit his father's farm, to marry, and to enjoy his modest but pleasant existence.

Of course, this is the opinion of the conservative poet who insisted on the traditional values of feudal society according to which every individual had to stay in his/her class into which s/he was born. However, Wernher also included considerable criticism of the world of the aristocratic courts where the ideals from the old days were also no longer observed because the nobles appear to have resorted to vicious and murderous methods to repress their subjects. This entails that young Helmbrecht reflected a profound worry about the moral, ethical, and social decline of thirteenth-century society. But, according to this verse narrative, the attempt to resort to rebellion was also no good

option and would cause only disaster for the rebel and his countless victims. However, we also need to keep in mind that the young man did not simply hit upon the idea of leaving his social class and join robber knights. His entire family was essentially involved in transforming Helmbrecht from an obedient and content person into a rebel who aspired for a higher social status. The run-away nun was the first one to produce the precious cap; the sister and mother contributed in their own ways, and the father, foolishly, and this despite all his prophetic dreams, granted him the horse and only then tried to hold him back from his dangerous efforts to turn into a robber knight (Menke, 1993).

Even though the general framework signals that the protagonist operates as a rebel, in essence, he fails in that regard miserably especially because he is not driven by any ideals, intends only to gain as much material goods as possible without any distinctions, and steals from other people wherever he can, ultimately badly hurting his own social group and even his family. The parents are extremely pained about the outcome of their evil son's operations but cannot help him at all because he has become an outlaw. And Helmbrecht's sister loses her honour and disappears from view after her bridegroom has been hanged. We are hence dealing with a rebel who does not gain any respect and whose terrible ending does not evoke any empathy in us. His transgression against the laws of the land, the social system of his time, theological principles, and moral and ethical ideals leave us behind deeply disappointed, as the poet actually appears to have intended with his work, a literary warning against uncalculated rebellion that was not directed against any injustice but created only injustice, that was not intended to change the class structure but reconfirmed the feudal system, and that was not aimed at bringing about any form of new freedom for the individual; on the opposite, Helmbrecht robs everyone whom he can overwhelm with his weapons and only accumulates

wealth for himself, which thus at the end fully justifies his severe punishment (Andermann, 2018).

Heinrich von Kleist's Michael Kohlhaas

Germanist scholarship has paid an enormous amount of attention to Heinrich von Kleist's novella *Michael Kohlhaas*, which makes it unnecessary here to engage with all the relevant details contained in the narrative and many of the questions which research has raised (Hamacher, 2009). Suffice it here to combine these few facts: The Prussian officer and author Heinrich von Kleist was fascinated by the sixteenth-century story of a rebel called Hans Kohlhaas and published the first version of his novella in 1808 (Reuß & Staengle, 2010). In contrast to the medieval case, Kohlhaas simply pursues his ordinary business with his horses when he runs into a conflict at the border where two of his best horses are taken away as pawns for missing papers. Those new administrative rules are, however, completely arbitrary and illegal, as he soon finds out once he has left and reached Leipzig.

The narrator describes Kohlhaas as a most worthy individual, as an honest and generous horse dealer who is liked everywhere and proves to be a truly upright character who would deserve the best treatment from and respect by his neighbours and the authorities. However, although a shining example of a highly dignified citizen, in one respect, he faces an Achilles Heel, "Das Rechtsgefühl aber machte ihn zum Räuber und Mörder" (9). His sense of justice made him, however, into a robber and murderer. The legal issue arises because the Junker Wenzel von Tronka, who has assumed the rein of his house after his father's death, who had been a benevolent and honourable man, lacks in ethical principles and operates arbitrarily without any legality or justification.

Although Kohlhaas tries everything possible to pay his respect to this young upstart nobleman, offering his horses to him at a very reasonable price, the Junker proves to be haughty, arrogant, selfish, and pompous, deeply

disrespectful of the people below him in social terms. The offer is rejected, but two horses have to stay behind, along with one of Kohlhaas's servants to take care of those, until he has secured the necessary papers to cross the border, an artificial demand that is not authorised by the higher-ups in Dresden and is hence nothing but an arbitrary and illegal rule by the Junker to make more money. The impertinent Junker, however, stays in power because the aristocratic circles both in the countryside and in the capital, both in Saxony and in Brandenburg, collude with each other to the great harm for the ordinary people, including this horse trader, although the latter, just before his execution, can regain his ethical superiority by means of a secret about the ruling house written on a piece of paper that he swallows in view of the public (Ockert, 2005).

Kohlhaas tries out every avenue available to him to gain his right as an individual and a respectable and honourable citizen of his country. But although the authorities admit that he was abused by the Junker and that the latter had no right to impose arbitrarily tariffs at the border, they refuse to help him because they are so corrupt (13). Ultimately, Kohlhaas resorts to military means, that is, he becomes a rebel in the classical sense of the word driven by the external circumstances to defend himself against personal repression, pursues justice with his weapons, with arson, but then also with continuous appeals to the authorities to support his legitimate quest. The injustice committed by the Junker in this once instance might not amount to a major matter, holding back just those two horses, which barely survive their mistreatment. However, for Kohlhaas, the entire issue amounts to a "schändlich und abgekartete Gewaltthätigkeit" (14; shameful and manipulative act of violence). The narrator describes in drastic terms what is going on in the protagonist's heart reflecting on the terrible abuse he has to suffer from the castellan in the Junker's service and others: "Rechtsgefühl" (14;

feeling of justice) and "Goldwaage" (14; gold scale). But he is not the only one to experience this violence; everywhere, people complain bitterly about this volatile, selfish, cruel, and unjust aristocrat. Kohlhaas's servant, whom he had left behind at the castle to take care of the two horses, is badly beaten and chased away to get rid of him, barely surviving this suffering, and Kohlhaas's wife, Lisbeth, who reports to her husband what has happened, calls the actions at the Tronkenburg, the Junker's residence, as "Freveln" (17; wickedness); the servant uses the term "Raubnest" (17; nest of robbers).

It would go too far in our context to engage with the long list of abuses, mistreatments, and even violence committed by the Junker and his administrators. Suffices it here to confirm that the Junker emerges as a criminal who can maintain his position because of his family connections (corruption), which defeats even the legal suit which the protagonist had brought against him with the help of an influential attorney. After all his efforts to pursue the judicial path have failed, there is nothing left for Kohlhaas but to resort to his own right, pronouncing an *urfehde* against the Junker, a vendetta which quickly develops into a massive military campaign because he can attract many supporters who delight in the freedom to commit violence on his behalf. This vendetta causes much suffering among the civil population, many buildings are burned down, and it almost looks like an internecine strife might erupt when, due to various circumstances, Kohlhaas is finally apprehended and put on trial, which ends with his death penalty. Kleist offered a most remarkable short story about this upright, but in the end extreme man who was willing to sacrifice everything in his life to secure his right, to receive justice, and to win his day in court, and this against the highest members of the Saxonian and Brandenburg dynasties. He is denied all that, but the narrative itself emphasises the principal need for justice and warns against the corruption and moral and ethical decline in

sixteenth-century society. Kleist might have intended to criticise his own society through this historicising novella, but he did not reveal the true purpose of his story.

Conclusions

It cannot be the purpose here to develop a new interpretation of Wernher's *Helmbrecht* or Kleist's *Michael Kohlhaas* all by themselves. Instead, the intention was to reflect upon the motif of the rebel as presented here in this famous short story (Kleist's novella) and, by comparison, as developed by Wernher the Gardener in his verse narrative. There are major differences and significant parallels, and the outcome of both stories proves to be the same, the rebel is executed. In a way, both protagonists had turned to extreme violence in order to achieve their goals, for which they are tried and punished. But they differed radically in their personal agenda. Whereas *Helmbrecht* only wanted to leave his peasant class behind and rise to a higher social level out of selfish motives, *Kohlhaas* tried with all his power to gain justice in his matter. But we are also told that his opponent, the Junker, represented the entire class of aristocrats who abused their authority and power and became, so to speak, enemies of the people. *Helmbrecht*, by contrast, not able to pursue his goal as he had originally hoped for, declined rapidly from the dreamed-of courtier and knight to a brutal, reckless, mean, and vicious robber who did not hold back for anyone and thus became the enemy of the people. Oddly, *Kohlhaas* also turned to violence to pursue his goal and thus accepted the victimisation of many innocent people serving his purposes. Nevertheless, throughout the novella, we are explicitly told how much he himself had to suffer from injustice and abuse by the Junker and his many different allies at the highest echelons of society. While *Helmbrecht* turned into a criminal for purely material reasons, *Kohlhaas* accepted the consequences of his military actions as something necessary for the overarching

purposes to secure justice for himself. Neither here nor there, however, does violence find any approval, neither by the late medieval nor by the early nineteenth-century poet.

Of course, there are huge differences between both narratives, but both were predicated on the concept of the rebel. *Kohlhaas* was virtually forced to turn to the vendetta since all his efforts to gain his right through legal means were crushed. He did not intend to gain a new social status, but as the military leader of his private army, he quickly rose to the level of a general. Since his actions led to massive damage and harm among the people, he was both feared and admired. Even the various princes got involved, but they could not provide him with any satisfying resolution because they all watch out for their own interests and the aristocratic class. At one point, *Kohlhaas* even seeks out the famous Protestant reformer Martin Luther, but the latter insists on purely peaceful actions (43-55), which does not help the protagonist at all because the system itself has become so corrupt. Kleist's narrative certainly ends tragically because justice is denied, the upper social class protects their own even under the worst circumstances, and *Kohlhaas* becomes, because of his actions, a criminal rebel who thus deserves his death penalty.

Helmbrecht, by contrast, wants to align himself with the upper class but has no sense of or care for justice, morality, or ethical principles. His only option to achieve his goal is to pursue injustice, crime, and violence, and this against his own people. His rebellion is not driven by any ethical ideals; instead, he only wants to gain wealth and social approval from his fellow robber knights. He destroys the bond with his family and endangers his sister's life in that process. *Kohlhaas* loves his family and is deeply committed to them, but he also brings about the end of his family, with his wife being attacked by a soldier when she tries to submit *Kohlhaas*'s petition to the Margrave of Brandenburg in Berlin. She dies from her wounds. And her husband, as we know, is executed at the end.

Mysteriously, however, his children receive the rank of knights and can thus rise to the upper echelon of society (105-06). In an odd twist of the events, while we are asked to contempt and reject the rebel Helmbrecht and cheer on at his final execution through lynching at the hands of his former victims, the peasants, we certainly feel torn in our evaluation of Kohlhaas. To quote the narrator once again: “Das Rechtsgefühl aber machte ihn zum Räuber und Mörder” (The sense of justice, however, made him into a robber and murderer). Helmbrecht also ended his life due to his criminal activities. But the direction he took was the very opposite to the one embraced by Kohlhaas. We can thus conclude that any rebel constitutes a dialectical figure, fighting against the traditional order and destroying much what society has built for a long time, and this whatever the ultimate intentions might be.

Helmbrecht fails in the end because he was, in his basic character, a robber and murderer, whereas Kohlhaas, in his character being a noble, fair, generous, and upright person, is driven into becoming such a criminal and hence likewise meets his death at the hands of the hangman who decapitates him. Both men are earnestly advised by their family members and others to abstain from their actions and hence their violent deeds, but they are so strongly determined by their goal that they cannot stop in the midst of their paths. It would have been easy for Kohlhaas simply to retrieve his horses, feed

and fatten them again, and thus to forget his financial losses and hence the injustice committed against him. Similarly, Helmbrecht, once having returned home to the peasant family, he could have accepted his destiny, embraced his new-found but stolen wealth, and then live a comfortable life. Yet, while the first one demanded justice at all costs, the latter aimed at even more wealth and thus turned into a miserable and contemptible criminal. To be sure, as both poets clearly indicate through their texts, the rebel challenges his society to the extreme, and consequently the authorities are forced to oppose him, drawing from their established power source, and thus they overcome and execute the enemy of the people. Little wonder that poets throughout time, such as Wernher the Gardener and Heinrich von Kleist, embraced this theme and explored it in most moving, troubling, controversial, and challenging terms. Any rebel proves to be highly unsettling because his actions threaten the traditional political and economic structures for good or for bad reasons.

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Бунтівник як літературний персонаж: дослідження середньовічного та сучасного тестового випадку. Повстання та катастрофа, розглянуті через порівняльний підхід Вернера Садівника та Генріха фон Клейста

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Анотація. Набагато частіше, ніж можна було б припустити, літературні автори уявляли бунтарів і простежували їхній шлях у житті, здебільшого показуючи їхні поразки у спробах боротися за справедливість, свободу чи незалежність. Усі постаті бунтарів регулярно стикалися з серйозними труднощами, оскільки вони піднімаються проти гегемонічної системи, яку чинна влада захищає всією своєю могутністю. Наскільки бунтарі мають право йти на крайні заходи у своїх спробах виправити, на їхню думку, неправду, навіть ціною страждань інших людей? Коли ідеали бунтарів виправдовують їхні очікування, а коли вони перетворюються на протилежне і загрожують перетворитися на кровожерливих злочинців, як це жорстоко показали провідні постаті Французької революції? Революція, що вдається до абсолютного насильства без будь-яких обмежень, може легко перетворитися на криваву тиранію. Водночас читачів часто запрошують співпереживати бунтареві, коли його/її справа здається правильною – залежно від ідеологічної точки зору – тоді як влада виявляється на хибному боці людських цінностей. Це означає, що потрібно ретельно подумати про різницю між бунтарем і терористом. Протягом історії поети регулярно зверталися до цієї надзвичайно проблемної, часто трагічної теми, якщо не сказати дилеми. Отже, у цій статті увага зосереджувалась на обговоренні та порівнянні двох важливих внесків у дискурс про бунтаря: одного з пізнього Середньовіччя (Вернер Садівник) і одного з початку XIX століття (Генріх фон Клейст), щоб проілюструвати значні відмінності між двома концепціями бунту та водночас виявити спільні наративні елементи – адже це, врешті-решт, дві сторони однієї монети, висвітлюючи важливий дискурс про літературного бунтаря протягом століть. Ця стаття не робила спроб простежити прямі зв'язки між обома текстами; замість цього увага зосередиться на спільній темі, хоча контексти суттєво різняться. Щоб допомогти читачам усвідомити універсальну значущість цієї теми, обговорення спершу розглянуло деяких із найвідоміших бунтарів та повстань, а потім перейшло до аналізу обраних літературних прикладів

Ключові слова: повстання в літературі; середньовічний розбійник-рицар; сучасний бунтар; терорист; Вернер Садівник; Генріх фон Клейст; революція; виклик соціальним структурам

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