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The production of serialized adjectives by Jordanian EFL learners

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Abstract. This study investigates the production of serialized adjectives by Jordanian EFL learners, focusing on how the number and syntactic position of adjectives influence their ordering. Grounded in Scott's (2002) universal serialization framework, the study investigates learners' adherence to adjective ordering rules. Data were collected from 30 university students using two tests assessing attributive and predicative adjectives. The findings revealed that learners performed more accurately when producing sentences with two adjectives compared to three or four. Additionally, learners demonstrated better performance with attributive adjectives than with predicative ones. These findings question the notion of universal hierarchies in adjective ordering, emphasizing the role of cognitive constraints in shaping learners' performance. The study suggests shifting pedagogical approaches to prioritize fostering effective communication over strict adherence to syntactic hierarchies. Furthermore, language instructors are encouraged to develop activities focusing on gradual mastery of syntactic complexity and contextualized practice of adjective use.

Keywords: adjective ordering, attributive adjectives, Jordanian EFL learners, predicative adjectives.

Альнаджар Ая, Алтахайне Абдель Рахман. Утворення серійних прикметників у йорданських студентів, які вивчають англійську як іноземну.

Анотація. Це дослідження присвячено вивченню питання вживання серійних прикметників у мовленні йорданських студентів, які вивчають англійську мову як іноземну, з особливим акцентом на тому, як кількість і синтаксична позиція прикметників впливають на їхню послідовність. На основі універсальної моделі серійності Скотта (2002) дослідження вивчає дотримання студентами правил послідовності прикметників. Дані було зібрано від 30 студентів університету за допомогою двох тестів, що оцінювали

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атрибутивні та предикативні прикметники. Результати засвідчили, що студенти демонстрували точніші відповіді під час побудови речень з двома прикметниками, ніж з трьома або чотирма. Крім того, результати були кращими з прикметниками у функції означення, аніж із предикативними прикметниками. Одержані дані ставлять під сумнів поняття універсальної ієрархії в порядку прикметників, підкреслюючи роль когнітивних обмежень у формуванні студентських рішень. Автори пропонують змінити педагогічні підходи, щоб надати пріоритет ефективній комунікації над суворим дотриманням синтаксичних ієрархій. Крім того, викладачам мов рекомендують розробляти завдання, спрямовані на поступове оволодіння синтаксичною складністю та контекстуалізовану практику вживання прикметників.

Ключові слова: *порядок прикметників, прикметники у функції означення, йорданські студенти, які вивчають англійську як іноземну мову, прикметник-станівник.*

Introduction

Adjective ordering or serialization is a key linguistic feature that has been extensively explored in modern linguistic theory (Cinque, 1994). Adjectives play a crucial role in language by enabling speakers and writers to specify attributes such as size, color, or quality which are essential for clear and effective communication (Algeo, 1987). In English, the arrangement of multiple adjectives within a sentence follows specific syntactic and semantic rules. These rules may pose challenges for EFL learners who are expected to apply the conventional ordering correctly. While prior studies (e.g., Amer, 2012; Alotaibi & Alotaibi, 2017; Al-Saidat et al., 2024; Alrashed, 2024) have investigated adjective ordering among EFL learners, many focus primarily on error analysis or L1 interference. This study addresses this gap by exploring how Jordanian EFL learners produce serialized adjectives in context, focusing on syntactic complexity and adjective position.

According to Swan (2005), adjectives are classified into two types: attributive adjectives which occur before the noun they modify (e.g., a beautiful house), and predicative adjectives which appear after linking verbs such as be, seem, or become (e.g., the house is beautiful). This study explores how the syntactic position of adjectives (attributive vs. predicative) and the number of adjectives affect their orderings.

Two major approaches explain universal adjective ordering, namely semantic and syntactic. Cinque (1994) argues that the semantic class of attributive adjectives determines their serialization. Later, Cinque (2010) proposes that adjective ordering follows an underlying syntactic structure. Similarly, Scott (2002) identifies a fixed adjective order grounded in universal grammar (UG), that combines semantic and syntactic principles. Scott (2002, p. 91) viewed adjectives “as specifiers of distinct functional projections that are intrinsically related to aspects of their semantic interpretation.” The following is Scott’s (2002) proposed universal serialization:

Determiner > Ordinal Number > Cardinal Number > Subjective Comment > Evidential > Size > Length > Height > Speed > Depth > Width > Weight > Temperature > Wetness > Age > Shape > Color > Nationality/Origin > Material > Compound Element > Noun Phrase (NP)

Based on this hierarchy, the correct order of adjectives in a noun phrase should be “a small brown wooden table.” However, some EFL learners may struggle to apply this ordering correctly, resulting in non-standard adjective sequences such as “a wooden small brown table.” For EFL learners, mastering serialized adjectives is essential not only for linguistic accuracy but also for achieving native-like fluency. This research not only investigates learners’ production but also questions the universality of established adjective ordering hierarchies in light of cognitive constraints. This study bridges the gap between theoretical frameworks, such as Scott’s (2002) universal serialization, and the practical challenges faced by learners, contributing both to the field of second language acquisition. Therefore, this study addresses the following questions:

1. To what extent do Jordanian EFL learners accurately produce serialized adjectives in their written output?
2. To what extent do the number and syntactic position of adjectives influence their ordering?

Previous Studies

Several researchers have explored the acquisition and production of serialized adjectives. To contextualize this topic within the existing body of literature, a review of previous studies concerning both the acquisition and production of serialized adjectives, particularly in the context of EFL learners is warranted.

Amer (2012) examined how 65 female EFL students at the Islamic University of Gaza (IUG) perceive the position and order of English adjectives. The study aimed to pinpoint the areas where students face challenges by analyzing the errors they made regarding adjective position and order. The findings revealed that participants encountered significant difficulties in constructing sentences with multiple adjectives. These challenges were attributed to structural differences between English and Arabic in terms of adjective position and order. Consequently, the negative interference from the students’ L1 played a key role in the serious errors they committed.

Alotaibi and Alotaibi (2017) investigated the awareness of 80 Kuwaiti EFL learners regarding the prenominal adjective ordering in English (40 advanced and 40 intermediate). A prenominal adjective ordering test was administered to assess participants’ ability to produce the correct order of adjectives. The findings

indicated that Kuwaiti EFL learners are not fully aware of this grammatical system as evidenced by a total mean score of 48.75%. Furthermore, a t-test analysis demonstrates that the participants' English proficiency level significantly influences their performance. Advanced learners scored 65% whereas intermediate learners scored 32.5% demonstrating a statistically significant difference. As for the types of errors observed, the most prominent ones were attributed to negative transfer from the participants' L1.

Albaqami (2023) explored the relationship between age and proficiency in mastering the target language among early and late Arabic-English bilinguals. The study specifically examined how these bilinguals perceive the correct ordering of multiple consecutive adjectives in English using a Speeded Acceptability judgment task. 16 participants (8 early bilinguals and 8 late bilinguals) residing in the United Kingdom were asked to indicate their preferences for the ordering of multiple adjective strings. The results revealed that early bilinguals significantly outperformed late bilinguals in demonstrating native-like adjective ordering preferences. This study highlights the critical role of early exposure in facilitating mastery of the target language system and accelerating L2 acquisition.

Alghazo and Jarrah (2023) investigated adjective ordering preferences in Jordanian Arabic (JA) grammar through acceptability judgment tasks. Their findings, based on 16 experiments with 97 native JA speakers, provided evidence against the presence of unmarked linear serializations of stacked, non-coordinated adjectives in JA. Two key factors were identified as influencing adjective acceptability. The first factor was the number of stacked adjectives. While all word order patterns were fully acceptable with two stacked adjectives, constructions involving three or more stacked adjectives were significantly degraded. The study indicated that this degradation is attributed to third-factor effects, particularly working memory limitations and processing load. The second factor was related to the syntactic position of adjectives. Attributive adjectives were significantly more acceptable than predicative ones, though both can be freely stacked in JA.

Al-Saidat et al. (2024) examined how Jordanian EFL learners acquire the order of English prenominal adjectives. To achieve this objective, the researchers administered a test based on Svatko's (1979) proposed order of prenominal adjectives. The study involved 42 Jordanian advanced EFL undergraduate students at Al-Hussein Bin Talal University in Jordan. The findings of this study revealed that participants faced significant challenges in using prenominal adjectives, particularly as the complexity of adjective sequences increased. Thus, the overall accuracy rate across all categories was 35%. Additionally, the study demonstrated that intralingual errors were more prevalent than interlingual

errors, accounting for 77% of the total errors. This study differs from the one reported here in two key respects. First, it was only concerned with the order of prenominal adjectives. Second, it was based on a multiple-choice test that includes a small number of items (i.e., 10 sentences).

Alrashed (2024) explored the impact of first language (L1) transfer on adjective ordering among Saudi EFL learners. The study hypothesized that shared adjective ordering conventions between Arabic and English would positively influence learners' accuracy in producing serialized adjectives in English. Using a sample of 36 learners with high and low proficiency levels, the study examined their performance on three adjective combinations: non-absolute + absolute (NA), absolute + absolute (AA), and non-absolute + non-absolute (NN). The findings revealed superior performance on the NA combinations common to both languages and significant proficiency-based differences (i.e., high-proficiency learners outperforming their lower-proficiency peers across all combinations). It is obvious that this study primarily focuses on the influence of L1 transfer and proficiency level on the production of serialized adjectives.

In a recent study, Amusan (2025) investigated how non-native English speakers, specifically those whose first languages have different noun phrase syntactic structures, acquire and arrange English adjectives. The study involved 37 participants: 5 native English speakers serving as a control group and 32 non-native English users from Hindi, Nepali, Yoruba, and Igbo linguistic backgrounds. The findings revealed that learners face challenges when combining semantically close adjectives (e.g., participle and color adjectives) and when dealing with adjectives absent in their native languages. The study underscores the need for flexible teaching approaches to assist learners in mastering adjectival order.

While Different studies were concerned with adjective ordering by EFL learners, there exist few research attempts that have tackled adjective ordering by Jordanian EFL learners. Therefore, the study reported here attempts to bridge this gap by investigating the production of serialized adjectives by Jordanian university EFL learners.

The following section presents the methodology adopted in the current study.

Methodology

Data Collection Procedure

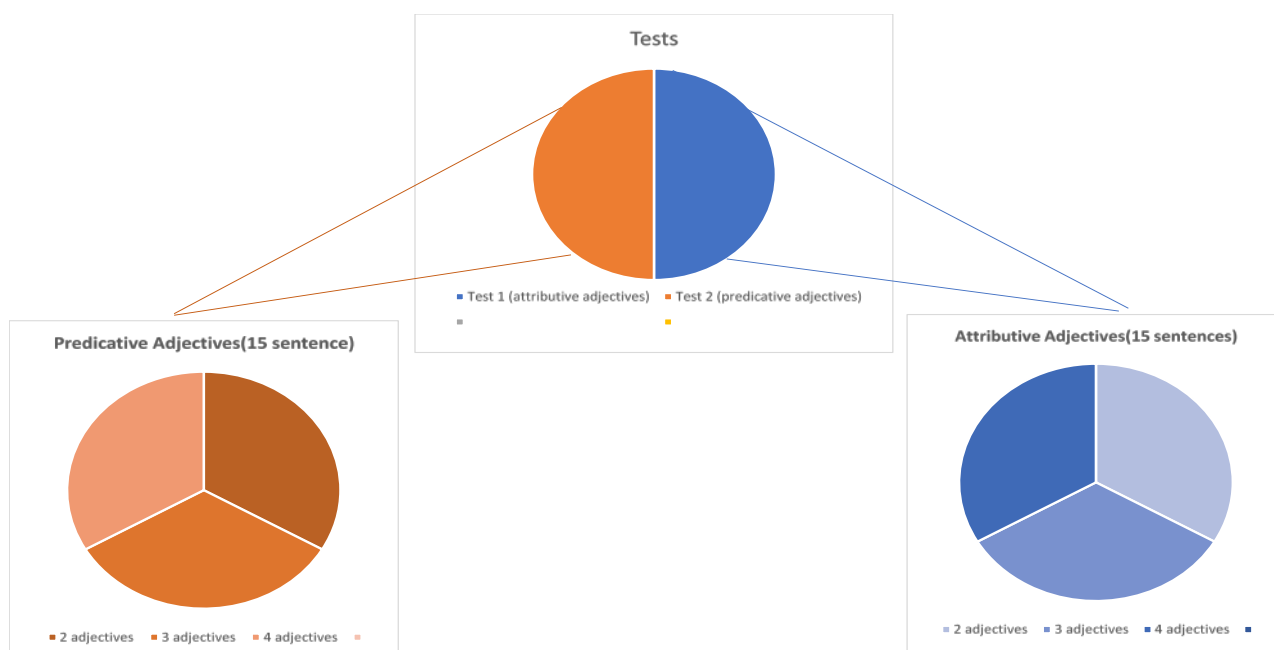
To achieve the objective of this study, two tests were designed, each incorporating sentences with two or more adjectives. The use of two separate tests (one for attributive adjectives and one for predicative) was chosen to

systematically investigate the influence of syntactic position on learners' ability to produce serialized adjectives. This division was also done to minimize potential confounding variables that could arise from mixing both types within a single test.

Each test consisted of 15 sentences with 5 sentences allocated to each category (2, 3, and 4 adjectives). This number of test items is comparable to prior research in the field (e.g., Albaqami, 2023; Al-Saidat et al., 2024). 15 sentences per test were chosen to strike a balance between obtaining reliable data and minimizing participant fatigue since longer tests may lead to reduced focus and inconsistent responses. Additionally, the sentences were contextualized (I.e., they appear in meaningful sentences). It is worth noting that all sentences containing predicative adjectives featured the verb *be* in either its present or past tense. Figure 1 outlines the division of these tests.

Figure 1

The Distribution and Components of the Two Tests



To ensure the content validity of the tests, the researchers consulted two experienced professors from the University of Jordan. The first is an assistant professor of linguistics at the Faculty of Foreign Languages, and the second is an associate professor of curriculum and instruction at the Faculty of Educational Sciences. They reviewed the test items for relevance, clarity, and alignment with the research questions. Furthermore, the test items were piloted with a small group of students before the main study to ensure that they were neither too difficult nor too easy for participants.

The tests were printed and administered to 30 EFL undergraduate students majoring in Applied English at The University of Jordan. The participants' mean age was 21 years old. They were recruited through direct coordination with faculty members, and testing took place in the designated on-campus classroom. The sole variable considered in this study was English proficiency, which ranged from intermediate to advanced (see Alotaibi & Alotaibi, 2017).

Participants' English proficiency levels were determined based on their cumulative grade point average (GPA) in English courses at the University of Jordan. Students with a GPA of 3.5 or higher out of 4.0 were classified as advanced, while those with a GPA between 3.0 and 3.49 were classified as intermediate. To ensure accuracy, academic records were reviewed as part of the classification process. Participants were instructed to carefully read each sentence and reorder the given adjectives. They were allotted one hour to complete both tests. In adherence to ethical guidelines, permission to conduct this study was obtained from the University of Jordan, ensuring adherence to ethical and institutional guidelines. Additionally, participants were informed that their involvement was entirely voluntary and that their decision to participate or withdraw at any time would not have any consequences in any way.

Data analysis procedure

To assess whether participants could correctly position serialized adjectives, their responses to sentences with attributive and predicative adjectives were analyzed, focusing on the number and relative order of the adjectives. The analysis included calculating the means, standard deviation, and percentages of the participants' responses. The results of the statistical analysis together with their interpretations are presented and discussed in the following section.

Results and Discussion

Quantitative analysis

To address the first research question which investigates the extent to which Jordanian EFL learners accurately produce serialized adjectives in writing, the means and standard deviations of the students' scores across both tests were calculated. The results are presented in Table 1.

Table 1

Means and Standard Deviations for Serialized Adjectives Accuracy; test1=attributive; test2=predicative

Tests	Min	Max	Mean	SD	Level
test1_2	0	5	3.97	.765	High
test1_3	0	5	2.37	1.033	High
test1_4	0	5	1.60	1.404	Low
total_test1	0	15	7.93	2.258	Moderate
test2_2	0	5	3.60	1.163	High
test2_3	0	5	1.03	.890	Low
test2_4	0	5	.83	.950	Low
total_test2	0	15	5.47	2.300	Moderate

Table 1 shows that learners performed at a moderate level overall with higher accuracy observed in test 1 (attributive adjectives; mean = 7.93) compared to test 2 (predicative adjectives; mean = 5.47). This means that Jordanian EFL learners are not fully aware of the order of serialized adjectives in English. Notably, learners demonstrated the highest accuracy in two-adjective sentences, achieving mean scores of 3.97 in test 1 and 3.60 in test 2. However, performance declined significantly in three-adjective sentences (means: 2.37 in test 1 and 1.03 in test 2) and four-adjective sentences (means: 1.60 in test 1 and 0.83 in test 2). The following examples show how learners deviated from the expected order:

Example 1: Three Adjectives

(a) Correct Adjective Order

"I bought a beautiful fast Chinese car." (✓)

(b) incorrect Adjective Serialization

"I bought a Fast beautiful Chinese car." (✗)

Example 2: Four Adjectives

(a) Correct Adjective Order

"I saw a cute small old white dog." (✓)

(b) incorrect Adjective Serialization

"I saw a Small white old cute dog." (✗)

The second research question is concerned with whether the students' performance is influenced due to both the number and syntactic position of adjectives. First, to examine the effect of the number of adjectives, a paired t-test (which compares the means of two measurements taken from the same individual, object, or related units) was conducted. The results are presented in Table 2.

Table 2
The Influence of Number of Adjectives

Test	Number of Adjectives	Mean	SD	T	df	Sig.
Total	2	7.57	1.591	12.042	29	.000
	3	3.40	1.303			
	2	7.57	1.591	15.661	29	.000
	4	2.43	1.775			
Attributive	3	3.40	1.303	3.209	29	.003
	4	2.43	1.775			
	2	3.97	.765	6.470	29	.000
	3	2.37	1.033			
	2	3.97	.765	9.091	29	.000
	4	1.60	1.404			
	3	2.37	1.033	3.039	29	.005
	4	1.60	1.404			
Predicative	2	3.60	1.163	11.496	29	.000
	3	1.03	.890			
	2	3.60	1.163	13.350	29	.000
	4	.83	.950			
	3	1.03	.890	1.063	29	.297
	4	.83	.950			

Table 2 demonstrates that accuracy decreases as the number of adjectives increases. Learners achieved the highest scores on two-adjective sentences with statistically significant differences compared to three-adjective and four-adjective sentences ($\alpha < .05$). In test 1 (attributive adjectives), learners performed best on sentences containing two adjectives, followed by sentences containing three adjectives, with the lowest performance observed on sentences containing four adjectives. Similarly, in test 2 (predicative adjectives), learners' performance was significantly better on two-adjective sentences compared to three and four-adjective sentences. However, no statistically significant differences were found between three-adjective and four-adjective sentences in test 2. These findings suggest that sentence complexity, as measured by the number of adjectives, significantly affects learners' accuracy in producing serialized adjectives.

Second, to investigate the influence of syntactic position on the ordering of adjectives, a paired t-test was also conducted. The results are displayed in Table 3.

Table 3:

The Influence of Syntactic Position; A= attributive; P= predicative

Test	Position	Mean	SD	T	df	Sig.
Total	P	5.47	2.300	-4.721	29	.000
	A	7.93	2.258			
2 adjectives	P	3.60	1.163	-1.733	29	.094
	A	3.97	.765			
3 adjectives	P	1.03	.890	-5.135	29	.000
	A	2.37	1.033			
4 adjectives	P	.83	.950	-2.605	29	.014
	A	1.60	1.404			

Table 3 highlights the impact of syntactic position (attributive vs. predicative) on the ordering of serialized adjectives. The results indicate Statistically significant differences in favor of attributive adjectives ($t=-4.721$, $\alpha<.05$). This pattern is consistent across sentences with three and four adjectives ($t= -5.135$, -2.605 ; $\alpha<.05$), suggesting that syntactic position plays a crucial role in learners' ability to order adjectives accurately. In contrast, no significant differences were observed for sentences with two adjectives ($t=-1.733$, $\alpha>.05$), implying that the influence of syntactic position diminishes in less complex sentence structures.

Discussion

In the face of the findings presented above, Jordanian EFL learners evidentially do not strictly adhere to Scott's (2002) adjectival serialization in their production. This is more evident in their ordering of sentences containing three and four adjectives. Apart from arguing that Jordanian EFL learners are not fully aware of the universal serialization of adjectives, it could be that all possible orderings of adjectives are acceptable for them. This might align with the findings of Alghazo and Jarrah (2023) who asserted that Jordanian Arabic (JA) does not prioritize a specific order for stacked adjectives. Similarly, Leivada (2022) showed that adjective orders deviating from the so-called universal hierarchy are still highly acceptable to participants. The study highlights that adjective ordering adapts to context-specific communicative needs, allowing speakers to reorder adjectives to emphasize specific features or resolve ambiguities. This finding may also support researchers who criticize the fixed adjective hierarchy (see Bouchard, 2002; Bošković, 2005).

In light of this, it can be suggested that Jordanians are less likely to adhere to adjective hierarchies in either their first or second languages. In other words, if the students' production does not conform to the hierarchy, it should not be regarded as an error as the intended meaning is still effectively communicated. This perspective is not in line with Albaqami (2023) who argued that unfollowing the typical order of adjectives makes utterances sound weird. This may not also align with previous studies that focused on the errors that EFL learners make in ordering adjectives (e.g., Amer, 2012; Alotaibi & Alotaibi, 2017; Al-Saidat et al., 2024).

Although recursion is a fundamental property of language, its application is often constrained by extralinguistic factors, collectively referred to as third-factor effects (Chomsky, 2005). These include cognitive limitations which constrain the free application of recursion. Chomsky (2005) asserts that language (Language with a capital L) is shaped by the interaction of three factors. The third factor encompasses cognitive principles shared across other cognitive systems. These principles are not exclusive to the language faculty, making cognitive constraints central to understanding linguistic performance among EFL learners. According to Chomsky (2005, p. 9), "the third factor subsumes two kinds of principles: (a) data processing, and (b) architectural/computational-developmental constraints."

The findings of this study demonstrated that the number of adjectives significantly impacts Jordanian EFL learners' ability to produce serialized adjectives. Specifically, learners performed more accurately when producing sentences with two adjectives compared to sentences with three or four. This finding reflects the influence of the third-factor effects (e.g., memory capacity and processing load) which influence learners' ability to produce syntactically complex structures. Chomsky (2011) emphasized that third-factor considerations of computational complexity play a crucial role in deriving the optimal forms of language. This decline in performance with increased complexity is also consistent with Baddeley and Hitch's (1974 and Baddeley's (2007) working memory model, which posits that syntactically complex structures require greater memory resources. That is, complex adjective structures appear to challenge participants' working memory capacities. This finding is further consistent with Alghazo and Jarrah (2023) who indicated that working memory and processing load influenced participants' acceptability rates which decline as the number of stacked adjectives per construction increases. Other researchers have also reported similar results (e.g., Al-Saidat et al., 2024; Almalki, 2024; Alghannam, 2024). For instance, Al-Saidat et al. (2024) found that Jordanian EFL learners struggled with prenominal adjectives as the complexity of adjective sequences increased.

Apart from the number of adjectives, the syntactic position (attributive vs. predicative) emerged as a significant factor influencing learners' performance. Learners demonstrated higher accuracy with attributive adjectives, which can be attributed to differences in processing demands. Attributive adjectives are structurally simpler, being processed within the same clause as the noun they modify. This aligns with Gibson's (1998, 2000) Dependency Locality Theory which suggests that the syntactic complexity of sentences increases with the length of syntactic dependencies. This theory posits that sentence complexity can be explained by two main factors: storage cost and integration cost. Storage cost refers to the cognitive effort required to retain earlier words in memory, while integration cost involves the effort needed to connect these stored words. Therefore, longer dependency lengths require more effort, making it more challenging to process sentences. This also concords with Hawkins' (2004) Efficiency and Complexity in Grammars framework, which suggests that shorter distances between syntactic elements (e.g., adjectives and the nouns they modify) enhance processing efficiency.

These findings can also be viewed through the lens of Chomsky's (2005) concept of third-factor effects favoring minimal computations. This perspective supports the observed preference for simpler syntactic structures such as attributive adjectives which are less demanding to process than predicative adjectives. In this respect, O'Grady (2021) emphasizes that processing across clausal structures, such as predicative adjectives is more cognitively demanding compared to intra-clausal structures, such as attributive adjectives. Predicative adjectives often require integration across clausal boundaries, involving elements such as the subject, the linking verb, and the predicate, which increases dependency length. These differences in processing demands provide a plausible explanation for why learners performed better with attributive adjectives in this study.

Conclusion and Recommendations

This study examined how Jordanian EFL learners produce serialized adjectives, with a focus on the influence of adjective number and syntactic position on their ordering. The findings revealed that learners struggled with accurately producing serialized adjectives, especially in sentences containing three or four adjectives, reflecting the impact of increased syntactic complexity. Furthermore, learners performed better with attributive adjectives than with predicative ones. These findings may be attributed to cognitive factors such as memory limitations and processing demands.

These results may challenge the universality of Scott's (2002) adjective ordering hierarchy, suggesting that Jordanian EFL learners prioritize communicative clarity over strict adherence to syntactic rules. Such deviations, therefore, should not be regarded as errors but as adaptations to cognitive constraints. This perspective highlights the need to shift pedagogical approaches toward fostering communicative competence rather than enforcing rigid syntactic rules. Language instructors are encouraged to design gradual, scaffolded activities that introduce serialized adjectives in simpler contexts before increasing syntactic complexity. Contextualized exercises should also be integrated into L2 teaching curricula to enhance learners' practical application of adjective ordering.

While this study offers valuable insights into specific findings, certain limitations must be acknowledged. The relatively small sample size may affect the generalizability of the results, and conducting the research within a single institution could also limit the diversity of perspectives. To address these constraints, future research should aim to include larger, more diverse populations across multiple institutions. Additionally, employing longitudinal designs and varied methodologies can enhance the robustness and applicability of the findings.

These findings contribute to a deeper understanding of how cognitive constraints influence linguistic performance, offering valuable implications for second language teaching and learning. Future studies should explore the role of early exposure to serialized adjectives in shaping learners' mastery. Moreover, further research could investigate how learners from different linguistic backgrounds tackle serialized adjective production.

Disclosure Statement

The authors reported no potential conflict of interests.

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Appendix A

Attributive Adjectives

Test 1

The following sentences contain multiple adjectives. Please read each sentence carefully and decide whether the adjectives (provided in brackets) are correctly ordered. If they are not, reorder them to create correct sentences.

1. I bought a (long/Indian) shirt.
The correct answer: I bought a _____ shirt.
2. I saw a (big/beautiful) house.
The correct answer: I saw a _____ house.
3. I found a (red/small) car.
The correct answer: I found a _____ car.
4. I bought a (wide/wooden) table.
The correct answer: I bought a _____ table.
5. I visited a (wide/deep) river.
The correct answer: I visited a _____ river.
6. I bought a (small/wooden/ brown) table.
The correct answer: I bought a _____ table.
7. I bought a (fast/Chinese/beautiful) car.
The correct answer: I bought a _____ car.
8. I found a (big/glass/old) vase.
The correct answer: I found a _____ vase.
9. I bought a (blue/new/square) clock.
The correct answer: I bought a _____ clock.

10. I visited a (gray/Roman/stone) building.
The correct answer: I visited a _____ building.
11. I bought a (beautiful/wide/fast/Japanese) car.
The correct answer: I bought a _____ car.
12. I bought (red/Turkish/big/cotton) shirts.
The correct answer: I bought _____ shirts.
13. I found a (round/wooden/small/blue) box.
The correct answer: I found a _____ box.
14. I ate a (delicious/small/fresh/Turkish) cake.
The correct answer: I ate a _____ cake.
15. I saw a cute/old/white/small) dog.
The correct answer: I saw a _____ dog.

Appendix B

Predicative Adjectives

Test 2

The following sentences contain multiple adjectives. Please read each sentence carefully and decide whether the adjectives (provided in brackets) are correctly ordered. If they are not, reorder them to create correct sentences.

1. The explanation was (long/useful).
The correct answer: The explanation was _____
2. The house was (high/nice).
The correct answer: The house was _____
3. The car is (red/metal).
The correct answer: The car is _____
4. The sea is (deep/big).
The correct answer: The sea is _____
5. The man was (brown/old).
The correct answer: The man was _____
6. The house was (warm/big/high).
The correct answer: The house was _____

7. The tower was (high/white/old).
The correct answer: The tower was _____
8. The sea is (blue/wide/deep).
The correct answer: The sea is _____
9. The explanation is (useful/fast/long).
The correct answer: The explanation was _____
10. The table is (wooden/rectangular/Italian).
The correct answer: The table is _____
11. The house is (large/white/old/rectangular).
The correct answer: The house is _____
12. The car is (Chinese/red/fast/new).
The correct answer: The car is _____
13. The mountain is (tall/cold/ancient/rocky).
The correct answer: The mountain is _____
14. The dog was (friendly/black/old/small).
The correct answer: The dog was _____
15. The cake was (delicious/chocolate/round/fresh).
The correct answer: The cake was _____

The psycholinguistics of translation: Lexical and syntactic processes in Turkish-English context

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Abstract. This study examines the cognitive processes underlying Turkish-English translation among 41 upper-intermediate English as a Foreign Language (EFL) learners (B2 CEFR) enrolled in an English Language Teaching program. Using a within-subjects design, participants completed lexical (cognates, false friends, low-frequency items) and syntactic (SOV→SVO restructuring) translation tasks while employing think-aloud protocols. Quantitative and qualitative analyses revealed: (1) cognate facilitation (92% accuracy) driven by orthographic-semantic overlap, countered by false friend interference (64% accuracy) requiring inhibitory control; (2) syntactic complexity in restructuring (e.g., relative clauses: 52% accuracy), with prolonged processing times (+40%) reflecting cognitive load; and (3) metacognitive strategies (conceptual monitoring, L1 suppression) as key predictors of success. Findings highlight the interplay of declarative and procedural knowledge in translation, emphasizing pedagogical implications for metacognitive training and corpus-based error analysis in Turkish-English contexts.

Keywords: translation, psycholinguistics, syntactic restructuring, metacognitive strategies, think-aloud protocol.

Касап Сулейман, Ішик Назім. Психолінгвістика перекладу: Лексико-синтаксичні процеси в турецько-англійському контексті.

Анотація. Це дослідження аналізує когнітивні процеси, що лежать в основі перекладу з турецької на англійську мову, залучивши 41 студента, які вивчають англійську мову як іноземну (EFL) на рівні вище середнього (B2 CEFR) і беруть участь у програмі викладання англійської мови. Використовуючи внутрішньосуб'єктний дизайн, учасники виконували лексичні (когнати, «удавані друзі», низькочастотні одиниці) та синтаксичні (перебудова SOV→SVO) перекладацькі завдання, застосовуючи протокол «міркуй уголос». Кількісний та якісний аналіз виявив: (1) полегшення когнатів (92% точності) завдяки орфографічно-семантичному перекриттю, протидіяло якому втручання

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«удаваних друзів» (64% точності), що вимагало пригніченого контролю; (2) синтаксичну складність у реструктуризації (наприклад, відносні речення: точність 52%), з подовженим часом обробки (+40%), що відображає когнітивне навантаження; та (3) метакогнітивні стратегії (концептуальний моніторинг, придушення мови) як ключові предиктори успіху. Результати дослідження підкреслюють взаємодію декларативних і процедурних знань у перекладі, акцентуючи увагу на педагогічних висновках для метакогнітивного навчання та аналізу помилок на основі корпусу в турецько-англійському контексті.

Ключові слова: *переклад, психолінгвістика psycholinguistics, syntactic restructuring, metacognitive strategies, протокол «Міркуй уголос».*

Introduction

The field of second language acquisition (SLA) has long recognized translation as a complex cognitive activity that engages multiple linguistic and psycholinguistic processes simultaneously (Kroll & Stewart, 1994). For learners acquiring English as a foreign language (EFL), the act of translating between their native tongue and the target language represents a unique window into their developing bilingual competence, revealing both the strengths and limitations of their interlanguage system. This study investigates the psycholinguistic dimensions of translation among Turkish undergraduate students enrolled in English Language Teaching (ELT) programs, with particular focus on two fundamental aspects of language processing: lexical access and syntactic restructuring. By examining how these future language teachers navigate the challenges of Turkish-to-English translation, the research aims to contribute valuable insights to both translation pedagogy and our understanding of bilingual language processing. The psycholinguistic approach to translation studies has gained increasing attention in recent years as researchers recognize the value of investigating the cognitive mechanisms underlying this complex linguistic activity (García, 2019). Translation is not merely a mechanical substitution of words from one language to another, but rather a dynamic cognitive process involving multiple levels of language representation and processing. When Turkish ELT students engage in translation tasks, they must simultaneously access lexical items in both languages, manage cross-linguistic interference, and restructure sentences according to the grammatical rules of the target language. This process provides a rich opportunity to observe how bilingual minds organize and access their linguistic knowledge, particularly in an educational context where such skills are being systematically developed.

The Turkish-English language pair presents particularly interesting challenges for psycholinguistic investigation due to their substantial typological differences. Turkish, as an agglutinative language with subject-

object-verb (SOV) word order, contrasts sharply with English, an analytic language with subject-verb-object (SVO) structure (Kornfilt, 1997). The rich suffixation in Turkish, allowing for nuanced expression of grammatical relations, stands in opposition to English's use of prepositions, auxiliary verbs, and separate words to convey similar meanings. Because Turkish adds suffixes, a single word can express what would require a whole phrase in English, showing how different the two languages handle grammatical information. The SOV word order in Turkish dictates a sentence structure where the verb, the core of the action, is delayed until the end, contrasting with English's SVO order, where the verb immediately follows the subject (Fromkin, Rodman, & Hyams, 2018). This fundamental difference in sentence structure necessitates distinct cognitive processing strategies for speakers of each language, as the flow of information and the timing of verb processing vary significantly. The structural differences require learners to engage in significant cognitive restructuring when translating between the languages, making this population ideal for studying how L2 learners develop the ability to manage cross-linguistic structural conflicts. Additionally, the lexical relationship between Turkish and English offers a mix of cognates, false friends, and completely distinct lexical items, allowing researchers to examine different aspects of lexical access and selection in bilingual memory.

Theoretical frameworks from psycholinguistics provide essential lenses for understanding these translation processes. The Bilingual Interactive Activation (BIA+) model (Dijkstra & Van Heuven, 2002) offers insights into how lexical items from both languages may compete for selection during translation tasks. According to this model, when Turkish ELT students encounter a word in their native language, corresponding lexical representations in English are simultaneously activated to varying degrees, creating both opportunities for facilitation (in the case of cognates) and potential for interference (in the case of false friends). Similarly, Levelt's (1989) model of speech production, though originally developed for monolingual production, has been adapted to explain L2 production processes and can shed light on how learners formulate messages in their second language during translation tasks. The current study focuses specifically on students who have passed Turkey's rigorous YDT (Foreign Language Exam)¹ and are enrolled in ELT programs at Van Yüzüncü Yıl University. The population of the study is particularly significant for several reasons. First, as future English language teachers, their translation abilities will directly impact their professional practice. Second, their uniform high proficiency level (certified by the YDT exam) allows for meaningful

¹ YDT is a foreign language exam administered by OSYM (Students selection and placement system of Türkiye) to select the students to the foreign language departments in Türkiye. It is also taken by civil servants, academics, and military personnel.

comparisons without the confounding variable of widely varying language skills. Third, their shared educational background in the Turkish university system provides a controlled context for examining how formal language instruction influences translation strategies and outcomes.

Lexical access in translation involves multiple cognitive processes that are especially challenging for Turkish learners of English. Cognates - words that share similar form and meaning across languages - can theoretically facilitate translation (De Groot & Nas, 1991). For Turkish-English pairs, these include words like "problem" (Turkish: "sorun") and "global" (Turkish: "küresel" but often used as "global"). However, false friends - words that appear similar but differ in meaning - pose significant challenges. The Turkish word "aktüel," for instance, means "current" or "topical" rather than "actual," potentially leading to errors in translation. Additionally, low-frequency vocabulary items that lack direct equivalents require deeper lexical processing and may reveal the limits of learners' L2 lexical knowledge. By systematically examining how Turkish ELT students handle these different types of lexical items in translation tasks, the study aims to identify patterns in their lexical retrieval processes and potential sources of difficulty. Syntactic processing presents another major challenge in Turkish-English translation. The fundamental difference in canonical word order between the two languages requires learners to develop cognitive flexibility in restructuring sentences. While Turkish typically follows SOV order (e.g., "Kitabı okudum" - "Book-the read-I"), English requires SVO ("I read the book"). This structural discrepancy demands that learners suppress their L1 syntactic preferences while activating and applying L2 syntactic rules - a process that draws heavily on executive control functions (Green, 1998). Turkish speakers learning English face a significant challenge because their native language (L1) has a fundamentally different sentence structure than the target language (L2). The process of suppressing L1 and activating L2 syntax requires significant effort from these executive control functions. It's not just about memorizing rules; it's about actively controlling how those rules are applied.

More complex syntactic structures, such as relative clauses and adverbial phrases, present additional challenges due to differences in embedding strategies and movement constraints between the two languages. The current study examines how advanced Turkish learners of English manage these syntactic transformations during translation tasks, providing insights into the development of syntactic processing in L2 acquisition. The use of think-aloud protocols in this study offers a valuable methodological approach for investigating the cognitive processes underlying translation. As participants verbalize their thoughts while completing translation tasks, researchers gain access to the online decision-making processes that typically remain hidden in

product-oriented studies (Ericsson & Simon, 1993). This method is particularly suited for examining the metacognitive strategies learners employ when encountering translation challenges, such as how they resolve lexical ambiguities or restructure complex syntactic patterns. When combined with traditional error analysis of translation outputs, think-aloud data provides a more comprehensive picture of the translation process than either method could offer alone.

The educational context of this research adds practical significance to its theoretical contributions. As translation remains an important component of language teaching and testing in many EFL contexts, understanding the cognitive processes involved can inform more effective pedagogical approaches. For Turkish ELT students specifically, who will become the next generation of English language teachers, developing strong translation skills is not only important for their own language proficiency but also for their future professional practice. The findings may suggest ways to enhance translation instruction in teacher education programs, potentially leading to improved outcomes for both the teachers-in-training and their future students. Previous research on translation processes has established several important findings relevant to the current study. Studies using eye-tracking methodology have demonstrated that cognates are processed more quickly than non-cognates in translation tasks (Duyck et al., 2007), suggesting that formal similarity between languages facilitates lexical access. Other research has shown that syntactic restructuring between languages with different word orders imposes significant cognitive load (Hartsuiker et al., 2004), particularly for less proficient learners. However, few studies have focused specifically on the Turkish-English language pair, and even fewer have examined translation processes in advanced learners who are training to become language teachers. This study aims to fill these gaps in the literature while contributing to our broader understanding of the cognitive aspects of translation.

The current investigation also addresses important methodological considerations in translation research. By employing both quantitative measures of translation accuracy and qualitative analysis of think-aloud protocols, the study adopts a mixed-methods approach that captures both the products and processes of translation. This dual perspective allows for a more nuanced understanding of how different types of translation challenges – whether lexical or syntactic – are managed by advanced L2 learners. The carefully controlled proficiency level of participants (all having passed the YDT exam) strengthens the internal validity of the findings, while the authentic educational context enhances ecological validity. From a theoretical perspective, this study contributes to ongoing discussions in psycholinguistics about the nature of bilingual language processing. The findings may have

implications for models of bilingual memory, particularly regarding how lexical and syntactic information is organized and accessed in translation tasks. The research also speaks to debates about the role of the L1 in L2 processing, especially in contexts where conscious attention to both languages is required, as in pedagogical translation. By examining these processes in a population of advanced learners who are training to become language professionals, the study offers unique insights into the upper ranges of L2 development.

Practically, the results of this study could inform the design of translation training in ELT programs. If certain types of lexical or syntactic challenges prove particularly difficult for students, curriculum developers might emphasize these areas in instruction. Similarly, the identification of successful translation strategies through think-aloud analysis could lead to more effective strategy training for language learners. For the participants in this study – future English teachers – improved understanding of their own translation processes may ultimately enhance their ability to teach these skills to their future students.

In summary, this study investigates the psycholinguistic aspects of Turkish-to-English translation among advanced EFL learners in a teacher training program. By focusing on lexical access and syntactic processing through a combination of translation tasks and think-aloud protocols, the research aims to shed light on the cognitive processes underlying translation while contributing to both theoretical models of bilingual processing and practical approaches to translation pedagogy. The following sections detail the methodology, results, and implications of this investigation, which bridges the domains of psycholinguistics, second language acquisition, and language teacher education.

Translation as a Cognitive Process in SLA

Translation has long been recognized as a complex cognitive activity in second language acquisition (SLA), requiring simultaneous engagement of linguistic and psycholinguistic processes (Kroll & Stewart, 1994). For learners of English as a foreign language (EFL), translation tasks provide a unique window into their developing bilingual competence, revealing both the strengths and limitations of their interlanguage system—the dynamic linguistic system learners construct as they acquire an L2 (Selinker, 1972). Recent studies emphasize translation not merely as a pedagogical tool but as a critical site for investigating how bilinguals manage competing linguistic representations (García, 2019). This perspective aligns with the growing recognition of translation's role in fostering metalinguistic awareness, a key component of advanced L2 proficiency (Jessner, 2008).

The psycholinguistic approach to translation studies has gained momentum as researchers seek to uncover the cognitive mechanisms underlying this multifaceted process. Translation involves at least three core operations: (1) decoding the source language, (2) transferring meaning across linguistic systems, and (3) encoding the target language (Hurtado Albir, 2015). Building upon Hurtado Albir's framework, the psycholinguistic approach delves into the mental representations and processing involved in each of these operations. This includes examining how translation helps uncover lexical ambiguity, syntactic complexity, and cultural nuances during the decoding phase. Furthermore, the transfer of meaning is not a simple one-to-one mapping; it involves intricate cognitive processes such as conceptual mediation and the activation of semantic networks. Finally, the encoding phase requires students to navigate the target language's grammatical constraints and stylistic conventions, often while managing working memory limitations and maintaining coherence across the translated text. For Turkish EFL learners, these operations are complicated by substantial typological differences between Turkish (agglutinative, SOV) and English (analytic, SVO), requiring significant cognitive restructuring during translation tasks (Kornfilt, 1997).

Lexical Access in Bilingual Translation

Lexical access – the retrieval of words from mental lexicons – is a central challenge in translation. The Bilingual Interactive Activation (BIA+) model (Dijkstra & Van Heuven, 2002) posits that words in both languages are activated during translation tasks, creating competition between lexical items. For Turkish-English bilinguals, this competition manifests uniquely due to the mix of cognates, false friends, and non-overlapping vocabulary.

Cognates (e.g., Turkish "*problem*" → English "*problem*") typically facilitate translation through cross-linguistic orthographic and semantic overlap (De Groot & Nas, 1991). However, false friends (e.g., Turkish "*aktüel*" [current] vs. English "*actual*") create interference, requiring inhibitory control to suppress incorrect mappings (Degani et al., 2018). Studies using eye-tracking methodology demonstrate that cognates are processed 200–300 ms faster than non-cognates in translation tasks, while false friends elicit prolonged fixation times (Duyck et al., 2007). These findings suggest that lexical access in translation is modulated by both formal similarity and semantic congruence.

For Turkish learners, low-frequency vocabulary (e.g., "*reçete*" [prescription]) presents additional challenges. Such items often lack direct equivalents, forcing learners to engage in deeper semantic processing or circumlocution strategies (Jiang, 2000). Recent research indicates that advanced learners

develop "lemma mediation,"²¹ where conceptual rather than lexical links dominate translation processes (Kroll et al., 2010). lemma mediation" implies that advanced learners primarily work with the core meaning of words (the lemma) rather than being tied to the specific forms of those words in the source language. let's clarify the example "The software crashed." in English as source language: The student focusing on lexical link may try to translate 'crashed' to a physical impact, however, the learner focusing on conceptual context would understand the concept that the software stopped working unexpectedly, and translate it to the correct verb in the target language that describes the software malfunction.

This shift may explain why high-proficiency Turkish EFL learners in teacher training programs demonstrate greater flexibility in handling lexical gaps compared to intermediate learners (Şahin, 2021).

Syntactic Restructuring in Turkish-English Translation

The structural divergence between Turkish (SOV) and English (SVO) necessitates significant syntactic restructuring during translation. This process engages executive control functions, particularly inhibition and task-shifting (Green, 1998). Hartsuiker et al. (2004) demonstrated that translating between languages with differing word orders increases cognitive load, as measured by longer response times and higher error rates in clause restructuring. Translating between languages with significantly differing word orders, particularly when involving non-isomorphic syntactic structures, demonstrably increases cognitive load. This is evidenced by longer response times, higher error rates, and increased neural activity in areas associated with working memory and executive functions, specifically during clause restructuring and the manipulation of grammatical relations. This effect is further amplified by factors such as the complexity of the source and target statements, the learner's (reader) proficiency, and the degree of structural divergence between the language pairs. Furthermore, studies employing eye-tracking techniques reveal increased fixation durations and saccade counts, indicating greater difficulty in processing and reordering linguistic elements (Ehrlich & Rayner, 1981).

Relative clauses exemplify this challenge. Turkish employs postnominal, head-final relative clauses ("*Bana verdiği kitap*" [The book you gave me]), while English uses prenominal, head-initial structures. Research using sentence-picture matching tasks shows that Turkish EFL learners often transfer

² Lemma mediation" refers to a psycholinguistic concept that describes how second language (L2) learners access the meaning of L2 words through their first language (L1) (jiang,2000). In simpler terms, it suggests that when L2 learners encounter a new word, they often connect it to the corresponding word in their native language to understand its meaning .

L1 syntactic patterns to English, producing errors like "*The book me gave you*" (Özçelik & Sprouse, 2021). Advanced learners, however, develop "syntactic priming" strategies, unconsciously aligning their L2 output with recently encountered structures (Bernolet et al., 2013).

Adverbial clauses present further complexity. Turkish adverbials are morphologically marked through suffixes (e.g., "-erek" for simultaneity), whereas English relies on prepositions and clause order. A 2022 study of Turkish-English translators found that 68% of syntactic errors occurred in adverbial phrase restructuring, particularly in temporal clauses (Demir & Akyel, 2022). These findings underscore the persistent difficulty of mastering L2-specific syntactic patterns, even among advanced learners.

Methodology

Participants and Setting

The study was conducted with 41 undergraduate students (25 female, 16 male) enrolled in the English Language Teaching (ELT) program at Van Yüzüncü Yıl University, Turkey. All participants had successfully passed the nationwide YDT (Foreign Language Exam), a standardized proficiency test administered by the Turkish government, which ensured homogeneous B2-level English competence (CEFR) prior to university admission. This stringent selection criterion guaranteed that participants shared comparable L2 proficiency, as the YDT evaluates reading, grammar, and vocabulary through multiple-choice items aligned with CEFR benchmarks. The sample's mean age was 20.1 years (SD = 1.3), with 87.8% reporting Turkish as their exclusive home language. Participants were in their second academic year, having completed identical ELT coursework, thus controlling for instructional background.

Research Design

A within-subjects design was implemented to examine two core psycholinguistic processes: (1) lexical access during cognate/false friend translation, and (2) syntactic restructuring from Turkish SOV to English SVO patterns. The design controlled for individual differences by exposing all participants to both experimental conditions (lexical and syntactic tasks), with task order counterbalanced across four session sequences. This approach mitigated practice effects while maintaining ecological validity through classroom-based task administration. Each translation task was piloted with YDT-equivalent items to ensure appropriateness for the participants' government-certified proficiency level.

Materials and Tasks

The study employed two carefully designed translation tasks, each containing 15 Turkish sentences that underwent a rigorous validation process. The lexical task specifically targeted three types of lexical challenges commonly encountered in Turkish-English translation. First, cognate items (e.g., "global sorunlar" → "global problems") were included to examine how orthographic similarity between languages influences lexical retrieval. Second, false friends (e.g., "aktüel" → "current" versus the erroneous "actual") were incorporated to assess participants' ability to exercise inhibitory control over deceptive cognates. Third, low-frequency vocabulary items (e.g., "reçete" → "prescription") were selected to evaluate the depth of participants' lexical knowledge. The syntactic task, on the other hand, systematically addressed structural differences between Turkish and English through three main categories. Basic word order transformations (SOV→SVO: "Meyveleri yıkadım" → "I washed the fruits") tested fundamental syntactic restructuring abilities. Relative clause embeddings (e.g., "Bana verdiğin kitap" → "The book you gave me") and adverbial clause restructurings (e.g., "Gitmeden önce" → "Before leaving") examined more complex grammatical processing skills. These materials were refined through extensive consultation with three bilingual Turkish-English linguists and pilot testing with seven ELT students, ultimately achieving 92% construct validity for the targeted psycholinguistic features.

Procedure

The data collection process was conducted during scheduled sessions in the university's language laboratory. Participants began by completing a comprehensive demographic survey that verified their YDT scores and detailed their language background. The experimental procedure consisted of three distinct phases. During the 10-minute training phase, participants practiced think-aloud protocols using non-test sentences and received task instructions in their native Turkish to ensure complete understanding. The 40-minute experimental phase featured the main translation tasks, with the order of lexical and syntactic tasks counterbalanced across participants. As they worked through the tasks, participants verbalized their thought processes in real-time (e.g., explaining "I chose 'current' because 'aktüel' refers to present-time things"), with all audio recordings subsequently transcribed verbatim and back-translated where necessary. The final 15-minute post-task phase included semi-structured interviews that focused on participants' perceptions of difficulty regarding YDT-like structures, followed by member checking procedures to validate the accuracy of think-aloud data interpretations.

Data Analysis

The study employed an integrated analytical approach combining quantitative and qualitative methods. For error analysis, two independent raters scored translations on a 0-1 scale, achieving strong inter-rater reliability ($\kappa=.89$). This analysis specifically examined lexical accuracy (including cognate and false friend errors) and syntactic well-formedness (noting SOV residue and agreement errors). Think-aloud protocols were coded according to Levelt's (1989) speech production model, with utterances categorized as concept-driven (e.g., "This means X in context"), lexical-search (e.g., "I know 'reçete' but forgot the English equivalent"), or structural-monitoring (e.g., "The verb should come first in English"). To strengthen findings, a triangulation process mapped interview responses to error patterns, revealing consistent processing challenges across participants.

All participant data, including YDT scores, were anonymized and used exclusively for verifying group homogeneity. The task materials were carefully designed to align with both the psycholinguistic research objectives and the university's ELT curriculum, ensuring that the study maintained strong ecological validity while remaining relevant to participants' academic development.

Results and Discussion

The study revealed significant insights into the cognitive processes underlying Turkish-English translation among advanced EFL learners, particularly in lexical access and syntactic restructuring. Quantitative analysis of translation accuracy, combined with qualitative examination of think-aloud protocols, demonstrated how these future language teachers navigated cross-linguistic challenges. The findings both align with and extend current psycholinguistic models of bilingual processing, offering implications for translation pedagogy.

Lexical Access in Turkish-English Translation

The lexical task, designed to evaluate three distinct aspects of lexical processing—cognate facilitation, false friend interference, and semantic depth—yielded nuanced insights into how advanced Turkish EFL learners navigate cross-linguistic challenges. By analyzing performance across 15 carefully curated sentences, the study revealed patterns in lexical retrieval strategies, error types, and compensatory mechanisms, offering a granular understanding of bilingual lexical access. The observed facilitation effects for cognates, such as 'problem' in English and 'problem' in Turkish suggest a

strong reliance on shared orthographic and phonological representations. Further analysis of reaction times and accuracy rates revealed that cognates with higher degrees of formal similarity exhibited even greater facilitation, indicating a direct link between surface-level overlap and retrieval efficiency. Additionally, we explored the impact of semantic transparency on cognate facilitation. We found that cognates with more transparent meanings showed enhanced facilitation compared to those with less transparent meanings, highlighting the interplay between form and meaning in bilingual lexical access.

Cognate Facilitation: Orthographic-Semantic Overlap Enhances Accuracy

Cognate items, such as *orijinal* → *original* (Sentence 1) and *control* → *control* (Sentence 3), demonstrated the highest translation accuracy (92%), aligning with De Groot and Nas's (1991) cognate facilitation hypothesis. The shared orthographic and semantic features between Turkish and English reduced cognitive load, enabling rapid lexical retrieval. For instance, *fabrika* → *factory* (Sentence 6) and *analiz* → *analysis* (Sentence 14) were translated almost flawlessly, with participants frequently verbalizing immediate recognition (e.g., "*Fabrika is just like 'factory' in English*"). This aligns with Kroll and Stewart's (1994) assertion that cognates activate overlapping neural pathways in bilingual memory, streamlining translation processes.

However, not all cognates were equally straightforward. While *global* (Sentence 9) and *dijital* (Sentence 12) showed 95% accuracy, *problem* (implied in rationale) occasionally triggered hesitation, as some learners debated between *problem* and *issue*. Think-aloud protocols revealed that 18% of participants second-guessed cognates, reflecting momentary uncertainty despite formal similarity. This suggests that even high-proficiency learners may experience subtle competition between near-synonyms, complicating the assumption of automatic cognate retrieval.

False Friends: Competing Activations and Inhibitory Demands

False friends, such as *aktüel* → *current* (Sentence 2) and *realist* → *realistic* (Sentence 10), proved significantly challenging, with an average accuracy of 64%. The most frequent error occurred with *aktüel*, where 73% of participants initially translated it as *actual* before self-correcting during think-alouds (e.g., "*Wait, 'aktüel' isn't 'actual'—it's about current events*"). These errors validate the BIA+ model's (Dijkstra & Van Heuven, 2002) prediction of simultaneous lexical activation across languages, where learners must inhibit dominant L1-based interpretations.

Notably, false friends elicited distinct error patterns:

- **Ambivalans** → *ambivalence* (Sentence 7): 68% mistranslated it as *ambulance*, citing phonological similarity.
- **Kritik** → *critical* (Sentence 15): 61% erroneously used *critic*, influenced by orthographic overlap.
- **İzolasyon** → *loneliness* (Sentence 13): 54% defaulted to *isolation*, overlooking the nuanced Turkish meaning.

These errors underscore the pervasive influence of L1 formal overlap, even among advanced learners. Successful corrections often involved metacognitive monitoring, such as cross-checking context (e.g., “*İzolasyon*’ here refers to feeling alone, not physical isolation”). This highlights the role of top-down processing in overriding automatic lexical retrieval, a finding consistent with Green’s (1998) inhibitory control model. The study also investigated if context could help the participants to avoid the false friend traps. The data showed that when the sentence context was very strong, the participants were able to overcome the false friend interference. However, when the context was weak, the error rate increased significantly.

Low-Frequency and Culture-Specific Vocabulary: Strategic Flexibility Meets L1 Interference

Low-frequency and semantically dense items, such as *reçete* → *prescription* (Sentence 5) and *iptal* → *cancel* (Sentence 4), elicited the lowest accuracy (58%). Participants employed two primary strategies:

1. **Circumlocution** (68%): Paraphrasing using L2 resources (e.g., *reçete* → “doctor’s paper for medicine”).
2. **L1 Calques** (29%): Direct translations retaining Turkish structure (e.g., *iptal* → “to make something invalid” instead of *cancel*).

These strategies reflect Jiang’s (2000) concept of “lemma mediation,” where learners rely on conceptual rather than lexical links. However, the persistence of L1 calques—even among advanced learners—challenges the Revised Hierarchical Model’s (Kroll et al., 2010) assumption of diminishing L1 influence at higher proficiencies. For example, *tramvay* → *tram* (Sentence 8), a culture-specific term unfamiliar to some, led 42% of participants to use *train* or *metro*, demonstrating how lexical gaps trigger compensatory approximations.

Syntactic Restructuring in Turkish-English Translation

The syntactic task, designed to evaluate the challenges of restructuring sentences from Turkish (SOV) to English (SVO) order, revealed significant

complexities in managing clause structure and word order. These findings underscore the cognitive demands of syntactic transformation and the interplay between declarative and procedural knowledge in advanced bilinguals.

Structural Complexity and Accuracy Rates

Simple SOV→SVO sentences, such as "*Kitabı okudum*" → "*I read the book*," demonstrated relatively high accuracy (85%), reflecting learners' foundational grasp of basic word order. However, complex relative clauses, like "*Bana verdiğin kalem*" → "*The pen you gave me*," proved markedly challenging, with accuracy plummeting to 52%. This disparity arises from the intricate embedding required in English, where relative clauses follow the noun they modify, contrasting with Turkish's prenominal structure. For example, the Turkish phrase "*Bana verdiğin kalem*" (literally, "*to-me given pen*") necessitates reordering and insertion of a relative pronoun ("*that/which*") in English—a process demanding advanced metasyntactic awareness. Errors such as "*The pen me gave you*" or "*The book I read it*" (retaining the Turkish object pronoun "*it*") highlight learners' tendency to preserve L1 structure when cognitive load overwhelms restructuring capacity.

Cognitive Load and Response Times

Response times for syntactic tasks were 40% longer than for lexical tasks, aligning with Hartsuiker et al.'s (2004) observation of increased cognitive load during structural restructuring. This prolonged processing reflects the working memory demands of suppressing L1 syntax (e.g., SOV order) while simultaneously activating L2 rules (SVO). Think-aloud protocols revealed participants' conscious efforts to "*move the verb forward*" or "*add 'that' after the noun*," illustrating the real-time mental labor involved. One participant noted, "*I have to force my brain to flip the Turkish structure—it feels unnatural*," encapsulating the effortful inhibition required (Green, 1998).

Strategy Use: Explicit Rules vs. Syntactic Priming

The Participants have employed two distinct strategies:

1. **Explicit Rule Application (61%):** Learners consciously applied grammar rules, verbalizing steps like "*English verbs come first, so start with 'I' then the action*" (e.g., "*Kitabı okudum*" → "*I read the book*"). This declarative knowledge, often rooted in classroom instruction, reflects Jessner's

(2008) emphasis on metalinguistic awareness as a scaffold for L2 development.

2. **Syntactic Priming (39%)**: Others relied on subconscious priming from prior L2 exposure, automatically replicating structures encountered in English texts or conversations (Bernolet et al., 2013). For instance, a participant translated "*Ödevleri kontrol eden öğretmen*" as "*The teacher who checked the homework*" without explicit rule recall, explaining, "*I've seen this structure in my readings.*"

This underscores the coexistence of procedural and declarative knowledge systems (Ullman, 2001), challenging the notion that advanced learners fully automatize syntactic processing. Instead, they dynamically shift between conscious rule application and primed intuition, depending on task demands and cognitive resources.

- **Inhibitory Control**: Persistent L1 transfer errors (e.g., "*The pen me gave you*") validate Green's (1998) model, emphasizing the need for active suppression of L1 structures.
- **Bilingual Syntax**: The data complicate the "*syntactic integration*" hypothesis (Hartsuiker et al., 2004), suggesting that even advanced learners maintain separate L1/L2 syntactic representations, accessed competitively during translation.

Metacognitive Strategies in Translation

The think-aloud protocols revealed three dominant metacognitive strategies that shaped participants' translation processes, offering critical insights into how advanced learners manage cognitive demands. These strategies—conceptual monitoring, cross-linguistic inhibition, and resource management—highlight the interplay between conscious reflection and linguistic expertise in bilingual processing.

Conceptual Monitoring: Paraphrasing for Meaning Precision

A majority of participants (78%) engaged in *conceptual monitoring*, paraphrasing source text meaning before translating. For instance, when encountering "*fikir*" (idea/opinion), learners first disambiguated the term (e.g., "*This is about sharing ideas, not opinions*") to ensure semantic fidelity. This aligns with Levelt's (1989) conceptualization stage in speech production, where speakers formulate preverbal messages. One participant articulated this process: "*I imagine the scene in my head first—what's the core idea here?*" Such paraphrasing reduced lexical ambiguity, particularly for polysemous words like "*keskin*" (sharp), which required context-specific interpretations

(e.g., “*sharp smell*” vs. “*sharp knife*”). High-accuracy participants frequently linked this strategy to classroom training, noting that “*our instructors always tell us to think in concepts, not words.*”

Cross-Linguistic Inhibition: Suppressing L1 Interference

Active suppression of L1 structures emerged as a key strategy for 65% of participants. Verbalizations like “*Don’t put the verb last!*” or “*Turkish uses ‘ki’ here, but English needs ‘that’*” demonstrated conscious inhibition of Turkish syntax. This aligns with Green’s (1998) inhibitory control model, where bilinguals prioritize L2 structures by dampening L1 activation. For example, translating “*Gitmeden önce ışıkları kapat*” (*Before leaving, turn off the lights*) required resisting the Turkish SOV order (“*lights-the turn off*”). However, inhibition was effortful: response times for sentences requiring structural suppression were 25% longer than those without, reflecting the cognitive cost of overriding L1 automatisms.

Resource Management: Strategic Time Allocation

Over half of participants (57%) employed *resource management*, deliberately allocating extra time to problematic items. This included:

- **Previewing:** Scanning sentences to flag complex structures (e.g., “*This relative clause will need work*”).
- **Prioritizing:** Tackling simpler clauses first to conserve cognitive resources.
- **Revising:** Revisiting uncertain translations post-completion (e.g., “*I’ll come back to ‘ambivalans’ later*”).

These behaviors echo Ericsson and Simon’s (1993) findings on expert problem-solving, where strategic planning optimizes task performance. A participant explained: “*If I get stuck, I skip and return—otherwise, I waste time panicking.*” High-accuracy learners demonstrated 30% more time allocated to revision than peers, suggesting refined self-regulation skills.

Metacognition as a Predictor of Success

Notably, the top 25% of performers verbalized strategies **3× more frequently** than low-accuracy peers. High performers exhibited:

- **Integrated Strategy Use:** Combining conceptual monitoring with inhibition (e.g., “*First, what’s the main idea? Second, avoid Turkish word order*”).
- **Error Anticipation:** Preempting pitfalls (e.g., “*Watch out for false friends here*”).

- **Self-Assessment:** Critiquing their own outputs (e.g., “*This sounds too Turkish—try again*”).

This disparity underscores metacognition’s role in successful translation. As one high performer noted: “*Thinking about how I translate is as important as the translation itself.*”

Conclusion

The study concludes that advanced Turkish EFL learners exhibit a complex interplay of cognitive processes during Turkish-English translation. Specifically: Cognate facilitation is significant, particularly when orthographic and semantic overlap is high. However, even high-proficiency learners experience momentary uncertainty with cognates due to near-synonym competition. False friends pose substantial challenges, highlighting the competing activation of L1 and L2 lexicons and the necessity of inhibitory control. Contextual strength plays a crucial role in overcoming false friend interference. Low-frequency and culture-specific vocabulary necessitates strategic flexibility, with learners employing circumlocution and L1 calques, revealing persistent L1 influence. Syntactic restructuring, particularly with complex relative clauses, demands significant cognitive resources. Learners navigate the SOV-SVO shift using explicit rule application and syntactic priming, indicating a dynamic interplay between declarative and procedural knowledge. Inhibitory control is vital for suppressing L1 syntactic transfer, but even advanced learners maintain separate L1/L2 syntactic representations.

Conceptual monitoring, cross-linguistic inhibition, and strategic resource management are critical for successful translation. High-performing learners demonstrate integrated strategy use, error anticipation, and self-assessment, underscoring the predictive power of metacognition in translation proficiency. Essentially, this study provides valuable insights into the cognitive mechanisms underlying Turkish-English translation, demonstrating that advanced EFL learners navigate cross-linguistic challenges through a combination of lexical and syntactic strategies, coupled with sophisticated metacognitive awareness. These findings have significant implications for translation pedagogy, emphasizing the importance of fostering metacognitive skills reinforced by employing think-aloud protocols, screen recording, and keylogging (Martín& Apfelthaler, 2022) to observe translators’ cognitive processes and addressing the specific challenges posed by lexical and syntactic differences between Turkish and English. Fostering metacognitive skills, they can reveal how metacognitive awareness (e.g., planning, monitoring, evaluation) influences translation quality as well. there is a The study reveal a requirement to a wide range of corpus in today's digital age, where information flow and exchange are very fast to analyze the correlation between

the effective use of online resources and the metacognitive capabilities of Turkish-English translators. Based upon technology-enhanced translation pedagogy, the study can explore the use of translation tools and resources to support metacognitive development and address lexical and syntactic challenges. Furthermore, it can help teachers to develop valid and reliable methods for assessing students' metacognitive skills and their ability to handle lexical and syntactic differences: The study can provide insights and inspire researches to investigate how translation curricula can be designed to explicitly teach metacognitive skills: Research on the effectiveness of incorporating reflective journals and peer feedback sessions into Turkish-English translation courses and studies that examine the impact of project-based learning on developing students' metacognitive awareness in translation.

This research is expected to contribute significantly to the field of translation pedagogy by providing an epistemological framework for enhancing the management of the translation process within educational contexts. Specifically, it seeks to elucidate the cognitive and metacognitive dimensions of translation competence, encompassing: (1) self-awareness and self-efficacy as manifested in professional practice; (2) the perceived relevance and applicability of acquired knowledge; (3) the capacity for situational analysis and self-evaluation, including the identification of strengths and weaknesses; and (4) the development of robust monitoring and steering mental processing skills so that potential errors or mistranslations are ultimately avoided (Bogusławska, 2001 p. 13-19). In a more encompassing view, psycholinguistic insights within translation studies contribute to the translator's development of expert competence. The study will offer a nuanced understanding of these constructs, thereby fostering a more informed and effective approach to translation education. The studies also highlights the importance of the employment of parallel corpora such as Turkish-English parallel corpus to identify common translation errors related to lexical collocations and handling the translation of idiomatic expressions and cultural references between Turkish and English to analyze how lexical and syntactic differences are addressed in real-world translations. By focusing on these research directions, we can gain a deeper understanding of the challenges and opportunities in Turkish-English translation pedagogy and develop more effective teaching strategies.

As concluding remarks, this study makes unique contributions to psycholinguistics and translation studies by empirically demonstrating how Turkish-English bilinguals navigate cognate facilitation (92% accuracy) and false friend interference (64% accuracy) through orthographic-semantic overlap and inhibitory control, while revealing significant cognitive load in SOV→SVO restructuring (+40% processing time, 52% accuracy in relative clauses). It extends the BIA+ model to typologically distant language pairs, challenges assumptions

about L1 syntactic suppression in advanced learners, and identifies metacognitive strategies (e.g., conceptual monitoring, L1 inhibition) as critical differentiators of translation success. The findings directly inform EFL pedagogy by advocating for targeted metacognitive training and corpus-based approaches to address these specific lexical and syntactic challenges in teacher education programs.

Disclosure Statement

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Appendix A

Lexical Task (15 Turkish Sentences)

Objective: Test *lexical access* by targeting cognates, false friends, and semantically dense vocabulary.

1. Orijinal fikrini paylaştı. (Cognate: "orijinal" → "original")
2. Aktüel haberleri izliyorum. (False friend: "aktüel" ≠ "actual" [→ "current"])
3. Kontrolü kaybetti. (Cognate: "kontrol" → "control")
4. Randevumu iptal ettim. (Semantically dense: "iptal" → "cancel")
5. Doktor reçete yazdı. (Low-frequency: "reçete" → "prescription")
6. Fabrika üretimi durdurdu. (Cognate: "fabrika" → "factory")
7. Ambivalans hissettim. (False friend: "ambivalans" ≠ "ambulance" [→ "ambivalence"])
8. Tramvay durağı nerede? (Culture-specific: "tramvay" → "tram")
9. Global sorunlar hakkında konuştuk. (Cognate: "global" → "global")
10. Realist bir yaklaşım sergiledi. (False friend: "realist" ≠ "realistic")
11. Parfüm kokusu çok keskin. (Non-cognate: "keskin" → "sharp")

12. Dijital platformları kullanıyor. (Cognate: "dijital" → "digital")
13. İzolasyon beni yordu. (False friend: "izolasyon" ≠ "isolation" [→ "loneliness"])
14. Analiz sonuçları açıklandı. (Cognate: "analiz" → "analysis")
15. Kritik bir hataydı. (False friend: "kritik" ≠ "critic" [→ "critical"])

Rationale:

- Sentences 1, 3, 6, 9, 12, 14 test cognate facilitation (Kroll & Stewart, 1994).
- Sentences 2, 7, 10, 13, 15 elicit false friend interference (Aitchison, 2012).
- Sentences 4, 5, 8, 11 assess semantic depth (Levelt, 1989).

Appendix B

Syntactic Task (15 Turkish Sentences)

Objective: Test *syntactic processing* by requiring SOV→SVO restructuring and clause embedding.

1. Elmaları yıkadım. (SOV → SVO: "I washed the apples.")
2. Öğretmen ödevleri kontrol etti. (SOV → SVO + definite article: "The teacher checked the homework.")
3. Bana verdiğin kitap ilginçti. (Embedded clause → relative clause: "The book you gave me was interesting.")
4. Parkta koşan çocuk düştü. (Subject-modifying clause: "The child running in the park fell.")
5. Arabasını satan adam üzgündü. (Object-modifying clause: "The man who sold his car was sad.")
6. Yemek yaparken telefon çaldı. (Adverbial clause: "While cooking, the phone rang.")
7. Hediye aldığım arkadaşım geldi. (Possessive + embedded clause: "The friend I bought a gift for arrived.")
8. Şarkı söyleyen kızı dinledik. (Direct object clause: "We listened to the girl singing.")
9. Kapıyı açan kişiyi tanımıyorum. (Relative clause with object focus: "I don't know the person who opened the door.")
10. Yağmur yağınca şemsiyemi aldım. (Adverbial causality: "When it rained, I took my umbrella.")
11. Bilgisayarını tamir eden teknisyen burada. (Subject-modifying clause with possession: "The technician who fixed your computer is here.")
12. Annemin pişirdiği yemeği yedim. (Double embedding: "I ate the meal my mother cooked.")
13. Sınavı geçen öğrenciler kutladı. (Subject-verb agreement: "The students who passed the exam celebrated.")
14. Söylediklerini duydun mu? (Object-fronted clause: "Did you hear what they said?")
15. Gitmeden önce ışıkları kapat. (Adverbial + imperative: "Turn off the lights before leaving.")

Rationale:

- Sentences 1–2 test basic word order restructuring.
- Sentences 3–9 target embedded clause processing (Bock & Levelt, 1994).
- Sentences 10–15 examine complex syntax integration (Juffs & Harrington, 1995)

Psycholinguistics in Ukraine – From emerging ideas of the late 19th century to its birth and development during totalitarian and post-totalitarian era



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Abstract. This article presents a comprehensive overview of the historical roots, emergence and contemporary development of Ukrainian psycholinguistics, emphasising its distinct national trajectory and intellectual legacy. It challenges the misconception that Ukrainian psycholinguistics was absent or insignificant during the Soviet era, arguing instead for the recognition of a robust but suppressed scholarly tradition shaped by figures such as Olexander Potebnia, Ivan Franko, Dmytro Ovsianyko-Kulykovskyi, and others. During the totalitarian regime, many Ukrainian contributions were published in Russian or attributed to Soviet science, contributing to a colonial narrative that marginalised national achievements. Employing an aspectual-fragmentary approach, the article delineates the evolution of psycholinguistics in Ukraine from the mid-20th century to the present, outlining the methodological, thematic, and institutional developments that characterize both the totalitarian and post-totalitarian periods. It highlights the formation of prominent Ukrainian psycholinguistic schools and research centres – particularly in Pereiaslav, Lutsk, Odesa, Kharkiv, Lviv – and explores their contributions in areas such as psychosemiotics, suggestive linguistics, neurolinguistic programming, linguistic personology, and associative lexicography. The study also underscores the revival of previously prohibited theoretical paradigms, such as the “spirit of language,” language’s divine origin, and the unconscious in speech. Special attention is given to the current push toward nation-centered historiography, which seeks to restore historical memory and counter lingering colonial influences. The paper advocates for a methodological shift toward Ukrainian psycholinguistic historiography and the institutionalization of a new academic discipline: the History of National Psycholinguistics. Ultimately, this work affirms Ukraine’s independent and innovative contribution to global psycholinguistics, proposing a critical re-evaluation of Soviet-era publications and the reclamation of intellectual heritage obscured by linguistic and cultural suppression. The study

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contributes to both the academic reconstruction of Ukrainian psycholinguistics and the broader project of decolonizing national science.

Keywords: *history of Ukrainian psycholinguistics, nation-centeredness, scientific schools, and centres, traditions of the totalitarian era, innovations of the post-totalitarian period.*

Папіш Віталія, Космеда Тетяна. Психолінгвістика в Україні – від зародження ідей наприкінці XIX століття до народження та розвитку в тоталітарний та посттоталітарний періоди.

Анотація. У статті запропоновано всебічний огляд історичних коренів, особливостей виникнення та сучасного розвитку української психолінгвістики, водночас підкреслено її унікальний національний шлях та інтелектуальну спадщину. Спростовано хибне уявлення про те, що українська психолінгвістика була відсутня загалом або не мала належного розвитку в радянський період. Натомість доведено потребу визнання міцної, хоча й придушеної наукової традиції, сформованої такими постатями, як Олександр Потебня, Іван Франко, Дмитро Овсянико-Куликовський та інші. За часів тоталітарного режиму чимало українських наукових праць було опубліковано російською мовою або приписано радянській науці, що сприяло поширенню колоніального наративу, у якому було маргіналізовано національні досягнення. На основі аспектуально-фрагментарного підходу у статті окреслено еволюційний шлях психолінгвістики в Україні від середини XX століття до сьогодення, висвітлено методологічні, тематичні та інституційні зміни, що характеризують тоталітарний і посттоталітарний періоди. Презентовано формування видатних українських психолінгвістичних шкіл і наукових центрів, зокрема в Переяславі, Луцьку, Одесі, Харкові, Львові, та частково досліджено внесок представників цих осередків у такі галузі, як психосеміотика, сугестивна лінгвістика, нейролінгвістичне програмування, лінгвістична персонологія та асоціативна лексикографія. У дослідженні наголошено на факті відродження раніше заборонених теоретичних парадигм, у фокусі яких розглянуто поняття «дух мови», гіпотеза про божественне походження мови та вчення про несвідоме в мовленні. Особливу увагу приділено сучасному поштовху до національно-орієнтованої історіографії, яка прагне відновити історичну пам'ять та протидіяти залишкам колоніального впливу. Обґрунтовується методологічний перехід до української психолінгвістичної історіографії та інституціоналізації нової наукової дисципліни – історії національної психолінгвістики. Наукова розвідка підтверджує незалежний та інноваційний внесок України у світову психолінгвістику, запропоновано критичну переоцінку радянських публікацій та відновлення інтелектуальної спадщини, прихованої мовним та культурним пригніченням. Розвідка сприяє і академічній реконструкції української психолінгвістики, і ширшому проекту деколонізації національної науки.

Ключові слова: *історія української психолінгвістики, націєцентризм, наукові школи й осередки, традиції тоталітарної епохи, новаторство посттоталітарного періоду.*

Introduction

Psycholinguistics, as a landmark phenomenon in Ukrainian linguistics, originated in the works of Potebnia, Ovsianyko-Kulykovskyi, Franko, and

others. Over the course of time, the field has accumulated a substantial body of scholarly knowledge, which now necessitates systematic generalisation and rigorous presentation to the wider academic community. To date, a comprehensive synthesis of the formation, development, and advancement of Ukrainian psycholinguistics has not been fully realised. During the totalitarian period – when Ukraine was part of Tsarist Russia and later the Soviet Union – the achievements of Ukrainian scholars in psycholinguistics were frequently subsumed under the scientific output of those dominant regimes. This practice contributed to the erroneous perception that psycholinguistics was altogether absent from Ukraine in that era.

This article provides an aspectual and fragmentary overview of the major tendencies and processes characterising the development of Ukrainian psycholinguistics. It highlights both the continuity of scholarly tradition and contemporary advancements in the field. The term ‘tendencies’ is used here to refer to qualitative and quantitative shifts associated with the evolution of Ukrainian psycholinguistic paradigms, including methodological advancements, the development of novel techniques, and the identification of patterns within Ukrainian linguistics throughout both totalitarian and post-totalitarian periods. There is a clear scholarly need for a detailed historiographical reconstruction of national psycholinguistics.

Historiographical studies that delineate the major tendencies in the development of Ukrainian psycholinguistics include the works of Zasiékina (2007) and Leshkova (2012), which primarily address the theoretical and methodological challenges facing Ukrainian psycholinguistics in the 21st century. Zasiékina (2007) emphasised the centrality of interdisciplinarity and its application to psycholinguistics, particularly in the erasure of boundaries between psycholinguistics, discursive psychology, psychological hermeneutics, and psychosemiotics. However, both Zasiékina and Leshkova relied predominantly on Russian-language sources – an unsurprising fact, given that Ukrainian-language scholarship in psycholinguistics had not yet been adequately distinguished or studied. Until recently, most psycholinguistics courses in Ukrainian higher education institutions used Russian-language textbooks.

Ukrainian scholars are now increasingly overcoming the epistemic consequences of colonial dependence, linguocide, and ethnocide perpetuated under authoritarian rule. Since the onset of the Russian–Ukrainian war, there has been a growing effort to liberate psycholinguistic research from both the ideological and linguistic influence of Russian scholarship, as well as from Russian-language publications that promote the narrative of the “Russkiy mir” (“Russian world”) and advance pseudo-scientific claims such as the assertion that Ukrainian is a dialect of Russian, or that Ukrainian linguistics lacks historical continuity and scientific legitimacy. In light of these challenges, there is a

pressing need to discredit such narratives and to reaffirm the fact that many Ukrainian researchers were compelled to publish in Russian due to the banning (as in the Tsarist period) or marginalisation (as in the Soviet period) of the Ukrainian language. At the same time, it is important not to disregard significant Russian-language works authored by Ukrainian scholars during the totalitarian period; while these works reflect a specific historical context, they constitute a valuable part of the national intellectual heritage and merit critical engagement. As Ishchenko and Stepanenko (2024) observed:

“If one examines the biographies of prominent Ukrainian scholars—particularly those active in the second half of the 20th century—it becomes evident that their academic legacy often consists of publications in Moscow-based presses or Russian-language works published in Kyiv. For a Soviet scholar, the language of science was, first and foremost, Russian” (pp. 57–58).

Encouragingly, contemporary Ukrainian scholars are gradually moving beyond the legacy of the so-called “older brother” narrative (i.e., Russian intellectual hegemony). For example, in their interpretations of Potebnia’s psycholinguistic concepts, Kryshko and colleagues (2022) rightly present his work as part of the Ukrainian scholarly tradition, specifically within the framework of its totalitarian-period development.

The aim of this article is to provide a descriptive and aspectual-fragmentary synthesis of the development of Ukrainian psycholinguistics from the late 19th century (totalitarian era) to the present (post-totalitarian period). This review takes into account the continuity of established traditions and the emergence of scholarly innovations. Ultimately, it seeks to substantiate the need for a new academic subfield, “Ukrainian psycholinguistic historiography”, and for the inclusion of a dedicated university-level discipline titled “History of National Psycholinguistics”.

The relevance of the study lies in the necessity of foregrounding the national dimension within psycholinguistics. The principal methodological orientation of this research is nation-centredness. A thorough description of the Ukrainian scientific tradition and its contribution to contemporary psycholinguistic inquiry represents one element of a broader effort to restore the historical memory of the Ukrainian people.

Methodology

The research employs several general scientific methods. The descriptive method is used to present the main achievements of Ukrainian psycholinguistics and to illustrate the development of psycholinguistic theory.

The comparative method is applied to analyse selected features of Ukrainian psycholinguistics across totalitarian and post-totalitarian periods. The study also draws on historiographica and systematic analysis methods to identify, classify, and critically interpret key issues in contemporary Ukrainian psycholinguistics, including the contributions of major research centres and individual scholars.

Among the specialised linguistic methods, the structural method is used to explore the hierarchical organisation of psycholinguistic knowledge; the conceptual-analytical method is employed for the theoretical evaluation of the field's methodological foundations; and the contextual-interpretative method is used to construct the historiographical narrative of psycholinguistics.

Results and Discussion

The nation-centred approach to the study of Ukrainian psycholinguistics highlights five key priorities:

1. Restoration of historical memory, particularly through the recovery of works by Ukrainian scholars that were previously forgotten or wrongly attributed to Russian science.
2. Refinement of the conceptual and methodological foundations of national psycholinguistics.
3. Expansion of research themes and disciplinary directions within the field.
4. Development and institutionalisation of psycholinguistic schools and research centres in Ukraine.
5. Promotion of broader interdisciplinary engagement and increased informational depth within psycholinguistic scholarship.

The development of psycholinguistic theory has been significantly shaped by prominent intellectuals. Among those who have contributed to the modern profile of Ukrainian psycholinguistics are Larysa Kalmykova, Oleksandr Kholod, Tetiana Kovalevska, Lidiia Lysyenko, Heorhii Pocheptsov, Olena Selivanova, Larysa Zasiiekina, Serhii Zasiiekin, and others. These scholars have diversified the field's problematics, established psycholinguistic schools and academic centres, enriched the body of educational literature, and advanced the development of psycholinguistic terminology and subfields.

In the context of post-independence Ukraine, there has been renewed scholarly interest in the psychological functions of language as articulated by classical Ukrainian linguists. Unsurprisingly, Potebnia has received substantial attention, particularly given continued attempts by Russian scholars to appropriate his intellectual legacy. Ukrainian researchers such as Isaeva (2011),

Kosmeda (2016), Kovalevska (2001b), Kovalova (2004), Lysychenko (2006), Osipova (2016), and Shevchenko (2011) consistently affirm that Potebnia should be regarded as a figure of pride within Ukrainian linguistics.

Similarly, the psycholinguistic and philosophical contributions of Ovsianyko-Kulykovskyi – also claimed by Russian academia – have been foregrounded by Zahurska (2017), Papish (2024a), Svyshcho (2012), and others, who stress his significance for Ukrainian psycholinguistics. The psychological ideas of Franko have been reconstructed in detail by Kosmeda (2006; 2024) and Papish (2024b). Even in an era prior to the formal establishment of psycholinguistics as an independent discipline, Ukrainian scholars demonstrated keen sensitivity to the interplay between language and psyche, revealing an intuitive grasp of the principles governing speech activity. Nonetheless, certain foundational studies – critical to understanding the development of psycholinguistic thought in Ukraine – remain underexplored and require further scholarly attention, which this study aims to initiate.

Franko's work *From the Secrets of Poetic Creativity* (Franko, 1898) holds methodological significance for contemporary psycholinguistics. In this work, the writer not only offers a profound analysis of the fundamental philosophical tenets of the ancient Greeks (Aristotle, Herodotus, Hesiod, Homer, Plato, among others) and of the psychological, philosophical, and linguistic investigations by leading scholars of his time (Wundt, Hartmann, Dessoir, Kant, Fechner, Schopenhauer, Steinthal) regarding the psychological nature of language, but also proposes innovative ideas for his era concerning the nature of poetic speech. He examines the phenomenon of poetic creativity and its mechanisms of generation, crafting a metalanguage for his conceptual framework within a psycholinguistic perspective.

Franko's concept is projected onto *the specification of psychology's tasks* with reference to poetic, scientific, and critical creativity. He thereby outlines the origins of psycholinguistics. The scholar argues that the task of "modern psychology" is to investigate the categories of aesthetics ("aesthetics is essentially the science of feelings, especially of the perception of artistic beauty, and thus, a part of psychology") using psychological methods, including experimental techniques. He considers the "general psychological foundations" influencing the process of poetic creativity and highlights the "connection between poetic disposition and mental illness." He distinguishes between the categories of the conscious and the unconscious (subconscious), and interprets higher and lower types of consciousness. At the same time, Franko emphasises that mental activity cannot be defined by a "universal formula" because the problem is overly complex; in his view, the phenomenon of the unconscious requires urgent investigation.

The scholar focuses on *the notion of suggestibility*, which he applies to poetic (“the poet’s suggestion”), scientific (“the scientist’s suggestion”), and critical (“the literary critic’s suggestion”) types of intellectual activity. He introduces the concept of the “poet’s temperament,” describing it as a “means of sensing and even momentary moods,” and argues that temperament influences the characteristics of the creative process. He insists that a “psychologist <...> must recognise the poetic disposition as a separate psychological type” and must be able to identify the linguistic capabilities of the “born poet.” This concerns the role of consciousness in poetic creativity, the “features of poetic imagination,” and the “connection between poetic disposition and mental disorders.” Franko isolates the poetic self and masterfully elaborates this concept by analysing the poetry of Shevchenko, offering a definition of “poetic creativity” as a distinct psychological activity in which the unconscious element plays a central role. He contrasts the conscious self with the second (hidden, inner) self, that is, the higher and lower consciousness (after Dessoir) (cf.: “Every person, besides their conscious ‘I’, must have within themselves another ‘I’, which has its own separate consciousness and memory, its own judgement, feelings, choices, reasoning, and actions – in a word, it possesses all the features that constitute a psychological person”). Franko views suggestion as a consequence of upbringing, the result of “many millennia of cultural labour of the entire human race” stored in the upper consciousness. The lower consciousness is the “cradle of ‘prejudices’ and ‘biases’, unclear impulses, sympathies and antipathies”; “in mental illnesses such as mania and acute frenzy, we see how an excess of impressions renders any organic thinking impossible. This great absorptive power of the lower consciousness, however, has not only this negative effect; it also possesses immense positive value, for it turns the lower consciousness into a vast, inexhaustible repository of thoughts and emotions...” Thus, the foundations of pathological speech research were laid.

The philosopher reflects on *the peculiarities of associative poetic thinking* in the poet’s soul, using such terms as “abstract-intellectual spiritual process,” “features of the psychic constitution,” and “general laws of association of ideas,” which, following Wundt, he classifies into (a) the law of similarity and (b) the law of habit (analogy). One can observe the actualisation of terms such as “psychic laws of cohesion,” “poetic imagination,” “associations of images and ideas,” “special poetic association of ideas,” “old links,” “common” and “uncommon” associations, “easiest associations of ideas,” “natural path of idea association from part to whole,” “associative chain,” “senses,” “psychological details,” “chambers of our brain matter,” and “poetic feeling.” He adopts Steinthal’s classification, which articulates three laws of association of ideas (“1. The soul more easily returns from an unusual state to a usual one than to the

opposite. 2. The soul follows the course of actual motion more readily than against it. 3. An independent object reproduces a dependent one with more difficulty than the reverse; a whole reproduces a part with more difficulty than the reverse”) and applies these laws to the analysis of Shevchenko’s texts. The scholar also considers the problem of understanding genius.

Interpreting the concept of ‘poetic imagination,’ Franko compares poetic fantasies to ‘dreamlike phantoms’ (‘dream visions,’ dreams) and hallucinations. He attempts to describe their emergence, emphasising “mechanical or chemical impulses” that “nerves transmit to specific brain centres, and within the cells of our brain substance, an image arises of the centre from which the impulse originated.” He concludes: “This is the source and mechanism of our sensory perception (the reception of external impressions) and simultaneously the source of our sensory illusions.” This refers to the unconscious brain activity in creating a particular “world of images” in poetic speech, a corresponding “mental illusion.” Franko elucidates the mechanism of the power and richness of “dream fantasy,” affirming that “our spiritual life within the boundaries of consciousness consists of two categories of phenomena: (a) impressions – images and their combinations – thought, and (b) affects – feelings – passions”; he explores their symbolism and prophetic potential. Imagination, according to the writer, “was the sovereign mistress of an enormous treasure of impressions and ideas,” while the human psyche “is merely the receptive apparatus.” The concept of the soul is presented as the sum of the “functions of the internal organs,” and “mental life” is based on the manifestations of consciousness associated with its impulses, memory, the “inner self of feeling,” imagination (the capacity to combine and transform images), and will (the ability to realise “our physical or spiritual powers”).

However, in the writer’s view, not all senses are “equally important for the development of our soul,” and even “elementary psychology” differentiates between higher and lower senses – those with specialised, well-developed organs (sight, hearing, taste, smell) and those without (touch). Franko devotes special attention to the emergence of verbal (poetic) meanings based on the actualisation of the laws of association linked to basic human senses. He asserts that there is “least representation of gustatory and olfactory impressions, more of tactile and auditory impressions, and the most of visual impressions,” a claim he substantiates by analysing poetic texts. Notably, employing a comparative method, he demonstrates the specificity of the verbalisation of sensory reactions across cultures: “Oriental peoples, the ancient Egyptians, Jews, Babylonians” are more inclined than Europeans to verbalise smells. In Ukrainian poetry, “such a hypertrophy of the olfactory sense is not encountered.” Like Potebnia, Franko believes that “gustatory

impressions appear far more frequently in our poetry, if only because the abstractions of these impressions in our language and in many others are used to express pleasant and unpleasant feelings in general. 'Sweet,' 'bitter,' 'sour,' 'salty,' 'astringent' possess diverse meanings." He provides compelling poetic illustrations of the modelling of visual images (meanings), which are the most frequent and offer "the richest material for our psychic life" (contrasts of light and darkness, the infinite scale of colours, corresponding colouristic verbal effects).

Worthy of attention is Franko's comparison of poetry as an art form with other forms (music, painting, sculpture). This concerns the high creative function of the "human spirit" and the exceptional power of the "spirit of language," which finds its most vivid expression in poetry. Consequently, we observe the formulation of key postulates in the development of such psycholinguistic theories as the psychology of creativity, associative linguistics, the theory of the conscious and the unconscious, the psychology of perception of poetic art in comparison with other forms of art, the specificity of poetic verbalisation of basic sensory images, and the theory of genius.

Other methodologically significant theories of psycholinguistics, previously prohibited during the post-totalitarian period of its development within Ukrainian linguistics and now revitalised, have been reintroduced into the scientific discourse. These include the postulates of Potebnia, regarded as the founder of the psychological school in Ukrainian linguistics. Notably, Potebnia proposed:

(1) a strong interrelation between psychology and linguistics, encouraging the interpretation of linguistic phenomena through the lens of psychology and vice versa;

(2) the concept of the "spirit of language," which he defined as a complex construct reflecting elements of ethnic psychology, cognitive activity, behaviour, worldview, perception, belief systems, and mythology as expressed in a particular ethno-idiolect. This idea is now being projected onto research concerning cognitive processes of the human psyche, linguistic ethnoconsciousness, and linguistic and cognitive worldviews (Bardina, Zasiiekin, & Kulish);

(3) Potebnia's hypothesis on the divine origin of language, positing that language was initially oriented toward positive and exclusively truthful communication, is also revisited. This notion aligns with contemporary understandings of the human capacity for deception in speech and how language may facilitate distortions of reality. It supports the idea of an identification between word and referent, thus concealing the fact that environmental communication is not always truthful. This has implications for

the study of “special languages,” such as those attributed to angels or the devil (see: Vakulenko, 1999; 2011).

Contemporary psycholinguistics, following Potebnia and Franko, also demonstrates renewed interest in the phenomenon of apperception, i.e. the influence of previous experience on knowledge perception—a concept now developed in linguistic cognitivism and theories of linguistic and cognitive worldviews (see: Isaeva, 2011).

Additionally, Potebnia’s categorical assertion that children should be educated exclusively in their mother tongue remains significant. He argued that denationalisation results in intellectual degradation (Potebnia, 1992). His ideas concerning the roles of the conscious and unconscious in speech continue to evolve, currently explored by scholars such as Batsevyich (2012, 2019) and Bondarenko (2002). The role of experiment in language, extensively analysed by Ovsianko-Kulikovskiy in the wake of Potebnia and Franko, is being actively advanced today by researchers such as Druzhynets (2019), Kovalevska (2014), and Martinek (2021) (see: Papish, 2024a).

Dmytro Ovsianyko-Kulykovskiy, a direct intellectual successor of Potebnia, expanded his teacher’s psycholinguistic ideas by applying them to: (1) the psychology of gifted individuals and the connection between mental processes, artistic vision, and intuition; (2) the psychological nature of the word and the expression of emotion in speech; (3) psychological interpretation of texts and the creative nature of language; (4) associative-apperceptive processes in speech; (5) considerations of normal versus pathological speech, approaching the issue of accentuated writing. The psycholinguistic orientation of his work is evident from his Russian-language publications, such as *On the Significance of Scientific Linguistics for the Psychology of Thought* (1901), *The Psychology of Thought and Feeling: Artistic Creativity. Foundations of Vedaism* (1909), *Introduction to an Unwritten Book on the Psychology of Intellectual Creativity (Scientific-Philosophical and Artistic)* (1909), and *Questions of the Psychology of Creativity: Pushkin, Heine, Goethe, Chekhov* (1909) (see: Papish, 2024a).

Scholars have identified numerous theoretical concepts developed by Ukrainian classics that not only paralleled but at times anticipated those of foreign psycholinguists, though they were often unrecognised due to the constraints of the totalitarian regime. For instance, Ivan Franko’s discussion of “dreamlike visions and hallucinations” in the creative process prefigured Sigmund Freud’s theory of dream interpretation (Papish, 2022, p. 30). Potebnia’s phenomenological psycholinguistic theory preceded the ideas of Heidegger and Merleau-Ponty (Stratan, 1998), and his studies on speech generation and the interrelation of language and thought anticipated those of

many Western European theorists of linguistic consciousness, including Wundt. Later, the ideas of Potebnia and Ovsianyko-Kulykovskyi resonated in the works of Vygotsky, Luria, and Leontyev. Potebnia laid the groundwork for a paradigm in which language is conceived not only as a communicative tool but also as a cognitive instrument intimately connected to cultural and historical experience. His concept of the internal form of the word has proved particularly fruitful, resonating in contemporary linguistics and psycholinguistics with notions such as linguistic representation, gestalt, and worldview. Potebnia thus unified individual-psychological and collective-cultural aspects of language, providing a productive basis for contemporary interdisciplinary research.

Particularly noteworthy for Ukrainian psycholinguistics are the somewhat neglected contributions of Soviet Ukrainian scholar Leonid Bulakhovskyi, a follower of Potebnia who notably received and interpreted his teacher's legacy (see: Bulakhovskyi, 1951; 1953; 1961). Bulakhovskyi elaborated the affinity between linguistics and psychology (in the section "Linguistics and Psychology"), presenting the foundational elements of psycholinguistics. He defined the concept of 'the psychology of language,' advocated for the development of 'psychological semantics,' interpreted the term 'psychology of peoples,' and emphasised the dependence of individual mental acts on those typical of the nation to which the individual belongs (Bulakhovskyi, 1975, pp. 94–96).

He developed a theory of the psychological basis of children's speech, laying the foundations of ontolinguistics (section "The Social Aspect of Child Speech"). He noted that children sometimes introduce words into adult language through playful alterations; highlighted the influence of caregivers' speech on children; observed that most of children's lexicon originates from interjections; and described the active use of reduplication by children (Bulakhovskyi, 1975, pp. 293–295).

He formulated postulates of gender linguistics regarding male and female speech (in the section "Remarks on Women's Speech," he observed that each language contains two psychologically motivated varieties—'female speech' and 'male speech'). Due to women's historically subordinate status, a "secret" language developed among them for communication hidden from men. Female speech, as contrasted with male speech, was expected to be more polite, eschew swearing, employ euphemisms, and observe speech taboos. It was also closely associated with child speech (Bulakhovskyi, 1975, pp. 293–294). These ideas were later interpreted and expanded by Tetiana Kosmeda and her school (Kosmeda, 2008; Kosmeda et al, 2015, pp. 212–218), who asserted that the methodological postulates of gender linguistics as a modern branch of Ukrainian psycholinguistics were originally laid by Bulakhovskyi.

Contemporary gender linguistics in Ukraine distinguishes between feminine and masculine linguistics, identifies primary features of male and female speech, and outlines strategies and tactics of their verbal and nonverbal communication.

This list of unrecognised achievements by Ukrainian scholars during the colonial phase of scientific development could be extended further (see Fig. 1).

Figure 1

The Emergence of Psycholinguistic Ideas in the Works of Franko, Potebnia, Ovsianyko-Kulykovskyi, and Bulakhovskyi



The problem of exploring the relationship between language and psychology, first addressed in the works of Franko, Potebnia, Ovsianyko-Kulykovskyi, and Bulakhovskyi, found further development in a comparatively new field within modern Ukrainian philology – the psycholinguistics of literary texts/discourse. This area was actively advanced by Lysychenko, a prominent representative of the Kharkiv School of Philology. The central idea of her theoretical framework is the psychological determination of literary speech (Lysychenko, 1996; 2001). According to this perspective, an author's linguistic choices are not accidental but conditioned by their individual psychological traits. Consequently, it becomes possible to reconstruct the psychological portrait of a writer through the analysis of linguistic material (taking into account all levels of the language

system and viewed through the prism of stylistic features), as well as on the basis of intertextual evidence (e.g., biography, including psychobiography and contemporary evaluations).

Together with Skorbach, Lysychenko (2001) proposed an original model for analysing literary texts, which was tested using the poetry of Mykhail Semenko and Valerii Polishchuk. This model effectively revealed individual-typological features of the authors' linguistic personalities. Linguistic analysis of the literary texts led to the conclusion that Semenko was an introvert + choleric, whereas Polishchuk was an extrovert + choleric. Lysychenko (2007) also investigated the psychology of text perception by readers, thereby continuing to develop the ideas of Potebnia and Franko regarding textual apperception. She highlighted the crucial role of the interaction between writer, language and reader, which is socio-culturally conditioned.

In postcolonial Ukrainian psycholinguistics, we observe the formation and active development of scholarly schools and research centres whose aims include: (a) disseminating and deepening traditional knowledge – thus actualising the principle of continuity in Ukrainian scholarship, and (b) elaborating and refining innovative theoretical frameworks.

One such example is the school of thought entitled “Polyfunctional Interpretative Linguistic Paradigm: Current Directions”, headed by Professor Kosmeda, the founder of Ukrainian linguoaxiology. This school features explicitly psycholinguistic orientations in its research, including:

1. Psychosemiotics (Kosmeda, Osipova, Piddubna, & Khaliman);
2. Psychological aspects of gender linguistics (Kosmeda, Osipova, Salionovych, & Khaliman);
3. The theory of linguo-psychoaccentuation (Papish);
4. Linguopersonology (Kosmeda, Mykytiuk, Osipova, & Piddubna);
5. Linguistics of emotions (Kosmeda & Slipetska);
6. The theory of the ego-text (I-linguistics) (Kosmeda & Papish);
7. The linguistics of deception, or linguo-mentiology (Kosmeda) and
8. The theory of discursive word as a factor in determining the psychotype of the linguistic personality (Kosmeda & Papish).

The research focus of this school encompasses the linguistic and psychological interpretation of texts/discourses, specific linguistic phenomena, and the phenomenon of collective and individual consciousness, among other topics.

Within the currently prominent cognitive-discursive paradigm, psycholinguistic concepts that were previously stifled under the totalitarian regime have gradually been revived. A pertinent example is the theory of speech influence, interpreted by Olena Selivanova as “a branch of applied linguistics situated at the intersection with communicative linguistics, discourse studies, and psycholinguistics” (Selivanova, 2012, p. 226). In more

recent studies, this approach has increasingly been classified as psycholinguistic in nature. The theory of speech influence has been applied to contexts such as advertising language (Kutuza, 2018; Shcherbak, 2018), education (Myronenko & Puliak, 2022; Nikolaienko, 2009; Palchevskyi, 2005), and, in the context of the Russian–Ukrainian war, the manipulation of consciousness (Pryshchepa, 2017).

Suggestion, recognised as one of the most powerful forms of speech and communicative influence, was discussed by both Potebnia and Franko. This naturally led to the development of suggestive linguistics, aimed at influencing interlocutors through specific linguistic constructions. This direction is being actively developed in Ukraine by scholars of the unique Odesa School of Psycholinguistics, comprising 36 researchers and led by Professor Kovalevska of Odesa I. I. Mechnikov National University. According to the school's research dossier, its primary areas of study include:

1. Suggestive linguistics (Kovalevska);
2. Psycholinguistics and communicative linguistics (Kovalevska);
3. Political linguistics and pragma-linguistics (Kondratenko);
4. Sociolinguistics and linguistic conflict studies (Formanova);
5. Linguopersonology (Romanchenko);
6. Pathogenic political discourse, spin-suggestology, and profiling (Kovalevska-Slavova).

The school's overarching aim is the development of a new theory of verbal and non-verbal suggestion in various types of discourse. Its researchers have proposed a comprehensive set of strategies and tactics to counteract negative influence, contributing to the ecologisation of the information space and the development of programmes in the sphere of Ukraine's information security. Notable publications by members of this school include:

- Communicative Aspects of Neuro-Linguistic Programming (Kovalevska, 2001);
- Communicative Suggestion in Advertising Discourse: A Psycholinguistic Aspect (Kutuza, 2018);
- Ukrainian Spoken Language: Psycho- and Sociophonetic Aspects* (Druzhynets, 2019);
- The Elite Linguistic Personality in the Space of Scientific Discourse: Communicative Aspects (Romanchenko, 2019) and
- The collective monograph *Current Directions in the Study of Verbal Suggestion. The Odesa Linguistic School: Coordinates of Contemporary Research*, edited by Kovalevska (see in detail: Kovalevska, 2014).

Based on the methodological foundations of neuro-linguistic programming, a number of doctoral dissertations by Bronikova, Kyseliova, Anastasiia Kovalevska, Oleksiuk, Petrenko, Stankevych, & Hovorenko have been completed,

“the results of which will prove useful for further development of the theoretical foundations of the theory of speech and communicative influence and other related fields of the humanities” (ibid., p. 116).

The Odesa Linguistic School is also represented by Professor Bardina, who has explored English anthroponyms within the psycholinguistic epistemological space (Bardina, 2016) and addressed the issue of linguistic harmonisation of consciousness (Bardina, 1997).

The expansion of the research domain is also reflected in contemporary associative lexicography, particularly in the compilation of associative dictionaries based on psychological experiments conducted with respondent groups. Researchers from Odesa I. I. Mechnikov National University have compiled *The Associative Dictionary of Ukrainian Advertising Vocabulary* compiled by Kovalevska and colleagues (Kovalevska, Sologub, & Stavchenko, 2001) and *The Concise Associative Dictionary of Advertising Slogans* compiled by Kutuza and Kovalevska (2001), which have no analogues in Ukraine and represent a significant contribution to the theory of speech influence. These dictionaries enable the identification of priority groups of appellative and onomastic vocabulary in the process of their perception (specifically in response to advertising messages) and contribute to uncovering common mental orientations in decoding processes within both rhetorical and interindividual communication. This, in turn, facilitates the modelling of appropriately suggestively marked discourses and adequate, harmonious communicative contexts (Kovalevska, 2014, p. 113).

A similar dictionary was later compiled by Karpenko (2006). Though modest in volume, containing just 60 entries, each headed by a proper noun stimulus, the dictionary records the reactions of 100 recipients, listed by frequency.

The tradition of compiling such dictionaries has been continued by Pasterchuk (2019), who created *The Associative Dictionary of Personal Proper Names*. This Associative Dictionary is distinctive in that it pertains not only to the theory and practice of onomastics, but also to linguocognitology, psycholinguistics, and sociolinguistics. Its subject matter comprises “associations with personal proper names that arise in the linguistic consciousness of members of a specific linguoculture and corresponding linguistic community, gathered through the experimental method of questionnaire surveys” (Kosmeda, 2020, p. 180).

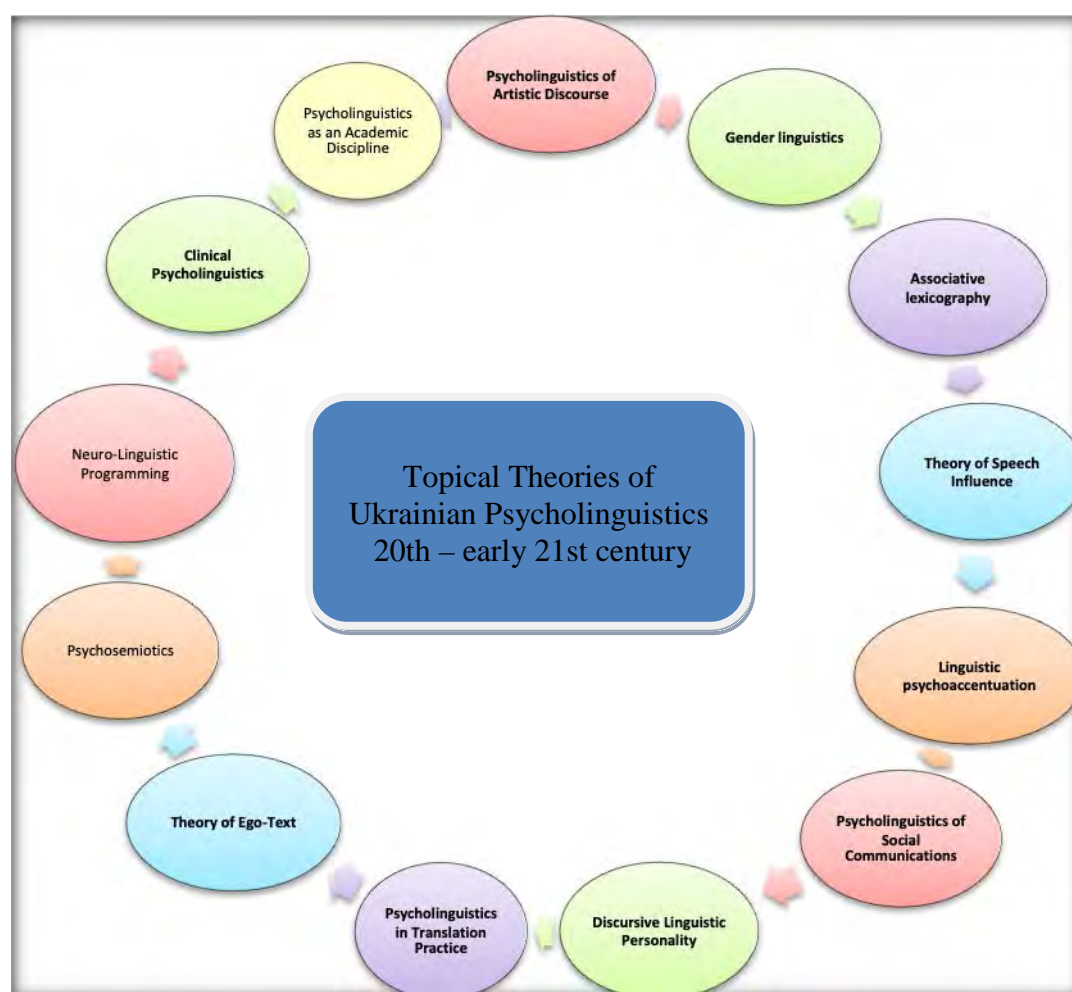
However, the origins of Ukrainian associative lexicography are most often linked to the work of Butenko (1979), author of *The Dictionary of Associative Norms of the Ukrainian Language* – one of the earliest dictionaries of its kind globally – and *The Dictionary of Associative Modifiers of Nouns in the Ukrainian Language* (Butenko, 1989). Also well known are the works of Martinek (2007),

namely the two-volume *Ukrainian Associative Dictionary*, and volumes 3–4 of *The Ukrainian Associative Dictionary*, co-compiled by Martinek and Mitkov (2021), representing the Lviv Psycholinguistic Centre (for further details, see: Papish, 2024b).

A summary of contemporary theories in Ukrainian psycholinguistics of the 20th and early 21st centuries is presented in Fig. 2.

Figure 2

Contemporary Ukrainian Psycholinguistics: Continuity of Tradition and Innovation



In addition to the aforementioned Ukrainian psycholinguistic schools, the national and cultural identity of domestic psycholinguistics is also represented by several scholarly centres, classified according to territorial principles: Vinnytsia (Donetsk School: Zahnitko, & Koval), Kamianets-Podilskyi (Marchuk & Rarytskyi), Kyiv (Bilodid, Bondarenko, Kulish, Kuranova, Sakharova, Terekhova, & Kholod), Lviv (Batsevysh, Butenko, Kosmeda, Martynenko, &

Mitkov), Lutsk (Zasiekina & Zasiakin), and Pereiaslav (Kalmykova, Karpiuk, Navalna, Kharchenko). Each of these psycholinguistic centres comprises research collectives focused on particular aspects of psycholinguistics and the development of psycholinguistics teaching materials for Ukrainian universities. To date, only the activity of the Lviv psycholinguistic centre has been thoroughly documented (see: Papish, 2024b).

Arguably the most influential centre of psycholinguistics has emerged in Pereiaslav, where the All-Ukrainian Association of Psycholinguists was established, led by Kalmykova. In 2006, this centre founded the psycholinguistic research school “The Dynamics of Psycholinguistic and Linguodidactic Issues in the Context of National and Global Scientific Development.” This school coordinates the publication and reissue of collective and individual monographs, textbooks, and teaching manuals under the auspices of the Ministry of Education and Science of Ukraine. It also initiated the creation of the new academic specialisation 19.00.12 – “Psycholinguistics.” One of the school’s major contributions is the student textbook “Psychology of Speech and Psycholinguistics” authored by Kalmykova (2008). Annual psycholinguistic conferences are held in Pereiaslav, alongside the publication of the journal “Psycholinguistics”, which addresses theoretical and applied issues in the field. Published in both Ukrainian and English since 2008, the journal holds Category “A” status (Scopus indexed), with English-language contributions increasingly prevalent in recent issues.

Also noteworthy is the Lutsk psycholinguistic centre, active since 2014. Key figures include Professors Zasiekina and Zasiakin, whose joint work primarily concerns the conceptualisation of psycholinguistics as an academic discipline, early ontogenesis, and the current state of the field. These scholars founded *East European Journal of Psycholinguistics* (Editor-in-Chief: Serhii Zasiakin), a Category A Scopus-indexed journal. Its thematic focus includes bilingualism, clinical psycholinguistics, cognitive linguistics, cognitive psychology, discourse analysis, forensic linguistics, acquisition of first and second foreign languages, neurolinguistics, and the psychology of language and speech, as well as translation studies. It is important to note the crucial role of psycholinguistics in translation practice, where the accurate transmission of not only semantic content but also emotional-pragmatic load is essential. From the perspective of contemporary neuroscience, Zasiakin (2012) has explored psycholinguistic categories of literary translation, as reflected in his monograph “Psycholinguistic Universals in the Translation of Literary Text. Zasiekina, a member of the International Society for Applied Psycholinguistics (ISAPL) and founder of the field of clinical psycholinguistics, researches normal and pathological speech (Zasiekina, 2012, 2014, 2018).

It is also important to highlight the research potential of studying the literary texts of Ukrainian classical authors, many of which may be viewed as a kind of "psycholinguistic laboratory." Ukrainian classical literature offers remarkable examples of character portrayals with clinically suggestive speech disturbances. For example, Miriam in Lesia Ukrainka's drama *Woman Possessed* exhibits impulsive speech akin to a trance-like state or mental instability (manifestations of glossolalia). Counsellor Stalskyi in Franko's novel *The Cross-Paths* displays chaotic, jargon-laden speech, filled with metaphors and clichés (indicating verbal self-presentation disorder and psychopathic traits). The protagonist in Khvylovyi's *I (Romance)* experiences inner voices, split speech, internal dialogue, and referential disorientation (suggesting schizoid or dissociative symptoms); the tsar in Shevchenko's satirical poem *The Dream* speaks in confused, fantastical imagery (a form of speech desynchronisation). These episodes are not diagnostic in nature but symbolic and psychological. This area remains underexplored in Ukrainian psycholinguistics, yet it offers rich potential. Its development could contribute to the popularisation of Ukrainian literature and reinforce the idea that the classics of Ukrainian literature have produced exemplary works of psychological prose.

Some notable contemporary scholars work on psycholinguistic issues outside the aforementioned schools and centres. For instance, the psycholinguistics of social communication is represented by Oleksandr Kholod, Co-Chair of the Ukrainian Association of Psycholinguists and Professor at Vasyl Stefanyk Precarpathian National University. Kholod investigates the psychological markers of societal inmutation and has developed a theoretical model for the psycholinguistic media toolkit used to shape political image. He also initiated the founding of the Ukrainian Association of Psycholinguists and its official journal "Psycholinguistics", editing its first three issues. For further reference, see Kholod's numerous works (Kholod, 2004, 2006, 2008, 2009, 2010–2012, 2011, 2013). Under Kholod's leadership, a research school has formed, specialising in applied socio-communicative technologies, the history and theory of social communications, psycholinguistics, and sociolinguistics. Key outputs of this school include the collective monograph "Social Communications: Research Results" (five volumes, 2011–2015); the collective monograph "Media Transformations" (2014–2015); international symposia "The World of Social Communications" (2011–2015, Kyiv); and international research conferences "Applied Socio-Communicative Technologies" (2011–2014, Kyiv).

Psycholinguistics in Ukraine is also institutionalised as a university discipline, as demonstrated by such teaching manuals as *Introduction to*

Psycholinguistics by Zasiiekina and Zasiiekin (2002) published in Ostroh, and *Fundamentals of Psycholinguistics* by Kuranova (2012) published in Kyiv. These and other resources have been critically analysed and reviewed by Kosmeda and Papish (see: Kosmeda & Papish, 2024; Papish, 2022).

Conclusions

Ukrainian psycholinguistics has deep-rooted traditions that were partially preserved even during the totalitarian period when Ukraine was part of first the Russian Empire and then the Soviet Union. The achievements of Ukrainian scholars in this period were either suppressed and forgotten (e.g., the work of Franko) or appropriated by Russian academics (e.g., the concepts of Potebnia, Ovsianyko-Kulykovskyi, among others). As a result, the global academic community developed the mistaken impression that psycholinguistics in Ukraine had no coherent development and lacked any continuous tradition. Today, this misconception is being challenged, with growing evidence pointing to a national tradition of psycholinguistic inquiry.

Modern Ukrainian national psycholinguistics is experiencing dynamic growth. Research efforts are focused both on the reclamation of Ukraine's intellectual heritage and the development of new directions and theoretical frameworks. The high degree of academic freedom achieved after Ukraine gained independence in 1991 has allowed for a reevaluation of the classical legacy and its further development. Special attention is paid to the exploration of the unique features of the national speaker, who embodies the "spirit" of the Ukrainian language and contributes to the anthropologisation of linguistic consciousness.

The field of 'psycholinguistics of literary discourse', initiated by Lysychenko and her school, continues to evolve. Research has also expanded into the psychology of language, linguopersonology, linguoaxiology, linguomentiology, and gender linguistics. Scholars within Kosmeda's school are increasingly investigating personal discourse genres, such as diaries, memoirs, letters, and autobiographies, while Kholod's school focuses on the psycholinguistics of social communication. New paradigms are constantly emerging, bringing attention to previously marginalised topics such as suggestive linguistics and pathogenic discourse (Kovalevska's school).

Within regional centres (Kharkiv, Lviv, Odesa, Lutsk, Pereiaslav), diverse scholarly intentions can be observed. Despite methodological differences, these groups are united by a shared scientific mission: the advancement of key issues in Ukrainian psycholinguistics in connection with translation studies, lexicography, linguodidactics, and communication. Ukrainian associative

lexicography remains unparalleled globally, having produced pioneering lexicographic innovations. Contemporary psycholinguistic research by Ukrainian scholars constitutes a significant contribution to national science. Nonetheless, some areas – such as psychosociology, which explores the intersection of social psychology and linguistics – remain underdeveloped. Experimental methodologies are still in the formative stage, and Ukrainian psycholinguistic terminology awaits systematic clarification.

The future of this field lies in expanding Ukrainian linguistic historiography by establishing a dedicated subdiscipline: the national historiography of psycholinguistic theories. This includes the formation of a standalone section within the academic discipline of psycholinguistics entitled “History of Ukrainian Psycholinguistics”, aiming to comprehensively document the contributions of individual scholars within their historical, ideological, and disciplinary contexts. There is also a need to develop traditional historiographic genres applied to psycholinguistics: bibliographies of major scholars and schools, indexes of works, bibliographic databases of psycholinguistic journals, and biobibliographic directories and anthologies.

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On the Turkish transnumeral as an aspect effectuation device

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Abstract. This paper deals with the phenomenon of the Turkish transnumeral and its interplay with aspect. The transnumeral is a nominal/noun-phrase form interpreted as either singular or plural – i.e., numerically ambivalent and thus different from the standard singular-plural numerical form. Despite the high prevalence of transnumerality in Turkish, its grammatical and semantic description in the literature lags behind the need for a more thorough explanation. The transnumeral form is regarded, on the one hand, as an element which, in its interaction with noun phrases and other sentence components, tends to explicate a certain value in terms of the compositional aspect theory and, on the other hand, as a phenomenon in need of an analysis not paradigmatically vis-à-vis the standard numerical nominal form but in its features and impact at the sentence level. The analyses carried out of the different types of uses of transnumerals in different sentences – as subjects, direct and indirect objects and as certain types of adverbials (instrumental ones)- show that transnumerals cannot be regarded as solely related to the effectuation of imperfectivity, as conjectured by some authors. Transnumerality must necessarily also be interpreted in terms of cognitive processes taking place in the human brain, reflecting the need for language economy and precision. However, the paper shows that, as a general rule, while cognitive processes underlie the effectuation of both number and aspectual values, the system of distribution of the devices responsible for the realization of these values in grammars of different languages does not directly result from cognitive processes. Rather, it is the work of the collective human brain in the construction of language-specific paradigms, such as the singular-plural distinction – as in English, pure transnumerality – as in Chinese, or hybrid systems with simultaneously a singular-plural contrast and transnumerality – as in Turkish.

Keywords: *transnumerality, the Turkish transnumeral, category of number, noun morphology, grammatical semantics, compositional aspect.*

Куцарова Сема. Турецкий транснумерал як засіб вираження аспекту.

Анотація. У цій статті авторка аналізує явище транснумеральності в турецькій мові та його взаємодію з категорією аспекту. Транснумеральна форма — це іменна фраза, яку мовці інтерпретують і у формі однини, і множини, тобто вона має числову амбівалентність і різниться від стандартного розмежування "однина-множина". Хоча

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транснумеральність широко представлена в турецькій мові, більшість дослідників ще не надали їй достатньо чіткого граматичного й семантичного опису. Авторка тлумачить транснумеральну форму, з одного боку, як елемент, що у взаємодії з іменними фразами та іншими компонентами речення дає змогу виявити певне значення в межах композиційної теорії аспекту, а з іншого – як явище, що потребує аналізу на рівні речення, а не лише в межах парадигматичного порівняння зі стандартною числовою формою. У межах дослідження авторка аналізує різні типи вживання транснумералів у ролі підмета, прямих і непрямих додатків, а також обставин (зокрема, інструментальних). Ці приклади показують, що транснумерали не зводяться лише до засобів реалізації імперфективності, як це припускають деякі дослідники. Підкреслено, що для пояснення транснумеральності необхідно враховувати когнітивні процеси, які тривають у людському мозку, відповідаючи за прагнення до економності та точності мовного вираження. Водночас авторка стверджує, що хоча когнітивні процеси лежать в основі формування числових та аспектуальних значень, граматичні системи мов розподіляють засоби їх вираження не прямо, відповідно до когніції. Натомість колективна мовна свідомість формує мовно-специфічні парадигми, наприклад, протиставлення "однина-множина" (як в англійській мові), чисту транснумеральність (як у китайській) або гібридні системи, що поєднують обидві ознаки (як у турецькій).

Ключові слова: транснумеральність, турецька транснумеральність, категорія числа, морфологія іменника, граматична семантика, композиційний аспект.

Introduction

On the Phenomenon of Transnumerality, the Transnumeral Itself and the Effectuation of Compositional Aspect in Turkish

The idea for an investigation of transnumerality and the Turkish transnumeral form arose from the results in a recent publication in which a description of the devices in Modern Turkish was proposed for the effectuation of compositional aspect (CA) in its two instantiations: perfectivity, imperfectivity (Kutsarova, 2025). It is common knowledge that transnumerality is a phenomenon observed in many languages, see, e.g., Acquaviva (2005; 2008), Manzini (2020) in different forms and in various degrees of prevalence of use. It is especially characteristic of Modern Turkish and of many other Turkic languages.

I take aspect across languages to be represented in two archetypes – verbal aspect (VA) and CA (see Kabakčiev, 2000, pp. 3–6; 2019; 2023). VA has been known for a long time from the study of Slavic languages where, intriguingly, it resides in the semantics of verbs as lexical entries but is grammaticalized. Almost every separate verbal lexeme in the vocabularies of these languages is recognized as either perfective or imperfective, with the exception of biaspectual verbs, which are aspectually ambivalent. The percentage of biaspectual verbs in the different Slavic languages varies around 10% of all

verbs. CA comes in different disguises in the languages around the world from the formal point of its effectuation, though not from the semantic one. Aspect can be realized through the regular pattern of articles: definite, indefinite and zero, as known in English. In most, or even all, other Germanic and Romance languages it appears in a similar way. In languages outside these two groups it is realized differently, for example, through the case system, where two cases, the nominative and the accusative, effectuate perfectivity, and imperfectivity is effectuated through the partitive. CA is a very important sentence-level phenomenon from the theoretical linguistic point of view. It is a cross-language one, obviously universal and extremely intricate. It was discovered by Henk Verkuyl in his 1971 dissertation (Verkuyl, 1972). The discovery gave rise to the establishment of the theory of CA, whereby CA itself is realized through Verkuyl's two aspectual schemata, the perfective and the imperfective one (see it described in Verkuyl, 1993; Kabakčiev, 2019, pp. 202–207, etc.).¹

A General Preliminary Description of the Turkish Transnumeral

Turkish features this specific nominal form, also known as noun/NP form or declension form, different from the forms of nouns/NPs in English and most other European languages: Germanic, Romance, Slavic. While the relevant standard nominal forms in these languages are based on the singularity-plurality distinction, the Turkish nominal form at issue is numerically neutral and used to signify *either* singularity or plurality. As in other specific areas in the grammar of Modern Turkish and similar languages, the literature does not offer a standardized terminology and abounds in names to refer to the phenomenon: “number-neutral”, “general number”, “bare singular”, “transnumeral” (as regards Turkish see Schroeder, 1999; Corbett, 2000; Göksel & Kerslake, 2005; Acquaviva, 2005; 2008; Görgülü, 2018; Sağ, 2022), or “low number” (as regards Italian – *-a* plurals) and Albanian (neuters), see Manzini (2020). To me, “transnumeral” seems to be the most appropriate term and will be used in the paper. Here are two typical examples of sentences with transnumerals:

- (1) a. Kedi köpekten daha nankör
Cat^{TRANSNUM} dog^{TRANSNUM} more ungrateful
'The cat is more ungrateful than the dog'
- b. Pazardan yumurta aldım
Market egg^{TRANSNUM} bought
'I bought eggs from the market'

¹ The initial theoretical model of CA was gradually developed further by Verkuyl and some other aspectologists (Verkuyl, 1972; 1989; 1993, Kabakčiev, 1984; 2000; 2019, Bulatović, 2013; 2020; 2022).

Sentence (1a) features two nouns/NPs, *kedî* ‘cat’ and *köpek* ‘dog’, which look like standard ones in the singular. But they are not: they are transnumerals, encoding plurality and/or genericity of the entities denoted. Here the role of *kedî* is more important, as it is the subject. Such uses of transnumerals are highly characteristic of Modern Turkish. In the subject position, the transnumeral often signifies genericity. One might reason that it would also be natural for *kedî* and *köpek* to acquire a plural affix and for the sentence to be structured in this way: *Kediler köpeklerden daha nankör* ‘Cats are more ungrateful than dogs’. In any case, (1a) is to be rendered in English either as ‘The cat is more ungrateful than the dog’ or ‘Cats are more ungrateful than dogs’.² In (1b), the transnumeral *yumurta* is a direct object and in this context it tends to signify plurality. The capacity of the transnumeral to encode plurality plays an important role in the realization of aspect meanings but it happens not by itself or on the spur of the moment, it is the result of a complex interaction with other sentence elements, see below. The major aim of the examples (1a) and (1b) here is to illustrate the typical uses of transnumerals: as subjects (1a) and as direct objects (1b).

Transnumerality as a Cross-Language Phenomenon; Transnumerals in Languages Other than Turkish in the Adjacent Area

This section, reviewing some areal characteristics of transnumerality, will show that although it is a very specific phenomenon characteristic of Modern Turkish, is far from being an exotic one, because it exists in the region comprising Eastern Europe, the Balkans, Asia Minor.

Are there transnumerals in Greek?

As an important language Greek ought to be the first one to check out in the surrounding area when looking for transnumerals. But, according to personal communication with linguists who are native speakers of Greek (Vasilis Symeonidis, Desislava Dimitrova), Greek does not seem to feature transnumerals. Let us check out other languages nearby.

Transnumerality in Georgian

Georgian is a language with no genealogical links to other languages in the world, yet it is one that has been in contact with Turkish for a long time. Transnumerality is highly prevalent in Georgian. Here is an example (Shabashvili & Kabakčiev, 2021, p. 379), in which *bevri vashli* is literally ‘many apple’:

² The transnumeral as subject will be analyzed in further detail below.

- (2) Chemma k^halishvilma_{ERG} gushin bevri vashlin_{NOM} shech'ama_{PFVAOR3SG}
 My daughter yesterday many apple_{TRANSNUM} ate
 'My daughter ate many apples yesterday'

Similarly to Bulgarian (see below), the Georgian transnumeral could hardly be conjectured to serve the effectuation of aspect, because Georgian is a VA language (Shabashvili & Kabakčiev, 2021), having an aspect system similar to the Slavic one where aspect is directly effectuated by verbs and it does not, in principle, need assistance from nominals.

The transnumeral in Crimean Tatar, a Turkic language/dialect

Transnumerality is a common phenomenon in Crimean Tatar (personal communication with Oksana Tyschenko-Monastyrskaya, researcher of Crimean Tatar at the Kyiv Institute of Linguistics). Words or phrases referring to number such as *çoq* 'a lot', *az* and *biraz* '(a) little, (a) few', *bir qaç* 'some' do not require a plural marker in Crimean Tatar: cf. *biraz qartop* 'some potatoes', *bir qaç yıl* '(a) few years', *az adam* '(a) few people', *çoq student* 'many students'. The same is valid for quantifiers, as in *eki dost* '(literally) two friend'. Phrases such as *eki dostlar* 'two friends' with a plural suffix *-lar*, are non-grammatical in Crimean Tatar – but they are encountered in the colloquial register, due to influence from Ukrainian and Russian. A possible role of transnumerals for the effectuation of aspect (as in Turkish, see below) could be conjectured for Crimean Tatar – subject to future research.

Transnumerality in Albanian

Albanian is an Indo-European language in the Balkansprachbund similar in its grammatical structure to the Romance languages and transnumerality exists in it. Albanian is known to have been influenced by Turkish, though predominantly in the lexical domain. Sentence (3a) below is from the Internet. The phrase *mace e qen* '(literally) cat and dog' means 'cats and dogs', i.e., these two nominals are transnumerals. However, grammars and specialists in Albanian tend to interpret such nominals as standard ones, insisting that these are forms coinciding for singular and plural (personal communication with Hysnie Haxhillari and Ekaterina Tarpomanova):

- (3) a. Sa ka si kjo sot ne kete Shqiperine tone, ku ca s'kanë bukë me ngrënë e ca s'kane ku i harxhojne parate, por ushqejne mac_{TRANSNUM} e qen_{TRANSNUM}
 'How many people are like this today in our Albania, where some don't have bread to eat in the morning and some have nowhere to spend their money, so feed cats and dogs [literally feed cat and dog]'

- b. Fëmija ushqeun mace
 The kid fed cat^{TRANSNUM}
 ‘The kid fed cats’

Apart from that, Haxhillari, who recently described Albanian as a CA language – for the first time in linguistics, lists sentence (3b) above as imperfective with the object-NP *mace* ‘cat’ in it (Haxhillari, 2024, pp. 334). As the meaning of (3b) is ‘the kid fed cats’ (not one cat), *mace* ‘cat’ is obviously a transnumeral. It resembles English *cattle* as in *The kid fed cattle*³ – an imperfective sentence with a nonbounded object-NP.

A more precise analysis of Albanian transnumerality and its relation to aspect – which seems highly probable, is to be done by specialists in Albanian.

Transnumerality in Bulgarian

Vestiges of a phenomenon similar or analogous to Turkish transnumerality are observed in Bulgarian, an Indo-European language (unlike Turkish) in the Balkansprachbund. Bulgarian has been in contact with Turkish for many centuries and still is. For this reason, what is called a Bulgarian transnumeral here is, in my view as native speaker of both languages, clearly the result of contact, Turkish-Bulgarian influence.

Listed below are three typical examples with transnumerals in Bulgarian. Sentence (4a) can be said by someone who saw many cat prints in the snow but does not use the standard plural form. In (4b), conversely, the standard plural form is used. Sentence (4a) is produced when an observer/speaker sees many cat prints on the snow. Why not use (4b) here, a perfect sentence with the plural form *kotki* ‘cats’? Because, actually, the real-life possibilities are two: (i) there was only one cat in the snow but it left many paw prints; (ii) there were many cats on the snow leaving traces. If (4b) is produced – with the plural *kotki* ‘cats’, then it is *only* the case that many cats passed. In (4a) it is different: the observer/speaker does not know whether only one cat or many cats passed – and uses, therefore, the ambivalent form. Thus the use of a transnumeral, despite its idiosyncrasy, turns out to reflect in a more precise way the subtleness of situations in reality as perceived by an observer/speaker. Compare also Bulgarian (4c), a very popular jokular expression with two transnumerals – meaning that there are many people who love to boss around and few people willing to work hard. As for the observations about (4a) below, they are also valid for Turkish – because Bulgarian (4a) directly translates into Turkish (4d), see analysis further below:

³ Cf. *The kid fed the cow*, a perfective sentence (see below).

- (4) a. Mnogo kotka e minala ot tuk
 Many cat^{TRANSNUM} has passed through here
 ‘Many cats have passed through here’
- b. Mnogo kotki sa minali ot tuk
 Many cats have passed through here
 ‘Many cats have passed through here’
- c. Mnogo vozhd, malko indianets
 Many chief^{TRANSNUM} few Indian^{TRANSNUM}
 ‘Quite a few chief, too few Indian’
- d. Buradan çok kedi^{TRANSNUM} geçti
 From here many cat(s) passed
 ‘Many cats have passed through here’

Finally, it is worth emphasizing that although the use of transnumerals in Bulgarian in sentences such as (4a) and (4c) is rare, restricted to the colloquial register and has obviously arisen from contact with Turkish, it does not strike Bulgarian speakers as some foreign or strange jargon. Nevertheless, it is also logical to argue that the existence of transnumerals in Bulgarian could hardly have arisen due to a necessity to assist the effectuation of aspectual values – because Bulgarian is a VA language with aspectual values easily realized through the verb system.

To sum up from the geographical point of view, the existence of transnumerality in three Balkan languages – Turkish, Albanian, Bulgarian, allows regarding it not simply as a Balkansprachbund feature but as a major one. Its inclusion in the list of Balkansprachbund phenomena appears necessary,⁴ and future research into it could prove promising for revealing the *raison d’être* of transnumerality across languages.

Method

Aims of the Investigation

This investigation of Turkish transnumerality uses a mixture of methods: (i) analysis of Turkish data – the morphology and semantics of Turkish transnumerals; (ii) comparisons in cross-language terms of data from other languages (including genealogically different) concerning the existence or absence in them of transnumerals; (iii) use of English and partly Bulgarian as metalanguages for understanding the *raison d’être* of transnumerality; (iv) analysis of the possible aspectual function of the Turkish transnumeral, following the theory of compositional aspect as represented in Verkuyl (1972; 1993; 2022), Kabakčiev (1984; 2000; 2019), Bulatović (2013; 2020; 2022);

⁴ This has hardly been the case so far, to the best of my knowledge as author.

(v) employment of a deductive approach to the Turkish data, best described in Dimitrova (2021) – which initially formulates universal features that are supposed to be present in a particular language, and a search for them is then carried out in the relevant language. This approach is also good for the Turkish data. In the opposite approach, inductive, typical of mainstream grammars and grammatical writings, formal devices in a certain language are found and listed first and then attempts are made to discover their functions; (vi) finally, the transnumerality phenomenon must also be analyzed through the prism of psycholinguistics, whereby questions arise and attempts to answer them are made concerning the transcoding of what is perceived by the speaker as objective reality and the mechanism generated in people's heads governing the encoding of number.

Of course, the major aim of this paper is a little different, namely, to investigate and try to foster a better understanding of the specificity of the Turkish transnumeral in the light of the CA theory, as well as to reveal, as much as possible, the general mechanism of its relationship with aspect. This major aim is also related to the circumstance that there exist certain publications, albeit rare (Sağ, 2022, p. 754), which assert that transnumerality is in a direct relationship not simply with aspect in general, but with imperfectivity in particular. This work will try to offer a preliminary answer to the question whether transnumerals generally function as aspectual devices and whether they must be solely associated with the effectuation of imperfectivity.

Transnumerality Results from Man's Cognitive Apparatus; But Are Grammatical Differences Between Languages Explainable Through Man's Cognitive Apparatus Only?

Objective reality cannot be said to comprise single and multiple entities. This is a contrast generated by man's cognitive apparatus, the result of man's inborn capacity to differentiate between one thing and many things. As argued for Bulgarian by Stoyanova (2021, p. 278), the cognitive basis of the category of number in nominals is the contrast between singularity and plurality – which is standardly formally marked, morphologically. Within the singular-plural contrast in languages like English, Langacker (2008, p. 105) also describes man's capacity to “manipulate a group as a unitary entity for higher-order cognitive purposes”. He calls this reification. But the mechanism of realizing the singular-plural contrast is represented differently in the different languages, and these fall roughly into three types: (i) “purely transnumeral” (of the Chinese type), where number is not at all grammatically realized in nominals; (ii) hybrid (as in Turkish and genealogically related languages) where grammatical transnumerality co-exists with nominal forms for singular

and plural; (iii) languages of the European type like English (Germanic, Romance) and the Slavic languages, where there is no transnumerality of the Chinese type or hybrid transnumerality of the Turkish type.

Here comes a point where some reasoning is necessary about the difference that exists between man's cognitive apparatus as such (explained by Langacker, 2008), and the different ways languages are architected, otherwise based on exactly the same cognitive apparatus, man's. Recall the situation in Bulgarian sentences such as (4a) and (4b) above in which a transnumeral is used in (4a) and a standard plural nominal in (4b) to realize two different real-life situations. The fact that transnumerality exists in a language, Turkish in the present case under study, which, apart from transnumerals, also has full paradigms of standard nominal forms carrying the singularity-plurality contrast, calls for an explanation. Why must two different systems of nominal forms for encoding number exist in one and the same language?⁵ Is this not a violation of the general principle for language economy, as described, e.g., in Symeonidis (2020)? A more accurate scrutiny of the semantic and pragmatic constitution of Bulgarian sentences such as (4a), (4b) and (4d) above would tend to interpret the employment of two separate paradigms for encoding number as an overkill. It is effectuated in a paradoxical breach of the morphologically realized singularity of the relevant NP referent – with a result in which two diverging complex situations arise, and these have to be processed accordingly in the minds of the observer-speaker and the hearer.

A long time ago, Galton (1967, p. 98–99) insightfully noted that grammatical categories and grammemes in a language are not to be regarded as *membra dissecta*, because they, he insisted – using a specific phrase, *hang together*. Using Galton's conception of grammatical entities hanging together, Dimitrova et al. (2025) argue that in Greek and in Bulgarian it is the definite article and the imperfect as grammemes that hang together (i.e., are interdependent) and, furthermore, the aorist arises as a by-product of the interdependence. Another case of hanging together of grammemes is that between preterits (aorists and imperfects) and the perfect. These three grammemes are found in each of the following three languages – Greek, Bulgarian, Georgian – despite their different genealogies. Similarly, Kabakčiev's (2023) description of the use of aorist and imperfect participles with the Bulgarian perfect grammeme shows that these two participles hang together. If the perfect grammeme can have an aorist participle, it must also have an imperfect participle, so that a distinction can be made between situations that are temporally non-bounded (when using an imperfect participle) and temporally bounded with a natural telos reached (when using a perfective aorist participle), and temporally bounded with no natural telos reached (when

⁵ Valid for Turkish in the examples above and not so much for Bulgarian – where transnumerality is rare.

using an imperfective aorist participle). Thus Galton's principle of *hanging together* can be said to be valid also for the Turkish system of transnumerality in the sense that transnumerals exist alongside standard singular-plural forms. This means that obviously the language system relies on both forms for its functionality.

To sum up, on the one hand, future research would be necessary to further pinpoint the reasons for the need of both systems in Turkish simultaneously: transnumerals *and* standard singular-plural forms. On the other hand, importantly, the analysis shows that transnumerality is not simply and always *a result of the workings of man's cognitive apparatus*. This apparatus produces certain fundamental rules and regularities. But the final result of its work also crucially depends on the way the collective human brain "has decided to distribute" the final parameters of the grammatical entities at issue in the relevant language(s). As already shown, a certain language (English) may have a "standard" nominal system of singularity-plurality. Another (Chinese) may totally lack such a system. A third, Turkish, may have a hybrid system embracing both a "standard" nominal system of singularity-plurality *and* a transnumeral system, with nominals unmarked for the singular-plural contrast.

A More Detailed Description of the Turkish Transnumeral

One of the problems in understanding the Turkish transnumeral is that in terms of the singularity-plurality dichotomy this grammatical entity can hardly be said to have its own representation – formal, morphological, as does the numerical form in many (actually in most) other European languages. The standard numerical form in these languages is: singular and plural forms (singulars, plurals). In English, the standard dichotomy is neatly morphologically represented: the singular by a zero marker – *book*; plurals are marked with a special post-positioned morpheme, and in the enormous majority of cases it is *-s* (*books*). In Turkish also, nouns are similarly marked for singularity and plurality, generally in the same way as in English, with a zero morpheme for singular and an affix for the plural: *kedî* [singular] 'cat', *kediler* [plural] 'cats', *araba* [singular] 'car', *arabalar* [plural] 'cars'. But this picture of nominal forms for number in Turkish must be complemented by the system of transnumerality.

It will be seen below that the definiteness-indefiniteness distinction in the article system of English also touches upon the phenomenon of transnumerality. It is well covered in mainstream grammars and other grammatical writings on English and similar languages in general. Forms such as *the cat* and *the cats* – with count nouns, and *the sand*, *the water* – with non-count nouns, are called definite. Conversely, forms such as *a cat*, *cats* and *sand*, with either an indefinite article or a zero article, are called indefinite. But there

is also a distinction between boundedness and nonboundedness, and in the enormous majority of cases it is conceptualized “in general spatial terms” (according to all mainstream grammatical descriptions). It is effectuated through the use of the articles *the* and *a/an* versus the non-use of articles (use of a zero article/a bare NP); compare *a cat*, *the cat*, *the cats*, *the sand* and *the water* versus *cats*, *water*. However, bare NP forms such as *sand* and *water*, which signify non-boundedness, receive much less attention in the literature. As argued by Bulatović (2013; 2020; 2022), grammatical writings on English data are actually poor and inadequate in the descriptions of the difference between boundedness and nonboundedness.

The problem now is that the two distinctions definiteness-indefiniteness and boundedness-nonboundedness cannot be described in Turkish in the same manner as it is done in English – or in a similar generalized manner. The main reason is that a formal definiteness-indefiniteness contrast in Turkish is observed in a single case only: in the direct (syntactic) object, where definiteness is morphologically marked through the accusative case and indefiniteness through the non-use of the accusative case (i.e., the sometimes so-called “general case marking”). Furthermore, indefiniteness, i.e., lack of definiteness, in English does not exactly equal nonboundedness. This is because if non-count nouns with no definite article (*sand*, *water*) explicate nonboundedness, count nouns with no definite article (*cat*, *book*) do not follow suit, they do not (standardly) explicate nonboundedness. They are considered to be in need of an indefinite article – and when they acquire it, it makes them bounded. As already shown and as will also be seen below, this regularity in English is not valid for Turkish. And it is not observed in Turkish also because of (perhaps mainly and precisely) the phenomenon of transnumerality.

In Kutsarova (2025, pp. 65–66) I argued that in Turkish sentences such as (5a), demonstrating the use of a transnumeral, for the NP *keci* ‘cat’ to be recognized as non-quantified, nonbounded and corresponding to English *cats*, this form is stripped of the accusative marker – which effectuates definiteness and hence boundedness. The NP *keci* acquires a special form, unspecified for number and ambivalent between singular and plural, and *is not* placed in initial sentence position, where it might perhaps be recognized as definite, (i.e., as if with a definite article) – which in turn, would probably lead to the explication of perfectivity, in accordance with Verkuyl’s perfective schema.

- (5) a. Çocuk keci besledi⁶ [IMPERFECTIVE]
 Kid_{NOM} cat_{TRANSNUM} fed

⁶ Turkish verb forms that could be thought of as coming closest to perfectivity are the preterits *-DI* and *-mİş*. But these certainly **do not express perfectivity**. In my understanding (Kutsarova, 2025), *-DI* and *-mİş* forms are **aspectually unmarked**, they **only allow** the signalling of perfectivity – which is realized compositionally, at the sentence level.

Literally: 'The kid fed cat' (meaning 'The kid was feeding/used to feed cats')

Correct English translation: 'The kid fed cats'

- b. Kedi besleyen çocuklar [IMPERFECTIVE]

Cat^{TRANSNUM} fed^{SbjP} kids⁷

Literally: 'Kids fed cat' (meaning 'Kids were feeding/used to feed cats')

Correct English translation: 'Kids fed cats'

Compare now (5b). Turkish is a language of the SOV (Subject-Object-Verb) type, i.e., it has a standard SOV word order, although OSV sentences are not outside the norm. In the case of (5b), there is a specific change of word order in which the verb form *besleyen* is non-finite and *çocuklar* 'kids' is in final sentence position – where it is easy to be recognized as unquantified, hence nonbounded. But this is not only because of its own morphological and semantic features and its final sentence position. It is *also* because of this special nominal form *kedi* 'cat/cats' in the adjacent position, of a syntactic object ambivalent between singular-plural, a transnumeral. All these circumstances seem to rule out the recognition of *çocuklar* 'kids' in the subject (which is in final sentence position) as quantified and hence bounded, also because of the final position itself – which is rather untypical for definite NPs (Kutsarova, 2025, p. 65). This special form labelled in my previous publication "unspecified for number and ambivalent between singular and plural" is what here is termed a transnumeral.

The significant difference with English and other similar CA languages is that in Turkish, beside the standard numerical entity with two representatives – singular and plural, there exists this third numerical form, transnumeral, which coincides formally with the singular. Consider again the Turkish word for "cat". The singular is *kedi*, the plural *kediler*. The confusing thing is that the transnumeral form is again *kedi*, the same as for the singular form for 'cat'. Hence, when English sentences such as *Kids fed cats* must be translated into Turkish, they yield sentences such as *Kedi besleyen çocuklar*, see again (5b) above, where *kedi* is a transnumeral, and the literal translation into English is something approximating 'Cat-feeding kids' [repeatedly, imperfectivity is encoded]. And here *kedi* 'cat', despite its outward singularity, is processed in the hearer's mind as 'cats'. A question arises: as the transnumeral form *kedi* 'cat' coincides with the standard one for singular, does it make sense at all to assert that the Turkish transnumeral has formal representation? Why not treat it simply as a case of grammatical homonymy? Isn't it better to characterize *kedi* as carrying two separate values: *kedi*^{One} – singular, meaning 'cat'; *kedi*^{Two} – transnumeral, meaning 'cat' or 'cats', whereby the second form is to be recognized as singular or plural according to the type of use in concrete expressions, especially whole sentences. These issues have been dealt with in

⁷ SbjP is a special non-finite form meaning "subject participle" (Kornfilt, 1997, p. 420).

the literature, e.g., in Acquaviva (2005; 2008) and Manzini (Manzini, 2020) – but not in terms of the possible interaction with the realization of aspectual values.

Thus the problem with *kedi*^{Two} is serious and two-fold. On the one hand, as a transnumeral, *kedi* will be processed accordingly in the mind of the observer-speaker – and, of course, also in the mind of the hearer, as a form which is numerically neutral. On the other hand, the standard form *kedi*^{One}, when processed in the mind of the observer-speaker, will be read as singular only. The result thus appears to be that *there is no special difference in essence between the two forms kedi*^{One} and *kedi*^{Two} and that the true difference between them lies solely in the way they are used in concrete sentences – and can only be recognized in such sentences. This means that analyzing and comparing *kedi*¹ and *kedi*² as separate nominal forms is *of little value*, although there are publications (Sağ, 2018; 2022; Turgay, 2020), which follow the path of focusing on the paradigmatic aspects of the transnumeral and not on the reasons for its emergence and existence and its behavior. The fact that the transnumeral as a grammatical entity is used in the encoding of *either* singularity or plurality calls for a convincing explanation of *how exactly* the encoding takes place, in view of the fact that there exists no morphological or some other conformation of the transnumeral.

More on the Functional Features of the Turkish Transnumeral and Its Relation to Aspect

In sentences like (5a) above, where the transnumeral *kedi* ‘cat’ is used as a direct object, it is also possible to use the standard plural *kediler* ‘cats’ instead of the transnumeral *kedi* ‘cat/cats’, see (6a). However, first, the presence of a standard plural *kediler* in (6a) does not sound natural for Turkish and, second, if used, it introduces certain nuances. The rule is that the more to the left the relevant NP, the more accusative case marking necessary. Phrased otherwise, if the NP is in a contact position with the verb,² non-accusative case marking is natural. If the NP is in a distant position to the verb, the more distant the position, the more accusative case marking needed. The non-native speaker of Turkish would tend to ask here whether non-accusative versus accusative marking is possible in the plural in this syntactic position – as it is in the singular. The answer: it is possible. But a question arises: if there is a non-accusative versus accusative case distinction in the plural direct object, what would it correspond to in English as a metalanguage for the description of Turkish grammar? In contrast to the singular, where only one distinction is

² This is called *focus position* in Erguvanli’s (1984, p. 34) terminology; *contact direct object* in Scheka’s (2007, p. 113).

possible in the correspondences in English – *the cats* vs *cats*, where *cats* is prototypically nonbounded, in the Turkish plural direct object the accusative versus non-accusative case distinction has three correspondences: see (6a), (6b), (6c) below. There (6a) is a rare expression, with *kediler* meaning ‘(some) cats’ – indefinite but nonbounded, in (6b) *kedileri* is definite (marked by the accusative) and stands for ‘the cats’, and *keci* in (6c) stands for ‘cat/cats’, i.e., a transnumeral, number-neutral between singular and plural:

- (6) a. Çocuklar kediler besledi [IMPERFECTIVE]
 Kids_{SPL} cats_{SPL} fed
 ‘Kids fed (some) cats’
 b. Çocuk kedileri besledi [PERFECTIVE]
 Kid_{NOM} the cats_{ACC} fed
 ‘The kid fed the cats’
 c. Çocuklar keci besledi [IMPERFECTIVE]
 Kids_{SPL} cat_{TRANSNUM} fed
 ‘Kids fed cat/cats’

It can be concluded that, in a comparison with English as a metalanguage, *kedileri* ‘the cats’ – marked grammatically for plural definiteness, encodes boundedness according to the CA theory (Verkuyl’s perfectivity schema). As for ‘cats’, indefinite and nonbounded in CA theory, it is the transnumeral *keci* ‘cat/cats’ that encodes the two values in (6c). It is now worth asking what the Turkish correspondence of English *some cats* will be – i.e., when a bare plural such as *cats* is interpreted in a sentence *as if* containing a silent *some*. Sentence (6a) seems to correspond to this use of *cats* with a silent *some* in English.

On Number in Turkish Mainstream Grammars

The category of number in Turkic languages in its functional and semantic aspects has been widely studied: Kowalski (1936), Gronbech (1936), Kononov (1941), Dmitriev (1956), Sokolov (1970), Guzev & Nasilov (1975), Scherbak (1970), Lyubimov (1972), Scheka (2007), Shtanov (2010), Guzev (2015), Fattahova (2015), Oganova (2022). Researchers usually stress the polysemanticity of the zero form of the nominal (the singular form which mainly expresses singularity and is contrasted to the plural form with the *-lAr*⁹ affix (1972, p. 78). There are also certain uses of the *-lAr* affix denoting singularity in emphasizing higher social status, politeness and respect (Kononov, 1941, p. 42; Sokolov, 1970, p. 79; Shtanov, 2010, p. 196; Oganova, 2020, p. 95) but these – along with other specific cases, fall beyond the focus of

⁹ The plural suffix may appear as either *-lar* or *-ler* for phonological reasons. I will use *-lAr*, where the capital letter indicates vowel alternations, regulated by vowel harmony.

the present study. It is worth emphasizing that practically all nominals in Turkish can take the plurality affix *-lAr*, for example: *başarı* ‘success’ – *başarılar*, *hava* ‘air/weather’ – *havalAr*, *kan* ‘blood’ – *kanlar*, *kim* ‘who’ – *kimler*, *ne* ‘what’ – *neler*, *saygı* ‘respect’ – *saygılar*, *su* ‘water’ – *sular*, *şeker* ‘sugar’ – *şekerler*, *öfke* ‘anger’ – *öfkeler*, etc. Nevertheless, Kononov (1941) maintains that the formal expression of number in Turkish frequently fails to be effectuated in comparison with languages such as Russian. For example, the word *kuş* ‘bird’ may denote ‘bird’ or ‘birds’ – because the Turkish singular can express singularity, as well as what he calls “indivisible collective plurality” (1941, p. 40). In Scheka’s (2007, p. 90) terminology this is called “added plurality”. Dmitriev (1956, p. 68), too, emphasizes the difference between singular and plural in Turkish in comparison with Slavic and other European languages and argues that the noun *taş* ‘stone’ can function as both singular and plural. He calls this “collective indeterminacy” and maintains that special syntactic conditions for it are necessary in every particular case. Sokolov (1970, pp. 72–75) analyzes meanings signified by singulars and plurals, emphasizing the link between the category of number and the definiteness-indefiniteness contrast. In his synchronic and diachronic research on Turkic languages, Scherbak (1970, p. 96) emphasizes the “maximum economy of expression devices” and calls it a characteristic feature of Turkic languages: wherever the expression of plurality is not necessary, the *-lAr* affix is absent. This is a cognitive aspect of a problem which has so far been predominantly interpreted as grammatical and which calls for a much more profound explanation – based on future investigations of transnumerality across larger samples of languages.

In his Turkish grammar, Lewis (2000, pp. 23–26) describes in a detailed fashion the plural of nouns from the point of view of its formation and functions, also by taking into account certain specific uses. In another Turkish grammar, Korkmaz (2009, pp. 257–259) also describes the manner of formation and the location of the *-lAr* affix in the structure of the word, along with the major semantic values it carries. Oganova (2022) describes the concrete types of realization of the singular and plural forms, paying special attention to the specificity of the choice between them. Corbett (2000, p. 14) argues that in Turkish the word *ev* can mean either ‘a house’ or ‘houses’, while the plural *evler* means ‘houses’. Such languages demonstrate a “general/singular vs plural opposition” in which the general/singular form does not by itself establish a number for the noun. The singular form with no plurality indicator is numerically neutral and denotes either the category itself or an individual member of the category (Lewis, 2000, p. 23). Guzev argues that this form is indifferent to numerical quantity and that “the category of *plurality* turns out to be single-membered, which contradicts the widespread opinion in Indo-European studies about the category as a set, a series of forms”; however, it is in full accordance with the original properties of agglutinative languages, in

which the absence of a form-obtaining indicator means the absence of the corresponding category (Guzev, 2015, p. 47).

There are significant differences in the use of numerical nominals in Turkish compared to English, Bulgarian and other European languages, although, according to the traditional understanding, the category of number is represented by singular vs plural as grammemes. The transnumeral actually expresses various other meanings, some of which are beyond the present concerns and hence left for future research. One of the important differences between nominals in Turkish and in languages like English and Bulgarian is that if there are numerals/quantifiers such as *kaç* 'how many/how much' *birkaç* 'a few, several', *çok* 'a lot of, (too) many, (too) much', *birçok* 'quite a few', *az* 'not much, not enough', *biraz* 'a bit, a little', *hiç* 'at all' etc. inside the NP, the head noun itself does not get plural marking (see Underhill, 1976, p. 125; Gencan, 1979, p. 174; Banguoğlu, 1990, p. 353; Lewis, 2000, p. 24; Scheka, 2007, p. 124; Korkmaz, 2009, p. 390)¹⁰⁹. Cf.:

iki/	on/	elli/	kaç/	birkaç/	çok/	az/	hiç	sandalye
two/	ten/	fifty/	how much/	a few/	many/	few/	any	chair
'two/	ten/	fifty/	how much/	a few/	many/	few/	any	chairs'

In my recent investigation of the major ways CA can be realized in Turkish (Kutsarova, 2025), among the conclusions is that CA is located strictly at the sentence-level and not at the VP level. The compositional effectuation of aspect in Turkish takes place predominantly through: (i) the definite-indefinite contrast in direct objects; (ii) the impact of other case values; (iii) word order patterns according to functional sentence perspective (also known as theme-rheme contrast, etc.) in subjects, indirect objects and direct objects (when the latter are not marked with an accusative); (iv) various other means, subject to future research. The present paper deals with a Turkish nominal/NP form which appears rather specific from the point of view of English as a metalanguage, on the one hand. On the other, from the point of view of the Turkish language itself, it is a standard form with a high prevalence in real speech. The specific object of analysis here are the types of aspect values explicated at the sentence level, triggered as a result of an interplay between the transnumeral in a given sentence component and the other sentence components – or some of them.

There are many popular Turkish expressions containing transnumerals, such as (7a) and (7b), the latter resembling Bulgarian (4c) above:

¹⁰ There are exceptions to this rule of the use of a plural noun after a numeral, showing that the persons or things in question form a particularly well-known and distinct entity: *Yedi Cüceler* 'The Seven Dwarfs', *Kırk Haramiler* 'The Forty Thieves', *Üç Silahtarlar* 'The Three Musketeers' etc. (Underhill, 1976, p. 125; Lewis, 2000, p. 24).

- (7) a. Özel günlerde eşime hep çiçek ya da hediye aldım
 [IMPERFECTIVE]
 Special day wife always flower^{TRANSNUM} or gift^{TRANSNUM} bought
 ‘I always bought flowers or gifts for my wife on special occasions’
- b. Sen gittin de aylarca yas tuttu, iki gözü iki çeşme
 [IMPERFECTIVE]
 You left and for months mourned two eye^{TRANSNUM} two fountain^{TRANSNUM}
 ağladı¹¹
 cried
 ‘When you left, she mourned for months, her two eyes cried like two fountains’

They are correct and standard. They are not regarded as grammatically and/or semantically strange – as in Bulgarian where sentences with transnumerals such as (4a) and (4c) are sometimes perceived by the native speaker as unusual, albeit grammatically correct. Standard Turkish nominals do have forms for singular and plural, but forms such as *çiçek* ‘flower’ and *hediye* ‘gift’ in (7b) are different, not marked for singular/plural and ambivalent between the two values. Still, they fully conform to the grammatical and semantic norms of Turkish. Among the aims in this paper is to offer a hypothesis concerning their possible link to the explication of aspect. As already established (Kutsarova, 2025, pp. 65–66), they can be seen as helping the compositional effectuation of imperfectivity, as in the sentences (7) above. A similar position can be found in Sağ (2022, p. 754): “Number neutrality is dependent on aspectual specification. It is only available when the aspect supports atelic or habitual interpretations.”

The analysis of the specificity of the Turkish transnumeral necessitates leaving the narrow domain of standard grammatical descriptions and placing the phenomenon into a broader context. Of essential importance in outlining the role of the transnumeral in CA terms is the study of number as a universal category with the meanings expressed by the transnumeral (the affixless form) and the standard form (with the *-lar* plural affix), including the category of definiteness/indefiniteness; the relationship between number and the functions of the NP as part of the sentence. A transnumeral can function as: subject, direct object not marked with an accusative, indirect object, certain types of adverbials. Among them, the instrumental adverbial will be analyzed here. Three approaches will be employed: (i) a deductive one, which posits the necessity for universal features found across natural languages to be formulated first, and then for a search for their realization across languages to be initiated; (ii) a descriptive one through which the essence of the category and its formal features are to be presented; (iii) a contrastive one through which examples in three languages are compared – Turkish as a CA language, English as a CA language and a metalanguage for the analysis of Turkish, Bulgarian as a VA language and a

¹¹ The quoted verse is by the poet Y. Kemal.

metalanguage – through which comparisons with Turkish can reveal subtle semantic and grammatical details in the realization of aspect.

Interplay Between the Transnumeral and (In)Definiteness. But Does Such an Interplay Really Exist?

The definiteness-indefiniteness contrast is effectuated in Turkish through a complex of lexical, morphological and syntactic means or, in other words, its connection with the category of number is realized through grammatical means and semantic interactions expressed both structurally and contextually. In its interaction with other components in the NP, the transnumeral helps in the expression of aspectual meanings related to the quantification or non-quantification of the NP – which forms the basis of the theory of CA.

Nouns in Turkish take an accusative case suffix when they are definite. See (8a) below where the noun *hayvanları* ‘animals’, accompanied by the accusative case suffix [-ı] indicates that it is a specific (not generic) entity, known to both speaker and hearer, definite. Without the accusative case suffix, the nominal loses its specificity and definiteness, turning into a transnumeral, see (8b), cf. Rocchi (2016). These are the reasons why (8a) is a perfective sentence, while (8b) is imperfective: sentence (8a) falls into Verkuyl’s (1993) perfective schema, (8b) into his imperfective schema. According to Kabakčiev’s (1984; 2000) extended versions of Verkuyl’s aspect schemata, *hayvanları* ‘the animals’ in (8a) is to be interpreted as a bounded temporal entity, with a definite beginning and a definite end on the time axis, the two points encoded by the accusative. Conversely, the transnumeral *hayvan* ‘animal/animals’ in (8b) is an entity with no known beginning on the time axis and no known end. This temporal boundedness of *hayvanları* ‘the animals’ in (8a) is mapped (transferred) from the NP onto the aspectually ambivalent verb *besledim* ‘fed’, forcing it into boundedness and perfectivity. Analogously, the temporal nonboundedness of *hayvan* ‘animal/animals’ in (8b) – understood *not* as animals standing together in the same place but as animals appearing on the time axis one after the other – is mapped (transferred) from the NP onto the aspectually ambivalent verb *besledim* ‘fed’, this time forcing the verb referent into imperfectivity, i.e., non-boundedness in the form of indefinite iterativity (Kabakčiev 1984; 2000: Chapter Six; 2019, pp. 208–209):

- (8) a. *Hayvanları besledim* [PERFECTIVE]
 Animal_{PL-ACC} fed
 ‘I fed the animals’
 b. *Hayvan besledim* [IMPERFECTIVE]
 Animal_{TRANSNUM} fed
 ‘I fed animal/animals’

In principle, a direct object can be realized either as a bare NP without a case ending or as a noun/NP with the accusative case suffix *-(y)I* (Heusinger & Kornfilt, 2005, p. 4). Some authors, e.g., Yohanson (1977) and Enç (1991), argue that the accusative case suffix indicates specificity rather than definiteness. But the important difference is between the nonboundedness of the NP without an accusative case suffix and the boundedness of the NP with an accusative case suffix – no matter whether the boundedness will be definite or only specific without being definite. Additionally, according to Dede (1986, pp. 156–159), as cited in Heusinger & Kornfilt (2005, p. 10), the case suffix may optionally also mark a generic direct object, as illustrated in (9a) and (9b):

- (9). a Çocuklar çikolata sever [IMPERFECTIVE]
 Child_{PL} chocolate_{TRANSNUM} like
 ‘Children like chocolate’
 b. Çocuklar çikolatayı sever [IMPERFECTIVE]
 Child_{PL} chocolate_{ACC} like
 ‘Children like chocolate’

Sentence (9a) is ambiguous between a generic reading for the direct object and a definite one, although, due to the so-called aorist form of the verb *sever* ‘like’, the generic reading for the direct object is stronger. The direct object is formally definite in (9b) – but the possibility for the recognition of such definite NPs as generic is restricted. Of course, the future formulation of the relevant conditions on their distribution is better left to future research. As for an answer to the question whether an interplay between the transnumeral and (in)definiteness exists in Turkish or not, the analysis here, being rather short and insufficient, does not allow providing such an answer. I leave the matter to future investigations of this difficult problem.

Interplay Between Number and Transnumerality and Functions of NPs as Sentence Elements

Let us initially consider the relationship between the category of number and the syntactic position of the NP in cases where it is the subject or the object (direct or indirect) in the sentence. The main question here is how formality/informality is realized with the *-lAr* affix of the noun phrase in cases where it is the subject or the object in the sentence. However, as this study is aimed at answering the question whether transnumerality can be interpreted as a device for the effectuation of aspect, the focus of attention will be the possible link between transnumerality and aspect.

When the Turkish verb is not formally marked for imperfectivity, perfectivity is realized in CA terms, at the sentence level, via Verkyl’s perfective

schema. Turkish strongly resembles English in this respect: imperfectivity is systematically realized (grammatically) through progressive and periphrastic verb forms such as “*used to + inf*”, while perfectivity can only be effectuated compositionally.¹² As far as imperfectivity in compositional terms could be at issue, occasional statements are encountered in the literature arguing that number neutrality (termed transnumerality in the present work) is dependent on aspectual specification and that it is “only available when the aspect supports atelic or habitual interpretations” (Sağ, 2022, p. 754). In Sağ’s terminology the imperfective aspectual value is labelled “atelic”; in particular, she argues that atelic “entails an iterativity of sub-events and habituality entails a quantificational structure presupposing a plural quantificational domain” (ibid.).

If we take it that in Turkish there exist two separate paradigmatic nominal entities, the singular nominal and the transnumeral (i.e., leaving aside the plural nominal), if the two, the singular nominal and the transnumeral, are juxtaposed, the logical assumption to make ought to be the following. Since the singular nominal in Turkish exists and functions normally – like the singular nominal in languages like English, it is the transnumeral that must be regarded as “the odd man out” and not vice versa – not the singular nominal. In other words, it is the transnumeral that seems to have emerged to complement the singular nominal and not vice versa. And if this is the case, if the transnumeral has emerged to complement the singular nominal, what is achieved by its emergence? A cursory glance at the *staus quo* with two separate nominal forms (singular *and* transnumeral) tends towards a conjecture that the transnumeral complements the singular nominal by providing it with an opportunity for “enrichment” of the possible semantics of the transnumeral. Enrichment, but with what exactly? With a plural value in a special sense, whereby the plural value is not incompatible with the singular value inherent in the transnumeral nominal and formally marked?

The Transnumeral as Subject in the Sentence

If we return to sentences (9a) and (9b), the subject *çocuklar* can be interpreted as definite, as ‘the kids’, because it is the theme of the sentence on the analogy of Czech *Žena napsala dopis* ‘The woman wrote a letter’ (Kutsarova, 2025, p. 63), where *žena* ‘woman’ is perceived as definite due to the theme-rheme regularities and despite the lack of formal marking of definiteness. But the subject *çocuklar* can also be interpreted as indefinite, as ‘kids’: according to Erguvanlı (1984, p. 21), when the subject in initial position is [+animate], it can

¹² Turkish is a CA language (Kutsarova, 2025), which means that imperfectivity can be grammatically marked on verbs, as in the progressive and imperfect verb forms found in many languages. But in CA languages perfectivity **cannot** be marked on verbs!

also be indefinite. In this case the subject is indefinite, and as it is plural, this means that it is also nonbounded, and its nonboundedness is mapped onto the verb, forcing it into indefinite iterativity and nonboundedness, hence imperfectivity.

The description above coincides with a major tenet in CA theory (see Bakardzhieva-Morikang & Kabakčiev, 2024; Kabakčiev, 2025, pp. 14–20), according to which the verb in a sentence must be aspectually ambivalent – i.e., encoding neither perfectivity, nor imperfectivity, for Verkuyl’s aspectual schemata to be operative. Rocchi (2016, p. 190) shares Erguvanlı’s view, whereby her example of indefiniteness of the subject in initial position (where the subject is usually interpreted as definite) is here sentence (10a). Rocchi’s example (10a) can be transformed into (10b) with a past-tense form and a singular indefinite subject, and then into (10c) with the same subject as in (10a), and the interplay between the separate elements in the sentence can now be analyzed¹³:

- (10) a. Köpek havlıyor [IMPERFECTIVE]
 Dog_{TRANSLUM-ABS}¹⁴ is-barking
 ‘A dog/dogs is/are barking’ [the same sentence could mean
 ‘The dog is barking’ if the stress is shifted on the verb] (Rocchi, 2016, 190).
- b. Bir köpek havladı [PERFECTIVE]
 One dog barked
 ‘A dog barked’
- c. Köpek havladı [IMPERFECTIVE]
 Dog_{TRANSLUM} barked
 ‘A dog/dogs barked’

The three sentences in (10) demonstrate the realization of the perfective-imperfective contrast through the boundedness-nonboundedness interplay of situation-participant NPs. Sentence (10a) belongs to Verkuyl’s imperfective schema in which the transnumeral form is non-bounded (represents “unspecified quantity” in Verkuyl’s terms), a leak appears, representing indefinite (non-bounded) iterativity, which leads to an imperfective reading of the verb and of the sentence as a whole. Sentence (10b) belongs to Verkuyl’s perfective schema, because the NP *bir köpek* ‘a dog’ encodes boundedness (“specified quantity” in Verkuyl’s terminology) through the quantifier *bir*, hence bounded. All these elements in their integrity render the sentence perfective.

In Turkish the subject is usually in initial position and standardly perceived as definite (as if with a definite article in English). Of course, there are cases in which, although in initial position, the subject is not definite. For

¹³ Sentence (10a) could mean ‘the dog was barking’ if the stress is shifted on the verb.

¹⁴ ABS means “absolute case”: “the simplest form of a noun, with no suffixes” (Lewis, 2000, 26).

example, in (10c), despite the initial position of the subject, represented by a transnumeral, it is the theme but is not definite. This sentence can have the following readings: *A dog was barking*, *Dogs were barking*. In these two readings the non-bounded iterativity of the transnumeral is mapped onto the verb *havladı* ‘barked’, which renders the situation imperfective. The imperfective reading is amplified by the stress which is not on the verb. If the stress is shifted onto the verb, the sentence may start to mean ‘The dog barked’. It is worth noting again here that the effectuation of the perfective-imperfective distinction is crucially dependent on the ambivalent aspectual nature of the Turkish past-time affixes *-DI* and *-mİş*.

The observation shows that for the effectuation of the perfective-imperfective distinction in sentences with a transnumeral in the subject position, very significant is the ability of this special form to encode both singularity and plurality. The imperfective reading is mainly dependent on the leak in the interpretation of plurality but the role of other elements, such as stress and word order, is also significant. It is also worth noting that the use of a transnumeral in the subject position is, however, rather restricted in comparison with the direct object position (to be shown in the following section), where genericity is very often signified.

The Transnumeral as a Direct Object

According to Turkish traditional grammars, nouns take an accusative case suffix when they are definite, see (11a) where *cüzdanı* ‘the wallet’ with the accusative case suffix *[-ı]* indicates that this is a specific entity known to both speaker and hearer. Without the accusative, the noun loses its specificity or definiteness, cf. (11b), see Rocchi (2016). These are (some of) the reasons why (11a) is a perfective sentence while (11b) is imperfective. In (11b) the transnumeral *cüzdan* ‘wallet’ triggers imperfectivity by not providing the referent of *cüzdan* with the “specified quantity” value needed for Verkuyl’s (1993) perfective schema:

- (11) a. Öğrenci cüzdanı buldu [PERFECTIVE]
 Student_{NOM} wallet_{ACC} found
 ‘The student found the wallet’
 b. Öğrenci cüzdan buldu [IMPERFECTIVE]
 Student_{NOM} wallet_{TRANSNUM} found
 ‘The student found wallet/wallets’

Similarly, in (12b) below, as already argued in Kutsarova (2025, pp, 65–66), in order for *kedi* ‘cat’ to be recognized as non-quantified, nonbounded and equal

to English *cats*, it is stripped of the accusative marker, cf. the accusative marker in (12a), acquires a special form unspecified for number (ambivalent between singular and plural) and is *not* moved to initial position – where it could be recognized as definite (as if with a definite article). If *kedî* ‘cat’ must be recognized as definite, it will have to be moved to initial position. Finally, in (12d) *çocuklar* ‘kids’ in initial position is recognized as unquantified and hence nonbounded because, again, of the special nominal form *kedî* ‘cat/cats’, transnumeral, ambivalent between singular and plural and hence ruling out the recognition by the hearer of *kedî* ‘cat/cats’ as quantified and hence bounded. Thus in (12b) and (12d) the transnumeral *kedî* ‘cat’ serves the effectuation of imperfectivity, while imperfectivity in (12c) is effectuated by: (i) placing the subject *çocuklar* ‘kids’ not in its normal position, the initial one, but in second position; (ii) placing the direct object *kediyi* ‘the cat’ in initial position, thus providing ground for *çocuklar* ‘kids’ in second position – which is more prone to indefiniteness and hence non-boundedness – when the noun is plural.

- (12) a. Çocuk kediye besledi [PERFECTIVE]
 Kid_{NOM} cat_{ACC} fed
 ‘The kid fed the cat’
 b. Çocuk kedî besledi [IMPERFECTIVE]
 Kid_{NOM} cat_{TRANSNUM} fed
 ‘The kid fed cat/cats’
 c. Kediye çocuklar beslediler [IMPERFECTIVE]
 Cat_{ACC} kids_{SPL} fed
 ‘Kids fed the cat’
 d. Çocuklar kedî beslediler [IMPERFECTIVE]
 Kids_{SPL} cat_{TRANSNUM} fed
 ‘Kids/The kids fed cat/cats’

It can easily be seen that the grammatical morphological devices and the word order techniques employed for the effectuation of aspectual distinctions in sentences like (13) below are generally the same as in the examples (12),¹⁵ which supports a conjecture that these devices and techniques will be identical or similar in many other analogously structured sentences and sentence patterns.

- (13) a. Turist kaleyi ziyaret etti [PERFECTIVE]
 Tourist_{NOM} castle_{ACC} visited
 ‘The tourist visited the castle’
 b. Turist kale ziyaret etti [IMPERFECTIVE]
 Tourist_{NOM} castle_{TRANSNUM} visited

¹⁵ Examples (13) are Turkish translations of constructed examples in English (Kabakčiev, 2019, pp. 205–206).

- ‘The tourist visited castles’
- c. Kaleyî turist ziyaret etti [IMPERFECTIVE]
 Castle_{ACC} tourist_{TRANSNUM} visited
- ‘Tourist/Tourists visited the castle’
- d. Turistler kale ziyaret ettiler [IMPERFECTIVE]
 Tourist_{PL} castle_{TRANSNUM.} visited
- ‘Tourists/The tourists visited castles’

When the noun functioning as direct object denotes a substance, full scope of the object of the action is indicated, and perfectivity is explicated – in sentences such as (14a), (15a). But the direct object is not always marked with an accusative, and when it is not, indefiniteness is explicated, again through a transnumeral, see (14b), (15b):

- (14) a. Hakan arabayı yıkadı [PERFECTIVE]
 Hakan car_{ACC} washed
 ‘Hakan washed the car’
- b. Hakan araba yıkadı [IMPERFECTIVE]
 Hakan car_{TRANSNUM} washed
 ‘Hakan washed cars’
- (15) a. Emel dondurmayı yedi [PERFECTIVE]
 Emel icecream_{ACC} ate
 ‘Emel ate the icecream’
- b. Emel dondurma yedi [IMPERFECTIVE]
 Emel ice cream_{TRANSNUM} ate
 ‘Emel ate ice creams’

There are rare cases in which, despite the accusative affix of the direct object, it fails to explicate definiteness – but these will not be dealt with here. The important thing is that (14b) and (15b) are imperfective sentences because of the use of the relevant transnumeral (*araba* ‘car’, *dondurma* ‘icecream’) as direct object, which explicates temporal nonboundedness (car after car, icecream after icecream), and this temporal nonboundedness is mapped onto the (referent of the) verb, coercing it into indefinite iterativity, hence imperfectivity.

Many Turkish sentences exist in which the direct object in a preverbal position, immediately before the verb, is signified by a transnumeral, see (16a-e), (17a-c) below. The direct object can in these cases receive a plural affix, which is not considered to be a grammatical error – but for native speakers of Turkish here it is still more natural to use a transnumeral. The transnumeral helps the explication of imperfectivity, see the mechanism explained above. As for the perfectivity of (16d), it arises out of the feature bounded in all the three

NPs – *Sibel*, *çantasından* ‘bag’, *bilet* ‘ticket(s)’ and the feature telic in the verb *çıkardı* ‘took out’,¹⁶ despite the transnumerality of *bilet*.

- (16) a. Ben kitap okudum [IMPERFECTIVE]
I book_{TRANSNUM} read
‘I read book/books’
- b. Serkan portakal yedi [IMPERFECTIVE]
Serkan orange_{TRANSNUM} ate
‘Serkan ate orange/oranges’
- c. Annem bize her akşam masal anlattı [IMPERFECTIVE]
Mother to us every evening fairytale_{TRANSNUM} told [IMPERFECTIVE]
‘My mother told us stories every evening’
- d. Sibel çantasından bilet çıkardı [PERFECTIVE]
Sibel bag ticket_{TRANSNUM} took out
‘Sibel took a ticket/(some) tickets out of her bag’
- e. Kız, güpegündüz mağazadan ayakkabı çaldı [IMPERFECTIVE]
Girl broad daylight store_{ABL} shoe_{TRANSNUM} stole
‘The girl/A girl stole shoes from the store in broad daylight’
- (17) a. Başbakan önemli açıklama yaptı [IMPERFECTIVE]
Prime minister important explanation_{TRANSNUM} made
‘The Prime Minister made important statements’
- b. Geçen haftadaki mağlubiyetlerden ders çıkardık [IMPERFECTIVE]
Last week loss lesson_{TRANSNUM} took a lesson from
‘We learned lessons from last week’s defeats’
- c. Annem her zaman problemlere yaratıcı çözüm verdi
[IMPERFECTIVE]
Mother every time problem creative solution_{TRANSNUM} gave
‘My mom always gave creative solutions to problems’

Many other similar examples exist in which the direct object is expressed by a transnumeral, whereby it encodes indefinite plurality, hence indefinite iterativity, hence imperfectivity (after the relevant NP value is transferred onto the verb). What is more, preference is observed for the use of a transnumeral in the direct object in a preverbal position at the expense of a form with an *-lAr* affix. These examples illustrate the interaction of the transnumeral form with other sentence components (verb, NPs), whereby the interaction impacts the aspectual value. The absence of a quantifier triggers the explication of nonboundedness, therefore imperfective situations (Vendlerian) are effectuated: states or activities (Vendler, 1957).

Many Turkologists argue that when the direct object is not in preverbal position, it must have an accusative affix, thus either obligatorily having a specific reading – and hence perfective (if the other necessary conditions are met), or, in some limited circumstances, a generic reading, thus non-specific (Heusinger & Kornfilt, 2005, p. 11, Scheka, 2007, p. 381).

¹⁶ *Sibel* is bounded, just like all proper nouns, as it contains a covert definite article: ‘the woman called Sibel’.

The Transnumeral as Indirect Object

Turkish grammars use different terms for indirect objects (*dolaylı nesne*, *dolaylı tümleş* – ‘indirect object’, *yer tamlayıcısı*, *yer tümleci* – ‘place complement’) and specify that an indirect object can be expressed by a word with a dative, locative or ablative marker (Gulubov, 1949, p. 332; Banguoglu, 1990, p. 528; Ediskun, 1999, p. 353; Hengirmen, 2006, p. 333; Eyup, 2007, p. 148). Following the descriptive apparatus of compositional aspect, sentences such as (18a), (19a) and (20a) below must be described as representing perfective situations – bounded with a reached telos (Vendlerian accomplishments or achievements), whereas sentences such as (18b), (19b) and (20b) represent imperfective (non-bounded) situations (Vendlerian states or activities):

- (18) a. 29 yaşında 150 bin borca battım [PERFECTIVE]
 29 age 150 thousand debt^{TRANSNUM} sank
 ‘I fell 150 thousand in debt at the age of 29’
 b. Hayatımda asla borca batmadım [IMPERFECTIVE]
 Life never debt^{TRANSNUM} sank
 ‘I’ve never been in debt in my life’
- (19) a. Bir gazetede en yeni haberleri okuduk [PERFECTIVE]
 One newspaper most new news^{ACC} read
 ‘We read the latest news in a newspaper’
 b. En yeni haberleri gazetede okuduk [IMPERFECTIVE]
 Most new news^{ACC} newspaper^{TRANSNUM} read
 ‘We read the latest news in newspaper/newspapers’
- (20) a. Gençken birkaç kez uçaktan çok korktum [PERFECTIVE]
 Young^{WHILE} a few times plane^{TRANSNUM} very scared
 ‘I got very frightened when flying a few times when I was young’
 b. Gençken uçaktan çok korktum [IMPERFECTIVE]
 Young^{WHILE} plane^{TRANSNUM} very scared
 ‘When I was young I was very afraid of flying’

The indirect object *borç-a* ‘debt’ in (18a) and (18b) appears in line with the understanding about sentence structure components adopted in the English linguistic tradition. However, according to the same tradition, the indirect objects *gazete-de* ‘newspaper’ in (19a) and (19b) and *uçak-tan* ‘plane’ in (20a), (20b) would rather be ascribed to the group of adverbials – a place adverbial in (19), a time adverbial in (20). In other words, the examples in (19) and (20) follow the descriptions in the Turkish linguistic literature, not the understanding of what is considered to be an indirect object in the grammars of English and other European languages.

Furthermore, the fact that there is a transnumeral in each of the sentences in (18), (19) and (20) – no matter whether the sentence is imperfective or

perfective, indicates that with indirect objects there appears to be no special preference for transnumerals to take part in imperfective sentences – as this is observed in sentences containing transnumerals serving as subjects and direct objects (a thesis indirectly supported by Sağ 2022, p. 754).

The sentences in (18), (19) and (20) with two situation-participant NPs and a preterit verb form, aspectually ambivalent, effectuate the perfective-imperfective contrast. The interplay between the components in the examples and the use of the quantifiers *150 bin* ‘150 thousand’, *bir* ‘one’, *birkaç kez* ‘a few times’ make the situations in (18a), (19a), (20a) perfective, due to the bounded value in the NPs (Verkuyl’s “specified quantity”) – plus the other requirements in the perfective schema (see above). Conversely, in (18b), (19b), (20b), containing *-DI* preterit verb forms and transnumerals, the situations are imperfective – due to the aspectually ambivalent nature of the verbs and the value nonboundedness explicated in the NPs, which is then transferred onto the verb (as also explained in more detail above).

Let us now consider sentences in which the indirect object is realized with a transnumeral with a dative affix, as these cases are more akin to the understanding of what an indirect object is in the linguistic tradition based on English.

- (21) a. İstanbul'dayken hep erkek hastaya baktım [IMPERFECTIVE]
 Istanbul always male patient_{TRANSNUM} took care
 ‘When I was in Istanbul, I always treated male patients’
 b. Hemşire çok hastaya baktı [PERFECTIVE]
 Nurse many patient_{TRANSNUM} took care
 ‘The nurse took care of many patients’
- (22) a. Mısır'a her gittiğimde deveye bindim [IMPERFECTIVE]
 Egypt every went camel_{TRANSNUM} rode
 ‘I rode a camel every time I went to Egypt’
 b. Mısır'da birkaç deveye bindim [PERFECTIVE]
 Egypt a few camel_{TRANSNUM} rode
 ‘I rode a few camels in Egypt’

The sentences (21) and (22) contain a transnumeral in the position of an indirect object and illustrate the realization of perfectivity and imperfectivity through the mechanism of boundedness and nonboundedness of the NP situation participants. In (21a) and (22a) the transnumerals *hasta-ya* ‘patient’ and *deve-ye* ‘camel’ encode plurality and are unquantified, nonbounded. Due to the NP leak, they realize imperfectivity, whereby the role of the adverbial *hep* ‘always’ is decisive. The sentences (21b) and (22b) contain the quantifiers *çok* and *birkaç*, which make the (referents of the) situation-participant NPs quantified and therefore bounded, despite the transnumerality, and this matches the perfective schema in the CA theory.

On Transnumerals as Adverbials. The Transnumeral as an Instrumental Adverbial

As already shown in the subsection above on indirect objects, the Turkish transnumeral does not necessarily take part in imperfective sentences only. The generalization to make is that *although the transnumeral tends to assist the realization of imperfectivity in many cases, it cannot be regarded as a universal imperfectivization device!*

Imperfectivity depends on several factors in a sentence but the use of a transnumeral in a certain sentence component may still be a decisive factor for effectuating imperfectivity. Consider the two sentences in (23) below – (23a) contains a transnumeral as an instrumental adverbial. The subject NP *çocuklar* explicates non-boundedness and must be interpreted as a non-bounded series of temporal instantiations of kids going to school: not simultaneously but one after the other in time, no matter whether individually or in groups. In (23b), however, the transnumeral *bisiklet* ‘bicycle’ preceded by *bir* ‘one’ does not trigger nonbounded iterativity. When a quantifier such as *bir* ‘one’, is added to the instrumental adverbial in such cases, boundedness is explicated in the NPs, it is transferred onto the verb referent, and this kind of interaction between the elements of the sentence renders the situation perfective. In (23a) the transnumeral *bisiklet* ‘bicycle’, despite its seeming (outward) singularity, encodes plurality, hence this is a leak. Being a temporal entity with no beginning and no end on the time axis and implicating (or explicating) non-bounded iterativity, it is mapped onto the verb – which ultimately renders the situation imperfective. In (23b) the subject is more easily perceived as definite due to its initial position – which, in terms of Verkuyl’s aspect schemata, means that the sentence is perfective.

- (23) a. *Çocuklar okula bisiklet ile gittiler* [IMPERFECTIVE]
 Kid_{PL} school_{DAT} bicycle_{TRANSNUM} with went
 ‘Children/The children went to school by bicycle’
 b. *İki çocuk okula bir bisiklet ile gittiler* [PERFECTIVE]
 Two kid school one bicycle with went
 ‘Two children went to school with one bicycle’

In both sentences in (24) below the NP *kabı* ‘container’ is a transnumeral. But the first sentence, (24a), is imperfective, because of the impact of the transnumeral itself. It pluralizes the entity denoted, making it nonbounded on the time axis, indefinitely iterative. It has no known starting point and no known endpoint. The temporal nonboundedness and the indefinite iterativity here are transferred (mapped) onto the referent of the verb – which is otherwise, initially, aspectually ambivalent, and this coerces the verb into

imperfectivity. Imperfectivity is further amplified by the semantic impact of the adverbial nominal *çocukken* ‘when [we were] kids’ – referring to a nonbounded past period with no known starting point and endpoint:

- (24) a. Çocukken yogurt kabı ile pasta yaptık
[IMPERFECTIVE]
Child_{WHILE} yogurt container_{TRANSDNUM-ACC} with cake_{TRANSDNUM} made
‘When children we made a cake with a yogurt container’
- b. Kardeşim ile yogurt kabı ile birkaç pasta yaptık
[PERFECTIVE]
Brother with yogurt container_{TRANSDNUM} with a few cake_{RANSNUM} made
‘We made a few cakes with my brother with a yogurt container’

In sentence (24b) *kab-ı* ‘container’ is again a transnumeral. But this time, conversely, a one-off situation is portrayed, hence perfectivity is effectuated. This happens thanks to the initial position of the subject *kardeş-im* ‘my brother’, a position which renders the subject definite according to the cross-language theme-rheme regularity (cf. the Czech sentence *Žena napsala dopis* ‘The woman wrote a letter’ above), hence temporally bounded. In contrast to the transnumeral *kabı* ‘container’ in (24a) which pluralizes the entity denoted and makes it non-bounded, in (24b) the referent of the transnumeral *kabı* is “reduced” to only several instances of use of yogurt containers, which means bounded on the time axis. The boundedness and perfectivity of the situation in (24b) is amplified by the quantified (i.e., bounded) expression *birkaç pasta* ‘a few cakes’ – representing a few instances (i.e., bounded on the time axis) of producing the relevant entity. Thus sentence (24a) falls into Verkuyl’s imperfective schema, sentence (24b) falls into Verkuyl’s perfective schema.

As for instrumental adverbials in general, in a debate long ago on whether these adverbials take part in the compositional effectuation of aspect or not, Verkuyl (1972, p. 109) maintained that they fall outside the scope of the sentence in which aspect is composed. He provided the examples (25a) and (25b) here – which he judged non-grammatical due to some incompatibility, reckoned by him, with *for*-time adverbials:

- (25) a. *Carla wrote that letter with a pencil for half an hour
b. *Carla wrote that letter with pencils for half an hour

Strangely, despite the large importance of instrumental adverbials, Verkuyl’s idea remained generally sidestepped in the literature – but was criticized by Kabakčiev (2000, pp. 261–262) who judged the sentences in (25) to be peculiar in pragmatic terms and upheld a thesis opposite to Verkuyl’s. On the one hand, according to Kabakčiev, sentences such as (25a) and (25b) are not representative of the issue dealing with instrumental adverbials. On the other,

instrumental adverbials, as is common knowledge, are obtainable from direct objects, see (26) > (27) below. This ultimately means that instrumental adverbials take part in the composition of aspect.

The real-world setting of the sentences in (26) and (27) below is the following. Seymour works in a meat department. He slices salami every day, using different knives. Sentences such as (26a) and (27a) describe a single occasion of Seymour's slicing salami. This is a perfective situation. Conversely, sentences such as (26b) and (27b) describe Seymour's permanent activities in the meat department – hence, imperfectivity is effectuated:

- (26) a. Seymour used a knife to slice the salami [PERFECTIVE]
 b. Seymour used knives to slice the salami [IMPERFECTIVE]
 (27) a. Seymour sliced the salami with a knife [PERFECTIVE]
 b. Seymour sliced the salami with knives [IMPERFECTIVE]

Rendered into Turkish, the corresponding sentences display the same regularity. The phrase *kesmek için bıçak* 'cut [with] knife' – with *bıçak* 'knife' as a transnumeral, is the same in (28a) and (28b). The perfective-imperfective contrast, interestingly, is realized through the accusative-nominative contrast in the direct object (*salami*_{ACC} vs *salam*_{NOM}). The Turkish sentences (28c) and (28d) are identical in structure and meaning to the English sentences (27a) and (27b), and describe what Orhan does in the meat department (on a past-time segment). He either performs a one-off act, as in (28c), or is engaged in the activity (activities) of slicing salami – a nonbounded situation, imperfective. In (28c) perfectivity is realized exactly as in (27a), and in (28d) imperfectivity is effectuated as in (27d). The difference is that while in English the bounded-nonbounded (hence perfective-imperfective) contrast is realized through the indefinite vs the zero article (with a plural nominal in the latter case) – the verb in both cases being aspectually ambivalent – in Turkish the perfective-imperfective contrast is triggered through the use of the numeral *bir* 'one' vs a transnumeral:

- (28) a. Orhan salami kesmek için bir bıçak kullandı [PERFECTIVE]
 Orhan salami_{ACC} cut with one knife used
 'Orhan used a knife to slice the salami'
 b. Orhan salam kesmek için bıçak kullandı [IMPERFECTIVE]
 Orhan salam_{NOM} cut with knife_{TRANSNUM} used
 'Orhan used knives to slice the salami'
 c. Orhan salami bir bıçakla kesti [PERFECTIVE]
 Orhan salami_{ACC} one knife cut
 'Orhan sliced the salami with a knife'
 d. Orhan bıçakla salam kesti [IMPERFECTIVE]
 Orhan knife_{TRANSNUM} salami cut
 'Orhan sliced the salami with knives'

The four Turkish sentences (28a-d) with transnumerals as instrumental adverbials indicate once again that while the transnumeral, as shown above for sentences (24), does not in itself always and invariably support the effectuation of imperfectivity, here imperfectivity is realized through the use of transnumerals. In any case, the realization of the aspect values of perfectivity and imperfectivity is an extremely complex and intricate mechanism in which transnumerality could be regarded as prone to the realization of imperfectivity. Future research is needed to clarify the uncertainties and inaccuracies in the handling of this problem field.

Results and Discussion

The aim of the analysis carried out in the paper was to reveal the role of the transnumeral form in the realization of perfectivity and imperfectivity in Turkish. Examples with transnumerals were analyzed positioned as subjects, objects (direct and indirect) and an instrumental adverbial. The analysis here and in my previous study (Kutsarova, 2025) show that Turkish is a CA language with aspectually ambivalent *-DI* and *-mİş* past-tense forms, i.e., in contrast to Bulgarian and all the other Slavic languages, it has no perfective and imperfective verbs. The compositional realization of aspect in Turkish resides at the sentence level and is effectuated through the definite-indefinite contrast and boundedness and nonboundedness, respectively, through the subject and the direct object, as well as through instrumental adverbials. It was shown above that perfectivity and imperfectivity in the syntactic object are effectuated through entities (NP referents) that are morphologically marked as definite or indefinite (the latter not marked for definiteness). As a result, accusative forms, which are definite, explicate boundedness in the NP referent; and vice versa, when the syntactic object is not marked as accusative, nonboundedness is explicated in the NP referent. Note, however, that even though this contrast is systematically effectuated with the syntactic object, the final compositionally established aspect value is a result of a complex interplay between all sentence elements, including word order. Indeed, there are certain sentence types in Turkish in which this principle will not hold, but these cases are rare – and the generalization above is valid for the large majority of possible sentence types.

If in the direct object the perfectivity-imperfectivity contrast is explicated easily through the alternation of morphologically marked and non-marked forms, with the subject the phenomenon is much more restricted. This constraint is generated by the formal, structural, semantic and functional specificities of the subject, which is usually in initial position and is not morphologically marked with a case affix. These specificities are directly related to the explication of definiteness and indefiniteness in terms of the

functional sentence perspective. The definiteness-indefiniteness category is most closely related to boundedness and nonboundedness, a major and very significant element in the theory of CA directly related to the explication of perfectivity and imperfectivity. Apart from that, the non-markedness of the subject formally coincides with the transnumeral form (grammatical homonymy), which makes the analysis rather complicated. Apart from that, the realization of aspect meanings from the point of view of the theory of CA is always at the level of the sentence, combined with a complex interplay of many components – nominal and verbal elements, whereby adverbials, word order and logical stress also take part in various ways.

Conclusions

The overall analysis aimed to investigate the specificity of the Turkish transnumeral in the light of the CA theory, as well as to reveal, as much as possible, the general mechanism of its relationship with aspect. It was determined that Turkish is a “hybrid language type” where grammatical transnumerality co-exists with nominal forms for singular and plural, unlike in “purely transnumeral” languages (of the Chinese type) and languages of the European type like English (Germanic, Romance) and the Slavic languages with singulars and plurals.

It was expected for conclusions to be drawn from this study that transnumerality is a major phenomenon in Modern Turkish that contributes to the realization of aspect in compositional terms and in particular imperfectivity.

But the analysis favors a conclusion that when quantifiers are added to the transnumerals, boundedness may be explicated in the NPs, it is transferred onto the verb referent, and this kind of interaction between the elements of the sentence renders the situation perfective – which, in terms of Verkuyl’s aspect schemata, means that the sentence is perfective.

The specific object of analysis here were the types of aspect values explicated at the sentence level, triggered as a result of an interplay between the transnumeral in a given sentence component (subject, object, adverbials) and the other sentence components – or some of them. It is worth noting again here that the effectuation of the perfective-imperfective distinction is crucially dependent on the ambivalent aspectual nature of the Turkish past-time affixes *-DI* and *-mİş*.

The transnumeral as subject in the sentence. The analysis shows that for the effectuation of the perfective-imperfective distinction in sentences with a transnumeral in the subject position, very significant is the ability of this special form to encode both singularity and plurality. The imperfective reading is mainly dependent on the Verkuylian leak (nonboundedness) in the interpretation of plurality but the role of other elements, such as stress and word order, is also significant. The use of a transnumeral in the subject

position is, however, rather restricted in comparison with the direct object position, where genericity is very often signified.

The transnumeral as direct object in the sentence. Examples are given in which the direct object is expressed by a transnumeral, whereby it encodes indefinite plurality, hence indefinite iterativity, hence imperfectivity (after the relevant NP value is transferred onto the verb). When the direct object with a transnumeral is used with the accusative case suffix [-ı], it indicates that this is a specific entity known to both speaker and hearer. Without the accusative, the noun loses its specificity or definiteness. These are (some of) the reasons why sentences are perfective and imperfective respectively. But the direct object is not always marked with an accusative, and when it is not, indefiniteness is explicated, again through a transnumeral. The use of the relevant transnumeral as direct object explicates temporal nonboundedness and this temporal nonboundedness is mapped onto the (referent of the) verb, coercing it into indefinite iterativity, hence imperfectivity. What is more, preference is observed for the use of a transnumeral in the direct object in a preverbal position at the expense of a form with an *-lar* affix. The absence of a quantifier triggers the explication of nonboundedness, therefore imperfective situations (Vendlerian) are effectuated: states or activities (Vendler 1957).

The transnumeral as indirect object. Some of the examples (19a), (19b), (20a), (20b) with transnumerals as indirect object would rather be ascribed to the group of adverbials – a place adverbial in (19), a time adverbial in (20), i.e., the descriptions in the Turkish linguistic literature are followed, not the understanding of what is considered to be an indirect object in the grammars of English and other European languages.

However, the fact that there is a transnumeral – no matter whether the sentence is imperfective or perfective, indicates that with indirect objects there appears to be no special preference for transnumerals to take part in imperfective sentences – as this is observed in sentences containing transnumerals serving as subjects and direct objects (a thesis indirectly supported by Sağ, 2022, p. 754).

Transnumerals in the position of an indirect object illustrate the realization of perfectivity and imperfectivity through the mechanism of boundedness and nonboundedness of the NP situation participants. In the case of an NP leak imperfectivity is realized. However, in the case of perfectivity the quantifiers make the (referents of the) situation-participant NPs bounded, despite the transnumerality, and this matches the perfective schema in the CA theory.

The transnumeral as an instrumental adverbial. The Turkish sentences (28a-d) with transnumerals as instrumental adverbials indicate once again that the transnumeral does not in itself always and invariably support the effectuation of imperfectivity. Imperfectivity depends on several factors in a

sentence but the use of a transnumeral in a certain sentence component may still be a decisive factor for effectuating imperfectivity. In certain cases (23a), the transnumeral, despite its outward singularity, encodes plurality, hence this is a Verkuyl's leak. Being a temporal entity with no beginning and no end on the time axis and implicating (or explicating) non-bounded iterativity, it is mapped onto the verb – which ultimately renders the situation imperfective. When a quantifier is added to the instrumental adverbial in such cases (23b), boundedness is explicated in the NPs, it is transferred onto the verb referent, and this kind of interaction between the elements of the sentence renders the situation perfective and the subject is more easily perceived as definite due to its initial position – all of which, in terms of Verkuyl's aspect schemata, means that the sentence is perfective.

The generalization is that although the transnumeral tends to assist the realization of imperfectivity in many cases, it cannot be regarded as a universal imperfectivization device. While it cannot be categorically asserted that transnumeral forms directly or indirectly help in the realization of aspect, they play a very important role for the effectuation of aspect meanings.

Transnumerality was also analyzed through the prism of psycholinguistics regarding the transcoding of what is perceived by the speaker as objective reality and the mechanism generated in people's heads governing the encoding of number. The Turkish transnumeral can be said to play an important role in syntax and semantics, allowing speakers to express ideas without focusing on a particular number. This facilitates the flexibility of expression and helps the economy of language devices.

Ultimately, the realization of the aspect values of perfectivity and imperfectivity is an extremely complex and intricate mechanism in which transnumerality could be regarded as prone to the realization of imperfectivity. Future research is needed to clarify the uncertainties and inaccuracies in the handling of this problem field.

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Multimodal Critical Discourse Analysis of political cartoons

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Abstract. This article investigates political cartoons related to sanctions on Russia following its invasion of Ukraine, using Multimodal Critical Discourse Analysis (MCDA). The selected corpus, drawn from specialized digital repositories, illustrates thematic representations of the effectiveness or ineffectiveness of restrictive measures. Through analytical tools grounded in the triadic model of sender, code, and receiver, the study aims to uncover latent meanings conveyed through the interplay of verbal and non-verbal modes. Cartoons portray political figures, symbols, and events, often employing prototypes and tools to highlight specific actions and their perceived outcomes. Their multimodal nature combined with satire, metaphor, and criticism makes them especially potent for critical discourse analysis, shaped by historical, political and sociocultural factors. The analysis identifies several communication strategies that implicitly influence public opinion. Cartoons supporting sanctions often depict the Russian nation and its president through denigration, emotional appeals, and fear-based imagery, fostering solidarity with Ukraine and promoting negative assessments of Russian leadership. Conversely, cartoons emphasising the ineffectiveness of sanctions draw attention to Russia's circumvention tactics, profits from energy exports, and the economic risks to sanctioning nations. These representations may push international leaders toward seeking a ceasefire or, alternatively, undermine support for sanctions and democratic values. Ultimately, political cartoons emerge as semantically rich, visually concise instruments requiring significant background knowledge for proper interpretation. They function not only as tools of critique but also as persuasive media, influencing public discourse on the legitimacy and consequences of geopolitical actions. Based on the analyzed corpus, it has been established that political cartoons simultaneously highlight the ineffectiveness of the chosen mechanisms. On the one hand, they call on international leaders to consolidate efforts toward achieving a ceasefire and preventing potential threats to European security. On the other hand, they contribute to the weakening and delegitimization of sanction-related actions, thereby undermining democratic values and serving as a potential lever for the withdrawal of support for Ukraine.

Keywords: *Multimodal Critical Discourse Analysis, sanctions, visual and verbal components, political cartoons.*

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Макарук Лариса, Заблоцький Юрій, Чарікова Ірина. Мультиmodalний критичний дискурс-аналіз політичних карикатур.

Анотація. Ця стаття досліджує політичні карикатури, пов'язані із санкціями проти Росії після її вторгнення в Україну, з використанням мультиmodalного критичного дискурс-аналізу (МКДА). Відібраний корпус, сформований на основі спеціалізованих цифрових репозиторіїв, ілюструє тематичні уявлення щодо ефективності або неефективності обмежувальних заходів. За допомогою аналітичних інструментів, що спираються на тріадичну модель «відправник — код — отримувач», дослідження має за мету виявити приховані смисли, які передає взаємодія вербальних і невербальних засобів. Карикатури зображують політичних діячів, символи та події, часто використовуючи прототипи та візуальні засоби для акцентування уваги на конкретних діях і сприйманих наслідках. Їхня мультиmodalність у поєднанні з сатирою, метафорикою й критикою робить такі зображення особливо ефективними для критичного дискурс-аналізу, зумовленого історичними, політичними та соціокультурними чинниками. Аналіз дав змогу виокремити низку комунікативних стратегій, що неявно впливають на громадську думку. Карикатури, які підтримують санкції, часто зображують російський народ та його президента в принизливому світлі, з апеляцією до емоцій і страху, сприяючи солідарності з Україною та формуванню негативної оцінки російського керівництва. Натомість карикатури, що підкреслюють неефективність санкцій, звертають увагу на обхідні стратегії Росії, прибутки від експорту енергоносіїв та економічні ризики для країн, які запровадили санкції. Такі уявлення можуть спонукати міжнародних лідерів до пошуку перемир'я або, навпаки, підірвати підтримку санкцій та демократичних цінностей. У підсумку політичні карикатури постають як семантично насичені, візуально лаконічні інструменти, для адекватного тлумачення яких потрібні значні фонові знання. Вони функціонують не лише як засоби критики, а й як спонукальні засоби, що впливають на публічний дискурс щодо легітимності та наслідків геополітичних дій. На підставі проаналізованого корпусу встановлено, що політичні карикатури актуалізують недовіру до обраних механізмів з одного боку, оскільки закликають міжнародних лідерів до акумулювання зусиль задля припинення вогню та запобігання потенційним загрозам європейській безпеці. З іншого боку, вони спонукають послабити та делегітимізувати дії із запровадження санкцій, ставлячи під загрозу демократичні цінності, що слугує певним важелем можливого припинення підтримки України.

Ключові слова: мультиmodalний критичний дискурс-аналіз, санкції, візуальні та вербальні складники, політичні карикатури.

Introduction

It is impossible to present the material studied in this article without reviewing the events and circumstances underlying it. Initially, this involved the March 2014 annexation of Crimea by the Russian Federation, a shocking violation of the rules-based world order followed by a range of severe consequences, including a dramatic deterioration of diplomatic relations between Russia and many other states and then followed by the imposition of various sanctions by Western countries. The EU imposed restrictive measures targeting individuals and entities involved in undermining Ukraine's territorial integrity. This included asset freezes

and travel bans designed to pressure Russia into reversing its actions in Crimea. In response to further Russian military aggression in 2022, the EU adopted unprecedented sanctions packages, expanding previous measures and targeting key sectors of the Russian economy, including bans on transactions with the Russian Central Bank, the exclusion of several Russian banks from the SWIFT financial messaging system, and prohibitions on the export of specific goods and technologies to Russia (“EU sanctions against Russia explained”, 2025). By December 2024, the EU had adopted its fifteenth package of restrictive measures, which included asset freezes and travel bans on 54 individuals and 30 entities which supported Russia's war against Ukraine (“Russia’s war against Ukraine”, 2024). This package also targeted Russia's “shadow fleet,” a network of vessels facilitating illicit oil exports to countries like India and China, which are crucial for financing the war. Overall, the sanctions applied against Russia by the EU and the USA have evolved from targeted measures in 2014 to broad and multifaceted actions intended to constrain Russia's capacity to sustain its military operations and to deter further violations of international law.

Of particular interest to us is the fact that the measures undertaken by countries in the free world to peacefully pressure Russia into abandoning the war were extensively reflected in the global media environment. This ultimately came to constitute a body of sanction-related discourse that comprised its own specific issues, rhetoric means, and semiotic resources. Many leading Western media support the sanctions, clearly pointing to the inadmissibility of the large-scale violence and brutality during the process of annexing the territory of Ukraine.

In our view, political cartoons constitute a significant segment of sanctions-related discourse, and it is possible to subject them to critical discourse analysis given their wide popular distribution: they not only give a reflection of the issue involved, but they also provide an attitudinal evaluation of the events and characters involved. Political cartoons from topic-specific repositories provide enough context to enable typical recipients to decode them. For the focus decision, each cartoon is indexed in terms of keywords: an indication is given regarding the thematic category to which it belongs, and it includes the heading and the author’s name below. In addition, some sources feature flag icons indicating the author’s nationality.

Such a structured indexing system and contextual metadata enhance the accessibility and interpretative potential of political cartoons, making them a valuable resource for analyzing the interplay between verbal and visual semiotics reflecting themes and ideological configurations of sanction discourse in the Western media environment. With these considerations in mind, we will now turn our attention specifically to the body of cartoons centered on the anti-Russian sanctions, which constitutes a discrete multimodal dimension of the broader sanction discourse.

Method

Language functions as a powerful instrument in shaping social, cultural, and political realities, often serving the interests of particular groups by influencing how objective reality is interpreted. Critical Discourse Analysis (CDA) provides a methodological framework for uncovering implicit meanings and exposing underlying ideological intentions. According to Fairclough (Fairclough, 2010, p. 59), one of the founding figures of CDA, its scope encompasses three interrelated dimensions: the text (as the material, linguistic output), discursive practice (encompassing the processes of production, distribution, and interpretation), and social practice (how discourse reflects and reinforces broader sociocultural contexts).

In the present study, this framework is adapted to analyzing political cartoons as multimodal texts composed of both verbal and visual elements. Within this context, the textual level refers to the visual-verbal composition of a cartoon; the discursive practice involves not only the producer (caricaturist), medium (e.g., international cartoon databases), and receiver (mass audiences) but also incorporates genre-specific features such as symbolism, exaggeration, irony, and analogy, along with core communicative functions such as criticism, ridicule, and attitude formation. The social practice pertains to the ideological and evaluative messages conveyed within the corpus of cartoons, including their possible impact on the value systems and the political stances of the viewers. We have developed a set of criteria for the cartoons selection and conducting Multimodal Critical Discourse Analysis (MCDA), which is presented in the table below.

Table 1

The Criteria for the Cartoon Selection and Conducting MCDA

Analysis Criteria & Modes	Means of Realization	Role / Functional and Semantic Load (Deep Meaning)
Non-verbal Modes	Color	Grey – indifference; black – evil (grief); red – danger; blue-and-yellow – Ukrainian identity
	Contrast (saturation / blurriness)	Salient / marginal elements
	Size	Hierarchical or power imbalance
	Spatial Composition	Narrative and ideological relations:

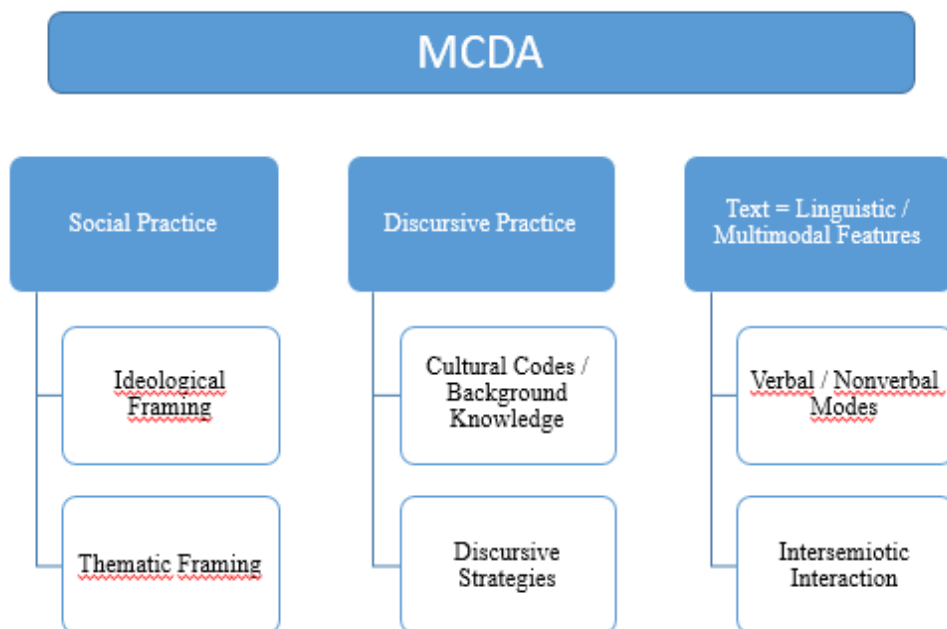
		<ul style="list-style-type: none"> • top-bottom = status (power/subordination); • left-right = given-new / past-future; • proximity = association / opposition
Verbal Modes	Heading, labels, inscription, names (any verbal element naming characters, objects, or places in the cartoon)	Contextual grounding through reference to characters, items, locations, etc.
Intersemiotic Interaction	Connection between verbal and visual elements; relations between multiple non-verbal components	Facilitates or complicates interpretation; reveals implicit meaning
Cultural Codes & Background Knowledge	Broad social context, set of values, encyclopedic knowledge, multimodal literacy	Enhances comprehension of visual components and assist in decoding their deeper meanings
Discursive Strategies	Metaphors, allusions, visual clichés, hyperbole, grotesque, distortion, sarcasm	Satirical critique, social commentary, symbolic generalization
Ideological Framing	Images, symbols, subjectivity	Serves as a marker of value identification; shapes the viewer's attitude; reveals political reality through stylistic framing
Thematic Framing	Recurring characters, narrative patterns, culturally marked signs	Elicit audience response to political context through periodic use of consistent visual markers

The set of developed for the selection and MCDA criteria of political cartoons is aligned with Fairclough's three level CDA model. Each parameter corresponds to one of the key analytical levels: text, discursive practice, and social practice. This adaptation allows for the systematic integration of both visual and verbal components within the broader sociopolitical context of meaning-making. The

following diagram presents how these criteria map onto Fairclough's framework in the context of multimodal analysis.

Figure 1

Adapted MCDA Criteria



Following the Russian invasion, the sanction-related discourse developed gradually, patterning the particular framework and parameters, making them a linguistic analysis focus. Recent studies of the types of this sociolinguistic phenomenon provide quite a wide range of criteria for outlining distinct discourse subtypes, depending on the research objectives. The identification of discourse relating to sanctions is possible based on thematic and content parameters, as well as the social nature and ideological approach of the utilized semiotic resources. Several recent papers featuring the notion of “sanction discourse” in their titles and focusing on various linguistic aspects serve as compelling evidence of this approach (Masaka, 2012; Berkmanas, 2016; Gloria, 2021).

Establishing sanctions-related discourse as a distinct entity facilitates the process of subjecting it to the principles of critical discourse analysis. The basic framework of critical discourse analysis presupposes three elements: society, discourse, and social cognition (Van Dijk, 1995b, p. 17). Social cognition comprises historical, cultural, and mental filters of interaction with reality (Fiske, Taylor, 2017, p. 44), ultimately forming the community's beliefs, norms, and values. Unquestionably, sanctions-related discourse observed in the media presents the issue of restrictive measures applied to the Russian economy and its executives

through the lenses of the belief systems and the journalistic standards of Western countries.

The basic principle of CDA presupposes the analysis of the presentation of socially essential issues through the communicative activity of its participants at a given historical period within a particular sociocultural context. According to van Dijk, it is significant to undertake a thorough analysis of various traditional dimensions of discourse (grammar, style, rhetoric, schematic organization, speech acts, and pragmatic strategies) including other semiotic dimensions (pictures, film, sound, music, and gestures) of communicative events (Van Dijk, 1995a, p. 18) devoting particular attention to meanings and intentions implied “beyond the sentence” (Van Dijk, 1989, p. 164).

A comprehensive investigation into the communicative specificities of sanctions-related discourse, including its multidimensional semiotic configuration, can be carried out within Multimodal Critical Discourse Analysis (MCDA). Multimodality, as a field of linguistic inquiry, is grounded in the principles of Visual Social Semiotics, as formulated by Kress and van Leeuwen (Kress & Van Leeuwen, 2006), and is derived from Systemic Functional Linguistics (SFL), a linguistic theory developed by M.A.K. Halliday (Halliday & Matthiessen, 2004). According to Kress, meaning can be realized not just through language means but by the use of other semiotic resources such as dance, art, and pictures; they can “articulate ideological positions of complex and potent kinds, and they, too, should be approached from the point of view of social critique” (Kress & Van Leeuwen, 2006, p. 15), and thus should be studied within the framework of CDA.

Multimodal Critical Discourse Analysis (MCDA) expands the scope of CDA by incorporating multiple modes of communication, such as images, gestures, sounds, layout, and other visual or non-verbal elements. It analyzes how these modes interact with language to convey meaning and perpetuate ideologies. MCDA conceptualizes a text – the central unit of discourse analysis – as a multimodal semiotic entity constructed on a specific set of meaning-making choices determined by its creator. Its coherence is governed by both internal factors (textual structure) and external factors (communicative context), all of which are inherent within a given social group framework (Kress, 2023, p. 36). Unlike van Dijk, who emphasized the importance of uncovering hidden meanings within texts (Van Dijk, 1995a, p. 18), G. Kress rejects the notion of “implicitness”, arguing that since all modes contribute to meaning-making, the traditional critical analysis focused solely on linguistic parameters is limited in identifying the proper interpretation (Kress, 2023, p. 39). Any multimodal text is defined by three interrelated systems: information value (giving specific value to elements through their position on the image: left and right, top and bottom, center and

margin), salience (the ability to the viewer's attention via foreground or background balance, relative size, color, and tone contrast), and framing (dividing or uniting elements of the image) (Kress & Van Leeuwen, 2006, p. 177). These visual characteristics can intensify, add or even slightly change the aggregate meaning. Thus, the full potential of the discourse can only be realized when attention is given to all the modes and semiotic material involved. For this reason, the generalized approach to its social nature investigation should be based on the MCDA.

The socio-semiotic approach involves primarily the processes associated with the expression of meaning in general and the formulation of meaningful communicative output by individuals in particular (Jewitt, et al., 2016); it identifies types of multimodal cartoons and clarifies the meaning of their components and all units used in them; it also focuses on the relationship between modes and their compatibility, and the social needs for which they serve, taking into account the individual producing the sign and the context in which these meanings are realized. The comparative method enabled the implementation of the comparison to identify common and different parameters within the multimodal constructs identified in the media.

The multimodal representation of the Russia-Ukraine war in political cartoons has attracted scholarly attention in recent years. Researchers have explored ways in which cartoonists have dealt with the subject through the lens of multimodal and semiotic analysis, including Zrekat, Alanazi, and Lababneh's (Zrekat, Alanazi & Lababneh, 2023) examination of caricatures associated with the war, Abbasi, Zahra, and Asghar's (Abbasi, Zahra & Asghar, 2022) semiotic interpretation of political cartoons, and Semotiuk's (Semotiuk, 2019) comparative analysis of cartoons from American, German, and Ukrainian media. While these studies offer valuable insights into how the war is visually and discursively constructed, the specific topic of multimodal discourse analysis of economic sanctions imposed on Russia, with a focus on the social influence on the recipients, remains largely underexplored in linguistic research. This gap underscores the relevance and novelty of the present study.

Remarkably creative, semantically diverse, and thought-provoking political cartoons have become an integral part of sanctions-related discourse, helping to fulfill its key objectives within a defined communicative and social context. A political cartoon is a multimodal semiotic artifact (Stöckl, 2004) that integrates visual and verbal elements (Hussein, 2019) to frame, critique, and interpret political and societal issues (Abraham, 2009). This genre's fundamental principles involve the use of incongruity, exaggeration, metaphor, and irony (Genova, 2018) to reflect and shape public opinion on critical social matters by distilling complex issues into accessible and thought-provoking imagery. Despite their seemingly

“childlike” aesthetics and the frequent incorporation of humor, political cartoons do not always serve solely as a source of amusement and fun (El Refaie, 2009). Political cartoons are inherently socially charged due to their broader contextual grounding. They are rarely neutral in stance, and often imbued with an evaluative component, which makes them particularly effective for presenting ideology-related issues (Umer, Asghar, Qasim, Ahmad, Hassan, 2024); this renders them valuable for a comprehensive critical study of sanction discourse within the multimodal analysis.

From a psycholinguistic perspective, decoding political cartoons entails a complex interplay of cognitive and interpretive processes. As Forceville (2024) argues, decoding political cartoons requires not only linguistic competence and visual literacy but also the ability to activate relevant background knowledge and infer intended meanings – ranging from explicit cues to weakly implicated, context-dependent interpretations – making the process cognitively demanding and reliant on the viewer’s individual cognitive environment (pp. 262–264). Successful comprehension requires not only grammatical and syntax structures – the ability to process verbal elements such as captions and labels – but also situational awareness and encyclopedic knowledge, including multimodal and visual literacy skills necessary to interpret symbols, metaphors, and culturally loaded imagery. Viewers must integrate information across these semiotic strata to construct a coherent and meaningful message. This integrative process demands active cognitive engagement, particularly in reconciling visual and textual cues with background knowledge. Importantly, the mental effort involved in interpretation is often psychologically rewarding: recipients who successfully decode nuanced or layered meanings may experience a sense of cognitive gratification or intellectual satisfaction, coupled with a feeling of ingroup affiliation – that is, identification with a socially or ideologically aligned readership, such as audiences of liberal-democratic media outlets. Thus, cartoon interpretation operates both as a communicative shared worldview and affective responses within target audiences.

Despite the undeniable advantages of MCDA in discourse studies, it may exhibit certain shortcomings. As stated by P. Ledin and D. Machin, excessive reliance on SFL systemic parameters and strict adherence to semiotic resources outside their canon of use (norms and standards of their usage in a particular genre) as the foundation of analysis (Ledin & Machin, 2019, p. 501) might not be equally effective for all aspects of multimodal analysis, disregarding the broader social, cultural, and historical communicative context of meaning-making and potentially leading to a deficient analysis of the ideological influences of a given discourse (Ledin & Machin, 2017, p. 60). This criticism highlights the importance of developing a more socially-driven approach to MCDA, with the social aspect at

the centre, surrounded by canons of use and framed by the cultural context of a given historical period.

We acknowledge these concerns, but for several reasons, we consider political cartoons a major candidate for the application of MCDA within sanction-related discourse. Firstly, the “story” of sanctions as presented in a set of political cartoons is strongly socially framed, as it addresses the issue of an indefensible Russia’s invasion in Ukraine, a country in the middle of Europe, in an era where the prevailing pattern has involved open borders and global cooperation. It is intended not only to provide a commentary on this injustice but also to seek to rectify it. Secondly, while transmitting the main idea of a message, their content is ideologically charged, as they not only draw attention to the issue but they also seek to influence the readers’ attitude towards the events and their participants, using skillfully combined semiotic resources. Finally, it can be observed that the multimodal presentation of sanctions-related discourse is based on a number of predominant themes that convey a specific message. It possesses a distinct set of features shaped by particular strategies and tactics, expressed verbally using particular vocabulary, puns, and metaphors, as well as visually through various typical scenarios and images.

The source material for this study is political cartoons from the internationally known cartoon databanks *CartoonStock* (<https://www.cartoonstock.com/>), *GoComics* (<https://www.gocomics.com/>), and *Cartoon Movement* (<https://www.cartoonmovement.com/>). They are cartoons on important current global issues, indexed into thematic categories enabling specific search options. The websites display slight differences in their meta-information structure: *CartoonStock* presents each cartoon along with its title and the author’s full name at the bottom; *Cartoon Movement* additionally includes the date and a flag icon that indicates the author’s nationality; *GoComics* provides the author’s nickname and, optionally, the cartoon’s original source (such as a newspaper, a magazine or a website). While the inclusion of national flags suggests additional analysis parameters such as author’s identity and its potential influence on the issue perception, any attempt to reliably establish the cartoonist’s actual identity, nationality, or broader ideological viewpoint remains highly problematic. Many creators use pseudonyms, and verifying their background with confidence would require extensive investigation via search systems, professional directories, and personal websites. Taking into account the impossibility to apply this criterion to every element in the corpus, we consider such a task to go beyond the practical scope of this study due to its complexity and time-consuming nature. Other elements ensure sufficient social context, provided that the reader has a good command of English (as found in the cartoon titles and verbal components), is familiar with major current global issues (events

and prominent figures), and possesses fundamental visual literacy skills (such as the ability to recognize basic symbols, metaphors, and allusions).

A random sampling technique was applied to select data for further Multimodal Critical Discourse Analysis (MCDA). The phrase “Russia sanctions” was used as a key search term to identify cartoons related to this theme. The selected corpus was subsequently analyzed from a multimodal perspective. Based on the analysis of verbal and visual elements, two major themes were identified, namely the presumed effectiveness or the implied ineffectiveness of sanctions. These themes are presented by means of recurring scenarios, which were further categorized based on typical visual artifacts conveyed by means of specific imagery. The findings indicate that the overall semantic meaning of the selected cartoons is constructed by means of the combination of stylistic devices (such as metaphors, metonymies, multimodal puns, and allusions), established conventions (such as the functions of criticism and satire), communicative strategies and tactics (including mobilization, support for the affected party, delegitimization of sanctions, and emotional exhaustion), and overarching discourse ideologies (notably anti-war rhetoric and advocacy for the removal of sanctions). This methodological approach within the Multimodal Critical Discourse Analysis (MCDA) allows for a systematic examination of how linguistic and visual elements interact to construct meaning, allowing for a deeper understanding of the ideological and rhetorical functions performed by political cartoons in the context of sanctions-related discourse.

Following a keyword-based search, a total of 90 political cartoons depicting the economic sanctions imposed on Russia were identified and incorporated into the studied corpus. After a preliminary qualitative analysis based on recurring communicative scenarios, the material was divided into two overarching groups: cartoons representing the effectiveness of sanctions and those emphasizing their ineffectiveness. Each of these two groups was subsequently subdivided into ten thematic categories, reflecting dominant visual and semantic patterns.

The effectiveness group comprises five categories. The most represented among them is “Putin Under Pressure” (16.7%), which illustrates the personal consequences of sanctions for the Russian president, followed by “Crushed Economy” (14.4%), which visualizes the broader collapse of Russia’s economic infrastructure. Other categories in this group include “Civilian Suffering” (6.7%), highlighting the population’s hardships, “Trapped Bear Motif” (4.4%), using animal symbolism to portray geopolitical entrapment, and “Oil Sanctions Targeting Putin” (4.4%), emphasizing the targeting of energy revenues.

The ineffectiveness group contains the remaining five categories, with the highest frequency found in “Circumventing Restrictions” (16.7%), which depicts Russia’s adaptive strategies and sanction evasion tactics. “Backfiring Sanctions”

(13.3%) follows, focusing on the negative consequences for sanctioning states themselves. Additional categories include “Oil Profits for Putin” (8.9%), portraying Russia’s continued energy gains, “Military Power Unshaken” (7.8%), suggesting the persistence of Russian military strength despite sanctions, and “Sanctions Falling Short” (6.7%), reflecting the general perception of inefficacy.

Taken together, the results demonstrate that while both supportive and critical framings of sanctions are present, the visual discourse in the analyzed corpus leans more heavily toward representations of ineffectiveness. The emphasis on loopholes, unintended consequences, and enduring resilience reveals a complex and often skeptical view of sanctions as an effective geopolitical instrument.

Results and Discussion

The events related to and encompassing the theme of sanctions have been extensively covered in various media outlets in a variety of forms, including political debates, economic reports, news segments, and journalistic articles as well as in political cartoons, forming a body of linguistically-conditioned, socially-framed and ideologically-charged sanctions-related discourse. The discourse regarding anti-Russian sanctions has been shaped at the intersection of multiple narratives: military, as it represents the Western world's nonviolent response aimed at halting military actions; economic, since the measures primarily consist of financial and trade-related restrictions; and media-related, as the dissemination and framing of sanctions largely depend on communication channels. It has been widely reflected in oral and written form as news reports and newspaper articles, which have been extensively examined by linguistic experts in numerous publications. It can nonetheless be argued that the field of political cartoons has not been studied adequately, even though it provides such a rich source of raw material for Multimodal Critical Discourse Analysis. The study undertaken here is intended to provide an analysis of the major themes, patterns and images of sanctions-related discourse presented in political cartoons from Western media sources. The analyzed material displays underlying messages and explicit intentions embedded within specific communicative strategies.

The Degree of Effectiveness of International Anti-Russian Sanctions

The Multimodal Critical Discourse Analysis of the studied corpus has revealed recurring patterns that shape two distinctly identifiable major themes: the effectiveness, or conversely, the ineffectiveness of the sanctions applied against the Russian Federation. Each integral theme has been divided into several

subcategories, represented with different sets of semiotic resources embedded by the use of stylistic devices in accordance with canons of use of the political cartoon genre into ideologically charged and socially- and culturally-framed stories. Most narrations can be classified in terms of certain discursive tactics designed to achieve specific communicative objectives. The verbal and graphical components of these multimodal artefacts complement each other, outlining – through metaphorical projection and expressive means – the basic features of political cartoons: supporting certain values, condemning injustices, and shaping public opinion through critique and satire. Thus, they are not all intended to embody an element of humor; however, most of them are cleverly conceived and precise.

Within the studied material, the theme of the effectiveness of sanctions is conveyed in terms of the following scenarios: potential harm affecting Russia, its citizens, economy, and its president Vladimir Putin in particular. Sanctions themselves are depicted in the form of individuals, tools, obstacles, or weapons that could put pressure on Russian authorities to end the invasion of Ukraine. As suggested above, the target of these punitive measures is either Vladimir Putin personally, the metonymized Russian population, or the metaphorized economy, which suffer from the restrictions imposed. The primary intent of these multimodal texts is not to inflict further hardship but to force Russia to halt the war. The emotional tone, the unflattering depictions of key figures, and the compositional elements of these cartoons reflect a strong disapproval of violations of international law. The various visual representations, political figures, and design choices are, in a manner of speaking, united under the overarching theme of condemning the aggressive occupation of a peaceful country in the heart of Europe.

In one of the most common scenarios, Vladimir Putin, the president of the Russian Federation, is depicted as being the target of international sanctions. In view of the political situation in Russia, Mr. Putin is seen as the most influential individual; as such, he was among the first to be subjected to personal travel bans and asset freezes. He is depicted as being entrapped by sanctions, which are presented using a variety of objects, enforced by figures symbolizing the initiators of the sanctions, or suffering physically or mentally from the restrictions imposed (Fig. 1). All of the cartoons portray the Russian president in a very unfavourable light in terms of his appearance as well as the role he is shown to be performing: a seedy military man, a criminal, a shabby hobo, or even a malicious and deranged Gollum in his dark cave. However, in some cases, visual elements can evoke a certain cognitive dissonance. In the first cartoon, the visual component demonstrates the weight of the sanctions – the size of the kettlebell is larger than that of Putin himself, yet we can see that the character is holding the weight in his

hand, while the verbal component “If they won’t play my way, I’ll take my ball and go home...” suggests that he is more offended by others than actually suffering from the burden. It is also worth highlighting the use of visual devices that create hidden meaning, such as background and size. If we look closely, we can see that the background consists of a large crowd of people whose figures are barely distinguishable. The blurriness and small size of the “other” characters compared to the size of Putin’s figure make them minor objects, creating ambiguity in the perception of the overall message.

The background of the next two cartoons also plays an important role. In the second image, Putin is being led into the distance, where the silhouette of Saint Basil’s Cathedral on Red Square – one of the key symbols of Russia – can be seen against a deep black horizon. Ambiguity arises from the direction of the characters’ movement: the handcuffed criminal is being led into a gloomy space that, nevertheless, appears to be his familiar homeland. The background of the barren land in the third cartoon reinforces its overall unsettling impression, suggesting that the place ruled by Putin is turning into a deserted wasteland. These subtle graphic devices may seem insignificant at first glance; however, they play a crucial role in decoding the core message and shaping the recipient’s perception.

Figure 2

V. Putin Enduring the Consequences of the Sanctions



The body of somewhat similar cartoons is undoubtedly intended to humiliate the leader of the country that launched the brutal war. In this manner defacing the image of the Russian leader, this sector of sanctions-related discourse aims at supporting Ukrainians in their struggle and putting pressure on the aggressor nation to end the war. This strategy is widely used in a variety of discursive practices that relate to any opposition of a social nature. The stark negativity of the image of Mr. Putin, conveyed by means of repulsive facial features and compositional details, reflects the ideological rejection of the war by the creators

of the cartoons. Within a wider social context, this highly unfavorable representation of Vladimir Putin is designed to express condemnation of the violent breach of international law, to mobilize conscientious people to provide assistance for Ukraine, and unite nations that are part of western civilization in the support of democratic values.

Apart from Vladimir Putin himself, another target affected by the sanctions is the Russian Federation – both the political entity and its citizens as a whole. The trade restrictions primarily target the Russian economy, which provides the underlying power for the military forces; the sanctions exclude health- and food-related products in order to avoid harming ordinary people (“EU sanctions against Russia explained”, 2025). However, it is obvious that the measures will, to some extent influence every segment of society: no individuals can escape the effects of certain strategic moves, such as the withdrawal of international businesses and services as a protest against the aggression. To outside observers, it seems incongruous that following the invasion, the approval rating of President Putin among Russians rose by over 10 percent (“Vladimir Putin's approval rating in Russia”, 2025), so there would be a certain logic in causing economic consequences for Russian households in order to weaken support and create social pressure on government authorities.

The selection of cartoons introducing this thematic section of sanctions-related discourse draws some attention to the suffering of average citizens because of the restrictions. Russians are depicted using stereotypical Soviet images of low-income “babushkas” (old ladies) and plural “dedushkas” (old men) struggling with various inconveniences as a result of difficult economic period or suffering from the absence of the “benefits of civilization” which they had enjoyed previously (Fig. 2). The overall depressing mood of the cartoons is communicated by means of a pale colour scheme, gloomy inner and outer attributes of the people, shabby old-fashioned clothes, rough, unhappy and anxious faces, and by their rigid and lifeless positions.

The first picture depicts a harsh winter scene with a woman sitting outside near a small wooden shed labeled “HEATBOX,” and which resembles an outhouse in a small Russian village, obviously ridiculing the primitive standard of living, further complicated by economic hardships due to geopolitical tensions. The inscription “NYETFLIX” on the blank TV screen in the second cartoon stylistically resembles the name of the major American media provider “Netflix”, with a slightly altered spelling at the beginning that means “no” in the Russian language. In this creative manner, the exit of the streaming service from the Russian media market is portrayed. The colour contrast helps to emphasize that the population lost access to something bright and entertaining. The note “RUSSIA” on the old woman’s apron in the third cartoon helps to metonymize the whole country,

using the image of a stereotypical frail elderly woman nailed to the wall by a missile labeled “SANCTIONS”. Next to her is Vladimir Putin, with a torn Ukrainian flag in his hands, mockingly exclaiming, “Hah! Missed!”, illustrating the fact that measures targeting the Russian leader were harming only the country’s ordinary people. It is worth mentioning that the visual salience of Vladimir Putin described via his central position intensifies the overall meaning. The composition of the analyzed cartoons aims at evoking the sense of fear in the minds of Russians, in order to make them think about the unwarranted and senseless war directed against Ukraine, and the horrendous impact the sanctions are having on their daily existence.

Figure 3
Russians Suffering the Consequences of Sanctions



Another thematic-like set is various storylines depicting Russia with a metaphor of a bear. The bear is the animal traditionally used to symbolize Russia, implying its military might and geopolitical influence, as well as its wildness, aggressiveness, and diplomatic clumsiness. In a set of political cartoons, this powerful and terrifying wild animal is presented as having gotten into trouble, struggling under the weight of international sanctions (Fig. 3). The first illustration shows the bear caught in a painful trap, symbolizing Russia's entanglement in economic restrictions that hinder its movement. Another one depicts the bear wearing a collar labeled “U.S. Sanctions”, restricting its ability to act freely, particularly in the cyber domain, as suggested by the “Russia Hackers” label on its shirt. In yet another depiction, the bear’s neck is squeezed by a belt which hinders it from eating, a deadly hazard for a wild predator. Collectively, these images illustrate how sanctions, though not directly confronting Russia’s military forces, attempt to undermine their influence and limit their aggressive actions. The cartoons reflect the idea that while the ‘bear’ might remain strong and furious, its actions can be hindered by the collective efforts of the international community. The background of these cartoons is plain and neutral; the major effect is depicted by means of symbolic images of the animal (Russia)

and traps (sanctions trying to stop the beast). However, the red color of the T-shirt and the sinister look of the bear in the second cartoons flags about hidden danger despite the imposed restrictions causing the fear in viewers' minds.

Figure 4

The Russian Bear Motif in Sanctions-Related Discourse



A substantial portion of the international sanctions against Russia primarily targets the economic sector. Despite the constant claims of the Russian authorities about the success of “import substitution” and “new opportunities”, global experts state that the impact of Western measures on Russia’s economy has been considerable. For example, the GDP level has decreased by 10-12% compared with its pre-invasion level and personal disposable income has declined by 20-25% from what it would have been if the war had not begun (Szyszczak, 2025). The topic of recession is widely presented, with several recurring patterns portraying a bad economic situation (Fig. 4) from different perspectives.

The first picture in this set shows the true story of precarious economic conditions hiding behind the hypocrisy of media propaganda. The framing effect divides the picture into two parts, separating two parallel realities for Russian citizens. The left part, which usually presents the typical, known information, shows the smiling TV presenter with an abstract face telling his audience, “Western sanctions have zero effect on us”. The studio background colour is plain black. The word “zero” is written in red, a colour typically associated with danger, intended to plant some doubts in the minds of viewers. The right side, which introduces key information, occupies a larger part of the image and shows the broader picture: the black studio background is in reality a big “hole” in the Russian economy.

The second illustration is one of the metaphoric variations for the unprecedented devaluation of the national currency, when the Russian ruble crossed the psychological threshold of 100 to the dollar (“The ruble falls”, 2024). Even though sanctions were only partly responsible for the weakening, with declining global oil prices over the past few days accounting for the rest, the

overall financial – and even more, the psychological impact has been profound and far-reaching. The enormous size of the rolling ruble chasing Vladimir Putin underscores the country's dire financial situation, while also evoking the notion of a once “mighty ruler” transformed into a “frightened prey”.

Eventually, the freeze of more than half of Russian reserves, together with trade restrictions, the SWIFT ban, and other measures, led to the situation where the “steamroller” of EU sanctions “squeezes” resources such as employment positions with ensuing consequences for the Russian economy. The futility of Russian efforts to resist sanctions is presented by means of their disproportionate size, and the rolling they are trying to stop. A flock of crows circling over the deserted land in the background highlights the grimness of the image and consequently of the economic situation.

Figure 5

The Russian Economy Struggling Under Sanctions



A significant number of the cartoons connected with economic sanctions involves oil and gas-related multimodal narratives depicting the dramatic fall in Russian's hydrocarbon revenue. Over the past decade, oil and gas revenues have been the Kremlin's primary source of income, contributing between a third and half of the total federal revenue (“Russian oil and gas revenues”, 2025). Reacting to Russia's invasion in Ukraine, the EU Council adopted the sixth package of sanctions, which declared a prohibition on the purchase, import and transfer of seaborne crude oil and certain petroleum products, accounting for 90% of EU oil imports from Russia (“EU sanctions against Russia explained”, 2025). This ban was very significant for the Russian economy, considering that almost half of its oil exports used to go to the EU. Consequently, this situation was extensively covered by the media in the form of various scenarios with Vladimir Putin as the victim of the oil and gas embargo (Fig. 5). EU restrictions are presented as a “heavy burden” for the Russian leader, smashing him like an anvil. The top-down opposition in the image highlights the ‘dominance’ of sanctions over Vladimir Putin. The gas pipe used as a blackmail tool turned to be a deadly ‘trap’ for Mr. Putin, who is shown

with bloodstained hands. The serene and soft background elicits the feeling that Putin's dire situation, most probably resulting in death, is part of the natural order of things. Finally, the imposed price cap (the label on a jar lid) on Russian oil imports severely constrained his country's ability to finance the war against Ukraine. The unpleasant look of Putin resembling an entrapped frog combined with an instruction in red letters "KEEP LID FIRMLY CLOSED" create both an image of ridicule and a feeling of danger. This set of cartoons demonstrates the impact of EU sanctions on a key economic sphere of the Russian Federation, severely diminishing its financial stability, while ridiculing the image of the Russian leader.

Figure 6
The Impact of Oil and Gas Sanctions on V. Putin



The Purported Ineffectiveness of International Sanctions on the Russian Federation

The second major theme identified within the material under consideration is the purported ineffectiveness of international sanctions against the Russian Federation. Multimodal Critical Discourse Analysis has revealed the following five subcategories: the apparent ineffectiveness of sanctions, schemes for evading restrictions, unexpectedly high revenues from Russian oil and gas exports, the seeming reverse effect of the economic measures, and the apparent lack of impact on the military operation. Following a consistent genre principle and exploiting similar images and symbols in different scenarios, this section of the multimodal sanctions-related discourse places a question mark on the value of imposing restrictions. This contention is partly advanced by economic theorists whose vision is grounded in the pragmatic awareness that artificial obstacles to international cooperation in today's deeply globalized world negatively impacts all participants in international trade. Another aspect is that this rhetoric, reinforced by specific visual elements, manipulates public opinion to promote

well-funded pro-Kremlin propaganda. The portrayal of sanctions as being ineffective not only places a question mark on their strategic value but also influences international perceptions, thereby complicating the preservation of a global consensus on economic measures against the aggressor. This discursive practice does not align with democratic values, in that it undermines fact-based opinions on the part of recipients, weakens support for established international regulations, and seeks to undermine the recognition of the just nature of the struggle of the Ukrainian people.

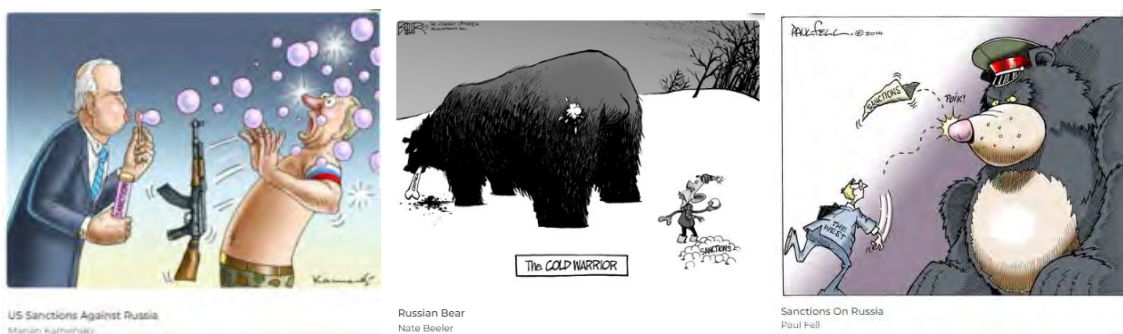
The imposition of severe international sanctions is not a common practice in the domain of international affairs, and is only applied as a radical economic instrument of political pressure against countries violating human rights and international norms to an extreme degree. Previously, such measures were imposed on the authoritarian regimes of North Korea, Iran, Iraq, Syria and couple of others, but achieved no real success in terms of producing any significant change. In fact, economics-related research provides no persuasive evidence that economic sanctions are an effective policy instrument (Smeets, 2018). The targeted countries manage to overcome obstacles by exploiting loopholes in international legislation; they find alternatives for importing and exporting goods in the huge global market, while at the same time coercing their citizens with power and fear. Unlike the other sanctioned states, the Russian Federation is a huge country with vast domestic markets and extensive international relations experience. Therefore, it has a much greater chance of evading even the unprecedented economic sanctions now affecting them.

A common tactic used to suggest the ineffectiveness of sanctions within the political cartoon framework is to utilize a humorous approach to this topic. The analyzed material contains the whole range of canvas suggesting the incongruity of the described activities. Their semantic core centers around the confrontation between Russia (metaphorically presented image of Vladimir Putin or of a bear) and Western countries (represented by the figure of a recognizable politician or just a generic man with a corresponding verbal label) (Figure 6). The first cartoon shows Joseph Biden blowing harmless pink bubbles labeled as “sanctions” towards a startled Vladimir Putin, who drops his rifle in surprise – obviously not the most effective “weapon” against the leader of an aggressor country. The second cartoon depicts a small figure of Barak Obama ironically nicknamed “THE COLD WARRIOR” (a person who engages in or promotes a cold war) throwing a snowball at the huge bear's back, leaving only a small white mark. The futility of the described actions is highlighted by the characters' size disproportion as well as by the grey, cold and indifferent background. The third cartoon demonstrates a fragile collective image of the West trying to intimidate a huge bear wearing a Russian military hat, with a paper airplane marked “Sanctions,” causing nothing

but a smile on the recipient's face, emphasizing the ineffectiveness of the sanctions. The size and the background colour scheme function as fundamental visual cues that underscore the absurdity of the depicted situation, thereby eliciting an ironic response from the viewer.

The use of verbal and visual elements is consciously or unconsciously intended to disparage sanction efforts, making them seem insignificant, and spreading the notion that attempting to affect Russia's powerful economy, bolstered by vast hydrocarbon deposits and other valuable resources, is futile. The use of humour distracts attention from the harsh realities of war, downplays the real reasons for deep concern, and cultivates the image of the invulnerability of the Russian economy.

Figure 7
The Ineffectiveness of Sanctions on Russia



Russia's skill in evading sanctions is another topic identified in the studied material. Despite extensive efforts by the international community to isolate Russia's trade networks, its pre-established connections enable it not only to securely acquire dual-use items but also to continue trading its resource commodities efficiently, albeit at slightly reduced prices. The prevalence of business interests over moral principles helps Russia to evade restrictions and even to establish new economic ties (Chazan, 2024). The situation is worsened by the fact that in spite of the massive withdrawal from Russian market of international businesses, reflecting their opposition to the war, 123 large and 328 mid-size and smaller U.S. firms continue doing business with Russia, which together account for taxes amounting to one billion US dollars to the federal budget (Plummer, 2025). This thematic section of multimodal sanctions-related discourse is presented with recurring scenarios exhibiting the unprincipled opportunism of global business participants; the skillful outmaneuvering by Vladimir Putin; and his partnership with India and China, who became principal oil and gas importers following the EU export ban (Figure 7). All three cartoons make use of the center and margin principle to outline the priority of business

interests in the first cartoon and granting Vladimir Putin a salient position in global affairs.

Figure 8

Russia's Methods for Evading Economic Sanctions



The MCDA shows a 'number of cartoons connected with the theme of Russia receiving high profits from the oil and gas trade. Despite some temporary effects in 2023, international sanctions failed to impact conclusively on this vital source of state revenue. Until recently, high global crude oil prices, together with the involvement of China and India as major new international hydrocarbons importers, helped to increase the proceeds for Russia from oil and gas sales in 2024 by 26% ("Russian oil and gas revenues", 2025). Sanctions-related multimodal discourse reflected this fact with cartoons showing Vladimir Putin enjoying profits from these industries (Figure 8). The first cartoon depicts Mr. Putin driving forward with his "OIL PROFITS"-powered truck that bore the license plate "RUSSIA", chasing a bear on a small three-wheeled bicycle with a "DEMOCRACY" flag attached. We infer that the truck driver is being presented as pursuing his own citizens who do not support the war. The power of Putin's "oil machine" is emphasized by its oversized barrel-shaped wheels. Another cartoon shows a winter scene in a forest with the half-naked Russian president resting on a wooden bench on the top of a trimmed tree in front of a huge gas flame. A label "Russian Sauna" hangs near a bloodstained axe. The Russian leader appears relaxed and comfortable, and seems to be in control of the situation. The calmness and confidence of Vladimir Putin are complemented by a stoic winter landscape in the background. The third cartoon exhibits a shirtless Vladimir Putin with an armband in the colors of the Russian flag, operating a press that transforms tiny figures of people on a conveyor belt, into oil. Another conveyor belt moves bags full of gold coins. A personified Earth under Putin's boot serves as a bag for gold. Vladimir Putin's enormous size in contrast to the line of figures – and even the personified Earth – serves to underscore his dominating power. The darkened background suggests an atmosphere of secrecy and underlying menace

unfolding on the depicted stage. The general idea of this set of cartoons is to project a strong image of the Russian president by seeking to point to his fearlessness, and his ability to generate profit based on combustible minerals.

Figure 9

Putin Enjoying Oil and Gas Revenues



A very popular scenario within sanctions-related political cartoons implies that economic restrictions targeted at the Russian Federation have the reverse effect, hurting the EU itself. Research into the effects of sanctions indicates that they affect all countries involved, including those taking the sanctions, even when the measures are backed by groups of countries collectively and are covered by a decision taken by the United Nations (Smeets, 2018). This narrative is broadly depicted with cartoon characters representing their political entities (Figure 9). Some of them are imagery figures made recognizable by means of national elements (a blonde woman in a blouse with a strip of stars around her waist, portraying Europe, or a typical Uncle Sam character representing the USA) or verbal elements (a moustached overweight gentleman wearing a grey suit, a blue tie and glasses with the inscription, “EUROPE”). Others are shown by means of specific elements of personal appearance obviously pointing to Russian president Vladimir Putin or Angela Merkel, the former chancellor of Germany. In the first case, the sanctions are exhibited as a boomerang that is coming back to those (the personified United States and Europe) who threw it. The danger from which the frightened characters are fleeing is emphasized by the bright red color of the boomerang set against a calm, light blue background. In the second illustration, Uncle Sam is holding a giant axe labeled “Sanctions” above his head, ready to strike a serene matryoshka doll labeled “Russia” which is located on the head of an old man who represents Europe. The cartoon obviously seeks to demonstrate that sanction efforts aimed at the Russian economy will have serious consequences for the EU. The futility and absurdity of the depicted actions are reinforced by the dull background colors. The third episode displays Vladimir Putin standing calmly and confidently in a red judo uniform. On the right side,

one can see the much smaller figure of Angela Merkel and two other men behind her. One man, wearing a Breton shirt and a skipper cap, has a fishing rod and a bowl of fish, clearly indicating his occupation. The man in a straw hat has a basket of cherries. One can also see a bomb labelled “SANCTIONS” thrown by the ex-chancellor, which has bounced back from Putin and is heading towards the man. The general message of the cartoons reflects the situation when anti-Russia sanctions turn against the EU by devastating its fishing and agricultural industries. The political prominence of the depicted characters is effectively illustrated by their relative sizes. This set of cartoons evoking strong emotional appeal by means of the combination of visual characteristics targets at creating the idea of the uselessness of restrictions and evoking fear in the minds of EU citizens. Obviously, economic obstacles might affect regional parties, decreasing living standards, but it is not to be compared with the brutal and immoral invasion of a small and peaceful country in the middle of Europe.

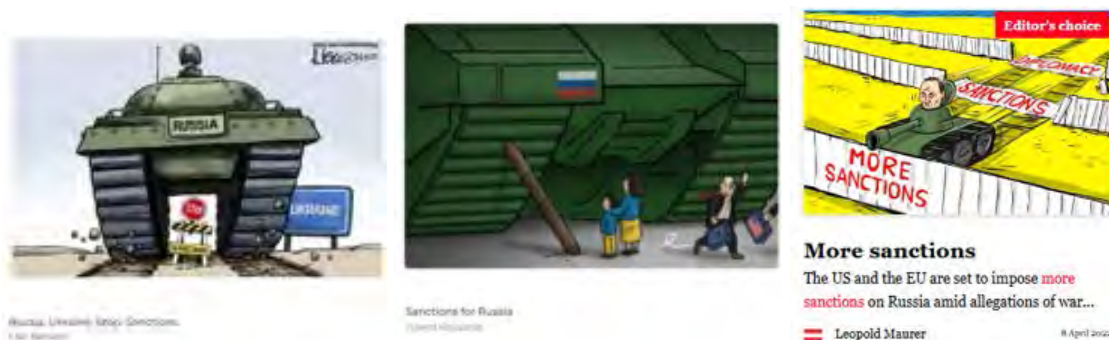
Figure 10
Sanctions Affecting Their Initiators



The last thematic cluster in this category involves cartoons depicting the limited effectiveness of international economic sanctions in countering the Russian war machine. As the world’s second-largest military power, and with a population exceeding 140 million, the Russian Federation launched an unprovoked attack on Ukraine, its neighbor, without any legitimate geopolitical or economic justification. When the initial offensive proved unsuccessful, the EU, the USA, Great Britain, and their allies began providing Ukraine with military and humanitarian aid simultaneously imposing severe sanctions on the aggressor. However, economic sanctions have limited power and cannot fully replace military support (Kulikov, n.d.). The motif of the ineffectiveness of economic restrictions to stop the huge Russian army is one of the key topics in the analyzed multimodal material (Figure 10). The sanctions are represented as a tiny stop sign, a fragile wooden stick or a flimsy fence. They definitely cannot stop enormous tanks symbolizing the Russian Federation identified by the label “RUSSIA”, by its national tricolored flag, or by a tank driver resembling Vladimir Putin. The disproportionateness in size between the military vehicle and the obstacles intended to stop it serves as the primary

visual device in the first two cartoons, additionally evoking a sense of fear in the viewer's consciousness. The bright, almost cheerful yellow background of the third cartoon contrasts sharply with the violence of the image causing some cognitive dissonance: brutal aggression unfolding in a deceptively bright setting. Undoubtedly, recipients interpret the metaphorical scenario and understand that sanctions are not intended to directly deter Russian tanks but rather to deprive Vladimir Putin of the financial resources necessary for continuing the war. However, the emotional impact of the imagery – depicting massive and aggressive military machinery – may evoke a sense of the ineffectiveness of the sanctions and the inevitable defeat of Ukraine, ultimately undermining faith in justice and in the efficacy of international intervention.

Figure 11
Ineffectiveness of Sanctions Against Military Power



Conclusions

Political cartoons constitute a salient element within the contemporary English mass media communicative space, functioning as a potent instrument capable of conveying meaning both explicitly and implicitly. Despite their compact size, their visual nature gives them the capacity to convey a substantial amount of information, for which extensive verbal articulation would otherwise be required. Political cartoons emerge in response to prevailing situations in diverse global contexts. The analyzed corpus constitutes a comprehensive collection of political cartoons depicting the perceived effectiveness and ineffectiveness of the sanctions imposed on Russia in the context of its war against Ukraine.

Multimodal Critical Discourse Analysis of the illustrative corpus leads to the conclusion that various semiotic resources can represent complex social concepts and scenarios colouring them with additional implicit meaning, evaluative attitudes, and ideological bias. The broad social and political context, the structure of the general visual composition and verbal elements provide sufficient grounds

for decoding the intended message. The political attributes are represented through recognizable stereotypical components, such as the bear, the national flags of the states involved, military accessories etc. Characters are identified by distinctive facial features or corresponding inscriptions. The situations they are placed in and the emotions they convey construct narrative arcs that evoke admiration or aversion in the audience's perception. The systematic and repetitive use of such multimodal narratives contributes to the formation of broader discursive frameworks and facilitates the shaping of public opinion regarding the sanction discourse.

Political cartoons dealing with the sanctions imposed on Russia communicate meaning by utilizing stylistic devices encompassing critique, satire, mockery, irony, and metaphorization. Prototypes employed to convey the effectiveness of the sanctions include depictions of the president of the Russian Federation, the image of a bear, the Russian populace, and the Russian economy. This representational strategy is designed to underscore the results or the consequences of sanctions, presumably to give impetus to the efforts of the European community in demonstrating support for Ukraine and a refusal to tolerate Russian aggression.

Alternatively, the purported ineffectiveness or even the counterproductiveness of the sanctions is presented using various illustrative strategies to depict Russia's circumvention of restrictions, the substantial profits that it continues to receive from the oil and gas trade, and the potential risks incurred by the initiators of the sanctions. These techniques are often intended to minimize or delegitimize sanctions efforts, with the possible result of undermining support for democratic values and potentially for Ukraine itself. Emotionally-oriented appeals, instilling a feeling of futility and evoking fear, constitute primary discursive strategies existing within recurring scenarios of the cartoons that have been studied.

The combination of verbal elements, characters, and objects depicted in political cartoons – alongside the broader social context – offers recipients complex scenarios with relatively transparent meanings. However, minor details embedded in the background, colour scheme, orientation, position, and scale can be decoded only by an experienced and visually literate viewer. These subtle nuances, although seemingly innocuous at first glance, may nonetheless influence the perception process at a subconscious level, thereby shaping the viewer's attitude toward the depicted issue.

Disclosure Statement

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Enhancing translation teaching for L2 learners through ChatGPT: A study of AI-assisted Arabic-German translation

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Abstract. This study investigates the effectiveness of using ChatGPT as a teaching tool in enhancing Arabic-to-German translation skills. An experimental group, using ChatGPT throughout a 15-week semester, was compared to a control group that followed traditional translation instruction methods. Pre- and post-tests were administered to assess translation performance. Results demonstrated that students in the experimental group significantly outperformed those in the control group, showing improvements in sentence structure, vocabulary selection, grammatical accuracy, and the translation of idioms and collocations. Despite minor linguistic errors, students using ChatGPT showed greater progress in understanding translation nuances. The study highlights the potential of AI-powered tools in language learning, particularly in translation pedagogy, and suggests future research directions, including the long-term impact of AI on advanced translation skills, and the balance between machine and human input in the educational process. This study contributes to the growing body of literature on AI-assisted language teaching.

Keywords: *ChatGPT in translation, AI-assisted language learning, translation pedagogy, Arabic-German translation, Artificial Intelligence in education.*

Накраш Надя, Марван Джарах, Гасан Есраа, Сукайна Алі. Покращення навчання перекладу студентів, які вивчають другу мову, за допомогою ChatGPT: дослідження перекладу з арабської на німецьку з підтримкою ШІ.

Анотація. У цьому дослідженні вивчається ефективність використання ChatGPT як навчального інструмента для покращення навичок перекладу з арабської на німецьку мову. Експериментальну групу, яка користувалася ChatGPT протягом 15-тижневого семестру, порівнювали з контрольною групою, що навчалась за традиційною методикою. Для оцінки рівня перекладацької підготовки було проведено вхідне та підсумкове тестування. Результати показали, що студенти з експериментальної групи значно перевершили учасників контрольної групи, продемонструвавши покращення у побудові речень, доборі лексики, граматичній точності, а також у перекладі ідіом і сталих словосполучень. Незважаючи на незначні

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мовні помилки, студенти, які використовували ChatGPT, продемонстрували кращі результати у розумінні нюансів перекладу. Дослідження підкреслює потенціал інструментів на основі ШІ в мовному навчанні, зокрема у викладанні перекладу, і пропонує напрями для подальших розвідок, зокрема вивчення довгострокового впливу ШІ на розвиток професійних перекладацьких навичок і пошуку оптимального балансу між машинним і людським компонентом у навчальному процесі.

Ключові слова: *ChatGPT у перекладі, мовне навчання з підтримкою ШІ, методика викладання перекладу, переклад з арабської на німецьку, Штучний Інтелект в освіті.*

Introduction

In the modern age of technology and globalization, the demand for proficient translators and interpreters has significantly increased. As language barriers continue to vanish, the need for effective and accurate communication across different cultures and (practice) communities becomes increasingly important and, in some cases, urgent (see Ratna, 2019). While traditional translation techniques have served their purpose, the use and effects of artificial intelligence (AI) have opened new avenues for enhancing the translation and interpretation processes (see Brynjolfsson et al., 2019; Mohamed et al., 2024). One such AI tool, which receives remarkable attention is ChatGPT, which is a large language model developed by OpenAI (Wu et al., 2023). The present study aims to explore the potential of ChatGPT as a tool to enhance the translation skills and performance of students translating from Arabic to German.

The major rationale of this study is based on the fact that the field of translation studies has witnessed a growing interest in investigating the intersection of technology and language learning (Munday et al., 2022). Yet, the specific application of AI-assisted tools, including ChatGPT, to improve translation skills remains relatively underexplored (see Lee, 2023 along these lines). This is particularly valid for language pairs such as Arabic and German, which present unique linguistic and cultural challenges. By exploring the effect of ChatGPT on student translation performance, the current work aims to contribute to the enriching body of research on AI-powered language learning and translation. If ChatGPT is proven to be an effective tool in this regard, it could make available a valuable supplement to the traditional teaching methods of translation (see Fan et al., 2023 along these lines). By giving the students personalized feedback, opportunities for practice, and instant translations, ChatGPT could assist in accelerating the learning process and enhancing the overall translation quality.

In particular, this article explores the specific methods where ChatGPT can be utilized to enhance student translation skills. It investigates how ChatGPT can offer immediate feedback on translations, provide alternative phrasings, and point to improvements in terms of accuracy and fluency. By conducting a comprehensive analysis of student performance before and after using ChatGPT (in the experimental group), this study provides important insights into the tool's effectiveness; ChatGPT can be used effectively as a tool that enhances the students' translation practices. Therefore, the impact of ChatGPT on the translation skills and performance of Arabic and German students is evident. As ChatGPT is a large language model trained on a massive amount of text data, it is able to generate human-quality translations. In most cases, it provides accurate and contextually relevant translations. Therefore, ChatGPT should be integrated into the translation curriculum because it has an important impact in enhancing the student learning and performance (see Sahari et al., 2023; Zhao et al., 2024).

The structure of the paper is organized to provide a comprehensive overview of the study and its implications. Section 2 sets the scene by providing background on the use of AI tools in language learning, while Section 3 particularly focuses on ChatGPT's integration into translation pedagogy. It contextualizes the need for such research in light of the growing prominence of AI in education and translation. Section 4 outlines the methodology, detailing the approach used for data collection and analysis, with specific attention to the experimental design and the control group setup. In Section 5, the main findings are presented, highlighting the significant improvement in translation skills of students using ChatGPT, as compared to the control group. Section 6 offers a discussion of these results, drawing connections to recent scholarship on AI-assisted translation learning and its practical applications. Finally, Section 7 concludes the paper, summarizing the key insights and proposing directions for further research on AI-powered translation tools in educational settings, including the need for longitudinal studies and expanded AI integration.

Setting the Stage

In Jordan, the German language occupies a relatively niche yet growing position when compared to English, which is considered far more dominant in this regard. English is the primary foreign language in Jordan, which is taught across all educational levels. (Alomoush & Al-Na'imat, 2018). English is also viewed as the essential tool for communication, education, business, and diplomacy (see Alhabahba et al., 2016). English is a compulsory subject in

schools, and most university programs, especially those in scientific, medical, and engineering fields, are taught in English. Its prevalence in media, academia, and the private sector cements its role as the principal second language in the country, often regarded as a key to socioeconomic mobility (see Hamdan & Hatab, 2009).

In contrast, German, while not as widespread as English, has seen a gradual increase in interest, particularly in academic and professional circles. The growing prominence of Germany as a global leader in science, technology, and industry has made the German language increasingly attractive to Jordanians seeking higher education and career opportunities in German-speaking countries. A significant number of Jordanian students pursue scholarships or postgraduate studies in Germany, supported by programs such as those offered by the German Academic Exchange Service (DAAD). This has led to a rising demand for German language courses at institutions like the Goethe-Institut Amman, which provides language training and cultural programs aimed at fostering deeper ties between Jordan and Germany.

Despite this growing interest, German remains far less integrated into Jordanian society than English. Its use is largely confined to specific domains, such as academia, engineering, and technical fields, where knowledge of German can offer distinct advantages. Working with German businesses or looking for job in industries where Germany is well-represented worldwide, such engineering, architecture, and healthcare, are other reasons why learning German is thought to be advantageous. Nonetheless, English continues to be the more useful and approachable foreign language for the typical Jordanian, providing more possibilities both domestically and abroad. Furthermore, English has been a part of Jordan's educational system for a long time, and because of its supremacy in the world, it will always be given priority in curriculum, teacher preparation, and resource distribution (see Al-Saidat, 2009).

In Jordan, German is a foreign language with great cultural and economic significance. German is regarded as a language of science, technology, and business, and knowing it can lead to a number of chances. The English and German curriculum at the University of Jordan is essential to Jordanian students' development of their German language abilities. Students enrolled in this program will receive a thorough education in both languages. Nonetheless, this program's translation classes frequently use conventional approaches like dictionaries, grammar manuals, and human translation strategies. Language translation is not an exception to how artificial intelligence (AI) has transformed different fields. The potent language model ChatGPT, created by OpenAI, has the potential to greatly improve translation. This research

attempts to look into the the impact of ChatGPT on the accuracy of Arabic-German translations produced by students at the University of Jordan and explore its potential as a teaching tool to improve student performance.

In the next section, we review a number of major works that investigated the use of ChatGPT as a translation tool and teaching method to enhance student performance in translation.

The Use of ChatGPT as a Translation Tool and Teaching Method to Enhance Student Performance in Translation

Recent studies have increasingly explored ChatGPT's potential as a translation tool, often comparing its output to traditional systems like Google Translate and DeepL. Liu et al. (2023) highlight that, unlike conventional tools, ChatGPT's advanced language modeling enables it to handle idiomatic expressions and contextual nuances with greater accuracy, producing translations that go beyond word-for-word equivalence.

Lee (2023) emphasizes that while machine translation has evolved gradually over the years, the emergence of large language models (LLMs) such as ChatGPT marks a significant shift. These models, although not specifically designed for translation, can rival or surpass specialized tools. Lee calls for a reconceptualization of translation practice, viewing AI as an extension of human cognitive capabilities rather than a replacement. He advocates for a posthumanist perspective that redefines the translator's role and the competencies required in the digital age.

Khoshafah (2023) observes that ChatGPT can deliver generally accurate translations, but its outputs tend to be simpler in structure and may lack the stylistic richness and cultural nuance of human translations. He cautions against relying on ChatGPT for complex or specialized texts—such as legal, medical, or religious content—due to its limited domain-specific and cultural awareness. He also points to risks in handling idioms and colloquial expressions, which may be rendered inappropriately.

In the context of translation pedagogy, several studies underscore the value of integrating AI tools like ChatGPT. Yuxiu (2024) reports that AI can enhance students' translation accuracy and support more interactive, efficient teaching through real-time feedback. Similarly, Kong (2022) emphasizes AI's role in fostering learner autonomy and providing exposure to authentic bilingual corpora. Hasan et al. (2025) explore ChatGPT's application in teaching Arabic-Korean translation, noting improved student engagement and comprehension—findings that align with this study's focus on Arabic-German translation. Baskara and Mukarto (2023) add that AI tools support higher-order

thinking and help learners manage complex language tasks in academic settings.

Sahari et al. (2023) investigate ChatGPT's reception in the Arab academic context by interviewing teachers and students. While students favored ChatGPT for its fluency and usability, instructors tended to prefer Google Translate for its familiarity and consistency. Participants acknowledged both strengths and limitations, recognizing ChatGPT's usefulness for drafting and editing, but raising concerns about its reliability in more judgment-intensive translation tasks.

Al-Wasy and Mohammed (2024) explore the translation of euphemisms from Arabic to English, comparing strategies used by human translators and AI models. They find that while AI tools often rely on direct or literal strategies, human translators demonstrate greater cultural adaptability. Their quantitative analysis reveals that human translations more effectively apply strategies like cultural substitution, particularly when translating religious and sensitive texts. The study also notes that the direction of translation (e.g., Arabic to English vs. English to Arabic) influences AI performance.

Fan et al. (2023) provide a broader educational perspective, highlighting ChatGPT's transformative potential in translation teaching. They suggest it can personalize instruction, support independent learning, and innovate classroom management. However, they also raise serious concerns about academic integrity, over-reliance on automation, and the ethical risks associated with AI. They stress the need to maintain the human dimension in education while thoughtfully incorporating AI.

Fütterer et al. (2023) offer insight into public perceptions of ChatGPT by analyzing Twitter data. Their findings show education to be one of the most discussed themes, with public sentiment ranging from optimism about enhanced learning to concern over cheating and misinformation. They argue that academic researchers and policymakers should guide these conversations to shape responsible AI adoption.

Finally, Haryanti (2024) evaluates ChatGPT's role in helping students translate from Indonesian to English. She identifies several advantages: grammatical accuracy, quick feedback, accessibility, and adaptability. These features promote self-directed learning and improve student motivation. Nevertheless, she echoes other researchers in stressing that ChatGPT should be seen as a supplementary tool that enhances, rather than replaces, traditional instruction.

In this section, we have reviewed the findings of several related studies. Given the vast body of literature on the topic, no single study can fully encompass it all. However, two main patterns emerge. First, human

translation, particularly by professional translators, is superior to ChatGPT in terms of producing high-quality translations. The second pattern suggests that ChatGPT can serve as a valuable tool for helping students improve their translation skills. This paper aims to provide additional evidence supporting the latter finding, with novel insights drawn from Arabic-to-German translation. What sets this study apart is that ChatGPT was used consistently throughout the semester, giving students ample exposure to translations generated by the model, along with feedback that aimed to enhance their translation abilities.

Therefore, the current work seeks to answer the question of how much ChatGPT improves the accuracy of Arabic-German translations produced by students at the University of Jordan.

In the following section, we elaborate on the methods we employed to address these two questions

Method

The study is designed to assess the impact of using ChatGPT as a teaching tool to enhance student performance in translation. Two groups of students, enrolled in a translation course, are involved in the study: a control group and an experimental group. The control group receives traditional translation instruction, while the experimental group is exposed to ChatGPT as part of the teaching method. The goal is to compare the translation performance of both groups and assess whether the use of AI improves student learning outcomes.

This study focuses on the cognitive processes involved in translation, specifically in relation to how students decode the source language and encode the target language. Psycholinguistically, translation involves both comprehension (decoding) of the source text and production (encoding) of the target text, processes that require complex cognitive mechanisms such as semantic mapping, syntactic structuring, and lexical retrieval. By using ChatGPT as a tool in the experimental group, the study examines how AI-assisted feedback affects these cognitive processes. The real-time corrections provided by ChatGPT offer immediate insights into errors related to syntax, semantics, and vocabulary choice, potentially impacting learners' cognitive load and improving their efficiency in translation tasks. Furthermore, the study investigates how students' cognitive load is influenced by the use of AI tools: by automating certain aspects of the translation process (such as grammar checks), ChatGPT may reduce extraneous cognitive load, freeing cognitive resources for more complex aspects of translation, such as the nuanced interpretation of idiomatic expressions and contextual meanings. This

psycholinguistic approach aims to understand how AI tools like ChatGPT could help optimize cognitive resources, aiding students in focusing on more advanced language processing while avoiding errors in basic structures.

Participants

The participants in the study are 40 undergraduate students enrolled in an Arabic-German translation course at the University of Jordan during the fall semester of 2024. The students are divided into two intact classes: a control group consisting of 20 students and an experimental group of 20 students. The participants' ages range from 20 to 23 years old, and the gender distribution is relatively balanced, with 22 females and 18 males across both groups. All participants are native Arabic speakers and have been learning German as a foreign language for at least three years. Their proficiency in both Arabic (source language) and German (target language) was assessed using a combination of course grades, in-class language performance, and a diagnostic translation proficiency test designed by the course instructor and validated by a second faculty member. This ensured that all participants had a similar level of linguistic competence and translation aptitude prior to the intervention. All students are majoring in German Language and Literature. Their academic background includes prior coursework in general translation theory, contrastive linguistics, and practical translation. The prior training emphasized fundamental translation strategies such as literal translation, modulation, and adaptation. Instruction was delivered using authentic bilingual texts, glossaries, and guided exercises from official textbooks used in the department.

Inclusion criteria for participation in the study required students to have completed at least two prior translation courses and to have achieved a minimum GPA of 2.5 in their major-related courses. Students who were repeating the course or who had not completed the prerequisite courses were excluded from the study. Recruitment followed a naturalistic approach, as the study was embedded into two regular course sections. Participation in the research component was voluntary, and all students provided written informed consent. The study received ethical approval from the Institutional Review Board (IRB) of the University of Jordan, and all procedures adhered to ethical research standards concerning human subjects.

Design and Procedure

The study spans a semester, with participants engaging in biweekly translation exercises. Both groups are tasked with translating identical source texts into

the target language. However, the experimental group's methodology incorporates interaction with ChatGPT, while the control group undertakes translation activities in a traditional, AI-free manner.

The design of the experiment involves three key stages for the experimental group in each class:

1. **Initial Translation:** Students in the experimental group are first asked to translate the text on their own, using traditional methods and resources such as dictionaries and reference books. This mirrors the process followed by the control group, ensuring that both groups engage in independent translation as part of their learning process.

2. **ChatGPT Translation:** After completing their own translations, students in the experimental group are asked to compare their versions with a translation generated by ChatGPT. This step involves critical analysis, where students assess the differences between their work and ChatGPT's output. Instructors facilitate class discussions, encouraging students to explore why certain words, phrases, or sentences were used by ChatGPT. They are prompted to reflect on contextual choices made by the AI tool and compare these with their own translation decisions.

3. **Assessment and Feedback:** In the final stage, ChatGPT is used to assess the students' translations. Students submit their translations to ChatGPT, which identifies and points out potential errors, inconsistencies, or areas where the translation could be improved. The feedback provided by ChatGPT is reviewed in class, and students are encouraged to ask questions or seek clarification on specific issues. The instructor facilitates a reflective discussion, enabling students to understand the linguistic or stylistic challenges they encountered and how AI can offer solutions or alternatives.

Conversely, the control group adheres to a conventional translation learning paradigm. Following the independent completion of their translations, students receive feedback from the instructor, rather than from ChatGPT. The feedback is provided in a standardized format, addressing issues such as lexical choices, grammatical correctness, and overall coherence. Notably, the control group does not engage in the comparative analysis of their work with an AI-generated translation or benefit from the automated feedback provided by ChatGPT.

Data Collection

The data collected in this study include the following components:

1. **Translation Quality:** The primary metric for assessment is the quality of student translations in both groups. Translations are evaluated based on

criteria such as accuracy, fluency, and adherence to the intended meaning of the source text. Both the instructor and ChatGPT are involved in grading the translations, ensuring that a combination of human and AI assessment is used to measure performance. Translations are graded on a scale from 1 to 10, with a detailed rubric to standardize evaluation across both groups.

2. Pre- and Post-Tests: At the beginning of the semester, a pre-test is administered to measure the baseline translation skills of both groups. A post-test is conducted at the end of the semester to evaluate improvement in translation ability. The comparison between pre- and post-test scores helps to assess the overall impact of using ChatGPT on student learning outcomes. To analyze these results, a quantitative method was applied. A paired samples t-test was used to compare within-group differences (pre- vs. post-test) for both the experimental and control groups. Additionally, an independent samples t-test compared post-test scores between the two groups. This allowed the researchers to determine whether improvements were statistically significant and could be attributed to the AI intervention. All statistical analyses were conducted using SPSS, with significance set at $p < 0.05$.

3. Student Reflections and Surveys: In the experimental group, students are asked to reflect on their experience using ChatGPT for translation tasks. They complete weekly surveys that capture their perceptions of the AI tool's usefulness, their confidence in translating, and whether they believe their skills have improved as a result of interacting with ChatGPT. These reflections provide qualitative data that will be analysed to understand the subjective impact of using AI as a teaching aid.

In summary, this study employed a comparative design to investigate the impact of AI-assisted translation on student learning outcomes. The experimental group received supplementary instruction incorporating ChatGPT, while the control group followed a traditional translation learning model. The data collected from both groups will be analyzed to evaluate the effectiveness of AI-assisted translation in enhancing translation skills and overall language proficiency.

Results

This section presents three original Arabic texts that were assigned to students in both the control and experimental groups for translation into German, in conjunction with other texts throughout the semester. Initially, six translation samples from two students (chosen arbitrarily) in the control group, who did not use ChatGPT, will be shown. Subsequently, six samples from two students in the experimental group, who translated the texts with the help of ChatGPT-

generated feedback, will be presented. These exemplars will illuminate the evolution of the students' translation skills across the semester, with the first set collected at the outset, the second set midway through, and the third set at the conclusion of the semester.

Translation Samples from the Control Group

Upon a thorough examination and analysis of the students' translations, it can be concluded that the translation skills of the two students have shown some degree of improvement over the course of the classes, though this progress remains slow and subtle. The students continued to repeat several of the errors identified in the pre-test, which fall into categories such as Rendition Errors, Language Errors, and Miscellaneous Errors as outlined in Liao's (2010) Error Analysis Model.

Original text in Arabic No. 1:

كانت ميرا فتاة محظوظة لنشئونها في أسرة متحابية. ميرا هي الفتاة الصغرى في أسرتها المكونة من أربعة أفراد وكانت تحب والداها جدا. قام والدها بعد ولادتها بتبني طفل صديقه بعد وفاة والده في حادث مؤسف ولم يكن للطفل أية أقارب في البلد. كبر الطفل مع الإخوة وأصبح جزءا من العائلة. كان على الأب العمل بجِد ليتمكن من إعالة أسرته. كبرت ميرا وكانت طالما تحلم بتأسيس عائلة مع الشخص الذي أحبه. تزوجت ميرا وأرادت أن تصبح أما. إلا أن زوجها لم يكن متأكدا من قراره في إنجاب طفل معا، حيث كانت هناك بعض الصعوبات التي كان من الممكن أن تؤدي إلى الطلاق. لكن سرعان ما أصبحت ميرا في انتظار طفلها الأول. حاول الزوجان تخطي المشاكل إلا أنهما لم يتمكن من ذلك فافصلا، ولكنهما كانا قد حصلا على حق الحضانة المشتركة لطفلهما.

Student A:

Mera war sehr glücklich madchen, dass sie in einer liebevollen aufwachsen. Mera war das kleinste Mädchen in ihre familie das die von vier Köpfen und liebte ihre familie shera Nach ihm geborene der ihr Vater adaptierte eine kind einkind seine seuren Freund Kind und das war nach seine Freunde tod in einen schlechten unfall. Der Das Kind hat keine engste entfernte Verwandte. Das Kind aufwachsen mit ihr geschwister und schön fasst zur Familie gehören. Der Vater soll so Viel arbeiten seine Familie durchbringen. Mera aufwacht und sie traumt immer mit der ihr liebste partnerschaft um einer familie gründen. Sie & verheiratet und mochte einer mutter wurden. Aber ihr mann war sich ja doch nicht sehr er seher das thr mit ihr ein Kind lebekommen. Und es gibt viele schwerigkeiten Zur Scheidung führen. Aber bald wurden Mera erwartet für ihr ersten Kind. Das Paar versuchte die Probleme so zu überwinden aber die paar hat das nicht funktioniert und hat erschiedet. Sie hatten jedoch das gemeinsame sorge "Für ihr Kind gehalten.

Student B:

Mira war eine glückliche Mädchen, weil sie in einer liebevolle Familie aufgewachsen hat. Mira ist die jüngste Mädchen in ihre Familie, die sie auf vier Mitglieder enthalten, Mira liebt ihr Eltern so sehr. Nach der Geburt des Mädchen haben ihre Eltern eine Freundeskind adoptiert, weil seine Eltern in einen unglücklicher Unfall zu Tode kommen und das war keine engsten Verwandten in der Land. Das Kind hat mit seine Geschwister aufgewachsen und er wird ein Mitglieder in die Familie. Der Vater hat schwer gearbeitet um seine Familie durchzubringen. Mira hat aufgewachsen und sie

immer will eine Familie gründen mit die verliebt Person. Mira hat geheiratet und sie möchte ein Mutter bekommen aber ihre Ehemann war nicht so sicher über Kinder gründe gemeinsamm. Wo sie waren verschiedene Gründe können zu Scheidung, aber Bald erwartete Mira ihr erstes Kind, Die Ehepaar haben Überspringen Sie die Probleme versucht aber das war fruchtlos so sie trennen sich, aber sie haben in der Regel das gemeinsame Sorgerecht erhalten.

Original text in Arabic No. 2:

حصلت على منحة دراسية في الخارج. قررت أن أضرب عصفورين في حجر واحد، حيث سأسافر للدراسة والعمل في الوقت ذاته. سأحاول التأقلم مع جميع الظروف. قد لا يوجد وقت كاف لأخذ قسط من الراحة بسبب الانشغال بالدراسة والعمل معاً، ولكن كما يقولون، مشوار الألف ميل يبدأ بخطوة ولكل مجتهد نصيب، وفي النهاية لا بد أن تحصد ما تزرع. بدأت حياة جديدة في بلد جديد. كم كنت سعيدة ومتحمسة لهذه المغامرة، ولكن الغربة كانت أصعب مما ظننت وقد توالى علي الصعوبات. فأنا لم أعتد إعداد الطعام ولم أعتد الوحدة. ولكنني شعرت ولأول مرة بمتعة الحياة رغم صعوبتها، فقد كنت أعلم شيئاً جديداً في كل يوم، فلم يكن أي يوم شبيهاً باليوم الذي سبقه.

Student A:

Ich habe das Stipendium in Ausland erhalten. Ich zwei fliegen mit einer Klappe schlagen beschlossen, denn ich werde zu Arbeit und studieren in gleichzeitig reisen, ich versuche mit alles anpassen. Vielleicht gibt es keine Zeit zu erholen, Weil viele Arbeit und studieren in gleichzeitig beschäftigung, Aber wie sie sagen, jeder reise beginnt mit dem ersten schritt, ohne Fließ kein preis, und am Ende was der Mensch sat, wird er ernten.

Ich fange neue leben an in Deutschland, wie viele ich war glücklich und aufgereget für diese Abenteuer, aber die Fremdheit war schwere was ich denke. Denn haufen die Schwierigkeiten. Ich bin nicht gewohnt Essen zu bereiten und alleine sein. Aber ich gefuhle erstmal in Freude am leben trotz Schwierigkeiten, denn ich lerne neue dinge jeder tag, Es war nicht jeden tag wie die tag davor.

Student B:

Ich habe ein Das Stipendium in Ausland bekommen, Ich habe mich entschließen zwei Fliegen mit einer Klappe Schlagen, denn Ich habe abreise Für Studieren und arbeiten Zur gleichzeitig . Ich werde Versuchen alle. Es gibt vielleicht nicht genug Zeit, um eine pause zu machen, weil beschiftigen mit dem Stadium und der Zusammenarbeitet, abel alles sagen Ein Reise von tausend Millen beginnt mit dem ersten Schritt und für jeden Fleiß gibt es seinen preis und Was der mensch Sät.

Ich habe ein neue Leben im neue Land begonen. Ich war glücklich und aufgeregt für dieses Abenteuer, aber die Fremdheit war schwierigier als ich dachte, und die schwierigkeiten häuften sich auf mich. Ich bin nicht gewohnt Essen zubereiten und nicht gewöhnt allein zu sein. aber ich fühlte ersten mal Freude am Leben trotz schwierigkeiten. denn ich Lernte jeden Tag etwas Neues. Kein Tag war wie der Tag davor.

Original text in Arabic No.3:

يقول الناشط الإسرائيلي اليساري نمرود فلاشينبرغ: "إنَّ ما نطلبه من ألمانيا بسيط للغاية، لا نتوقع منها أن تكون مثل أيرلندا، التي تدعم فلسطين بشدة. لكننا ننتظر أن تعارض ألمانيا موقف الحكومة الإسرائيلية. كل ما نقوله هو أن تلتزم ألمانيا بموقفها الداعم لحقوق الإنسان والقانون الدولي وحل الدولتين. لهذا يجب على برلين أن تتصرف وفقاً لهذا الموقف، بدلاً من تقديم الدعم الكامل لإسرائيل".

منذ نهاية يناير 2024 احتج الناشط الإسرائيلي اليساري نمرود فلاشينبرغ مع ناشطين إسرائيليين آخرين أمام وزارة الخارجية الألمانية في برلين للمطالبة بوقف إطلاق النار في غزة وبحل سياسي إسرائيلي فلسطيني

Student A:

Nach dem, was der israelische Linke Aktivist sagt: was wir von Deutschland Verlangen ist sehr einfach: muss Deutschland sich der Haltung Israelische Regierung widersetzen. Was wir sagen statt anbieten Deutschland vorbehaltlose Unterstützung für Israel, dass Unterstützen Menschenrechte, das Völkerrecht und die zwei-Staaten Lösung verpflichten und Berlin muss für diese Haltung handeln.

Seit letzt januar 2024 der linke Aktivist Namrod Flischenbrg demonstriert mit ander israelische Aktivisten vor dem auswärtiges Amt in Berlin, für verlangen eine waffenstillstand in Gazastreifen und israeleische plaestinische politische lösung.

Student B:

Der linke Aktivist Namroud Flaschenberg sagt dass, wir sehr Einfach dinge von Deutschland fragen. Wir erwarten , dass Deutschland die Haltung des Israelische Regierung widersetzen will . Was wir sagen ist , dass Deutschland sich der Unterstützung von Menschenrechten , dem Völkerrecht und der zwei Staaten-Lösung verpflichtet und dass Berlin auch so muss, statt Israel zu vorbehaltlose Unterstützung.

Seit ende Januar 2024 hat der linke Aktivist Namroud Flaschenberg mit andere Israelische Aktivisten vor das Auswärtiges Amt in Berlin demonstriert. Sie verlangen einen Waffenstillstand im Gazastreifen und Israelische Palestinesche politische Lösung.

Translation Samples from the Experimental Group

The students in this group were instructed in translation with the aid of ChatGPT, an AI tool that offered real-time, detailed feedback during class sessions. ChatGPT assessed the group's translations, identifying errors and providing explicit guidance on how each student could improve their work. This process was carefully documented with a series of screenshots capturing interactions with ChatGPT. Representative screenshots will accompany each translation sample. The intervention spanned 15 weeks of the semester, conducted in the classroom, and provided a visual representation of the group's developmental progress.

Based on the feedback from ChatGPT, a significant enhancement in the group's translation skills can be observed, particularly in their ability to avoid many of the linguistic errors made in the pretest and earlier translations. This improvement was substantial and almost consistently present across the texts they translated, demonstrating steady progress from one translation to the next.

The following samples illustrate the considerable progress achieved by two students, Student A and Student B, in their translation abilities. The samples from Arabic Text No. 1 serve as the initial benchmark, highlighting the beginning of their noticeable improvement. The samples from Arabic Text No. 2 demonstrate a significant advancement in translation quality, while those

from Arabic Text No. 3 show the students' impressive refinement of their Arabic-German translation skills over time, aided by ChatGPT

Translation Samples for Arabic Text No.1

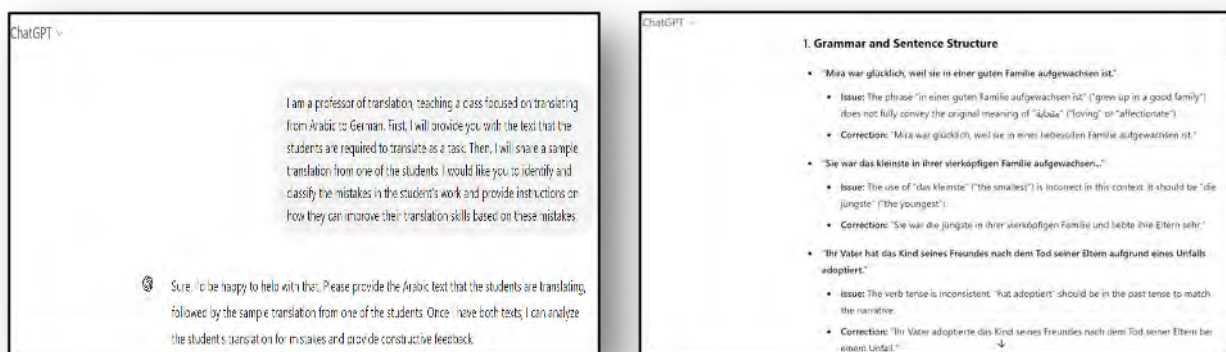
Student A:

Mira war glücklich, weil sie in einer guten Familie aufgewachsen ist. Sie war das kleinste in ihrer vierköpfigen Familie aufgewachsen und sie liebte ihre Eltern sehr. Ihr Vater hat das Kind seines Freundes nach dem Tod seiner Eltern aufgrund eines Unfalls adoptiert. Im Land hat das Kind keine nahen Verwandten. Das Kind ist mit seinen Geschwistern aufgewachsen. Und er wurde ein Teil der Familie. Der Vater musste hart arbeiten, um seine Familie durchzubringen.

Mira ist aufgewachsen und träumte immer davon, eine Familie mit der Person, die sie geliebt hat, zu gründen. Sie hat geheiratet und wollte Mutter werden, aber ihr Mann war nicht sicher, ob er Kinder von ihr bekommen wollte. Es gab Schwierigkeiten damals, die zur Scheidung führen konnte, aber bald schon darauf hat sie ein Kind erwartet. Das Paar haben viel versucht die Schwierigkeiten zu lösen, aber sie schafften das nicht, deshalb haben sie getrennt. Sie haben aber das gemeinsame Sorgerecht erhalten.

Figure 1

Screenshots from the Dialogue with ChatGPT, Along with Its Feedback on the Students' Translations



Student B:

Maria war ein Glückliches Mädchen, weil sie in einer liebevollen Familie aufwuchs. Sie war das Jüngste Mädchen in ihrer vierköpfigen Familie und sie liebte ihre Eltern sehr. Nach ihrer Geburt ihr Vater adoptierte Kind seines Freundes, nachdem seine Eltern bei einem Unfall gestorben sind. Das Kind hatte im Land keine enge Verwandten.

Das Kind wuchs auf bei seinen Brüdern und wurde ein Teil von Familie. Der Vater musste zu viel arbeiten um seine Familie unterstützen zu können. Mira ist groß geworden und träumte eine Familie zu gründen mit der Person, der sie liebte. Sie heiratete und wollte Mutter aber ihr Mann war nicht sicher ob er ein gemeinsames Kind bekommen will. Es gab Schwierigkeiten, die zu einer Scheidung führen könnten.

Doch schon bald erwartete Maria ihr erstes Kind. Das Paar versuchte, die Probleme zu überwinden aber das funktioniert nicht und sie trennten sich. Aber Das Paar erhielten ein gemeinsame Sorgerecht für ihr Kind.

Figure 2

Screenshots from the Dialogue with ChatGPT, Along with Its Feedback on the Students' Translations



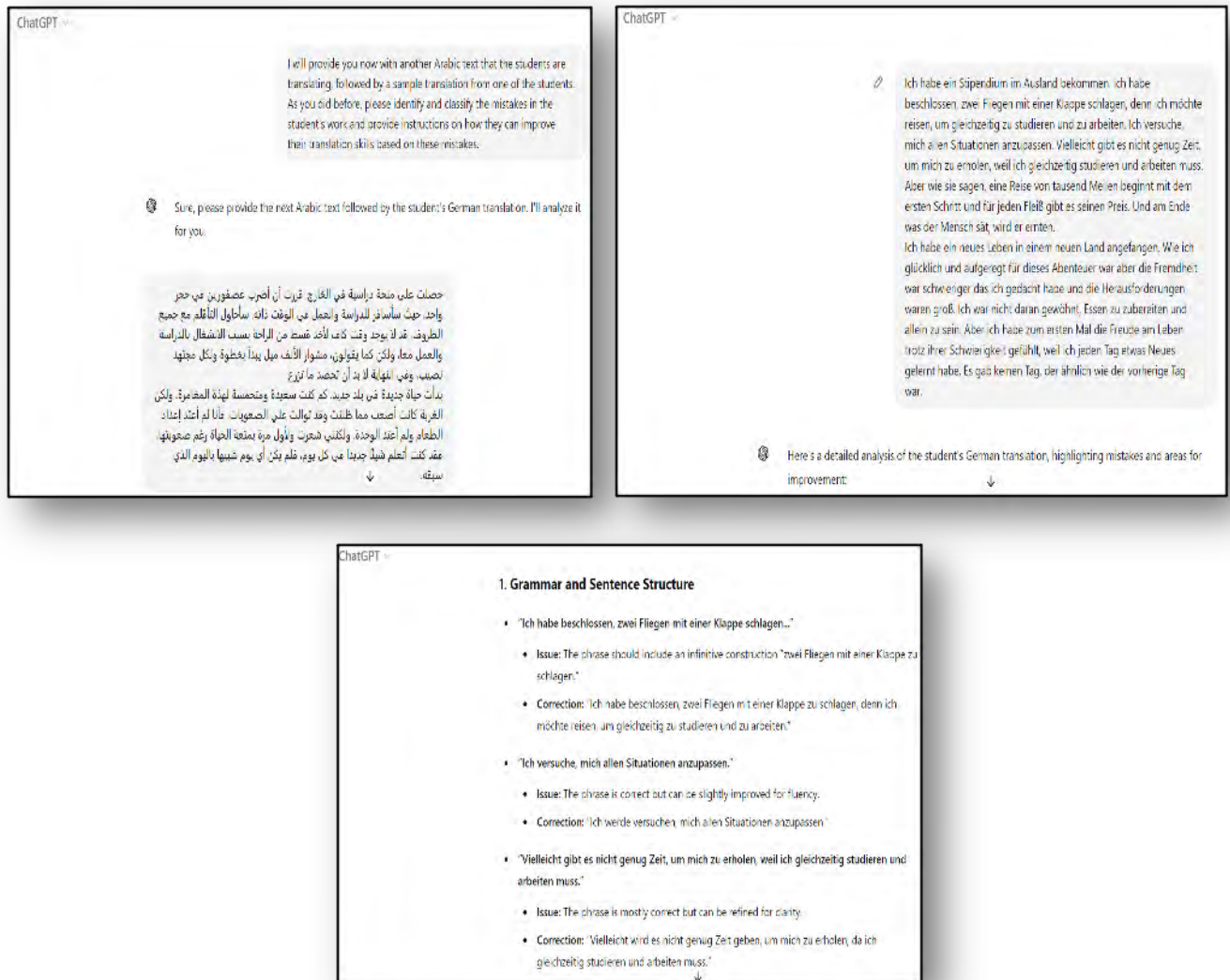
Translation Samples for Arabic Text No. 2

Student A:

Ich habe ein Stipendium im Ausland bekommen. Ich habe beschlossen, zwei Fliegen mit einer Klappe schlagen, denn ich möchte reisen, um gleichzeitig zu studieren und zu arbeiten. Ich versuche, mich allen Situationen anzupassen. Vielleicht gibt es nicht genug Zeit, um mich zu erholen, weil ich gleichzeitig studieren und arbeiten muss. Aber wie sie sagen, eine Reise von tausend Meilen beginnt mit dem ersten Schritt und für jeden Fleiß gibt es seinen Preis. Und am Ende was der Mensch sät, wird er ernten. Ich habe ein neues Leben in einem neuen Land angefangen. Wie ich glücklich und aufgeregt für dieses Abenteuer war aber die Fremdheit war schwieriger das ich gedacht habe und die Herausforderungen waren groß. Ich war nicht daran gewöhnt, Essen zu zubereiten und allein zu sein. Aber ich habe zum ersten Mal die Freude am Leben trotz ihrer Schwierigkeit gefühlt, weil ich jeden Tag etwas Neues gelernt habe. Es gab keinen Tag, der ähnlich wie der vorherige Tag war.

The student has demonstrated progress in several areas, including verb separation, verb conjugation, tense consistency, capitalization, accurate interpretation of the original Arabic text, and proper use of idiomatic expressions that convey the intended meaning, as guided by the instructor. However, persistent errors still require attention, particularly in the handling of infinitive and relative clauses, article and gender agreement, correct pronoun usage, awkward sentence constructions, the selection of appropriate prepositions, and the comprehension of contextual vocabulary.

Figure 3
Screenshots from the Dialogue with ChatGPT, Along with Its Feedback on the Students' Translations



It is important to emphasize that not every correction made by ChatGPT is necessarily valid or accurate. The instructor continues to play the most critical role in the teaching process by providing guidance to the students. This is evident, for example, in the following points from ChatGPT's feedback on Student A's translation:

Figure 4
ChatGPT's Feedback 1 on Student A's Translation

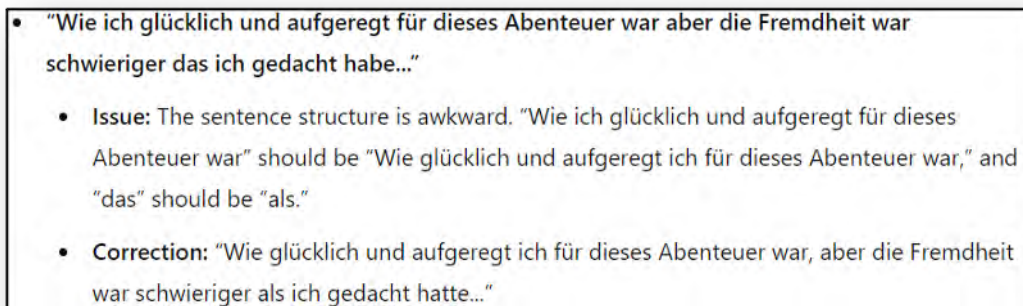
- "Aber wie sie sagen, eine Reise von tausend Meilen beginnt mit dem ersten Schritt und für jeden Fleiß gibt es seinen Preis."
 - Issue: Capitalize "sie" as it refers to a saying or quote.
 - Correction: "Aber wie sie sagen, eine Reise von tausend Meilen beginnt mit dem ersten Schritt, und für jeden Fleiß gibt es seinen Preis."

In this sentence, ChatGPT interpreted the pronoun "sie" as referring to a person who expressed the following idiomatic phrases. However, this was a literal translation from the Arabic text ("كما يقولون"). A more accurate correction would be to use phrases such as "wie man sagt" or "wie gesagt," which better convey the intended meaning in the original Arabic sentence.

This example illustrates a broader limitation: AI lacks the inferential and pragmatic competence that human translators and educators develop over time. From a psycholinguistic standpoint, these inaccuracies have critical implications for learners. Overreliance on AI-generated output can lead to the reinforcement of incorrect syntactic or semantic mappings, especially if students are not equipped to critically evaluate the suggestions provided by the tool. This may inadvertently impede the internalization of correct language patterns or distort learners' interlanguage development. Furthermore, the seeming authority of ChatGPT's responses may discourage students from questioning or challenging incorrect outputs, potentially diminishing their metalinguistic awareness and critical engagement with the translation process. Therefore, while ChatGPT serves as a valuable supplementary tool, its role must remain secondary to the instructor's pedagogical judgment. The human instructor is essential not only for correcting AI's mistakes but also for modeling how to interpret, critique, and learn from those mistakes – a process central to both translation competence and psycholinguistic development.

In this sentence, ChatGPT failed to correct the preposition used with the phrase "aufgeregt sein" and instead produced a literal translation from the Arabic text ("... لهذه المغامرة"). The correct preposition in this construction should be "über" or "auf," depending on the context, to accurately convey the meaning.

Figure 5
ChatGPT's Feedback 2 on Student A's Translation

- 
- The screenshot shows a feedback box with a light blue border and a drop shadow. It contains a bulleted list. The first bullet point shows a German sentence: "Wie ich glücklich und aufgeregt für dieses Abenteuer war aber die Fremdheit war schwieriger das ich gedacht habe...". The second bullet point, labeled "Issue:", explains that the sentence structure is awkward and provides a corrected version: "Wie ich glücklich und aufgeregt für dieses Abenteuer war," and "das" should be "als.". The third bullet point, labeled "Correction:", provides the full corrected sentence: "Wie glücklich und aufgeregt ich für dieses Abenteuer war, aber die Fremdheit war schwieriger als ich gedacht hatte...".
- "Wie ich glücklich und aufgeregt für dieses Abenteuer war aber die Fremdheit war schwieriger das ich gedacht habe..."
 - Issue: The sentence structure is awkward. "Wie ich glücklich und aufgeregt für dieses Abenteuer war" should be "Wie glücklich und aufgeregt ich für dieses Abenteuer war," and "das" should be "als."
 - Correction: "Wie glücklich und aufgeregt ich für dieses Abenteuer war, aber die Fremdheit war schwieriger als ich gedacht hatte..."

This example underscores one of the common limitations of AI-assisted translation tools: their tendency to adhere too closely to the structure of the source language without adequately accounting for the grammatical and idiomatic norms of the target language. Such inaccuracies highlight the ongoing need for human oversight in classroom settings, where instructors must step in to clarify and correct these subtle but important errors that may otherwise go unnoticed by learners.

Student B:

Ich habe ein Stipendium im Ausland bekommen. Ich entschieden mich zwei Fliegen mit einer Klappe zu schlagen, denn werde ich gleichzeitig studieren und arbeiten. Ich versuche mit aller Situationen anpassen. Ich weiß, dass ich nicht genug Zeit mich zu erholen, weil ich mit Studium und Arbeit sehr beschäftigt sein werde. Aber wie sie sagen eine Reise von tausend Meilen beginnt mit dem ersten Schritt. Endlich was der Mensch sät wird ernten.

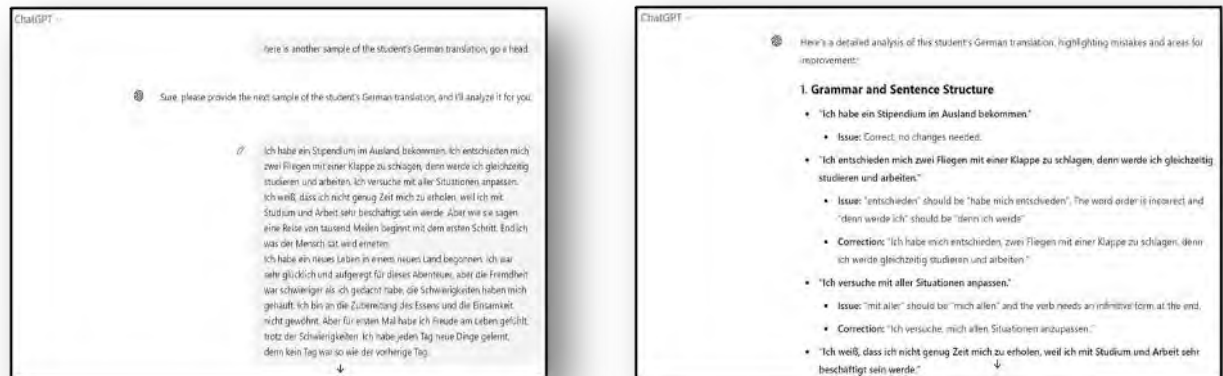
Ich habe ein neues Leben in einem neuen Land begonnen. Ich war sehr glücklich und aufgeregt für dieses Abenteuer, aber die Fremdheit war schwieriger als ich gedacht habe, die Schwierigkeiten haben mich gehäuft. Ich bin an die Zubereitung des Essens und die Einsamkeit nicht gewöhnt. Aber für ersten Mal habe ich Freude am Leben gefühlt, trotz der Schwierigkeiten. Ich habe jeden Tag neue Dinge gelernt, denn kein Tag war so wie der vorherige Tag.

The student has demonstrated improvement in several areas, including correct verb conjugation, appropriate tense usage and consistency, capitalization, mostly accurate sentence structure, correct relative clauses, and generally effective paraphrasing of the original Arabic meaning. However, further progress is needed in specific aspects such as the use of infinitive clauses, correct verb forms, awareness and proper use of reflexive verbs, selection of appropriate prepositions, conjunction and verb agreement, avoiding awkward expressions that may cause ambiguity, understanding contextual vocabulary,

and the correct application of punctuation and idiomatic expressions within context.

Figure 6

Screenshots from the Dialogue with ChatGPT, Along with Its Feedback on the Students' Translations



This feedback from ChatGPT also contains some corrections that are not necessarily accurate or valid, and may even confuse the student, who would then require the instructor's assistance. For example, see Fig. 7.

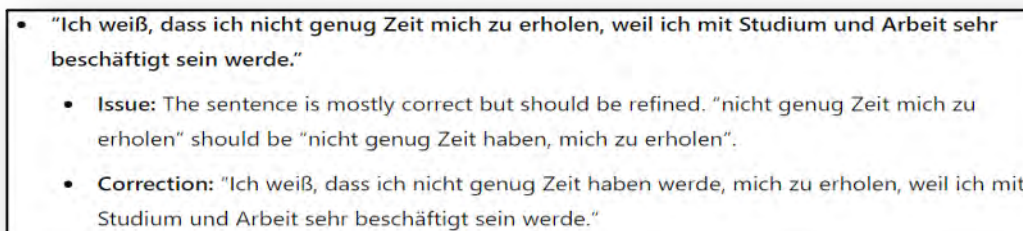
Figure 7

ChatGPT's Feedback 1 on Student B's Translation

- "Ich versuche mit aller Situationen anpassen."
 - Issue: "mit aller" should be "mich allen" and the verb needs an infinitive form at the end.
 - Correction: "Ich versuche, mich allen Situationen anzupassen."

In most instances, ChatGPT corrects grammar without providing an explanation of the rule or specifying the grammatical case, as demonstrated in this sentence. It corrected the noun "Situationen" from "aller" to "allen" without clarifying that the reflexive verb "sich anpassen" requires a dative object and that the reflexive pronoun should be in the accusative case, which is why "mich" was added. Furthermore, ChatGPT noted the need for an infinitive verb at the end of the sentence but did not specify which verb it was referring to, whether "versuchen" or "anpassen."

Figure 8
ChatGPT's Feedback 2 on Student B's Translation

- 
- The screenshot shows a feedback box with a light blue border and a subtle shadow. It contains a list of three items. The first item is a bullet point with the German sentence: "Ich weiß, dass ich nicht genug Zeit mich zu erholen, weil ich mit Studium und Arbeit sehr beschäftigt sein werde." The second item is a bullet point labeled "Issue:" explaining that the sentence is mostly correct but needs refinement, specifically that "nicht genug Zeit mich zu erholen" should be "nicht genug Zeit haben, mich zu erholen". The third item is a bullet point labeled "Correction:" providing the corrected sentence: "Ich weiß, dass ich nicht genug Zeit haben werde, mich zu erholen, weil ich mit Studium und Arbeit sehr beschäftigt sein werde."
- "Ich weiß, dass ich nicht genug Zeit mich zu erholen, weil ich mit Studium und Arbeit sehr beschäftigt sein werde."
 - **Issue:** The sentence is mostly correct but should be refined. "nicht genug Zeit mich zu erholen" should be "nicht genug Zeit haben, mich zu erholen".
 - **Correction:** "Ich weiß, dass ich nicht genug Zeit haben werde, mich zu erholen, weil ich mit Studium und Arbeit sehr beschäftigt sein werde."

ChatGPT deemed this sentence mostly correct and initially added only the infinitive verb "haben" (under "Issue"), omitting the auxiliary verb "werde," which is crucial for forming the future tense in German. Later, under "Correction," the auxiliary verb was included. This approach to correction could confuse the student, requiring the instructor's intervention and guidance for clarification.

Translation Samples for Arabic Text No. 3

Student A:

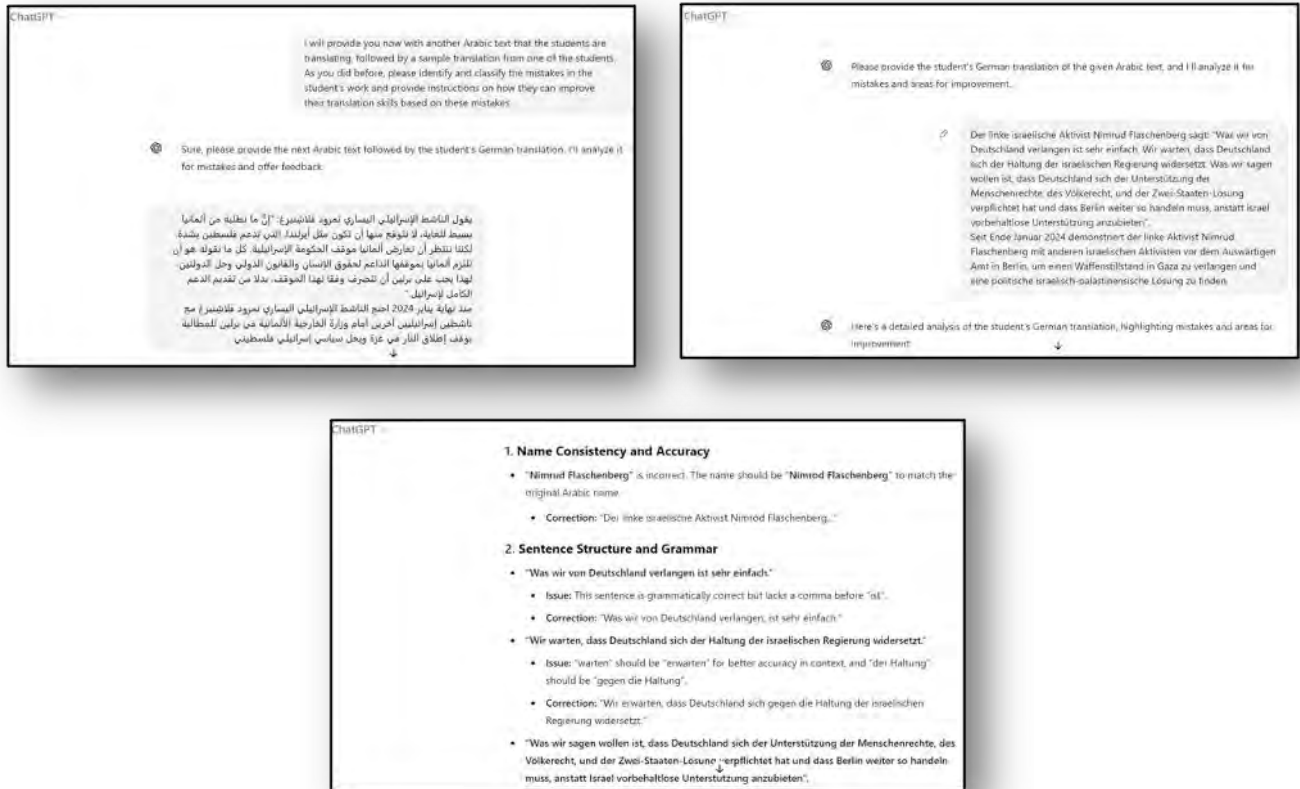
Der linke israelische Aktivist Nimrud Flaschenberg sagt: "Was wir von Deutschland verlangen ist sehr einfach. Wir warten, dass Deutschland sich der Haltung der israelischen Regierung widersetzt. Was wir sagen wollen ist, dass Deutschland sich der Unterstützung der Menschenrechte, des Völkerechts, und der Zwei-Staaten-Lösung verpflichtet hat und dass Berlin weiter so handeln muss, anstatt Israel vorbehaltlose Unterstützung anzubieten".

Seit Ende Januar 2024 demonstriert der linke Aktivist Nimrud Flaschenberg mit anderen israelischen Aktivisten vor dem Auswärtigen Amt in Berlin, um einen Waffenstillstand in Gaza zu verlangen und eine politische israelisch-palästinensische Lösung zu finden.

Overall, the student has demonstrated significant improvement across several areas by the end of the semester, including correct use of tenses and verb forms, maintaining tense consistency, mostly accurate verb-case agreement, proper capitalization, generally correct sentence structure, accurate infinitive clauses, awareness of reflexive verbs and their appropriate use in context, correct prepositions, and mostly effective interpretation and paraphrasing of the original Arabic meaning. However, some persistent errors still require the student's attention to further enhance the quality of the translation, such as incorrect spelling of names and words, improper punctuation, and the selection of more precise words and verbs for clarity and accuracy.

Figure 9

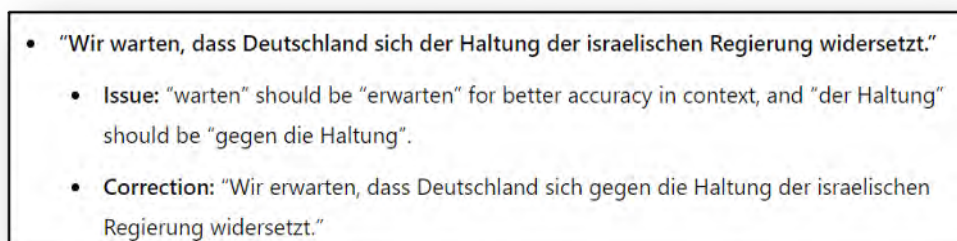
Screenshots from the Dialogue with ChatGPT, Along with Its Feedback on the Students' Translations



One inaccurate correction in ChatGPT's evaluation of this translation can be identified in the following sentence (see Fig. 10):

Figure 10

ChatGPT's Correction on Student A's Translation



In this sentence, ChatGPT identified the grammatical case used with the reflexive verb "sich widersetzen" in the phrase "der Haltung" (dative case) as an error and replaced it with the preposition "gegen" (accusative case). However,

both cases are correct, as the verb "sich widersetzen" can be used with either the dative or accusative case, depending on the context.

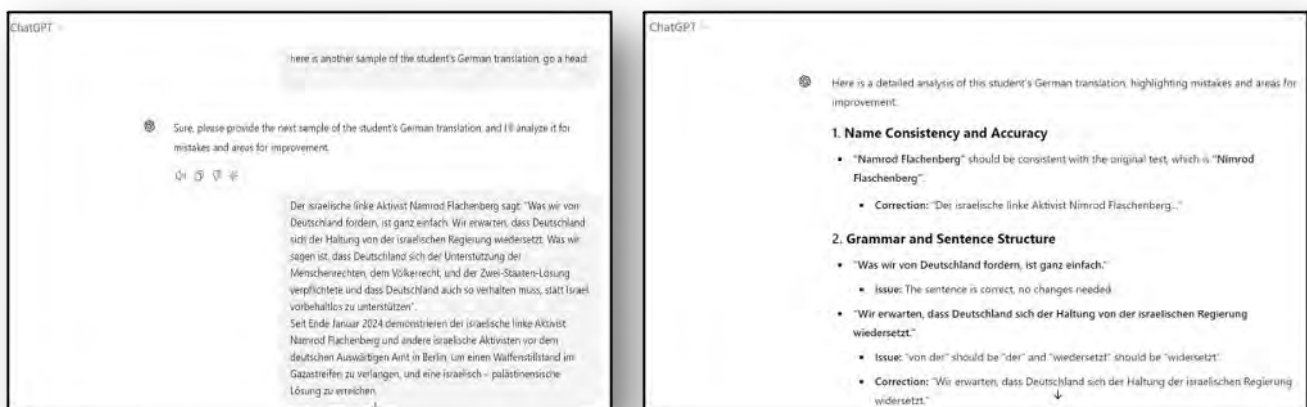
Student B:

Der israelische linke Aktivist Namrod Flachenberg sagt: "Was wir von Deutschland fordern, ist ganz einfach. Wir erwarten, dass Deutschland sich der Haltung von der israelischen Regierung widersetzt. Was wir sagen ist, dass Deutschland sich der Unterstützung der Menschenrechten, dem Völkerrecht, und der Zwei-Staaten-Lösung verpflichtete und dass Deutschland auch so verhalten muss, statt Israel vorbehaltlos zu unterstützen".

Seit Ende Januar 2024 demonstrieren der israelische linke Aktivist Namrod Flachenberg und andere israelische Aktivisten vor dem deutschen Auswärtigen Amt in Berlin, um einen Waffenstillstand im Gazastreifen zu verlangen, und eine israelisch – palästinensische Lösung zu erreichen.

Figure 11

Screenshots from the Conducted Dialogue with ChatGPT and Its Feedback On The Student's Translation



This student has also shown a good improvement in many language aspects such as: mostly correct use of tenses and verb forms, maintaining tense consistency, correct capitalization, mostly correct sentence structure, correct infinitive clauses, correct prepositions, better choosing of appropriate words and verbs, and good paraphrasing of the original meaning in Arabic. Some remaining mistakes like the incorrect spelling of names and words, incorrect punctuation and unawareness of genitive case and reflexive verbs still need more work on it.

Figure 12
ChatGPT's Incorrect Choice 1 on Student B's Translation

- "Was wir sagen ist, dass Deutschland sich der Unterstützung der Menschenrechten, dem Völkerrecht, und der Zwei-Staaten-Lösung verpflichtete und dass Deutschland auch so verhalten muss, statt Israel vorbehaltlos zu unterstützen."
- **Issue:** "Menschenrechten" should be "Menschenrechte", "verpflichtete" should be "verpflichtet hat", "verhalten" should be "verhält", and "statt Israel vorbehaltlos zu unterstützen" should be "anstatt Israel vorbehaltlos zu unterstützen". Commas should also be removed after "Völkerrecht".
- **Correction:** "Was wir sagen ist, dass Deutschland sich der Unterstützung der Menschenrechte, des Völkerrechts und der Zwei-Staaten-Lösung verpflichtet hat und dass Deutschland sich auch so verhalten muss, anstatt Israel vorbehaltlos zu unterstützen."

ChatGPT incorrectly corrected the grammatical case of the word "die Menschenrechte" by removing the "-n" ending, even though the student had used it correctly in the plural dative case and added the "n." Notably, ChatGPT had previously done the opposite in evaluating an earlier translation, where it correctly changed the word to "Menschenrechten." Furthermore, in the "issue" section, ChatGPT failed to indicate that the verb "verhalten" in this context is reflexive, instead offering an incorrect correction before conjugating it correctly in the "correction" section.

Figure 13
ChatGPT's Incorrect Choice 2 on Student B's Translation

- "Wir erwarten, dass Deutschland sich der Haltung von der israelischen Regierung widersetzt."
- **Issue:** "von der" should be "der" and "widersetzt" should be "widersetzt".
- **Correction:** "Wir erwarten, dass Deutschland sich der Haltung der israelischen Regierung widersetzt."

In the previous translation, ChatGPT overlooked the dative complement required by the verb "sich widersetzen" and instead replaced it with the preposition "gegen" (accusative case). However, it did not label this as an error in the current translation. This inconsistency and lack of accuracy highlight that ChatGPT cannot be fully relied upon and underscores the necessity of the instructor's guidance. Such inconsistencies could potentially confuse the student if the teacher does not intervene.

Post-Test Results

Results of the Experimental Group

Following the use of ChatGPT as a tool for teaching translation to the experimental group over a 15-week semester, a post-test was administered to both groups to evaluate the effectiveness of this approach in enhancing the translation skills of the experimental group. The test also aimed to determine whether there were any significant differences between the experimental group and the control group, who continued to learn translation through traditional methods. The post-test consisted of 10 sentences that participants were required to translate from Arabic into German. This section presents a sample of the test results from the experimental group, focusing on the same two students whose progress in translation over the semester, after integrating ChatGPT into the course, was previously documented. Subsequently, a sample of the control group's results will also be presented. Please note that the students' mistakes are underlined in the tables.

Table 1

Post-Test Experimental Group Samples for the Two Students

No	Sentence in Arabic	Translation into German	
		Student A	Student B
1	قررت أخذ إجازة طويلة لكي أرتاح من ضغط العمل.	Ich habe beschlossen, einen langen Urlaub zu machen, um mich vom Stress der Arbeit zu erholen.	Ich habe beschlossen, eine lange Pause zu machen, so kann ich mich von dem Arbeitsstress erholen.
2	مشوار الألف ميل يبدأ بخطوة، لذا حاول أن تتأقلم في بيئتك الجديدة.	Eine Reise von tausend Meilen beginnt mit dem ersten Schritt, deshalb versuchen Sie, sich der neuen Umgebung anzupassen.	Eine Reise von tausend Meilen beginnt mit dem ersten Schritt, so versuchen Sie an Ihrem neuen <u>Haus</u> zu gewöhnen.
3	في بداية الأمر يشعر المرء بالوحدة ولكنه سرعان ما ينشغل بتحديات الحياة التي تتوالى.	Am Anfang fühlt man sich einsam, aber dann ist man schnell mit den Herausforderungen des Lebens <u>beschäftigt</u> , die <u>häufen</u> .	Am Anfang fühlt man die Einsamkeit, aber danach wird man mit den Schwierigkeiten des Lebens <u>beschäftigt</u> .

4	وصل سعرالفضة الى أعلا مستوياته خلال الأسبوع المنصرم.	Der Silberpreis ist innerhalb der letzten Woche durch die Decke gegangen.	In letzter Woche hat der Silberpreis ein neues Rekordhoch erreicht.
5	المكمور ة، طبق شعبي تراثي محبوب من شمال الأردن.	Almakmurah ist ein volkstümliches traditionelles Gericht, das im Norden von Jordanien <u>verliebt</u> ist.	Makmurah ist ein <u>volkstümliche</u> geliebtes Gericht im norden des Jordaniens.
6	تتميز المكمورة عن باقي الأطباق الشعبية باستخدام الكثير من زيت الزيتون والبصل.	Almakmurah unterscheidet sich von den anderen volkstümlichen Gerichten in der viel Verwendung von Öl und Zwiebel.	Makmurah unterscheidet sich von anderen Gerichten, es wird viel Öl und Zwiebel verwendet.
7	افتتحت الأم محل بقالة لإعالة أسرته.	Die Mutter hat ein Lebensmittelgeschäft eröffnet, um ihre Familie zu ernähren.	Die Mutter hat ein Geschäft <u>geöffnet</u> , so kann sie ihre Familie ernähren.
8	بعد وفاة والديه ، قامت العمة بتبني الطفل الصغير.	Nach dem Tod seiner Eltern hat die Tante das Kind adoptiert.	Nach dem Tod seiner Eltern hat die Tante den Jungen adoptiert.
9	يمكن أن تؤدي أسباب مختلفة إلى الطلاق.	Verschiedene Gründe können zur Scheidung führen.	Es gibt verschiedene Gründe, die zur Scheidung führen können.
10	تمت دعوة الأقارب من الدرجة الأولى فقط لحضور حفل الزواج.	Nur die engsten Verwandten wurden zur Hochzeit eingeladen.	Nur die engsten Verwandten wurden zur Eheschließung eingeladen.

The post-test results overall demonstrated a significant improvement in the translation skills from Arabic to German among participants in the experimental group, compared to their performance in the pre-test. As evidenced by the sample translations from students A and B, there is a noticeable enhancement in sentence structure, grammatical accuracy, the

selection of appropriate vocabulary, and the translation of collocations and idioms – key challenges identified in the pre-test.

As expected, some minor linguistic errors persist, which is typical for students learning German as a foreign language in their third year. Among the recurrent errors noted in the samples, which can be regarded as an integral part of the language learning process, are grammatical errors such as the incorrect declension of adjectives. For instance, in student A's translation of example 1 (*lange* was used instead of *langen*) and in student B's translation of example 5 (*volkstümliche* was used instead of *volkstümliches*). Additionally, there was incorrect usage of some reflexive verbs, such as omitting the reflexive pronoun (*sich*) associated with the verb, as seen in student A's translation of example 3 with *sich häufen*.

Another linguistic error involved the confusion between the words *verliebt* and *beliebt* in student A's translation of example 5. *Verliebt* was incorrectly used to mean something desirable or liked, whereas it actually refers to someone who has fallen in love with another person. The same mistake was repeated by student B in the translation of example 7, where the student confused the verb *öffnen* (meaning "to open") with *eröffnen* (meaning "to inaugurate" or "to launch"), which is the intended meaning in the original Arabic sentence.¹

Results of the Control Group

As demonstrated in the sample provided below for students A and B in the control group, a modest improvement in translation skills was observed in the post-test results. This included mostly correct article and noun agreement, improved orthography, and some progress in verb conjugation. Despite this slight progress, many language errors persisted in sentence translations, including mostly grammatical errors (GE) such as incorrect verb forms, incorrect prepositions or sentence structures. Lexical errors (LE) such as inappropriate word choices or confusion with similar-sounding words, and idiomatic errors (IE) were also noted. This gradual improvement aligns with the expected outcome of a translation course supervised by an instructor, aimed at teaching translation skills. However, when comparing the post-test

¹ It is interesting to note student B's translation of example 2, where the phrase *Ihrem neuen Haus* was used to the meaning convey of "the new environment" in the original Arabic sentence. Although the usage was not entirely correct, as *Zuhause* would have been more appropriate than *Haus* to deliver the intended meaning, it can be said that the student did not resort to literal translation. Instead, he attempted to use a different construction to convey an equivalent meaning, implying that a person's new environment is like a new home with which they must adapt.

In example 3, both students used the adjective *beschäftigt* to convey the intended meaning in the Arabic sentence, which refers to being preoccupied with life's problems. This translation can be considered somewhat literal, and it would be preferable to replace it with the word *konfrontiert* in the construction *mit etwas konfrontiert sein oder werden*, meaning "to be faced with something."

results of the two groups, it is evident that students in the control group who were not taught using ChatGPT in translation continued to repeat various errors, while their peers in the experimental group showed a comparatively higher level of improvement.

Table 2

Post-Test Results Samples for Students A and B in the Control Group²

No.	Sentence in Arabic	Translation into German	
		Student A	Student B
1	قررت أخذ إجازة طويلة لكي أرتاح من ضغط العمل.	Ich <u>nahm</u> einen <u>langen</u> Urlaub, damit kann ich <u>von</u> Arbeitsstress <u>ruhen</u> .	Ich habe <u>eine</u> <u>langen</u> Urlaub <u>geschlossen</u> , damit ich Ruhe <u>haben</u> von <u>Arbeitsdruck</u> <u>kann</u> .
2	مشوار الألف ميل يبدأ بخطوة، لذا حاول أن تتأقلم في بيئتك الجديدة.	Der Weg von tausend Meilen beginnt mit <u>seinem</u> Schritt, so versuchen Sie in <u>seinem</u> neuen Leben <u>zusammenzuleben</u> .	Die lange Reise beginnt mit dem <u>erste</u> Schritt, dafür in <u>Ihren</u> <u>neue</u> Platz <u>aufpassen</u> <u>versuche</u> .
3	في بداية الأمر يشعر المرء بالوحدة ولكنه مايشغل بتحديات الحياة التي تتوالى.	Am Anfang hat man Alleinsamkeit Gefühle, aber man wird schnell mit <u>der</u> <u>folgenden</u> Schwierigkeiten <u>das</u> Leben <u>beschäftigt</u> .	Am Anfang fühlt man die Einsamkeit, aber er <u>beschäftigt</u> mit der <u>Verfolgung</u> Schwierigkeiten.
4	وصل سعر الفضة الى أعلا مستوياته خلال الأسبوع المنصرم.	Der Silberpreis <u>hat in die</u> <u>letzte</u> Woche <u>durch die</u> <u>Decke</u> erreicht.	Das Silber hat <u>durch</u> <u>die</u> <u>strenge</u> Woche <u>höchste</u> Wertigkeit erreicht.
5	المكمورة، طبق شعبي تراثي محبوب من شمال الأردن.	Makmura ist ein <u>angenehm</u> <u>volkstümliche</u> Gericht im Norden von Jordanien.	Makmura ist ein traditionelles Gericht, <u>dass</u> <u>verliebt</u> im Norden von Jordanien.
6	تتميز المكمورة عن باقي الأطباق الشعبية باستخدام الكثير من	Makmura hat viele Zwiebeln und Olivenöl, das macht es besonders auf <u>die</u> <u>andere</u>	Makmura <u>unterscheidet</u> von den anderen traditionellen Gerichten, dass es viele

² Errors are marked in red.

	الزيتون والبصل.	زيت	<u>Volksgerichte.</u>	Olivenöl und Zwiebeln <u>benutzt.</u>
7	افتتحت الأم محل بقالة لإعالة أسرتها.		Die Mutter <u>öffnet</u> ein Market, um ihre Familie zu <u>unterstützung.</u>	Die Mutter <u>geöffnet</u> ein Geschäft, um ihre Familie <u>durchbringen.</u>
8	بعد وفاة والديه ، قامت العمة بتبني الطفل الصغير.		Nach dem ihre Eltern <u>Tod</u> , die Tante hat <u>einen</u> Jungen <u>adoptieren.</u>	Nach <u>sein</u> Eltern <u>Tod</u> , hat die Tante ein kleines Kind <u>adoptieren.</u>
9	يمكن أن تؤدي أسباب مختلفة إلى الطلاق.		<u>Unterschiede</u> Gründe <u>kann</u> zur Scheidung führen.	Viele <u>Begründen</u> <u>ist</u> zur Scheidung führen.
10	تمت دعوة الأقارب من الدرجة الأولى فقط لحضور حفل الزواج.		Die Einladung <u>war engste</u> Verwandte.	Nur engste Verwandte wurden zur <u>Erschließung</u> <u>eingeladet.</u>

The findings of this study unequivocally demonstrate that students in the experimental group, who leveraged ChatGPT as a pedagogical tool, significantly surpassed their counterparts in the control group, who were instructed through traditional methodologies. The experimental group exhibited marked improvements in diverse facets of translation, encompassing sentence structure, grammatical accuracy, lexical choices, and the precise rendering of idiomatic expressions. In contrast, students in the control group displayed only limited progress, as their post-test results closely paralleled those obtained in the pre-test, revealing persistent linguistic errors, particularly in grammar and idiomatic usage. These outcomes underscore the efficacy of ChatGPT in augmenting translation skills relative to conventional teaching approaches.

Discussion

The results of this study reveal significant differences in the translation skills of students in the experimental group, who used ChatGPT as a teaching tool, compared to those in the control group, who followed traditional methods. This outcome underscores the potential of AI-assisted learning tools in enhancing students' linguistic capabilities, particularly in the domain of translation. The students in the experimental group demonstrated improvements in several areas, such as sentence structure, grammatical accuracy, vocabulary choice, and the ability to translate idiomatic expressions.

These advancements suggest that ChatGPT facilitated a more interactive and targeted learning process, enabling students to receive immediate feedback on their translations, which likely helped them refine their skills throughout the semester. The ability of ChatGPT to provide instant, detailed feedback on errors, along with suggestions for improvement, allowed students to actively engage with the translation process and address their mistakes in real-time. This personalized feedback mechanism is a key factor contributing to the observed progress in the experimental group.

On the other hand, the control group, which did not have access to ChatGPT, showed a slight improvement in their post-test results. Despite having the same period of instruction, these students maintained a level of performance consistent with their pre-test, with minimal reduction in errors. This result implies that traditional teaching methods, although effective to some extent, may not provide the same level of individualized and timely support as AI-based tools like ChatGPT. The minor and slow progress in the control group highlights the limitations of conventional learning approaches, particularly in terms of providing immediate, adaptive feedback and promoting sustained engagement with the translation process.

Moreover, the improvements observed in the experimental group can be attributed to the specific strengths of ChatGPT as a tool. ChatGPT's ability to evaluate translations on multiple levels—grammar, vocabulary, sentence structure, and idiomatic accuracy—enabled students to identify and correct their mistakes in a more comprehensive manner. For example, in areas such as verb conjugation, tense consistency, and article-noun agreement, students were able to refine their understanding through feedback that highlighted the nature of their errors and offered corrective suggestions. This iterative learning process facilitated a deeper grasp of the nuances of German grammar, which is often a challenge for learners at intermediate levels. Additionally, the AI's feedback on idiomatic expressions and lexical choices helped students understand how to preserve meaning while making appropriate linguistic adjustments, a skill crucial in high-quality translation.

While the experimental group demonstrated notable advancements, it is important to acknowledge that some linguistic errors persisted even after the integration of ChatGPT. Errors related to adjective endings, and reflexive verbs were still prevalent, which is expected for third-year learners of German as a foreign language. However, these errors were less frequent and less impactful compared to those observed in the pre-test, indicating that the students were making meaningful progress. The persistence of certain errors can be attributed to the complex nature of these grammatical structures, which require continued practice and exposure. ChatGPT, while a powerful tool, is not a panacea for all

language learning challenges, and consistent human guidance remains essential for addressing more intricate aspects of language acquisition.

In contrast, the control group's consistent failure to achieve a notable improvement points to the importance of individualized feedback in the learning process. The lack of significant progress among these students suggests that traditional methods may not always cater to the diverse learning needs of students, especially in subjects as complex as translation. The results highlight the potential of AI-assisted learning tools to offer tailored, real-time feedback that can accelerate learning and provide students with opportunities to self-correct and grow. Without such support, the students in the control group may have struggled with self-directed learning and missed out on crucial opportunities for improvement. This observation suggests that incorporating AI-based tools into language instruction can address some of the limitations of traditional methods and enhance the overall effectiveness of language teaching.

The findings of this work are consistent with the recent literature which underscores the growing significance of AI-powered tools like ChatGPT in assisting with translation tasks, particularly in academic settings where they have shown considerable promise in improving translation and teaching quality and student performance (Yuan et al., 2024). Studies demonstrate that AI models, particularly large language models (LLMs), offer substantial advantages when integrated into educational settings for translation training. This is evident in a comparative study where students using ChatGPT significantly outperformed their peers in the control group, reflecting the positive impact of such tools on learners' linguistic accuracy and comprehension (see Lyu et al., 2023).

AI tools, such as ChatGPT, not only aid in generating initial translations but also facilitate the refinement of translations through iterative feedback and correction. This aligns with the increasing trend towards "interactive machine translation" (IMT), where students can compare their work against AI-generated outputs, identify errors, and learn from the adjustments suggested by the tool. The feedback mechanism provided by LLMs, especially in identifying lexical errors, syntactic mismatches, and idiomatic inaccuracies, contributes to better learning outcomes (see Lyu et al., 2023). This is particularly important in translation pedagogy, where real-time error correction fosters a deeper understanding of language nuances, which students may otherwise miss.

Moreover, AI-powered tools like ChatGPT help bridge the gap between the student's current proficiency and the expected standards of accuracy in translation tasks. This is essential for improving confidence in translating complex texts, as evidenced by the enhanced performance of students in the experimental group who received guidance from the AI model. Such tools also ensure that students are exposed to diverse and more contextually accurate

translations, fostering a greater sense of linguistic diversity and cultural sensitivity (Muñoz-Basols et al., 2023; Kelly & Bruen, 2015). The success of AI in translation is linked to its capacity for "personalized learning," where models can be adapted to suit individual students' needs, offering customized feedback based on their specific errors and strengths (Limo et al., 2023; Yeşilçınar, 2023; Opara et al., 2023).

The results of this study can be also interpreted through the lens of psycholinguistics, particularly in relation to language comprehension and production, which are central processes in translation. According to Kasap and Ünsal (2024), language processing involves intricate mental operations whereby input in the source language must be decoded (comprehension) and then recoded into the target language (production). The consistent and marked improvement in the experimental group's translation performance suggests that the integration of ChatGPT as a pedagogical tool may facilitate more effective semantic and syntactic mapping. This aligns with psycholinguistic models that view translation as a bidirectional cognitive activity requiring robust lexical retrieval and structural reorganization in real time.

Furthermore, the real-time corrective feedback offered by ChatGPT supports students in identifying and rectifying mismatches between their internal linguistic representations and the expected target structures. As observed in the present study, students began to more accurately anticipate grammatical structures and lexical collocations, indicating a refinement in their mental encoding mechanisms. Kasap (2025) emphasizes the role of technological tools in shaping how learners internalize translation norms and linguistic patterns, noting that AI-driven environments may recalibrate the traditional cognitive processes involved in L2 translation. The improvement seen across the 15-week intervention supports this claim, as students gradually reduced errors related to syntax and word choice, often difficult aspects of production in psycholinguistic terms.

In addition to production-oriented gains, ChatGPT appears to have alleviated some of the extraneous cognitive load typically associated with translation, a key concept in Cognitive Load Theory. According to Kasap and Ünsal (2024), when AI tools handle low-level, routine linguistic tasks—such as identifying verb tense errors or suggesting more natural phrasings—students are able to redirect their working memory toward more complex linguistic analysis, such as handling figurative language, idiomatic expressions, or cross-cultural nuances. This was evident in the students' post-test translations, where fewer mechanical errors were observed and more contextually appropriate lexical and syntactic choices were made. Psycholinguistically, this suggests more efficient

allocation of cognitive resources, allowing deeper engagement with meaning-making rather than surface-level form correction.

Finally, the psycholinguistic implications of AI in translation extend beyond mechanics to the affective and metacognitive domains, areas also discussed by Kasap (2025). Students' reflections indicated that ChatGPT not only enhanced their confidence but also encouraged them to reflect more critically on their translation strategies. This aligns with the Noticing Hypothesis, which posits that awareness of language discrepancies is essential for learning. By juxtaposing their output with ChatGPT's feedback, learners were prompted to notice gaps in their comprehension and production, fostering greater metalinguistic awareness. The documentation of this interaction, including screenshots and revision trails, provides empirical evidence that ChatGPT facilitates a more active engagement with linguistic input—thus reinforcing cognitive processes fundamental to psycholinguistic theory.

However, while the pedagogical benefits of ChatGPT are evident, its integration into translation instruction also raises serious concerns that warrant critical reflection. As Kasap (2025) warns, AI tools may inadvertently undermine learning autonomy by encouraging overreliance on automated suggestions, thereby weakening learners' ability to make independent linguistic judgments. This overdependence can hinder the development of deep cognitive processing—an essential aspect of psycholinguistic growth in second language acquisition and translation. Furthermore, the alienation of traditional educational relationships, particularly the interactive, dialogic exchange between instructor and student, may dilute the socio-cognitive benefits of classroom-based learning. Ethical challenges are equally pressing; concerns around academic integrity, especially in assessment contexts, arise when AI-generated translations blur the line between assistance and authorship. Moreover, issues related to knowledge security and ideological bias in AI-generated content introduce new layers of complexity. These factors suggest that while ChatGPT can enhance certain cognitive and linguistic processes, its use must be carefully contextualized and pedagogically scaffolded to avoid undermining the very skills it aims to develop.

Conclusion

The aim of this study was to investigate the use of ChatGPT as a teaching tool in enhancing translation skills, specifically in the context of Arabic-to-German translation. We sought to assess whether integrating an AI-powered model, such as ChatGPT, could improve the translation accuracy and overall performance of students compared to traditional methods. The study involved

two groups: an experimental group that used ChatGPT as an assistive tool throughout a 15-week semester and a control group that continued learning through conventional methods. By administering pre- and post-tests, we were able to evaluate the differences in translation proficiency between the two groups.

The findings revealed that the experimental group, which utilized ChatGPT, showed significant improvement in their translation skills compared to the control group. Specifically, the students in the experimental group demonstrated better sentence structure, grammatical composition, appropriate vocabulary selection, and more accurate translation of idioms and collocations. While some minor errors remained, consistent progress was evident throughout the semester. In contrast, the control group exhibited negligible progress between their pre-test and post-test results, highlighting the value of incorporating AI tools in language learning. The use of ChatGPT not only assisted in generating initial translations but also provided real-time corrections, helping students develop a deeper understanding of language nuances and translation techniques.

For future research, it would be beneficial to explore the long-term impact of AI-assisted translation tools on advanced language learners and in more specialized translation fields such as legal, technical, or medical translation. Additionally, further studies could investigate the integration of other AI models, such as domain-specific language models, to see if they provide even greater accuracy and tailored feedback. It would also be insightful to analyze the role of AI in collaboration with human teachers to determine how best to strike a balance between machine assistance and human guidance in translation pedagogy. Finally, research should focus on addressing potential challenges in using AI for language learning, such as the development of students' critical thinking skills and their ability to detect inaccuracies in machine-generated translations.

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Cultural conceptualization of *death* in religious and carnival worldviews in Middle English

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Abstract. This study explores the cultural conceptualization of DEATH within two contrasting medieval worldviews – the religious/moral and the carnival – through the lens of Cultural Linguistics. Drawing on English literary texts from the 14th to 17th centuries, the paper analyzes how DEATH was perceived, framed, and emotionally coded in different sociocultural paradigms. Using the theoretical framework of Cultural Linguistics, which regards language as a reflection of culturally embedded cognition, the research identifies distinct cultural schemas, such as DEATH IS NATURAL TERMINAL, DEATH IS DIVINE PREORDINATION, DEATH IS MORAL EQUALIZER, and DEATH IS RELIEF/REST – in the religious worldview. These schemas present DEATH as a natural, moral, or divine event, often met with passive acceptance or spiritual reflection. In contrast, the carnival worldview re-negotiates DEATH as grotesque and laughable, with schemas like DEATH IS OBJECT OF RIDICULE, exemplified by parodic and humorous depictions in comedy. The study applies both onomasiological and componential analyses to identify the semantics of DEATH-related lexemes and traces its re-conceptualization in literary discourse. Ultimately, the research illustrates how DEATH, though a universal human concern, is cognitively constructed in culturally variable ways, revealing evolving ideological, ethical, and aesthetic orientations. The findings contribute to broader understanding of how historical-cultural conditions shape emotional and metaphorical frameworks in the worldview.

Keywords: cultural linguistics, ‘death’ conceptualization, medieval worldview, religious vs. carnival ethics, cultural schema, metaphorical cognition.

Шевченко Ірина, Морозова Ірина. Культурна концептуалізація СМЕРТІ в релігійній та карнавальній картинах світу середньоанглійського періоду.

Анотація. Це дослідження вивчає культурну концептуалізацію СМЕРТІ в рамках двох контрастних середньовічних картин світу – релігійної/моральної та карнавальної – крізь призму культурної лінгвістики. Спираючись на англійські літературні тексти 14–17 століть, у статті проаналізовано, як концепт СМЕРТЬ сприймався, конструювався та емоційно кодувався в різних соціокультурних парадигмах. Використовуючи

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теоретичні засади культурної лінгвістики, яка розглядає мову як відображення культурно зумовленого пізнання, дослідження визначає окремі культурні схеми – такі як СМЕРТЬ Є ПРИРОДНИЙ КІНЕЦЬ, СМЕРТЬ Є БОЖЕСТВЕННЕ ПРИЗНАЧЕННЯ, СМЕРТЬ Є МОРАЛЬНИЙ ЗРІВНЮВАЧ та СМЕРТЬ Є ПОЗБАВЛЕННЯ/ВІДПОЧИНОК у релігійній картині світу. Ці схеми представляють СМЕРТЬ як природну, моральну або божественну подію, яку часто зустрічають з пасивним прийняттям або духовною рефлексією. На противагу цьому, карнавальна картина світу переосмислює СМЕРТЬ як гротескну і смішну, зі схемами на кшталт СМЕРТЬ Є ОБ'ЄКТОМ СМІХУ, прикладом чого є пародійні та гумористичні зображення в комедіях. У дослідженні застосовано ономазіологічний та компонентний аналізи для визначення семантики лексем, пов'язаних зі СМЕРТЮ, та простежено її ре-концептуалізацію в літературному дискурсі. Зрештою, дослідження ілюструє, як концепт СМЕРТЬ, хоч і є універсальною людською проблемою, когнітивно конструюється в культурно варіативний спосіб, виявляючи еволюцію ідеологічних, етичних та естетичних орієнтацій. Результати дослідження сприяють ширшому розумінню того, як історико-культурні контексти формують емоційне сприйняття та метафоричні моделі в картині світу.

Ключові слова: культурна лінгвістика, концептуалізація СМЕРТІ, середньовічний світогляд, релігійна та карнавальна етика, культурна схема, метафоричне пізнання.

Introduction

Our understanding of the world, including fundamental worldview concepts such as LIFE, DEATH, GOOD, and EVIL, is shaped by empirical knowledge derived from the historical experience of humanity within specific cultural contexts. Among these, the concept of DEATH constitutes a persistent existential concern and a fundamental aspect of human experience (Kagan, 2012; MacLean et al., 2009). This concept is a culturally constructed phenomenon (Arora, 2021) – a stable mental representation rooted in culturally significant practices, experiences, and artifacts that evolve in tandem with societal transformations. Unsurprisingly, DEATH has been the object of extensive interdisciplinary research, encompassing both empirical clinical investigations (Zimmermann, 2007) and theoretical explorations in the humanities.

As a central theme in cultural and evolutionary theory, DEATH is often explored in relation to religious belief systems and historical-cultural transformations. Anthropologists approach the topic from a cross-cultural perspective, while philosophers and sociologists examine it through the lens of ethnic stereotyping and cultural progression (Suvorova, 2012; Arora, 2021). A seminal contribution in this field is the study by Palgi and Abramovitch (1984) that presents a comprehensive critical review of death-related research in psychological anthropology and behavioral science, positioning DEATH within a comparative cultural framework. Similarly, Kagan (2012) analyzes the

philosophical and cultural dimensions of mortality, addressing its ontological and existential implications.

The linguistic conceptualization of the world is embedded within cultural, linguistic, and social experiences, reflecting the ethnocultural specificity of a given language and revealing the essence of culturally constructed concepts. Lexicological studies investigate the semantic properties of DEATH through the paradigmatic relationships among related lexemes (Fedoriuk, 2017). Cognitive linguistics models the concept through frame-based analysis (Prykhodko & Prykhodchenko, 2018) and explores its cross-cultural representations (Kuczok, 2016; Uberman, 2018; Wachowski & Sullivan, 2021). Scholars have also examined metaphorical language that describes DEATH (Faur, 2012; Keefer et al., 2021; Uberman, 2016), identifying conceptual metaphors in which DEATH serves as the target domain (Molgamova, 2024).

Employing corpus linguistics methodologies, researchers have analyzed the concept of DEATH from a linguosynergetic perspective (Molgamova, 2024; Tatsenko & Molgamova, 2023). Using propositional schema modeling, the linguistic network of this concept reveals a fractal structure characterized by nonlinear dynamics among its components, producing a unified yet multifaceted conceptualization (Molgamova, 2024).

In sum, whether conceptualized as a natural element of the life cycle, a divine punishment, a scientific mystery, or a source of existential anxiety, dominant cultural representations of DEATH reflect shared ethnocultural values and individual belief systems. Yet, for contemporary scientific inquiry, DEATH presents a distinctive challenge, particularly in the context of global terrorism and wartime threats. Despite existing research that elucidates linguistic and metaphorical representations of DEATH, there remains a significant gap in diachronic studies addressing its cognitive and psychological dimensions. Bridging this gap is essential; as such concepts not only mirror prevailing ideologies but also trace evolving cultural transformations. However, diachronic cognitive analyses that capture these shifts remain relatively underdeveloped. This study posits that such an analysis can be effectively conducted through the theoretical framework of Cultural Linguistics.

Cultural Linguistics maintains that “language is a cultural form, and that conceptualizations underlying language and language use are largely formed by cultural systems” (Yu, 2007, p. 65). According to Shariffian (2017), this approach explores aspects of human language that encode culturally constructed conceptualizations of experience and underpin linguistic behavior. Cultural Linguistics is inherently interdisciplinary, integrating insights from cognitive science, pragmatics, psychology, and anthropology. Cultural conceptualization, understood as a mental process, is rooted in cultural

cognition—a view aligned with the enactive approach to cognition, which emphasizes the dynamic interaction of body, mind, and environment. From this perspective, cultural cognition emerges through the ongoing interaction between individuals and their cultural environments across temporal and spatial dimensions (Stewart et al., 2011), rather than being limited to internal mental representations.

Within this framework, cultural schemas function as analytical tools for examining how language encodes conceptualizations. As Shariffian (2017, p. 4) explains, these schemas encapsulate beliefs, norms, behavioral expectations, and values pertaining to diverse aspects of human experience. The historical development of a speech community and its culture inevitably transforms elements of cultural cognition, reflecting its dialectical nature. Accordingly, “language can be viewed as a primary mechanism for ‘storing’ and communicating cultural cognition, acting both as a memory bank and a fluid vehicle for the (re-)transmission of cultural cognition” (Shariffian, 2017, p. 2). While Cultural Linguistics has addressed the cross-cultural and cross-religious dimensions of DEATH (Lu, 2017), its diachronic dimensions remain underexamined. The present study seeks to contribute a preliminary exploration of this area.

Specifically, this paper investigates the cultural conceptualization of DEATH in two contrasting worldviews that coexisted during the Middle Ages: the moral/religious worldview and the carnival worldview. The former was shaped by traditional Catholic doctrines and beliefs, while the latter, in Bakhtin’s (1984) terms, was informed by a ‘comic world’ with its carnival aesthetics—such as masquerade, parody, the grotesque, and procession—which served to subvert dominant cultural norms (Tancons, 2014). In a Roman Catholic Perspective (Oakley et al., 2025), DEATH is a central theme connected with the notions of Salvation, Eschatology, Judgment, and Resurrection. The religion’s premise is that humans have forfeited immortality through the original sin, transmitted from Adam and Eve that brought death into the world. The opposite grotesque and humorous perception of DEATH in the English worldview manifests itself only in the short period of medieval carnival culture. This perception goes back to the Saturnalia of ancient Rome, where funerals included both mourning (glorification) and ridicule of the deceased. In the folk culture of medieval carnival, moments of death and rebirth, change and renewal were marked by a festive perception. In the grotesque archaism of the folk booth, DEATH and BIRTH created an oxymoron—the image of a ‘MERRY DEATH’; DEATH and HELL became ambivalent (Humphrey, 2000). While previous researches of DEATH addressed issues of linguistic semantics, corpus-based analysis and cognitive linguistics, we have instead focused on

how DEATH was perceived and represented within moral/religious and carnival perspectives, aiming to model and compare the cultural schemas that underlie each.

Drawing on linguistic data from English literary texts of the 14th –17th centuries, this research hypothesizes that the cultural conceptualization of DEATH demonstrates significant variation according to prevailing ethical and aesthetic principles. To support this claim, the study addresses the following research questions:

1. What were the dominant English perceptions of DEATH during the Middle English period?
2. What cultural schemas of DEATH are represented in religious/moral worldview?
3. How were cultural conceptualizations of DEATH re-negotiated within religious/moral and carnival worldviews?

Method

Procedure

To achieve the aim of this study, we begin by examining prevalent perceptions of DEATH in medieval English society. This is followed by an identification and analysis of the cultural schemas associated with the concept. Finally, we propose a tentative trajectory that traces transformation of the cultural conceptualization of DEATH across differing ethical frameworks.

In the first stage, our analysis is informed by psycholinguistic insights into the interaction between human perception of the world and language (Croft, 2009), as well as the interplay between consciousness and culture (Lakoff & Johnson, 1980). We apply a structural approach to the study of meaning and its tool—componential analysis of meaning of various lexemes that nominate DEATH to single out minimal distinctive features of meaning—semes and their clusters—archesemes. Textual interpretation of lexically represented concepts allows us to reveal how DEATH is perceived in different cultural contexts, what values are attributed to it, and what emotions it evokes.

In the second stage, our analysis draws on the principles of Cultural Linguistics. The theoretical framework of Cultural Linguistics is based on the assumption that the relationship between language and conceptualization is shaped by specific cultural contexts. This framework is grounded in a key premise of cognitive linguistics—namely, that cognition is embodied and culturally embedded (Langacker, 2014). Accordingly, cultural

conceptualizations refer to “patterns of distributed knowledge across the cultural group” (Shariffian, 2011, p. 3).

In this study, Cultural Linguistics enables an examination of the concept of DEATH through the lens of the interrelations among cultural cognition, cultural conceptualizations, and language. According to Shariffian (2017), language serves as a tool through which cultural cognition generates various formats of conceptual knowledge, including cultural schemas. These schemas are collectively constructed within a cultural worldview and play a key role in the communication of cultural meanings.

The analytical framework of Cultural Linguistics is grounded in the idea that morphosyntactic, pragmatic, and semantic meanings, as well as discourse strategies, may be embedded in cultural conceptualizations in the form of cultural schemas, categories, and metaphors (Shariffian, 2017, p. 4). Cultural schemas, as a type of cultural conceptualization, are understood as cognitive building blocks used for storing, organizing, and interpreting information (Shariffian, 2015, p. 475). In fiction, the cultural concept of DEATH is expressed through these schemas, which are mental constructs continually negotiated and re-negotiated across historical periods.

This study adopts a Cultural Linguistics diachronic approach. In line with its objectives, we applied information analysis and interpretation to identify the central idea of DEATH and its conceptual perception. We also employed comparison to highlight key similarities and differences in the cultural schemas of DEATH across ethnic systems.

Research Material

The corpus of this study includes excerpts dealing with DEATH from Geoffrey Chaucer’s literary works of the Middle English period, as well as from Early Modern comedies of William Shakespeare. These texts were selected based on several criteria.

First, *The Canterbury Tales* by Geoffrey Chaucer is widely regarded as one of the most significant poetic works in English literature, addressing both everyday concerns and profound philosophical questions, including the theme of DEATH. His texts offer reliable examples of a predominantly religious and moral worldview.

Second, although William Shakespeare belonged to the Early Modern period of English literature, Bakhtin compared his comedies to Rabelais’s carnival aesthetics relying on binary notions of death/birth (Marie-Laverrou, 2008). Shakespeare’s comedies *A Midsummer Night’s Dream* (Shakespeare, 1998a) and *Twelfth Night* (Shakespeare, 1998b) effectively represent medieval

carnival culture and its associated practices. *Twelfth Night* is rich in themes of gender disguise, festive misrule, and servant–master role reversals, while *A Midsummer Night’s Dream* features elements of chaos, physical comedy, and a world turned upside down—hallmarks of medieval carnival aesthetics.

Third, the historical perspective adopted in this study is underpinned by the idea of dynamic evolution of culture, society, and cognition over time (Shevchenko, 2016). The essential differences between the cultural schemas of DEATH in moral and carnival ethical frameworks allow for a meaningful comparison of these two medieval worldviews, providing a solid foundation for analyzing the cultural re-conceptualization of DEATH.

Results and Discussion

There exist three kinds of experience that together shape the formation of human cognition: bodily experience (embodiment), cultural experience in a specific environment or situation, and inherited linguistic experience. “All three kinds of experience, nevertheless, are situated in the sphere of culture. Culture is a superior force that permeates human conceptualization and cognition” (Yu, 2017, p.84).

Linguistic experience of DEATH comes from Old English *deað* (n.) “total cessation of life, act or fact of dying, state of being dead; cause of death,” in plural, “ghosts,” from Proto-Germanic **dauthuz* (source also of Old Saxon *doth*, Old Frisian *dath*, Dutch *dood*, Old High German *tod*, German *Tod*, Old Norse *dauði*, Danish *død*, Swedish *död*, Gothic *dauus* “death”), from verbal stem **dau-*, which is perhaps from PIE root **dheu-* (3) “to die” (see *die* (v.) with Proto-Germanic **-thuz* suffix indicating “act, process, condition.” The verb *die*(v.) mid-12c., *dien*, *deighen*, of sentient beings, “to cease to live,” possibly from Old Danish *døja*, Old Norse *deyja* “to die, pass away,” both from Proto-Germanic **dawjan*, from PIE root **dheu-* (3) “to pass away, die, become senseless” (source also of Old Irish *dith* “end, death,” Old Church Slavonic *daviti*, “to choke, suffer”) (OED, n.d.).

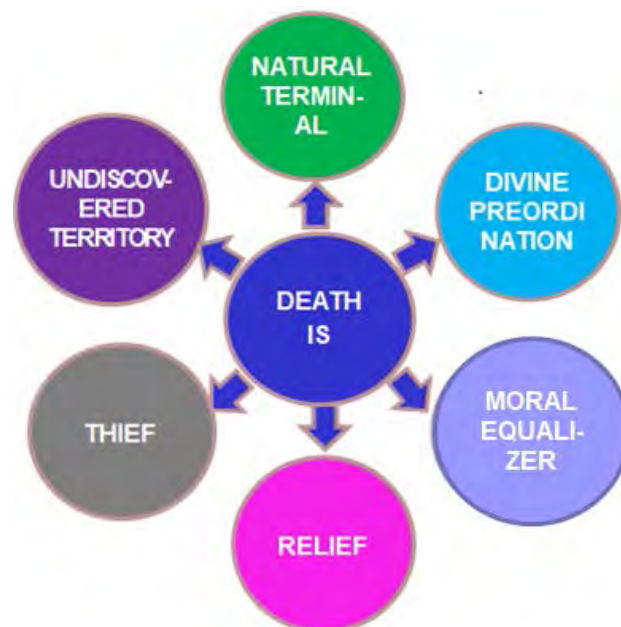
The data of an onomasiological analysis show that in the English language the concept of DEATH is lexically represented by lexemes and their derivatives, among them *death*, *afterlife*, *annihilation*, *bereavement*, *casualty*, *cessation*, *curtains*, *darkness*, *decease*, *demise*, *departure*, *destruction*, *dissolution*, *doom*, *downfall*, *dying*, *end*, *ending*, *eradication*, *euthanasia*, *exit*, *expiration*, *extermination*, *extinction*, *fall*, *fatality*, *finale*, *finis*, *finish*, *grave*, *heaven*, *loss*, *mortality*, *necrosis*, *obliteration*, *oblivion*, *paradise*, *parting*, *passing*, *quietus*, *release*, *repose*, *ruin*, *ruination*, *silence*, *sleep*, *termination*, *tomb*, *eternal rest*,

passing over (CFODT, n.d.; CDSA, n.d.; SOESD, n.d.). Their individual semes can be combined into archesemes 'Finish/Cessation', 'Departure', 'Loss', 'Relief', 'Rest'.

Cultural and bodily experience of DEATH encoded in the English language of Middle English period may be exemplified in cultural schemas that capture beliefs and values of Chaucer's personages. In their worldview, DEATH is perceived as neutral DEATH IS NATURAL TERMINAL, DEATH IS DIVINE PREORDINATION, DEATH IS MORAL EQUALIZER, negative DEATH IS UNDISCOVERED TERRITORY, DEATH IS THIEF, or positive DEATH IS RELIEF/REST.

Figure 1

Cultural Schemas of DEATH in Religious/Moral Worldview



The cultural schema DEATH IS NATURAL TERMINAL explicates this concept in terms of a natural timeline that has its ends, which corresponds to the archesemes 'Finish/Cessation'. As Theseus explains it in *The Knight's Tale*, God has allocated a definite number of days to everyone's life on earth, beyond which day they cannot pass:

(1) "That same Prince and that Moevere," quod he,
"Hath stablissed in this wrecched world adoun
Certeyne dayes and duracioun
To al that is engendred in this place,
Over the whiche day they may nat pace,
Al mowe they yet tho dayes wel abregge".

(Chaucer, "The Canterbury Tales")

In accord with religious worldview of Middle Ages, all existential concepts were perceived as God predestined. Such was the death of the tyrant Creon killed by noble Theseus (excerpt 2); and equally inevitable was the death of every living creature, being written in the stars (excerpt 3). This 'natural' conceptualization of DEATH had a religious edge typical of most issues in the medieval worldview and reflected neutral evaluation of this concept and people's passive obedience to accept it as inevitable.

(2) "And swoor his ooth, as he was trewe knyght,
He wolde doon so ferforthly his myght
Upon the tiraunt Creon hem to wreke
That al the peple of Grece sholde speke
How Creon was of Theseus yserved
As he that hadde **his deeth ful wel deserved.**"

(Chaucer, "The Canterbury Tales")

In *The Tale of Melibee*, DEATH is portrayed as a moral equalizer, transcending distinctions of social status and wealth. This theme reflects the medieval belief in the universality of DEATH as an inevitable and impartial fate. The cultural schema DEATH IS MORAL EQUALIZER is exemplified in excerpt (3), which underscores the prevailing medieval notion of DEATH as predestined and emphasizes the shared mortality of all human beings.

(3) "For **in the sterres**, clerer than glas,
It is writen—God wot, if that I can—
The deeth of every man, withouten leas".

(Chaucer, "The Canterbury Tales")

Cultural conceptualization of DEATH embedded in danger and loss caused fear and anxiety. Structural cognitive metaphor DEATH IS UNDISCOVERED TERRITORY (archeseme 'Departure'), and personification DEATH IS THIEF (archeseme 'Loss') added negative connotation to cultural cognition of the concept of DEATH. This negative perception is based on bodily experience of fear (compare: Hamlet's soliloquy reads, there is "...*the **dread** of something after **death**, **The undiscovered country from whose bourn No traveler returns**...*"). Fear belongs to basic human emotions that serve crucial biological and social functions (Ekman, 1999; Izard, 2011); it is motivated by the experience of dying and thus has distinct regulatory characteristics.

The cultural scheme DEATH IS UNDISCOVERED TERRITORY in excerpt (4) from *The Knight's Tale* is a cognitive metaphonymy. In it, metaphor DYING IS LEAVING ONE'S HOUSE is based on the synecdoche SPIRIT FOR

PERSON (THAT LEAVES HIS HOUSE). In this cultural scheme, the notion of a JOURNEY TO THE UNKNOWN (source of the cognitive metaphor) causes both fear and grief/sadness—another basic emotion caused in this example by the loss of one's home.

(4) "**His spirit chaunged hous and wente ther,
As I cam nevere, I kan nat tellen wher.**
Therefore I stynte; I nam no divinistre;
Of soules fynde I nat in this registre,
Ne me ne list thilke opinions to telle
Of hem, though that they writen wher they dwelle."

(Chaucer, "The Canterbury Tales")

The conceptualization of DEATH as an unseen force that takes lives without warning forms a cultural schema DEATH IS THIEF. The typicality and frequency of this schema in the worldview of Middle Ages is embedded in plague and other mischiefs of that period. In example (5) from *The Pardoner's Tale*, a servant boy recounts the sudden death of a friend. Here DEATH is metaphorically personified as a thief who stealthily takes lives.

(5) "There came a **privy thief, they call him Death,**
Who kills us all round here."

(Chaucer, "The Canterbury Tales")

The 'positive' perception of DEATH corresponding to the cultural schema DEATH IS RELIEF (based on the archeseme 'Relief') is summed up in Chaucer's quoth "*Deeth is an ende of every worldly soore.*" In Chaucer's time, *relief* (n.) had the meaning "alleviation or deliverance from distress" or was a variant of *relieve* (v.) —"to ease and mitigate pain or distress" (OED, n.d.). In *The Physician's Tale*, Virginius thinks that by killing his daughter, he is freeing her from a worse fate—dishonor and shame.

(6) "I am thy fader, and thy **deeth** I see,
But if I thee fordo, I thee **release.**"

(Chaucer, "The Canterbury Tales")

Rooted in the same concept of DELIVERANCE, the cultural schema DEATH IS REST is limited to the alleviation from physical pain or hardships of a weary life. In *The Pardoner's Tale*, an old man, weary of life, longs for Death's release and uses a conceptual metonymy one's BONES FOR PERSON:

(7) "Thus walke I, lyk a **restelees** kaityf."
"Allas, whan shul my **bones been at reste?**"

(Chaucer, "The Canterbury Tales")

The carnival worldview re-conceptualized DEATH; it could be mocked or shown in grotesque ways (e.g., bodies, bones, physical decay). As Bakhtin (1984, p.88) put it, "Medieval laughter is directed at the same object as medieval seriousness. ...One might say that it builds its own world versus the official world, its own church versus the official church, its own state versus the official state. Laughter celebrates its masses, professes its faith, celebrates marriages and funerals, writes its epitaphs, elects kings and bishops."

Though post-medieval, Shakespeare preserves carnival traditions in his comedies. In *Twelfth Night*, Shakespeare employs the character of Feste, the fool, to present DEATH in a manner that is both humorous and grotesque, often blending wit with dark themes. Excerpt (8) illustrates the cultural schema DEATH IS OBJECT OF RIDICULE through Feste's mockery of mourning as he challenges Olivia's prolonged mourning for her brother, whom she believes is in heaven:

(8) Feste: I think his soul is in hell, madonna.

Olivia: I know his soul is in heaven, fool.

Feste: **The more fool, madonna, to mourn for your brother's soul, being in heaven**

("Twelfth Night", Act 1, Scene 5)

This exchange (8) highlights Feste's use of humor to confront the absurdity of excessive mourning, suggesting that grieving for someone in heaven is itself foolish.

In Feste's melancholic song below (excerpt 9), he reflects on unrequited love and dares to drive away DEATH in a flippant grotesque manner impossible in religious worldview.

(9) **"Come away, come away, death,**

And in sad cypress let me be laid;

Fly away, fly away breath;

I am slain by a fair cruel maid."

("Twelfth Night", Act 2, Scene 4)

In accord with the carnival ethics, Feste sticks to sardonic and cynical manner of speaking about DEATH with a touch of dark humor: "*Youth's a stuff will not endure*" ("Twelfth Night", Act 2, Scene 3).

The cultural schema DEATH IS OBJECT OF RIDICULE is dominant in the carnival worldview. Quotations (8 – 9) demonstrate how Shakespeare uses Feste to intertwine humor with the grotesque perception of DEATH, offering a nuanced perspective on mortality in *Twelfth Night*.

In *A Midsummer Night's Dream*, Shakespeare employs humor and grotesque elements to depict DEATH, particularly through the act of entertainment at a wedding – the parody of the tragic story of Pyramus and Thisbe, which underscores the absurdity and theatricality of DEATH. In this context, DEATH is theatrical, not final; rather, it is a mock of high tragedy. Bottom's exaggerated speech (10) illustrates the cultural schema DEATH IS PART OF FESTIVE RENEWAL. Here death is a ritualistic performance — not an actual death, but a caricature of it — suggesting that death, when seen through the lens of festivity, is just another phase in the cycle of storytelling and life, as Bakhtin's (1984) theory of the grotesque body and carnival suggest. Bottom's repetitive and melodramatic monologue parodies tragic speeches, turning DEATH into a source of humor. The absurdity of his multiple declarations of death highlights the play's comic tone:

(10) “Thus **die** I, thus, thus, thus. Now **am I dead**;
Now **am I fled**; my soul is in the sky.
Tongue, lose thy light! Moon, take thy flight!
Now **die, die, die, die, die.**”

(“A Midsummer Night's Dream”, Act 5, Scene 1)

Theatricality is a distinctive feature of carnival aesthetics. Bakhtin (1984, p.88) argued that “... medieval culture of humor which accompanied the feasts was a “satyric” drama, a fourth drama, after the “tragic trilogy” of official Christian cult and theology to which it corresponded but was at the same time in opposition. Like the antique “satyric” drama, so also the medieval culture of laughter <...> was the drama of the great generic body of the people, and for this generic body birth and death are not an absolute beginning and end but merely elements of continuous growth and renewal”. In carnival framework, the conceptualizations of DEATH AS GROTESQUE BODY (11) and DEATH AS THEATRICAL PERFORMANCE (12) are also emphasized by the mismatched descriptions and over-the-top imagery contributing to the grotesque humor and parody of tragic conventions. Such is Flute's comical lament, when he mourns Pyramus's ‘death’ on stage with exaggerated metaphors (11) or the Athenians' ridicule and making fun of the character Pyramus and his ‘death’ (12), after he falls and cries out “die” five times.

(11) “His eyes were **green as leeks**;
With hands as **pale as milk**” (“A Midsummer Night’s Dream”, Act 5, Scene 1)

(12) DEMETRIUS: No die, but an ace for him, for he is but one.
LYSANDER: Less than an ace, man, for **he is dead, he is nothing**.
 (“A Midsummer Night’s Dream”, Act 5, Scene 1).

In sum, through these examples, the carnival worldview blends humor with the grotesque perception of DEATH, using parody, sarcastic commentaries, and irony. Figure 2 provides a visual summary of how different worldviews conceptualize DEATH.

Figure 2
Cultural Conceptualization of DEATH in Moral/Religious and Carnival Worldviews

Moral/religious worldview	Worldview intersection	Carnival worldview
<ul style="list-style-type: none"> • DEATH IS NATURAL TERMINAL • DEATH IS DIVINE PREORDINATION • DEATH IS THIEF • DEATH IS RELIEF • DEATH IS REST 	<ul style="list-style-type: none"> • DEATH IS SOCIAL EQUALIZER • DEATH IS UNDISCOVERED TERRITORY 	<ul style="list-style-type: none"> • DEATH IS OBJECT OF RIDICULE • DEATH IS THEATRICAL PERFORMANCE • DEATH IS GROTESQUE BODY • DEATH IS PART OF FESTIVE RENEWAL

Figure 2 visually captures the re-conceptualization, function, and emotional framing of DEATH in the two worldviews, while also showing subtle conceptual overlaps of shared but differently negotiated cultural schemas: DEATH IS SOCIAL EQUALIZER (positively perceived in moral/religious worldview, but celebrated with irony or irreverence in carnival ethics) and DEATH IS UNDISCOVERED TERRITORY (the theme of transition feared in moral/religious worldview but mocked in carnival).

Conclusion

Through psycholinguistic and cultural linguistic analysis, this study has provided key insights into the dynamic conceptualization of DEATH in the

moral and carnival worldviews of Middle English period. The research singled out cultural schemas of DEATH specific for different worldviews and highlighted the re-conceptualization of DEATH in carnival framework as contrasted to the traditional Catholic religious one.

Drawing on selected texts by Geoffrey Chaucer and William Shakespeare, we identified a range of cultural schemas that reflect different emotional, ethical, and cognitive attitudes toward DEATH in religious/moral and carnival worldviews. In the religious/moral system of Chaucer's works, DEATH is perceived as a natural, divine, and moral force – an inevitable endpoint governed by God's will and a universal equalizer of all human beings. Its typical cultural schemas are: DEATH IS NATURAL TERMINAL, DEATH IS DIVINE PREORDINATION, DEATH IS SOCIAL EQUALIZER, DEATH IS UNDISCOVERED TERRITORY, DEATH IS THIEF, DEATH IS RELIEF, and DEATH IS REST. These conceptualizations reflect medieval beliefs deep-rooted in Roman Catholicism in divine predestination and moral accountability.

By contrast, the carnival worldview, preserved in Shakespeare's comedies, presents a radically different conceptualization: DEATH becomes a grotesque, humorous, and theatrical construct that can be mocked, ridiculed, or parodied. In carnival worldview, DEATH is re-conceptualized; instead of being feared, it becomes part of the carnivalesque process that clears space for renewal and reconciliation along cultural schemas DEATH IS OBJECT OF RIDICULE, DEATH IS THEATRICAL PERFORMANCE, DEATH IS GROTESQUE BODY, DEATH IS PART OF FESTIVE RENEWAL.

This ambivalent view of mortality reflects the subversive spirit of carnival culture, which undermines religious solemnity with irony and laughter. Cultural schemas are both found in the moral/religious and carnival worldviews, though their conceptualizations differ from respect in the former to ridicule in the latter.

In sum, our findings demonstrate the value of diachronic approaches in exploring the conceptualization and re-conceptualization of DEATH in moral and carnival Middle English worldviews. The juxtaposition of the two worldviews illustrates how conceptualizations of DEATH are shaped by the ethical, aesthetic, and cognitive systems of their time. Ultimately, this diachronic and cross-framework approach offers new insights into the evolving cultural meanings of DEATH and underscores the utility of Cultural Linguistics in examining how language encodes and negotiates cultural cognition. However, the diachronic perspective of this study limited the integration of psycholinguistic methods, which, if applied to modern texts, could provide a richer empirical foundation. A promising direction of future research would be to trace how culturally embedded schemas of DEATH evolve in subsequent

worldviews, particularly within Enlightenment, Romantic, and contemporary worldviews, to further explore the continuity and transformation of moral, emotional, and aesthetic attitudes toward mortality.

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Metaphoric consideration of the UKRAINE concept significance in the non-Ukrainian journalistic discourse and its influence on social and linguistic consciousness – A corpus research of the 2022-2025 wartime period

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Abstract. The article studies associations of the Ukrainian topic in non-Ukrainian journalistic sources of the 2022-2025 wartime period to define how importance of Ukrainian support is regarded from the worldwide safety perspective. The research relies on heritage of the Ukrainian cognitive linguistics where concept is treated as a dynamic layer unity of notion, image and values, which develops in the constantly evolving discourse as social and linguistic consciousness with a changeable public attitude to its essence. The research is conducted via corpus as a mini-model of discourse. The News on the Web (NOW) Corpus is selected as the most authentic base of permanently updating resources since 2010 till today. 122 journalistic sources are taken from the NOW Corpus to produce a 230-context sample of Ukrainian metaphoric associations in the non-Ukrainian press. The sample is processed via the Lakoff-Johnson conceptual metaphor methodology to provide a list of images non-Ukrainians associate Ukraine with. All 421 detected cases of metaphoric associations are sorted by decreasing frequency in mental clusters (law, biology, structure, labor, psychology, science, economics, art and leisure, interpersonal communication). It produces a metaphoric spectrum from the most to least relevant images of the UKRAINE concept within the non-Ukrainian community. Consequently, UKRAINE is associated as ORGANISM; HUMAN; BUILDING; WARRIOR; LEGAL STATUS. Moderate considerations are reflected via metaphors UKRAINE as GAME; VICTIM; MACHINE; PHYSICAL BODY; OWNER; PARTNER; TARGET; OFFENDER; PRODUCT. The least frequent metaphors are UKRAINE is TEAM; FRAGMENTED OBJECT; COMPLEX OBJECT; SINGLE OBJECT; PROPERTY; IDEA; AUTHORITY; JESUS CHRIST; ANIMAL; PLANT; VEHICLE; FAMILY; CONSUMER; RESOURCE; LIQUID; SOLID; DEBTOR; ACCUSER; LEGAL SUBJECT; FLAME; LESSON; WRITTEN TEXT; PASSENGER; SCALES; GARMENT; GLASSWARE; PICTURE; RESEARCHER; EQUATION; RIVAL; BOMB. The results

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are open for specification (new samples of the UKRAINE concept may be processed because the war is not over and future non-Ukrainian associations may differ, respectively).

Keywords: *Ukraine, wartime, concept, layer model, image, conceptual metaphor.*

Степанов Віталій, Ємельянова Олена, Баранова Світлана, Набок Марина. Метафоричне осмислення значущості концепту УКРАЇНА в неукраїнському публіцистичному дискурсі та його вплив на суспільну й мовну свідомість – корпусне дослідження воєнного періоду 2022-2025 років.

Анотація. У статті досліджено асоціації української тематики в неукраїнських публіцистичних джерелах воєнного періоду 2022-2025 років з метою з'ясувати, як саме подається важливість підтримки України з точки зору світової безпеки. Дослідження спирається на науковий доробок української когнітивної лінгвістики, де концепт розглядається як динамічна шарова єдність поняття, образу та цінностей, що еволюціонує в дискурсі, який постійно розвивається як суспільна і мовна свідомість із мінливим ставленням громадськості до сутності концепту. Студія проводиться за допомогою корпусу як міні-моделі дискурсу. Зокрема, автори обрали корпус News on the Web (NOW) як найбільш автентичну базу ресурсів, що постійно оновлюється з 2010 року до сьогодні. З корпусу NOW було відібрано 122 публіцистичні джерела, з яких було сформовано 230-контекстну вибірку метафоричних асоціацій України у неукраїнській пресі. Вибірку опрацьовано за методикою концептуальної метафори Лакоффа-Джонсона для отримання переліку образів, за якими неукраїнці асоціюють українців. 421 виявлений випадок метафоричних асоціацій відсортовано за зменшенням частотної реалізації в ментальних кластерах (право, біологія, структура, праця, психологія, наука, економіка, мистецтво та дозвілля, міжособистісні стосунки). Це створює метафоричний спектр від найбільш до найменш релевантних образів концепту УКРАЇНА у свідомості неукраїнської спільноти. Отже, УКРАЇНА переважно асоціюється як ОРГАНІЗМ; ЛЮДИНА; БУДИНОК; ВОЇН; ПРАВОВИЙ СТАТУС. Помірне осмислення здійснюється через метафори УКРАЇНА як ГРА; ЖЕРТВА; МАШИНА; ФІЗИЧНЕ ТІЛО; ВЛАСНИК; ПАРТНЕР; ЦІЛЬ; ПОРУШНИК; ПРОДУКТ. Найменш частотними є метафори УКРАЇНА як КОЛЕКТИВ; ФРАГМЕНТОВАНИЙ ОБ'ЄКТ; КОМПЛЕКСНИЙ ОБ'ЄКТ; ЦІЛІСНИЙ ОБ'ЄКТ; ВЛАСНІСТЬ; ІДЕЯ; ВЛАДА; ІСУС ХРИСТОС; ТВАРИНА; РОСЛИНА; ТРАНСПОРТНИЙ ЗАСІБ; СІМ'Я; СПОЖИВАЧ; РЕСУРС; РІДИНА; ТВЕРДЕ ТІЛО; БОРЖНИК; ОБВИНУВАЧ; СУБ'ЄКТ ПРАВА; ПОЛУМ'Я; УРОК; ПИСЬМОВИЙ ТЕКСТ; ПАСАЖИР; ВАГИ; ОДЯГ; СКЛЯНИЙ ПОСУД; КАРТИНА; ДОСЛІДНИК; РІВНЯННЯ; СУПЕРНИК; БОМБА. Результати відкриті для подальшої конкретизації в нових дослідженнях (можуть бути опрацьовані нові дискурсивні вибірки концепту УКРАЇНА, оскільки війна не закінчилася і майбутні асоціації можуть відрізнятися).

Ключові слова: *Україна, воєнний час, концепт, шарова модель, образ, концептуальна метафора.*

Introduction

It goes without saying that people are social rather than purely natural beings. Since the moment of emergence, the humanity has been developing with a constant experience reconsideration in mind. The accumulated knowledge is represented mentally as separate units – concepts.

The modern concept perspective has formed as long-lasting improvement of cognitive theories. A prominent place among them is occupied by Ukrainian researchers from Kharkiv, Sumy, Kyiv, Kherson, Zhytomyr, Lviv, Odessa, Mariupol, Cherkasy, Zaporizhzhia.

The Kharkiv cognitive school (Martyniuk, 2012; Shevchenko, 2013; Bondarenko et al., 2017) has a peculiar attitude to the medium of concept existence. Concepts are believed to emerge, change and improve in the constantly evolving communicative space. This medium as social and linguistic consciousness is called discourse. In contrast to its previous idea as a stable communication in certain circumstances, today's discourse is treated as a permanently reconsiderable mind and speech process. In other words, when speaking, people imagine their previous experience of interaction with the world and reconsider it instantly after acquiring new knowledge about the essence in the moment of speech. Such an improved mental picture is stored in new meanings of words as concept names. Consequently, concepts evolve permanently along with the discourse itself.

The Sumy cognitive school (Zhulavska, 2011; Tatsenko, 2017; Stepanov et al., 2023) provides a comprehensive idea of the concept realization in human mind. Functioning in the discourse, the concept is manifested as a perceptive, cognitive, affective and volitional entity. As a mental dynamic unit about a certain world phenomenon, it represents permanent emotional reconsideration of individual and collective experience of interaction with the world phenomenon. Thus, people perceive the environment and regard it emotionally with a peculiar unstable attitude – positive and negative. Such a changeable assessing process is called valorization. This feature is the main distinction between the concept (a cognitive essence) and the notion (a logical essence).

The Kyiv cognitive school (Vorobiova, 2004; Nikonova, 2005) offers distinction between two types of consciousness: ordinary and artistic. Based on the same cognitive processes, the former provides a neutral consideration of humanity experience while the latter produces a specifically aesthetic treatment of the concept essence. In other words, the concept of ordinary consciousness refers to phenomena objectively regarded by the whole humanity whereas the concept of artistic consciousness implies extra subjective interpretations of the previously neutral essence by a writer. He may do it to intentionally underline significance of the ordinary concept within a certain human community. Therefore, artistic thinking may mislead from objective reality. Modifying the concept essence in literature, the author can distort it with own goals (positive or negative), which emotionally impacts on readers.

The artistic considerations of concepts were widely explored by scholars from Kyiv (Nikonova, 2005), Kherson (Bieliekhova, 2002), Zhytomyr (Borysov, 2005), Lviv (Starko, 2004), etc.

When concepts are reconstructed, it is necessary to define a set of units that reveal its inner essence. According to the Odessa cognitive school (Kolegaieva, 2018), there can be five principal stages to select an appropriate empirical basis of verbal names in researching the concept essence. Firstly, nominative units semantically adjacent to the key concept name are taken from explanatory dictionaries: words, phraseologisms and paroemias with their respective definitions. Secondly, semes of nominative units are defined. Thirdly, semes are arranged by meaning and word formation potential. Fourthly, the set of semes is grouped into the core, medial and peripheral zones. Fifthly, the etymological analysis of semes is conducted.

Among Ukrainian scholars, there is no single idea what units can be regarded strictly as concept names. Zhabotynska (2013), a Cherkasy researcher, regards multiple-level units as possible means to study the concept essence: morphemes, words, word combinations, sentences, texts. This idea was also previously supported by Pocheptsov (1996), a Mariupol linguist. Such an approach adjoins ideas of Bekhta & Bekhta (2019), Lviv experts, who regard a single literary text as a tool to reconstruct concepts. Simultaneously, Lomonosova (2013) and Taranenko (2014), scholars from Kyiv, propose resorting to texts of small form like proverbs, fables, tales, jokes, songs, etc., where concept is also vividly reflected as a reconsidered experience of humanity existence.

Besides, the concept nominativeness is not only limited to verbal units. Specific concept associations may be also derived from non-verbal means. For example, no looking into eyes implies LIE, laughter concerns FUN, red light relates to PROHIBITION, etc. Sometimes, concepts are studied via a simultaneous combination of verbal and non-verbal means. Such cases are called creolized texts (Bondarenko, 2017). As a combination of verbal and visual means, there can be various creolized texts for study of a certain concept: postcard, comic strip, meme, Internet post, advertisement, etc.

The Cherkasy cognitive school (Selivanova, 2008; Zhabotynska, 2013) proposes own approaches to reconstruction of concepts via lexemes and other means as their names. Accepting valorization as the main concept feature, the researchers distinguish between the notion as mental information or denotative meaning of the word and the concept itself as an assessed meaning of the word. Respectively, the former is regarded as a conceptual model while the latter as a cognitive model. Therefore, the single conceptual model (non-valorized mental information or denotative meaning) is processed via different

cognitive operations, which may produce various cognitive models of the same concept (valorized mental information or denotative meaning). These cognitive models can be manifested in the field, modus, layer and other forms.

Among Ukrainian scholars, it is the layer cognitive model that is mostly applied to reconstruct the full nature of a certain concept. The layer model was offered by the Zaporizhzhia cognitive school (Prykhodko, 2008). Such a model is manifested as a unity of three layers: notion, image and value. The notion and image produce a conceptual model as denotative information and associations about a certain essence. Above them, the value layer is put. It shows how relevant the essence is for people who consider it and what respective attitude they have.

There are conventional approaches to determining the notion, image and value layers. According to Prykhodko (2008), the notion as denotative meaning is given in explanatory dictionaries. The image is defined via the conceptual metaphor or association test methodologies. The value is calculated how often people associate concept with peculiar images, how frequent they use concept names in discourse. That shows the concept relevance for the community (valorization). Additionally, the value may be determined via assessing components in the concept name meanings and their emotional combinability with other words in speech. Other assessing techniques may be also engaged.

It is the image layer that is usually most difficult to define because various language communities may differ in associating the same concept essence. Researchers often rely on the conceptual metaphor methodology to reveal mental associations of the concept ontology.

As a process of reconsidering the concept essence via image of other concepts (Lakoff & Johnson, 1980; Kövecses, 2020), the conceptual metaphor methodology has been widely applied to conduct studies of peculiar socially important concepts. According to overview of the Scopus / Web of Science articles, scholars often use conceptual metaphors to research political communication (Oliynyk & Shevchenko, 2016; Morozova, 2017; Stojan & Mijić, 2019). Besides, experts are interested in metaphorization of sharp worldwide problems like COVID-19 (Abdel-Qader & Al-Khanji, 2022; Lahlou & Rahim, 2022; Jamal & Zhang, 2025). It is interesting that the pandemic is often metaphorized within a war context as a dangerous enemy to defeat (Benzi & Novarese, 2022; Jiang, 2023; Truc, 2024).

Within the Ukrainian state topic, home and foreign scholars have been applying conceptual metaphors to study socially relevant phenomena. In particular, linguists investigated metaphorization peculiarities of such concepts as the Dignity Revolution (Yehorova & Rohoza, 2015), the Donbas conflict and its

prehistory (Šeškauskienė & Ostanina-Olszewska, 2016; Diedkova & de Landtsheer, 2018).

Simultaneously, a wave of research interest awakened after beginning of the Russian full-scale invasion on 24 February 2022. There were conceptual metaphor studies of the Russian-Ukrainian War in various non-Ukrainian journalistic sources, for example American, British, Polish and Russian (Nytspol & Kobuta, 2022; Kiklewicz, 2024; Pawliszko, 2025). Each source produces different associations of the same war concept, which influences the audience attitude to Ukrainians.

On the one hand, we see a firm trust of scholars to conceptual metaphor as a methodology to define associations of the image layer in the concept ontology. On the other hand, the topic of Ukraine makes a public concern among non-Ukrainians. Respective communities should understand the importance of Ukrainian support to prevent any other military aggressions in future. Therefore, the mental consideration of Ukraine is critical. It underlines the topicality of our research.

For Europe and the world in general, the topic of Ukraine is of special significance. Since many non-Ukrainians have already forgotten about any wars, believing in their absolute safety under the NATO umbrella or within other military blocs, it is extremely important to make the strongest efforts in containing and eliminating any peace threat in any part of the planet. Otherwise, no blocs will rescue nations and consequently the humanity from destruction. Therefore, it is necessary to consolidate common efforts in stopping the Russian-Ukrainian War for preventing any other military conflicts of local or global scale. A specific barrier in this sphere may be the peculiar way how journalists represent the topic of Ukraine in non-Ukrainian sources. It can both strengthen and weaken the attitude to the Ukrainian topic among authorities and common people of foreign states, which impacts on international support of Ukraine in resisting the Russian aggression. Thus, new studies should be conducted to comprehend how non-Ukrainians are currently concerned about the Ukrainian support in stopping the war and establishing all-European peace.

As the aim of our study in this article, we will investigate the UKRAINE concept consideration in the non-Ukrainian press during the wartime period since the Russian full-scale invasion. Its association potential is realized as image within the layer cognitive model. Sorted by decreasing frequency, the conceptual metaphors as images will show non-Ukrainian attitude to the topic of Ukraine against prevention of further war escalation and peace establishment in the world. The methodology and research tasks are given in the next section.

Methods

Study of the UKRAINE concept metaphorization as associations of the image layer requires applying an appropriate research methodology. Since discourse is regarded as a constantly updating communication space (as a medium of the UKRAINE concept actualization as well as its social and linguistic consciousness), it is reasonable to use refreshable mini-models of communication where conceptual metaphors occur. Such a mini-model is generally called corpus.

In simple words, corpus is a compact set of authentic texts reflecting a certain speech phenomenon as close to reality as possible (Baker et al., 2006). Via representativeness, electronic format, annotation and software support as their key features, various corpora may be generated. Among the most famous and reliable corpora, we can find national ones that cover realization of almost any concept in all possible speech genres. For example, such corpora are the British National Corpus (BNC, 2025) or the Corpus of Contemporary American English (COCA, 2025).

Although authentic and trustworthy, the BNC and COCA corpora may not be suitable for research of the UKRAINE concept metaphorization features. The reason is the research implementation time: the wartime period comprises years 2022 to 2025 while the COCA and BNC inventory usually covers the English language of the 1990s-2010s. Also, these corpora cover only the English consideration of phenomena (in the United Kingdom and the USA) rather than consideration by other communities. Therefore, alternative and more updatable bases are required. One of them is the News on the Web Corpus (NOW, 2025).

The NOW Corpus covers speech contexts created since 2010 till today. It includes authoritative English-language periodicals as sources originating from various countries of different parts of the world. It can provide a complete picture of how non-Ukrainians metaphorically consider the UKRAINE concept in their press. Therefore, we select the NOW Corpus to conduct our research.

The sampling procedure is initiated via search queries (keywords) in the NOW Corpus to find contexts of the UKRAINE metaphorization examples. Respectively, we select such units as “Ukrainian state”, “Ukrainian nation”, “Ukrainians” to find appropriate contexts. Only contexts of the 2021-2025 year range are suitable for our study: from rumors about and beginning of the full-scale Russian aggression on 24 February 2022 till today. To ensure the research objectivity, contexts are selected randomly. Finally, we collect 230 contexts of

the NOW Corpus with examples of non-Ukrainian metaphoric consideration of the UKRAINE concept.

Table 1 below represents the full list of 122 electronic periodicals as sources the corpus sample contexts about UKRAINE (230 cases) originate from. The number in square brackets means how many times the corpus sample contexts were taken from the respective source.

Table 1

Sources of the UKRAINE Concept Metaphorization from the NOW Corpus

Region	Source
Europe (30 of 122 sources – 24.5%)	<p><i>The Guardian</i> [11]; <i>The Irish Times</i> [6]; <i>Reuters</i> [4]; <i>Politico Europe</i> [4]; <i>The Telegraph</i> [3]; <i>The Sunday Times</i> [3]; <i>The Daily Express</i> [3]; <i>BNE Intellinews</i> [3]; <i>BBC</i> [2]; <i>The Times</i> [2]; <i>The Irish Examiner</i> [2]; <i>The Daily Mirror</i> [2]; <i>The Week</i> [2]; <i>The Spectator</i> [2]; <i>The I Paper</i> [2]; <i>The Daily Mail</i> [1]; <i>The Irish Independent</i> [1]; <i>Sky News</i> [1]; <i>The Daily Herald</i> [1]; <i>TheJournal.ie</i> [1]; <i>Radio Free Europe / Radio Liberty</i> [1]; <i>The Screen Daily</i> [1]; <i>The New European</i> [1]; <i>The Catholic Herald</i> [1]; <i>Christian Forums</i> [1]; <i>Tech Xplore</i> [1]; <i>The Economist</i> [1]; <i>The York Press</i> [1]; <i>The Metro</i> [1]; <i>Politics Home</i> [1]</p> <p>Total: 66 of 230 cases (29%)</p>
Asia (30 of 122 sources – 24.5%)	<p><i>The Asia Times</i> [9]; <i>The Indian Express</i> [2]; <i>The Financial Express</i> [2]; <i>Al Jazeera</i> [2]; <i>The Times of Israel</i> [2]; <i>ZAWYA</i> [2]; <i>The Daily Pioneer</i> [2]; <i>ARY News</i> [1]; <i>The Malay Mail</i> [1]; <i>The Times of India</i> [1]; <i>The Northlines</i> [1]; <i>The Nation</i> [1]; <i>The Business Times</i> [1]; <i>The Wire</i> [1]; <i>The Daily Mirror</i> [1]; <i>The Hindustan Times</i> [1]; <i>Countercurrents.org</i> [1]; <i>The Jerusalem Post</i> [1]; <i>The News International</i> [1]; <i>The Daily Times</i> [1]; <i>Scroll.in</i> [1]; <i>The Daily Excelsior</i> [1]; <i>News18.com</i> [1]; <i>The Sunday Observer</i> [1]; <i>Devdiscourse News</i> [1]; <i>Ucanews.com</i> [1]; <i>Outlook India</i> [1]; <i>The Quint</i> [1]; <i>Philstar.com</i> [1]; <i>NewsClick</i> [1]</p> <p>Total: 44 of 230 cases (19%)</p>
America (49 of 122 sources – 40%)	<p><i>The Atlantic</i> [15]; <i>CNN</i> [11]; <i>The Washington Post</i> [5]; <i>The New Yorker</i> [5]; <i>The Globe and Mail</i> [4]; <i>Yahoo! News</i> [4]; <i>The Conversation</i> [3]; <i>The Associated Press</i> [2]; <i>The Washington Examiner</i> [2]; <i>The Los Angeles Times</i> [2]; <i>NBC News</i> [2]; <i>ABC</i> [2]; <i>PBS News Hour</i> [2]; <i>The Mercury News</i> [2]; <i>Slate</i> [2]; <i>Hotair.com</i> [2]; <i>War on the Rocks</i> [2]; <i>National Public Radio</i> [2]; <i>The</i></p>

HuffPost [1]; *CBS News* [1]; *The New York Daily News* [1]; *Jacobin* [1]; *World Socialist Website* [1]; *The Thompson Citizen* [1]; *The Wired* [1]; *The Nation* [1]; *The Hill* [1]; *Foreign Affairs* [1]; *The Chicago Tribune* [1]; *The Advocate* [1]; *The Medicine Hat News* [1]; *Voice of America* [1]; *The Hartford Courant* [1]; *The Mining Journal* [1]; *Twin Cities.com – Pioneer Press* [1]; *The American Conservative* [1]; *The Free Press* [1]; *The Christian Science Monitor* [1]; *Poynter.org* [1]; *Time* [1]; *Tech Church* [1]; *The New York Times* [1]; *The New York Post* [1]; *Canada.com* [1]; *National Review* [1]; *The National Post* [1]; *The Prince George Citizen* [1]; *The Washington Times* [1]; *The Bulletin of the Atomic Scientists* [1]

Total: 100 of 230 cases (43%)

Africa, *The Citizen* [4]; *The ASPI Strategist* [3]; *News.com.au* [2]; *The Australia and Premium Nigeria Times* [2]; *The Daily Dispatch* [1]; *The New Zealand Independent Nigeria* [1]; *PM News Nigeria* [1]; *My Joy Online – Ghana News* [1]; *KBC* [1]; *Sahara Reporters* [1]; *The Independent sources* – *Australia* [1]; *The Sydney Morning Herald* [1]; *Interest.co.nz* [1]
(13 of 122 sources – 11%)

Total: 20 of 230 cases (9%)

230 contexts about UKRAINE are analyzed via the conceptual metaphor methodology by Lakoff and Johnson (1980). The obtained metaphors are sorted by the decreasing frequency to identify comprehensive non-Ukrainian preferences in imagining UKRAINE as a separate humanity concept in the wartime frame. It is quantitatively established what values non-Ukrainians put into associating consideration of UKRAINE during the 2022-2025 wartime period.

Results

Analysis of 230 corpus contexts identifies two vectors of the UKRAINE metaphoric consideration: biological and social.

1. The biological metaphorization vector regards UKRAINE as ORGANISM, which can be assessed in terms of evolution, anatomy and physiology.

Evolutionally, UKRAINE as ORGANISM is born and exists. It develops in a good and bad way, e.g.:

It is now clear that the **Ukrainian nation** has been **born**. It was being **birthed** for many decades or centuries in torment, now it has united and has been **born** (Yahoo! News, 28.04.22).

Blinken quoted extensively from Vladimir Putin's long catalog of statements denying the **existence of the Ukrainian state and people** (The Asia Times, 12.12.24).

The success of the Ukrainian military over the past few months, along with the **evolution of the Ukrainian state itself toward a more tolerant, more liberal norm**, reveals what makes a better army in the modern world (The Atlantic, 28.09.22).

The armed forces under Kyiv's control had huge stocks of weapons, military equipment and ammunition left in the region from the Soviet Union, but much of this equipment was either very outdated or in poor condition due to decades of **degradation of the Ukrainian state and army** (KBC, 26.02.24).

UKRAINE as ORGANISM tries to survive among other organisms, with ability on inability to propagate, e.g.:

The **Ukrainian nation**, a European nation, is fighting for its **survival** (ZAWYA, 24.02.23).

Yet, politicians were willing to come together and present a unified front against Russia's aggression and against Russia's attempts to destabilize Ukraine. And that's very important. And I think it shows **the maturity of the Ukrainian state** (National Public Radio, 18.02.22).

Russians want the **Ukrainian state erased and neutered**, while the latter want Russians to pull out of all Ukrainian territory, including Crimea, pay war reparations and face war crimes tribunals (The Wire, 11.11.22).

Finally, UKRAINE as ORGANISM may die and get extinct, e.g.:

He needed to persuade Americans, Europeans, and Ukrainians that victory was impossible, that the only alternative was surrender, and that the **Ukrainian state would disappear** in due course (The Atlantic, 21.04.24).

Anatomically, UKRAINE as ORGANISM has a certain body structure. Its parts may be present or absent, e.g.:

Even if that were to happen, though, the fact remains that Putin's original war aim of bringing a **rump Ukrainian state** back firmly within the Russian orbit remains intact (The Irish Times, 13.11.24).

Instead of the planned lightning strike, Putin's forces have become bogged down, leading to the abandonment of his hinted-at strategic objective of **decapitating the Kyiv government** and **dismembering the Ukrainian state** (The Spectator, 26.03.22).

Some features of the UKRAINE as ORGANISM anatomy may be inborn, e.g.:

Five years after the catastrophe, Ukrainians voted themselves out of the Soviet Union. The independence of the modern **Ukrainian state has a nuclear birthmark** (CNN, 02.09.22).

Existing in the world, certain organs of UKRAINE as ORGANISM may function properly or improperly because of problems, e.g.:

The intent of such an action, like the Holodomor of 1932-1933, would be to **break the back of the Ukrainian nation** (The Bulletin of the Atomic Scientists, 09.03.22).

These images will be difficult to **stomach for the authorities in Kyiv**, who are watching Russians slowly gaining ground and removing all trace of the Ukrainian state (PBS News Hour, 30.05.22).

Physiologically, UKRAINE as ORGANISM may sleep and wake up, e.g.:

Sibir said there is now a joke that Putin has done more to **awaken the Ukrainian nation** than Stepan Bandera, a famous Ukrainian nationalist (NBC News, 18.05.22).

UKRAINE as ORGANISM interacts with the environment. Its vital energy may increase or decrease, e.g.:

The Euromaidan Revolution, also known as the Revolution of Dignity, and past Russian threats and aggressions have already done much to **strengthen Ukrainian state identity** (War on the Rocks, 13.04.22).

Putin is trying to **weaken Ukraine** as much as he can to reduce its value to the Western world it is trying to join (The Asia Times, 19.06.22).

UKRAINE as ORGANISM vitality may be affected via diseases. The reasons are weather, chemical, bacterial or other factors, e.g.:

Russia tried to **freeze to death the entire Ukrainian nation** by attacking its power and heat generation during the winter of 2022-2023 (The Hill, 15.03.23).

Endemic corruption has acted as a **bane for the Ukrainian nation** (The Daily Pioneer, 26.11.23).

Russian state media has used the existence of the regiment as proof of its false claim that **the Ukrainian state has been infected** with nazism, as Russia's president Vladimir Putin vowed to denazify the country (The Guardian, 29.06.22).

Besides, UKRAINE as ORGANISM may be wounded via beating or gunshots with a possible disability, e.g.:

Thus, the same Western power bloc that maintains a genocidal Israeli state now must also subsidize a **battered Ukrainian state and society** (The Sunday Observer, 24.02.24).

In 2014, when Russia's "little green men" made fast work of Crimea, **the Ukrainian state was riddled** with corruption and barely democratic (The Atlantic, 01.07.24).

Objectives may eventually shift once more, to the creation of a frozen conflict that will **cripple the Ukrainian state** (The Atlantic, 11.05.22).

The ill or wounded UKRAINE as ORGANISM must be treated. Otherwise, consequences may be lethal, e.g.:

The agreement represents one pillar of a complex strategy to share the burden of **keeping the Ukrainian state alive**, after Russian President Vladimir Putin launched the biggest land war in Europe (Politico Europe, 22.07.24).

Russian control over the Dnipro would also prevent the Ukrainians from launching an ill-advised assault on Crimea. The **slow and painful death of the Ukrainian state** is at hand (The Asia Times, 07.03.23).

Simultaneously, ORGANISM is reconsidered in terms of species' classification. Therefore, UKRAINE is regarded as ANIMAL or PLANT.

UKRAINE as ANIMAL may acquire features typical for peculiar species. For example, UKRAINE may be interpreted as a bird that is getting ready to fly, e.g.:

Prime Minister Justin Trudeau and Mr. Zelenskyi were also due to speak by phone on Thursday to mark the anniversary of Canada's becoming the second country in the world, after Poland, to recognize **the fledgling Ukrainian state** (The Globe and Mail, 02.12.21).

Ukrainian behavior may be alleged as that of a cruel ANIMAL seeking for prey, e.g.:

Putin, whose obsession with protecting Russian-speakers from the alleged **predations of the Ukrainian state** is central to his grievances, will resist surrendering the territorial foothold Russian-backed separatists have helped establish for him in those places over the past eight years (CNN, 03.03.22).

Also, UKRAINE as ANIMAL can be killed for processing or extermination, e.g.:

Putin wanted any deal to "lead to long-term peace" and "eliminate the original causes of this crisis", suggesting he was unwilling to relent on his **evisceration of the Ukrainian state** (The Telegraph, 13.03.25).

A revanchist Russia seeks the **extermination of the Ukrainian state**, and the Ukrainian people are in the mood to fight to the last ditch for their nation (National Review, 29.03.22).

UKRAINE as PLANT emerges from seeds. Growing, it blooms, e.g.:

We saved the most valuable thing – the Ukrainian future. Because our children are the **seeds of the Ukrainian nation saved** (The Irish Examiner, 25.05.22).

This is our history. It seems inevitable that a **thriving Ukrainian state** couldn't be allowed to continue next to Russia, that the old pattern of past centuries would reassert itself (The York Press, 07.01.23).

Vice versa, UKRAINE as PLANT may be defined as a weed, which requires removing, e.g.:

The Kremlin is brutally honest: it intends to **extirpate the Ukrainian state**, returning it to a subjugated province of a restored Russian empire (The Atlantic, 10.04.24).

The Kremlin is not interested in any settlement short of the complete **eradication of the Ukrainian state** (The ASPI Strategist, 01.03.24).

2. The social metaphorization vector is multi-faceted. There are several consideration clusters: psychology, labor, structure, art and leisure, science, interpersonal communication, economics, law. Let us represent these clusters in detail.

The psychology cluster regards UKRAINE as HUMAN who has certain desires, fears and resolve in achieving its aims, e.g.:

Ukraine wants security guarantees not only from Europe but also from the US, while the initial US framework said that robust security guarantees for Ukraine would only come from Europe (CNN, 25.04.25).

After the Orange Revolution turned Ukraine toward Europe in 2014, he responded by invading and seizing Crimea. That strengthened **Ukraine's fear** of Russia and its **resolve** to cast its lot with the West (The Atlantic, 01.07.24).

The Ukrainian delegation brought to Germany the **courage and resilience of the Ukrainian nation**. And confidence in future, even though we are a country at war (The Irish Times, 16.02.25).

In settling problems, UKRAINE as HUMAN uses peculiar approaches and endures possible difficulties, e.g.:

This **approach by the Ukrainian state** obviously makes it quite impossible to make any sort of appeal to the population of Crimea and the eastern Donbas to support a return to Ukrainian rule (The Nation, 17.04.23).

The school curriculum emphasized this personal tragedy as well as **suffering of the Ukrainian nation** so powerfully depicted by Shevchenko (CNN, 11.05.22).

Against UKRAINE as HUMAN, there can be a strong and cruel opponent, who is difficult to cope with, e.g.:

Although likely disappointed with his military's slow advance, Mr. Putin has shown **no mercy toward the Ukrainian people** (The Washington Times, 15.03.22).

On the other hand, UKRAINE may be reconsidered as IDEA. It may be alleged as true or false with further approval or disapproval, e.g.:

Vladimir Putin believes that the **Ukrainian state is a fiction** (The Mercury News, 31.05.24).

Zelenskyi was perfect to demonstrate how Russian-speaking Ukrainians, including those in the east, could fully **identify with the Ukrainian state** and express their patriotism (The Guardian, 26.12.22).

Besides, people resort to spiritual thinking in the process of the UKRAINE metaphoric consideration. For example, IDEA is reconsidered as JESUS CHRIST: the country is crucified and buried, arises, resurrects, e.g.:

In the wake of this holocaust what remains of the modern **Ukrainian state will be buried**. But do not think this represents any final solution to the Ukrainian question. For just as surely as **Ukraine's crucifixion** is upon us, so too will **Ukraine arise** from its Russian-dug tomb. With that **Ukrainian resurrection** there will be a reckoning. Those who drew Ukraine's blood, and those abandoned Ukraine, will not escape a judgment. Know, too, that **Ukraine's second coming** will not be a herald of the West's salvation. Putin, and all who permitted his predations, are tomorrow's damned. One day they will drink of the juices oozing from these grapes of wrath (The National Post, 18.03.22).

The labor cluster represents UKRAINE as HUMAN who works in achieving results with a possible active use of tools, e.g.:

After talks with Trump in Washington, Mark Rutte said on Thursday **Kyiv was working** hard for a deal (The Daily Dispatch, 25.04.25).

But by 2022, under President Volodymyr Zelenskyi, **Ukraine was tackling corruption**, Westernizing, and consolidating democratic rule (The Atlantic, 01.07.24).

The Americans and **Ukrainians have been hammering out** in Washington a viable way forward from a dense and corporate rare-earth minerals contract, which seems, according to the last draft seen by CNN, to be almost entirely in the White House's favor (CNN, 15.04.25).

The working process makes another reconsideration of UKRAINE. It is understood as a certain labor equipment or tool, for example SCALES, e.g.:

Your assistance is crucial because it's **weighed** towards military assistance, which is what **Ukraine** needs most (National Public Radio, 30.09.24).

Moreover, UKRAINE is regarded as MACHINE whose parts are adjusted for operating, e.g.:

He alleged that the **Ukrainian state in its current configuration** with the Nazi political regime will continue to pose a permanent, direct and clear threat to Russia (The Guardian, 10.10.22).

Britain will provide 75.6 million pounds to Ukraine through the World Bank, seeking to **keep core state functions running** and mitigate financial pressures caused by Russia's invasion (Reuters, 07.03.22).

Like an industrial equipment, UKRAINE as MACHINE acquires or loses a certain performance index, e.g.:

Andrei Kots, a war correspondent for Komsomolskaya Pravda, the top Russian tabloid, voiced hope that Monday's strikes were a new mode of action to the entire depth of the **Ukrainian state until it loses its capacity to function** (The Associated Press, 11.10.22).

UKRAINE as MACHINE is operated via peculiar controls (levers, buttons), e.g.:

The sanctions announced so far will take months and years to cause real pain to Russia, so there is little the West has done or is doing that reduces the very high probability that within days Putin will look as though he has taken control of the **levers of the Ukrainian state** (The Spectator, 25.02.22).

As any equipment, UKRAINE as MACHINE can wear down. For repair or upgrade, it is disassembled. Otherwise, an accident may occur, e.g.:

A deadlocked war of attrition could drag on for years and **wear down the Ukrainian state** (The Washington Post, 07.12.23).

If you take that attack and others alongside statements from Russian President that Ukraine as a nation does not exist – and his stated ambition that **Ukrainian state be disassembled** – then the concept of genocide, that is elimination of a national group, does come into play (The Irish Examiner, 09.04.22).

Moscow is betting on the physical exhaustion of the Ukrainian armed forces and the **Ukrainian state's meltdown**, Poletaev wrote recently (The Daily Pioneer, 18.01.25).

Another conceptual metaphor is UKRAINE as VEHICLE. It is driven to reach or leave peculiar places (including restricted areas or dead ends), e.g.:

Short of a miracle on the Potomac, Washington's uncompromising globalist political ideology founded on fear – fear of alleged enemies abroad and fear of free thinking and free speech at home – **will drive the Ukrainian nation** to its total destruction (The American Conservative, 04.10.23).

Russia also confirmed for the first time that North Korean soldiers have been fighting alongside Russian troops in Kursk, with the chief of the military General Staff praising their "heroism" in helping to **drive out the Ukrainians** (The Citizen, 26.04.25).

The notion that America could lay out a seven-point plan and put Crimea at the heart of it, the **ultimate red line – so red it's almost purple for the Ukrainians** – that was never going to fly in Kyiv (Sky News, 23.04.25).

Zaluzhnyi said **Ukraine** needs tech breakthroughs, which he likened to China's invention of gunpowder, to **overcome this impasse** (The Washington Post, 07.12.23).

On the contrary, UKRAINE is reconsidered as PASSENGER within a moving vehicle, e.g.:

With his attacks on civilians in Kyiv, Putin is going full-throttle. He also noted the Russians walked away from a "reasonable" 30-day ceasefire, whereas the **Ukrainians were on board** (The HuffPost, 25.04.25).

UKRAINE can not only be a worker or machinery in achieving goals. It is also interpreted as PRODUCT generated as labor result, e.g.:

Unable to force regime change in Kyiv and install a Russian puppet, **creating a Ukrainian state** similar to that of Belarus, tightly linked to Russia, its aims may now be to secure a land corridor from Russia to Crimea, essentially encircling the Sea of Azov (Canada.com, 21.03.22).

For Ukraine, Putin's poor decision-making continues to **forge a new Ukrainian state**, and it is a state that continues to stand up to a country that was once considered to be a superpower (The Asia Times, 11.10.22).

In a TV address on Monday, Putin rambled across centuries of history to characterize the **Ukrainian state as an artificial construct wrongly carved out** of Russia by its enemies (Al Jazeera, 09.03.22).

UKRAINE as PRODUCT may be embedded with extra components for specific needs, e.g.:

The civil war in Donbas was seen only in military terms. It attempted no program of popular politics against anti-Russian minority policies of the **Ukrainian state and its embedded Nazi elements** (NewsClick, 20.03.22).

It goes without saying, UKRAINE as PRODUCT may decompose. To prevent it, PRODUCT is preserved, e.g.:

Russians appreciated strength in 1999 when Putin invaded Chechnya. They appreciated it again in 2014 when he snatched Crimea from a **decaying Ukrainian state** (The Asia Times, 17.05.22).

Working together, they have not only **preserved the Ukrainian state**, but stood up to a bully whose nihilism harms the entire world (The Atlantic, 10.11.23).

Having peculiar practical qualities, PRODUCT is reconsidered as peculiar items. Therefore, UKRAINE is metaphorized as GARMENT or GLASSWARE, e.g.:

If that were to happen, the **Ukrainian state would shrink** to include only the central and western regions of the country (News18.com, 01.07.23).

It's risky, bad for the country and senseless from a political point of view. It would undermine the very **fragile political resilience of the Ukrainian state** (The Washington Post, 24.09.23).

The structure cluster comprises the UKRAINE consideration as a place with limits where interconnection of inner components may vary. Therefore, UKRAINE is SINGLE, COMPLEX or FRAGMENTED OBJECT.

UKRAINE as SINGLE OBJECT has integrity within peculiar borders, e.g.:

Mr. Tkachenko said the UOC-MP had been behaving inappropriately during the war – including a refusal by some in that branch to recognize the **territorial integrity of Ukraine** (ABC, 27.04.23).

In the east and south, where there was always a stronger connection to Russia, people are fighting back to protect their existence and their existence **within the borders of Ukrainian nation** (ABC News, 23.02.23).

In Germany, four occupying powers administered the areas they were in control of, but with the **Ukrainian state still intact**, it is difficult to see the connection (The Times, 11.04.25).

UKRAINE as COMPLEX OBJECT possesses the multi-element structure. There can be the core and other components. Also, the inner structure may vary: there are sections, elements, parts, e.g.:

In February 2022, 400 elite Wagner and Kadyrovite operatives infiltrated Kyiv, armed with detailed intelligence and orders to destabilize the **Ukrainian state** by striking at **its core** (The Citizen, 20.02.25).

The renewal of the Sevastopol lease in 2010 was extremely unpopular among the **sections of Ukrainians** who had overthrown Yanukovych and taken control of the country (The Indian Express, 26.04.25).

Whenever you read the results of sociological surveys in Ukraine about ordinary Ukrainians' hopes of victory, wonder in which **part of Ukraine** the survey was conducted (The New European, 12.02.25).

UKRAINE as FRAGMENTED OBJECT is instable. It disintegrates because of certain reasons or exists as a set of multiple units, e.g.:

Two Russian-speaking republics sought to **break away from the Ukrainian state** in 2014, sparking combat that has continued until now (The Asia Times, 09.05.22).

The maps showed no more Ukrainian state, and the **bulk of the country** had been turned into regions of Russia (Twin Cities.com – Pioneer Press, 09.07.24).

Russian arch-nationalist Alexander Dugin, whose daughter Darya was murdered outside Moscow in August in what Russia says was a Ukrainian state assassination, has piled more pressure on Surovikin, saying Kherson was the **last chunk of Ukrainian territory** that Russia could afford to give up (ZAWYA, 21.11.22).

The structure cluster gives another direction of metaphorization. UKRAINE is considered as BUILDING whose structure is imagined as foundation, floors and roof, e.g.:

We call on the Russian Federation to stop this war. To stop destabilizing the **democratic foundations of the Ukrainian state** (TheJournal.ie, 05.04.22).

Russia's campaign of infiltration did, however, stir suspicion and mistrust at some **levels of the Ukrainian state**, which hampered its ability to govern, especially in the first few days after the invasion (Reuters, 11.08.22).

We had very, very strong unity on the **top of the Ukrainian state** at the beginning of the invasion, when everybody was united, everybody was protecting Ukraine (The Washington Post, 01.02.24).

As time goes by and if not maintained, UKRAINE as BUILDING may crumble and collapse, e.g.:

Putin was dead wrong to presume that **Ukraine would crumble** in the aftermath of his invasion (The Hartford Courant, 22.02.25).

World leaders offered to arrange his escape, anticipating a **swift collapse of the Ukrainian state** (The Irish Times, 26.02.25).

Besides, UKRAINE as BUILDING can be deliberately demolished or restored for specific reasons, e.g.:

Every 100 years attempts are made by Russia to destroy Ukrainian culture, and **destroy the Ukrainian state** (Screen Daily, 20.02.25).

They (Putin and company) want to **deconstruct** not just buildings, not just infrastructure, not just the **Ukrainian state**. They want to **deconstruct** us, the **Ukrainian people** (Philstar.com, 27.03.22).

Towards that end, it will need global support for its territorial integrity, fair compensation and justice for Russian aggression, and a huge effort to **rebuild Ukraine** (The Times of India, 31.12.24).

Into UKRAINE as BUILDING, undesirable persons may try to enter. BUILDING may be locked, e.g.:

Now, a Reuters investigation has found that Russia's success at Chornobyl was no accident, but part of a long-standing Kremlin operation to **infiltrate the Ukrainian state** with secret agents (Reuters, 11.08.22).

What would defeat look like? Put simply, anything that results in a long-term simmering conflict that **locks Ukraine** in a grey zone of instability (The Guardian, 02.05.22).

As any place, UKRAINE as BUILDING may be dirty. It requires cleaning, e.g.:

He came to power to **clean out the corruption of the Ukrainian state** and take on the oligarchs who had robbed the people (The Times of Israel, 28.02.22).

The art and leisure cluster includes two ways of the UKRAINE metaphorization.

Firstly, UKRAINE is considered via generating works as a result of creative thinking. Here, UKRAINE is regarded as PICTURE or WRITTEN TEXT. They can be made or erased, e.g.:

Throughout their exchange, Carlson and Macgregor **painted a grim picture of a rogue Ukrainian state** operating outside of US control, lashing out violently as it faces a looming defeat on the battlefield (The Daily Mail, 15.03.25).

The Russian leadership has likely realized by this point that Putin's intention to **erase the Ukrainian state** will not be realized (Dailyexcelsior.com, 11.07.23).

Secondly, UKRAINE is interpreted via gambling and sport activity. In particular, it is GAME.

In terms of gambling, UKRAINE is GAME where people use cards and play for stakes, e.g.:

It can now use that to expand its global connections, reinvigorate the Ukrainian state, and build solid chains of cooperation and trade so that everyone has a **stake in Ukraine's future** (The Times of India, 31.12.24).

The Russian leadership seems to have believed that **Ukraine's national character was little more than a house of cards** that just needed a little shove (War on the Rocks, 28.04.22).

In terms of sports, UKRAINE as GAME is regarded via football, boxing, horse racing, chess, marathon, e.g.:

After talks with Trump in Washington, Mark Rutte said on Thursday Kyiv was working hard for a deal. There is something on the table, where **Ukrainians** are really **playing ball**, and the ball is clearly in the Russian court (The Daily Dispatch, 25.04.25).

Added up, one might suspect this is a **one-two punch the Ukrainian nation cannot sustain** (The Jerusalem Post, 07.03.25).

Recognizing Russian de facto sovereignty in Crimea is a **non-starter for the Ukrainians**, as is forbidding Ukraine from joining NATO (The New York Daily News, 24.04.25).

They are now trying to **pawn off on the Ukrainians** (The Medicine Hat News, 16.04.25).

We are going to see if the Europeans, the Russians and the **Ukrainians are ultimately able to get this thing over the finish line** (The Daily Herald, 23.04.25).

Playing such a GAME, UKRAINE has a risk to lose. It can give or does not give something up, e.g.:

It's a **lose-lose situation for Ukrainians**. While they are dying to defend their land, financial institutions are insidiously supporting the consolidation of farmland by oligarchs and Western financial interests (Countercurrents.org, 19.04.25).

Throughout their exchange, Carlson and Macgregor painted a grim picture of a rogue **Ukrainian state** operating outside of US control, lashing out violently as it **faces a looming defeat** on the battlefield (The Daily Mail, 15.003.25).

Ukraine has long said it **will not give up** Crimea, a southern peninsula illegally annexed by Russia in 2014 (BBC, 24.04.25).

Alternatively, UKRAINE as GAME can be considered as children's fun (teetering), e.g.:

This is important, as the **Ukrainian state is teetering** on the brink of default and is struggling with a 5 billion per month financing gap, which Kyiv believes could undermine the government's ability to sustain the war (Politico Europe, 22.08.22).

The science cluster shows that UKRAINE is treated as a training activity. For example, it is realized as LESSON held in a certain place, e.g.:

The strategy also allows NATO countries to use **Ukraine as a testing ground** for developing weapons, such as drones, in which they do not have as much experience, the official said (The Irish Independent, 22.04.25).

Simultaneously, UKRAINE can perform a peculiar research activity. UKRAINE is RESEARCHER who formulates mathematical equations. On the other hand, UKRAINE itself may be considered as EQUATION, e.g.:

The objective last week was for the **Americans, Europeans and Ukrainians to formulate a joint position** by trying to move Washington closer to the European and Ukrainian position (The Malay Mail, 23.04.25).

Given the severity of Putin's manipulations, it is encouraging that some of the most accomplished and celebrated scholars of World War, Nazism, genocide, and the Holocaust have united to condemn this cynical abuse of the term genocide, the memory of World War Two, and the **equation of the Ukrainian state with the Nazi regime** to justify its unprovoked aggression (Politics Home, 16.03.22).

Along with mathematical interpretations, UKRAINE is considered as PHYSICAL BODY. Moving, UKRAINE may mechanically interact or not interact with other bodies. So, UKRAINE is exposed to deformation, e.g.:

The Ukrainian nation is not static. Since independence in 1991, it is constantly forming, and the language laws were a natural reaction to the invasion of the Donbas and Crimea in 2014 (Al Jazeera, 18.10.22).

The president campaigned on ending the conflict in 24 hours, a boast that might always have been ridiculous but underlined his urgency to do what he thought Joe Biden should have done long ago: **pressure the Russians and Ukrainians into a peace settlement** (The Telegraph, 24.04.25).

At the same time, if adopted and implemented, the new approach to mobilization will also add significant strain for the already **stretched Ukrainian state** (The Conversation, 04.01.24).

Mr. Putin's effort to **shatter the Ukrainian state** dramatically increases the chances of another avoidable disaster. Russian forces captured the territory around Zaporizhzhia on 02 March 2022 (Hotair.com, 07.03.22).

Like any physical phenomenon, UKRAINE may acquire a peculiar state of matter. For example, it can be regarded as SOLID or LIQUID:

The war has **congealed Ukrainian society** and **crystallized the Ukrainian state** (The Chicago Tribune, 01.11.22).

The witnesses suggested the Russians were increasingly resorting to chemical weapons to **flush out Ukrainians** from defensive strongholds or to immobilize and leave them vulnerable to conventional attacks (The Sunday Times, 18.04.25).

This was a clear indication that Putin's intent after **absorbing the Ukrainian state** was cultural and linguistic genocide (Free Press, 18.07.23).

The way he has conducted the war, with no thought for Ukrainian life, even in the East of the country, has made it clear to Ukrainians that Russian rule would **wipe out their identity** (BNE Intellinews, 24.02.23).

Finally, UKRAINE can interact with oxygen. It burns as FLAME that can be extinguished, e.g.:

Polish president said Russia's goal is to **extinguish the Ukrainian nation** (NBC News, 07.04.22).

The tragedy discovered amid the rubble of Bucha and Borodianka overshadowed any jubilation that Kyiv had defeated Russian forces that had spent a month trying to envelop the capital and **snuff out the Ukrainian nation** (The Guardian, 09.04.22).

The interpersonal communication cluster defines UKRAINE via close relations between people. UKRAINE is FAMILY with a long origin. It has parents taking care of children. Also, the family may break up, e.g.:

Zelenskyi previously refused to agree to a deal that **10 generations of Ukrainians** will have to pay back (Politico Europe, 18.04.25).

The war is also measured in flowers: the daffodils that dappled street sides in Bucha after Russian soldiers left behind the corpses of tortured civilians; the tulips that flourished as bombs fell across the country; and the yellow and blue pansies that surrounded Kharkiv's monument to Taras Shevchenko, the poet revered as a **father of the Ukrainian nation**, with the colors of the national flag (The Globe and Mail, 22.05.22).

The Yale researchers identified two Russian facilities involved in the deportation of infants who were **under care of the Ukrainian state** before the invasion (The Economist, 14.04.23).

In effect, the United States are **abandoning Ukrainians** regardless of which option Zelenskyi chooses (The Atlantic, 23.04.25).

On the contrary, UKRAINE is considered as TEAM where people actively cooperate for a certain goal, e.g.:

Zelenskyi said he had asked Zaluzhnyi to remain as part "of the **team of the future Ukrainian state**" (The Washington Post, 08.02.24).

Nor did Russian leaders expect the **Ukrainian state and society to hold together** under the sudden onslaught of violence (Los Angeles Times, 28.08.22).

It can use that to **expand global connections, reinvigorate the Ukrainian state, and build solid chains of cooperation and trade** so that everyone has a stake in Ukraine's future (The Times of India, 31.12.24).

New members can join UKRAINE as TEAM. At the same time, other teams attempt to draw them, e.g.:

Then, the **Ukrainian state joins** this work. Some guys from our museum had experience with the Second World War archaeological exhumations. So, they went to the frontline. This mission was our first experience. We were well prepared for the full-scale invasion (Outlook India, 16.12.22).

They call themselves volonter, and their organizations, their crowdfunding campaigns, and their activism help explain why the Ukrainian army has fought so hard and so well, why a decade-long Russian attempt to **co-opt the Ukrainian state** mostly failed, even in Russian-speaking Odesa (The Atlantic, 10.08.22).

The economics cluster considers UKRAINE as a person who wants to get goods. As CONSUMER with a varying sum of cash, UKRAINE can afford or not afford something, e.g.:

For all their courage, **Ukrainians cannot afford** to fight for another three years and nine months without America's backing (The Sunday Times, 26.04.25).

The Ukrainian state is nearly broke. Ukrainian hospitals, overwhelmed with complex injuries, are dealing with problematic amputations that only have costly solutions (The Premium Nigeria Times, 15.09.24).

With a lack of money, UKRAINE borrows cash and becomes DEBTOR. If enable to pay back, UKRAINE is getting bankrupt, e.g.:

Zelenskyi previously refused to agree to a deal that 10 generations of **Ukrainians will have to pay back** (Politico Europe, 18.04.25).

The goal is to kill people, to destroy equipment, to suck in resources, to **bankrupt the Ukrainian state** and to break its will to fight (CNN World, 09.04.25).

Apart from money, UKRAINE as CONSUMER is considered via use of resources. They may be consumed properly or improperly. Also, they run out, e.g.:

From our side, the **Ukrainian state is not wasting time** and we are working on various ways of railway and river ports for the export of our grain, and we are increasing this export every day (CNN, 05.07.22).

It is **Ukrainians who are running out of patience**, because it is us who are under attack, and no one else, he added (BBC, 24.04.25).

Meanwhile, UKRAINE itself may be understood as RESOURCE for specific needs. There can be access or no access to such a resource. Also, it can be depleted, e.g.:

A draft of the minerals deal that was under discussion earlier this month would give the U.S. privileged **access to Ukraine's mineral deposits** and require Kyiv to place in a joint investment fund all income from the exploitation of natural resources by Ukrainian state and private firms, according to a source with knowledge of the matter (The Citizen, 18.04.25).

As the world deliberates on three years of Russia's assault on Ukraine, the **Ukrainian nation is depleted**, yet persistently determined to end the conflict on terms that will allow its future generations to live in peace (The Hartford Courant, 22.02.25).

Finally, UKRAINE may participate in economic relations to collect money for specific needs, trade or outsource something. Therefore, UKRAINE is PARTNER, e.g.:

Britain will **provide 75.6 million pounds to Ukraine** through the World Bank, seeking to keep core state functions running and mitigate financial pressures caused by Russia's invasion (Reuters, 07.03.22).

Back in February, just days before Russia attacked Ukraine, **the EU agreed to issue Ukraine 1.2 billion** in loans as macro-financial assistance (PM News Nigeria, 12.07.22).

Trump thinks he can get the **Ukrainians to trade land for peace** (The Telegraph, 23.04.25).

In the era of social media, the **Ukrainian state can outsource** much of the humor content to private citizens (Slate, 03.05.22).

The law cluster considers UKRAINE from different law perspectives (civil, administrative, criminal, diplomatic, humanitarian). These sections produce various conceptual metaphors for UKRAINE. Civilly, UKRAINE is regarded as subject or object of ownership relations. Respectively, UKRAINE is regarded as OWNER or PROPERTY. In the first case, UKRAINE owns and manages something. It decides how to dispose of the property. Also, it tries to regain something previously stolen, e.g.:

Ukraine has the second highest number of state-owned enterprises in the world, many of which are **being managed**, or some are **being mismanaged**, by the **Ukrainian state** (Voice of America, 26.02.25).

The **Ukrainian state retains ownership** of all mineral rights. It could theoretically **hand over the rights** to rare earth projects to the US in exchange for military support (The Mining Journal, 14.02.25).

In any case, do not see Putin under any circumstances **handing back Crimea to the Ukrainians** (The ASPI Strategist, 01.03.24).

In the second case, somebody possesses and disposes of UKRAINE. Such PROPERTY is considered as a single or multi-component item. It can be given to or stolen from somebody, e.g.:

Although Donald Trump has claimed Putin wants to stop fighting and does not want **control over the entirety of Ukraine**, US and western intelligence officials believe Putin remains fixated on either **subsuming the country into Russia** or ensuring a small, weak Ukrainian state that is dependent on Moscow (CNN, 20.02.25).

The **Ukrainian state would have been taken over** by the collaborators who had already chosen their Kyiv apartments (The Atlantic, 22.12.22).

These comments portray the **Ukrainian state** as an illegitimate creation: an **act of theft from Russia** and Ukrainians who should still be under Moscow's rule (The New York Times, 23.02.22).

Administratively, UKRAINE is AUTHORITY. It takes measures for or against something, e.g.:

Novinskyi, who has Ukrainian citizenship, was **sanctioned by the Ukrainian state** in December for supporting Russia – a move he said is illegal because of his citizenship (The Guardian, 25.04.23).

The most terrifying thing is perhaps what happens to the young men: the **Ukrainian state has forbidden** any military-age male, from 18 to 60, from leaving the country (The New York Post, 25.02.22).

Criminally, UKRAINE is alleged as ACCUSER or OFFENDER within a committed act of violence, e.g.:

Kirillov was murdered a day after **Ukrainian state prosecutors charged** him in absentia with the alleged use of banned chemical weapons, the Kyiv Independent cited the SBU as saying (Yahoo! News, 17.12.24).

The **Ukrainian state has been riven with meddling** by western powers, has been highly **repressive, corrupt, and guilty** of human right abuses including suppression of Russian-speakers (Interest.co.nz, 24.11.24).

But Shchyhol is keen to make it clear that's his personal opinion – wanting to avoid any suggestion of **collusion or organization by the Ukrainian state** (Wired, 14.09.22).

Besides, UKRAINE is often regarded as VICTIM of violence who is assaulted in a different way, e.g.:

For this, Ukraine gets basically nothing, except a vaporous security guarantee from an American president who has made clear his hostility to Ukraine and its leaders, an animus that became especially clear when Trump and Vance **ambushed Volodymyr Zelenskyi** during a White House meeting (The Atlantic, 23.04.25).

But in the following days, there was a growing sense that the U.S. negotiators were being pressured to make headway on a deal, they said. This, they said, made them concerned that **Ukrainians** and Europeans could be **backed into a corner** and rushed into an agreement (ARY News, 25.04.25).

His defiance has caused Trump to **lash out at Ukrainians** for defying his wishes (The Atlantic, 23.04.25).

Diplomatically, UKRAINE is defined as internationally recognized LEGAL STATUS (actual or desirable). Otherwise, it is regarded as LEGAL SUBJECT who offers or declares something on the international arena, e.g.:

Until the 20th century, the goal of Ukrainian activists was **autonomy**, not **independence**. Then, in the 20th century, we had five attempts to declare an **independent Ukrainian state**. The fifth succeeded in 1991 (The Week, 06.02.25).

The conditions of the peace agreement naturally include a **nuclear-free, neutral status for Ukraine, demilitarization and denazification of the Ukrainian state**, and abolition of all discriminatory laws passed after the 2014 coup (The Premium Nigeria Times, 16.04.25).

The **Ukrainian state that declared independence** in the aftermath of the 1917 Revolutions, envisioned a Ukraine for all ethnicities and religious groups living within its territory (PBS News Hour, 28.02.22).

Humanitarianly, UKRAINE is considered as a part of war conflict. Therefore, UKRAINE is regarded as TARGET. Enemies aim at UKRAINE. They invade, try to conquer and defeat the target, e.g.:

These have put Ukraine into a geopolitical position where the **country remains in the crosshairs** of rival great powers and has limited agency of its own (The Conversation, 20.01.22).

Rather it is Putin's statements when he **invaded Ukraine** that there is not such thing as a Ukraine or a Ukrainian culture or language (Free Press, 18.07.23).

The Ukrainian state and army have been forced to become far more efficient and capable to meet the tremendous threat facing them, and the Ukrainian people have rallied strongly in defense of their **beleaguered nation** (The Chicago Tribune, 01.11.22).

From the first days of the 2022 Russian invasion, President Vladimir Putin has been trying to **conquer Ukraine** through psychological games as well as military force (The Atlantic, 21.04.24).

UKRAINE is treated as WARRIOR that is ready to resist, fight for liberty and defeat the enemy, e.g.:

The truth is that even with the best of intentions, the **embattled Ukrainian state would likely struggle** to handle and effectively deploy such a large quantity of money in a short period of time (The I Paper, 18.03.25).

If all goes well, and it will with time, the **Ukrainian nation will stand firm and prevail** against the Russian thug (The Thompson Citizen, 31.03.22).

When **Ukrainians fought back**, the official Kremlin line shifted to something even more sinister (The Guardian, 10.03.23).

As a weapon to defeat enemies, UKRAINE uses not only guns but also other tools (funds, laughter), e.g.:

The truth is that even with the best of intentions, the embattled Ukrainian state would likely struggle to **handle and effectively deploy such a large quantity of money** in a short period of time (The I Paper, 18.03.25).

The **Ukrainian state is consciously deploying laughter** to define its position on the correct side of a just war (Slate, 03.05.22).

On the other hand, UKRAINE is treated as RIVAL that prevents somebody from achieving goals, e.g.:

Russia accepts the existence of a sovereign, independent Ukraine. We **oppose a Ukraine** that's an anti-Russia Western client state (The Christian Science Monitor, 17.01.25).

Apart from RIVAL, UKRAINE is also understood as BOMB that poses threat to security, e.g.:

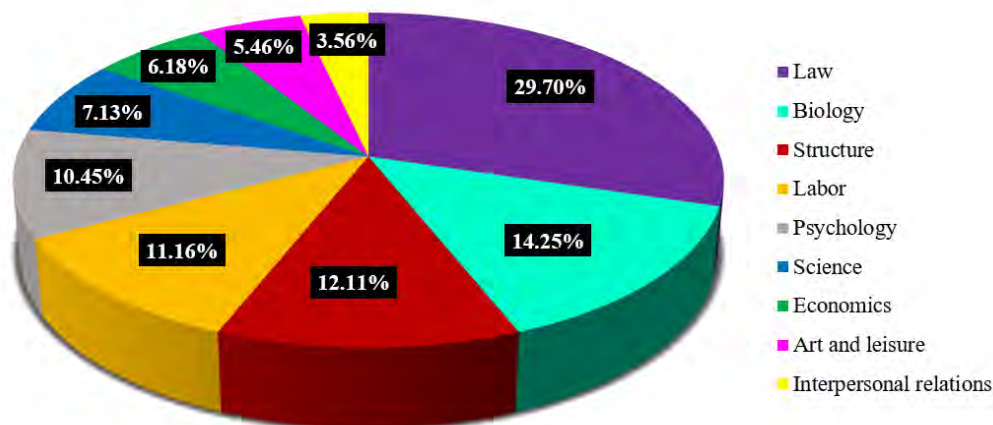
The new thinking, as Putin's remarks in Kaliningrad suggest, tends to regard any **Ukrainian state as a ticking bomb** right on Russia's borders not far from its capital (The Citizen, 13.09.22).

Discussion

The conducted analysis shows the quantitative frequency of the UKRAINE metaphorization among non-Ukrainians via respective clusters (see Fig. 2).

Figure 2

Clusters of the UKRAINE Metaphoric Consideration in the Non-Ukrainian Journalistic Discourse



Full list of identified conceptual metaphors for UKRAINE is indicated below (see Table 3).

Table 3

Full List of the UKRAINE Conceptual Metaphors in the Non-Ukrainian Journalistic Discourse (Sorted by Decreasing Frequency in the Corpus Sample)

Cluster	Conceptual metaphors	Quantity
Law	Humanitarian law:	
	UKRAINE as WARRIOR [22]; TARGET [15]; RIVAL [1]; BOMB [1]	125 (29.70%)
	Criminal law:	
	UKRAINE as VICTIM [18]; OFFENDER	34 (8%)

	[13]; ACCUSER [3]; Diplomatic law: UKRAINE as LEGAL STATUS [21]; LEGAL SUBJECT [3]	24 (5.7%)
	Civil law: UKRAINE as OWNER [16]; PROPERTY [7]	23 (5.5%)
	Administrative law: UKRAINE as AUTHORITY [5]	5 (1.2%)
Biology	UKRAINE as ORGANISM [50]; ANIMAL [5]; PLANT [5]	60 (14.25%)
Structure	UKRAINE as BUILDING [27]; FRAGMENTED OBJECT [9]; COMPLEX OBJECT [8]; SINGLE OBJECT [7]	51 (12.11%)
Labor	UKRAINE as MACHINE [17]; PRODUCT [11]; HUMAN [10]; VEHICLE [5]; PASSENGER [1]; SCALES [1]; GARMENT [1]; GLASSWARE [1]	47 (11.16%)
Psychology	UKRAINE as HUMAN [33]; IDEA [6]; JESUS CHRIST [5]	44 (10.45%)
Science	UKRAINE as PHYSICAL BODY [17]; LIQUID [4]; SOLID [3]; FLAME [2]; LESSON [2]; RESEARCHER [1]; EQUATION [1]	30 (7.13%)
Economics	UKRAINE is PARTNER [15]; CONSUMER [4]; RESOURCE [4]; DEBTOR [3]	26 (6.18%)
Art and leisure	UKRAINE as GAME [20]; WRITTEN TEXT [2]; PICTURE [1]	23 (5.46%)
Interpersonal relations	UKRAINE as TEAM [10]; FAMILY [5]	15 (3.56%)
Total		421 (100%)

According to the above-mentioned data, the most frequently used unit is actualized 50 times, the least frequently – 1 time. We admit the 21 to 50 frequency shows the highest preferences of the UKRAINE consideration in the non-Ukrainian press. The 11-20 frequency means the moderate preferences. The 1-10 frequency comprises the lowest preferences in the UKRAINE metaphorization.

The highest associating preferences are represented via the conceptual metaphors UKRAINE is ORGANISM [50]; HUMAN [43]; BUILDING [27]; WARRIOR [22]; LEGAL STATUS [21] – 163 of 421 cases (38.7%). It indicates that

UKRAINE tends to be understood as a true sovereign entity that is trying to survive regardless of wartime challenges. Like a human, it acts reasonably to solve wartime problems, although difficult obstacles must be overcome. Also, the entire wartime country resilience is revealed in the building image when all Ukrainians maintain it to prevent the collapse (in other words, the country will cease to exist if Ukrainians do not defend it). The latter is additionally underlined via metaphors of WARRIOR and LEGAL STATUS: Ukrainians defend their motherland to save their independent country, restore peace and recover.

The moderate assessment comprises the conceptual metaphors UKRAINE is GAME [20]; VICTIM [18]; MACHINE [17]; PHYSICAL BODY [17]; OWNER [16]; PARTNER [15]; TARGET [15]; OFFENDER [13]; PRODUCT [11] – 142 of 421 cases (33.7%). During wartime, the enemy collides with Ukraine in clashes destabilizing the state (PHYSICAL BODY). Diplomatic, economic, military and other efforts to stop the war are difficult to realize as a wartime game victory, a failing situation is also possible. As an operating machine, the Ukrainian state must function correctly during wartime with compulsory maintenance (coordinated work of government and population). Otherwise, a failure (state destruction) may occur. The latter is confirmed via hostile efforts to impose his influence on the Ukrainian society (TARGET), which leads to human suffering (VICTIM). Ukrainians as residents of their state (OWNER) may not accept it because their country has been developed by them for many centuries as a sovereign entity (PRODUCT). Therefore, they ask for assistance from other countries (PARTNER) although this activity can be abused if not controlled (OFFENDER).

The least frequently used metaphors are UKRAINE is TEAM [10]; FRAGMENTED OBJECT [9]; COMPLEX OBJECT [8]; SINGLE OBJECT [7]; PROPERTY [7]; IDEA [6]; AUTHORITY [5]; JESUS CHRIST [5]; ANIMAL [5]; PLANT [5]; VEHICLE [5]; FAMILY [5]; CONSUMER [4]; RESOURCE [4]; LIQUID [4]; SOLID [3]; DEBTOR [3]; ACCUSER [3]; LEGAL SUBJECT [3]; FLAME [2]; LESSON [2]; WRITTEN TEXT [2]; PASSENGER [1]; SCALES [1]; GARMENT [1]; GLASSWARE [1]; PICTURE [1]; RESEARCHER [1]; EQUATION [1]; RIVAL [1]; BOMB [1]. It comprises 116 of 421 cases (27.6%). The most used metaphors in this category show that non-Ukrainians usually perceive Ukrainians as a coordinated nation who work to keep their country alive regardless of war circumstances. Often, uneasy measures are taken: many resources are borrowed for state defense although it is difficult to return them. Ukrainians strengthen their state despite hostile attacks are painful to sustain. Despite the huge enemy aggression not recognizing Ukraine, Ukrainians believe they will not lose the war and their state will recover. Other countries can take a page from the Russian-Ukrainian War book.

Conclusions

The conducted research that focuses on study of the UKRAINE concept metaphorization as associations of the image layer represented in the non-Ukrainian journalistic discourse, proves to be highly effective. It demonstrates the broad spectrum of UKRAINE conceptual metaphors actively employed by the non-Ukrainian press to structure the image of Ukraine in the addressee's mind and produce a respective attitude to Ukrainians as a separate nation.

Metaphorically UKRAINE is treated as ORGANISM; HUMAN; BUILDING; WARRIOR; LEGAL STATUS – 163 of 421 cases (38.7%). These metaphors are of the highest frequency and reveal main mental images that figurate about Ukraine in non-Ukrainians' mind from the wartime perspective.

Metaphorical consideration of UKRAINE as GAME; VICTIM; MACHINE; PHYSICAL BODY; OWNER; PARTNER; TARGET; OFFENDER; PRODUCT comprises 142 of 421 cases (33.7%). It constitutes the moderate frequency of mental associations about the combating Ukraine in the non-Ukrainian consciousness.

Analysis of the lowest frequency metaphors foregrounds that UKRAINE is perceived as TEAM; FRAGMENTED OBJECT; COMPLEX OBJECT; SINGLE OBJECT; PROPERTY; IDEA; AUTHORITY; JESUS CHRIST; ANIMAL; PLANT; VEHICLE; FAMILY; CONSUMER; RESOURCE; LIQUID; SOLID; DEBTOR; ACCUSER; LEGAL SUBJECT; FLAME; LESSON; WRITTEN TEXT; PASSENGER; SCALES; GARMENT; GLASSWARE; PICTURE; RESEARCHER; EQUATION; RIVAL; BOMB. Totally, 116 of 421 cases (27.6%).

The metaphor use in the non-Ukrainian journalistic discourse is meant to raise people's concern all around the world as to the ongoing war in Ukraine. The prospect of the research lies in the thorough comparative study of the UKRAINE metaphoric representation by Ukrainian citizens who currently reside in the country and those who had to leave the country because of the full-scale invasion. Also, research of mental consideration of socially significant concept like WAR or PEACE may be conducted to define their importance for humanity.

Besides, results of the current study may be supplemented with additional research. In particular, valorization of the UKRAINE concept can be specified via quantitative calculations of how often names of the UKRAINE concept are used in the non-Ukrainian press.

After the war is over, we can also initiate another research to compare the current and future considerations of Ukraine in the non-Ukrainian consciousness. The difference between war and post-war images will be obvious. It must be also included in attempts to prevent any military conflicts in future.

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Arabic Verb Patterns and Macrostructure in Adolescent Narratives: A Comparative Analysis Across Writing Systems

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Abstract. The aim of the study is to explore verb patterns within narrative structures among Arabic-speaking adolescents using different writing systems – Arabic script, Romanized Arabic, and Hebrew script. It examines how these scripts influence the complexity and variety of verb usage, highlighting linguistic challenges in a multilingual educational context. Analyzed narratives from 78 students across three grade levels (7th, 9th, and 11th) using a mixed-methods approach. This included evaluating narrative macrostructure and analyzing verb usage, focusing on frequency, type, and token. Verbs were categorized by semantic features such as agentivity, transitivity, and tense to understand their role in narrative construction across different scripts. Hebrew script users displayed more complex verb patterns and higher macrostructural scores compared to peers using Arabic or Romanized Arabic scripts. There was a significant positive correlation between the diversity of root types used in Arabic script and narrative complexity, highlighting the impact of linguistic depth on narrative quality. A preference for eventive and transitive verbs was observed across all writing systems, with past tense verbs predominantly influencing narrative structuring. Writing system choice significantly impacts narrative verb patterns in a diglossic environment. Hebrew script is less cognitively demanding, suggesting the need for educational strategies to enhance narrative skills and support linguistic adaptability across scripts in multilingual settings.

Keywords: *narrative, writing systems, macrostructure, verb patterns, Palestinian Arabic.*

Таллас-Магаджна Найла, Елгіджа Дуа. Арабські дієслівні моделі та макроструктура в наративах підлітків: порівняльний аналіз різних систем письма.

Анотація. Метою дослідження є вивчення дієслівних моделей у наративних структурах серед арабськомовних підлітків, які використовують різні системи письма — арабську, латинську та іврит. Дослідження аналізує, як ці системи письма

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впливають на складність і різноманітність вживання дієслів, висвітлюючи лінгвістичні проблеми в багатомовному освітньому контексті. Проаналізовано розповіді 78 учнів трьох класів (7, 9 та 11) з використанням змішаного методу. Це включало оцінку макроструктури розповіді та аналіз вживання дієслів, зосередившись на частоті, типі та символі. Дієслова було класифіковано за семантичними ознаками, такими як активність, перехідність та час, щоб зрозуміти їхню роль у побудові розповіді в різних письмах. Користувачі івритського письма продемонстрували більш складні дієслівні моделі та вищі макроструктурні показники порівняно з однолітками, які використовували арабське або латинізоване арабське письмо. Було виявлено значущу позитивну кореляцію між різноманітністю типів коренів, що використовуються в арабському письмі, та складністю оповіді, що підкреслює вплив мовної глибини на якість оповіді. У всіх системах письма простежено перевагу подійних та перехідних дієслів, причому дієслова минулого часу переважно впливали на структурування розповіді. Вибір системи письма значно впливає на дієслівні моделі оповіді в диглосичному середовищі. Іврит є когнітивно легшим, що вказує на необхідність освітніх стратегій для покращення навичок розповіді та підтримки мовної адаптивності в різних системах письма в багатомовних середовищах.

Ключові слова: розповідь, системи письма, макроструктура, дієслівні моделі, палестинська арабська мова.

Introduction

As a cornerstone of language acquisition and literacy development, narrative development is essential for the articulation of complex ideas and requires advanced linguistic, cognitive, and social abilities (Hickmann, 2004; Uccelli & Paez, 2007). It includes two discourse levels: microstructure, which includes the language details used in storytelling and macrostructure, which is the overall narrative framework (Westby, 2005). There is still a dearth of study on Arab teens' narrative skills. Narrative development faces distinct challenges due to the phenomenon of diglossia in Arabic, which is characterized by a significant variance and a lack of an agreed orthographic representation for spoken language. In parallel, standard Arabic has a formal written language (Saiegh-Haddad, 2003; Walters, 2007). Furthermore, the understudied emergence of digital media as a narrative platform has left a gap in the literature concerning current linguistic study (Taguchi et al., 2013; Baron, 2010).

Narrative production is a cognitively demanding activity involving memory, linguistic organization, and perspective-taking, and it is particularly complex in multilingual and diglossic contexts (Berman & Slobin, 1994; Hickmann, 2004; Westby, 2005). It encompasses both macrostructural elements, such as goal, setting, and outcome—and microstructural components like syntactic complexity and verb morphology (Uccelli & Paez, 2007). In diglossic languages such as

Arabic, narrative construction is further complicated by the dual-language processing demands of Standard Arabic (StA) and Spoken Arabic (SpA). Writers must navigate not only lexical and syntactic variation but also the cognitive shift between linguistic registers, which can constrain coherence and expressive richness. In addition, the rise of digital platforms has introduced new modes of script choice and orthographic expression, enabling adolescents to compose narratives in Arabic using Hebrew or Latin scripts. These platforms reshape narrative practices by reducing orthographic constraints, increasing reliance on SpA, and altering the cognitive load associated with text production (Baron, 2010; Herring, 2007). The current study examines how these variables, e.g. diglossia, digital script choice, and cognitive processing, intersect to influence the narrative performance of Arabic-speaking adolescents.

Research on other diglossic languages supports the notion that digital media transforms narrative expression by offering orthographic and structural flexibility. For instance, in Persian, writers commonly blend standard Persian with colloquial forms in Romanized script, circumventing formal conventions to enhance expressive immediacy (Tobbi, 2024). Similarly, Greek digital users often shift between *katharevousa* (formal) and *demotic* (informal) varieties, with script variation and code-switching used to signal social identity and genre (Androutsopoulos, 2006). These examples from other diglossic settings illustrate how digital platforms enable narrative practices that deviate from traditional linguistic norms, thereby fostering new forms of written fluency and creativity. This broader perspective contextualizes the current study of Arabic digital narratives within the global phenomenon of digitally mediated storytelling in diglossic environments.

This study looks at stories that native Arabic-speaking adolescents from different grade levels (7th, 9th, and 11th) wrote in digital media using their favorite writing system (Hebrew, Arabic written in Latin script, or Arabic written in Arabic). Our study looks at both the macrostructure and the microstructure, comparing how different grade groups, writing styles, and verb patterns differ in their narrative composition.

Macrostructure and Microstructure of Narratives

Macrostructure and microstructure represent two distinct but interrelated levels of narrative organization. Macrostructure refers to the global organization of a story, including elements such as setting, initiating event, internal response, goal, attempts, and resolution (Stein & Glenn, 1979). It reflects the narrative's coherence and completeness. Microstructure, by contrast, involves the linguistic

surface features that shape narrative fluency, including lexical diversity, syntactic complexity, cohesion markers, and grammatical accuracy (Justice et al., 2006; Berman & Nir-Sagiv, 2007). While developmental models in English suggest a progression from basic narrative schemas toward more elaborated and hierarchically structured stories (Westby, 2005), these trajectories may not map neatly onto Arabic. Arabic's diglossic nature where Standard and Spoken varieties differ in syntax and lexicon complicates the acquisition of cohesive narrative forms. Moreover, Arabic's rich morphological structure and nonlinear orthographic conventions introduce processing demands that differ from alphabetic systems like English. Therefore, while prior cross-linguistic findings offer a useful comparative lens, we approach them critically, recognizing that Arabic-speaking adolescents may exhibit unique developmental patterns in both macro- and microstructural domains of narrative.

The narrative microstructure of a story involves the narrator's mastery of lexical, morphological, syntactic, and semantic elements, and includes measures such as morphology, morpho-syntax, verbal tense/aspect, inflectional morphology, lexical knowledge, number of utterances, words, syntactic complexity, and mean length of utterance (Heilmann et al., 2016; Nippold et al., 2005; Rezzonico et al., 2016). These features show developmental patterns that can be language-specific (Berman, 2009).

As children grow, their use of story grammar (SG) components increases, notably between ages 4 to 7, where they begin to include elements like setting and ending, central theme, initiating event, attempt, and outcome (Applebee, 1978). By age 10, children can reference inner thoughts in narratives (Bishop & Donlan, 2005), with microstructural skills continuing to develop thereafter (Blankenstijn & Scheper, 2003). Younger children create longer narratives with more varied content words and complex syntax (Justice et al., 2006; Berman & Nir-Sagiv, 2007).

Microstructure serves as a tool for evaluating children's linguistic abilities and is interrelated with macrostructure. The development of narrative production involves combining top-down cognitive processes (macrostructure) with bottom-up linguistic aspects (microstructure) (Berman, 1988, 2008; Berman & Slobin, 1994). Research indicates the interaction between microstructure and macrostructure indices and how changes in microstructure affect narrative macrostructure (Heilmann et al., 2010; Mäkinen et al., 2014). Understanding this correlation is essential, given its link to children's language, literacy, and academic success in their first language (Pinto et al., 2016; Suggate et al., 2018).

While previous studies have established the foundational constructs of narrative macrostructure and microstructure (e.g., Stein & Glenn, 1979;

Westby, 2005), critical divergences exist in how these dimensions are operationalized across developmental and linguistic contexts. For instance, Westby emphasizes the developmental trajectory of story grammar acquisition, whereas Justice et al. (2006) focus on linguistic indices as diagnostic tools, potentially underemphasizing the narrative coherence aspect. Similarly, Berman and Nir-Sagiv (2007) suggest that syntactic complexity increases with age, but this perspective largely stems from monolingual populations and does not account for diglossic or multilingual conditions where such development may be nonlinear or script-dependent. Furthermore, many studies employ elicitation methods based on wordless picture books or structured retells (e.g., Heilmann et al., 2016), which may not fully capture the spontaneous linguistic choices made in digital narratives. These methodological limitations highlight the need for research that explores narrative development across both macro- and micro-levels in naturally occurring digital contexts, particularly in languages such as Arabic, where orthographic and register complexity may significantly influence performance.

Narrative Production in Arabic Diglossic Context

Arabic is a prototypical example of diglossia, a sociolinguistic phenomenon where two distinct varieties coexist within a single speech community, each serving different functional roles (Ferguson, 1959; Albirini, 2016). Standard Arabic (StA) is the high variety, associated with formal education, writing, and official discourse. It is morphologically complex, syntactically rigid, and often acquired through schooling rather than home exposure. In contrast, Spoken Arabic (SpA) comprises various vernacular dialects used in everyday conversation, which are less standardized, more phonetically transparent, and typically acquired as the first language. The two varieties differ significantly in phonology, morphology, syntax, and lexicon, and are often not mutually intelligible in written form. From a narrative production perspective, this separation presents challenges: StA is expected in formal written narratives, but most adolescents have greater fluency in SpA, leading to interference, register mixing, or code-switching, particularly in digital contexts where normative constraints are relaxed. Understanding this sociolinguistic dynamic is crucial for interpreting narrative competence in Arabic-speaking youth.

Children who speak Arabic are raised in a diglossic environment, learning two dialects: spoken Arabic (SpA) for casual conversation and standard Arabic (StA) for writing and reading (Ferguson, 1959). Due to differences in exposure, children typically do not achieve equal proficiency in both dialects, even after

years of education (Saiegh-Haddad and Schiff, 2016; Schiff & Saiegh-Haddad, 2018).

The linguistic gap between SpA and StA is significant, with the standard variety posing challenges for developing linguistic and metalinguistic skills (Saiegh-Haddad, 2018). This gap affects children's acquisition of literacy and basic language skills (Khamis-Dakwar & Froud, 2012; Saiegh-Haddad, 2003, 2004, 2007; Saiegh-Haddad & Haj, 2018; Saiegh-Haddad et al., 2011; Saiegh-Haddad et al., 2020).

Spoken Arabic (SpA) lacks a writing convention in contrast to Standard Arabic (StA). The swift advancement of technology has made it possible to write spoken vernaculars in digital media using various writing systems. In Israel, for example, Arabic dialects can be written in Arabic, Hebrew, or Latin scripts. (see A9 in Appendix)

Digital Writing System of Arabic

Digital communication reveals much about language use and human behavior (Herring, 2007). Palestinian Israelis' written digital narratives are influenced by the writing systems they use. As people globally create new electronic writing conventions for their native languages, digital devices impact written colloquial forms, a phenomenon prevalent in diglossic languages like Arabic, Persian, Greek, and languages of the Indian subcontinent (Abu Elhija, 2014).

The diglossic nature of Arabic has partly driven the emergence of new communication modes (Abu Elhija, 2012, 2014, 2017). An interesting question arises regarding why Arabic speakers in Israel choose different scripts (Arabic, Latin, and Hebrew) to write in spoken Arabic (SpA), despite constant access to the Arabic script (Zoabi, 2012). Zoabi's (2012) study of Facebook script choices among Arabs from various nations and Palestinian Israelis found that script choice is influenced by religion, ideology, and education. For instance, those proficient in English often use Latinized script, while those proficient in Hebrew frequently use Hebrew script due to greater exposure.

Verb Patterns in Spoken Arabic

Arabic, being a Semitic language, uses morphological structure to encode the semantic relationship between verbs. Arabic verbal systems are composed of patterns that vary primarily in terms of transitivity and morphosemantic class (Laks, Hamad, & Saiegh-Haddad 2019). Table 1 based on Tallas-Mahajna et al. (2023) and illustrates how morphological affixes increase pattern complexity

and how a rise in morphological complexity allows for a rise in semantic complexity.

Table 1

Morphological Complexity and Semantic Features and Affixes of the Verb Patterns

Pattern	Morphological affix	Semantic affix / feature
CaCaC	None	various, unmarked
CaCCaC	medial gemination	Causative
Ca:CaC ¹	vowel lengthening	Conative ²
ʔaCCaC	ʔa- prefix	Causative
tCaCCaC	t- prefix + medial gemination	Reflexive/medio-passive ³
tCa:CaC	t- prefix + vowel lengthening	Reciprocal
inCaCaC	in- prefix (n- prefix)	Medio-passive
iCtaCaC	i+ta circumfix (-ta- infix)	Reflexive intransitive
iCCaCC	final gemination	Inchoative of colors
istaCCaC	ista- prefix (sta- prefix)	reflexive transitive
CaCCaC ⁴	additional medial consonantal slot	No semantic affix

The most fundamental verb pattern, *fa'al*, is this simple pattern *CiCeC* / *CaCaC*; it is the least complex pattern in terms of morphological complexity. It is composed of two templates, *a-a* and *i-e*, with different vowel patterns. The more common type of *a-a* pattern, *CaCaC*, denotes an action carried out by an agent; it can be transitive (e.g., *katab* 'write') or intransitive (e.g., *qaʕad* 'sit'). The *i-e* pattern *CiCeC* e.g., *xiser* 'lose' functions as an inchoative verb (Laks, Hamad, & Saiegh-Haddad 2019). This basic pattern is made more complex by the morphological elements that build upon it. A consonant may be doubled, a vowel may be extended, or consonants or entire syllables may be appended as complexifying elements. These modifications to *fa'al* are referred to as *morphological affixes* in this context. With each addition, the resulting pattern becomes more morphologically complex than the original pattern.

¹ The vowels between the root consonants, which the basic pattern *CaCaC*, may become prosodically unnecessary and drop, as in this pattern: *ʔaCCaC* (not **ʔaCaCaC*). For a theory on the prosodic constraints on the Semitic verb and nouns patterns, see McCarthy 1981.

² The conative function: engages the Addressee (receiver) directly and is best illustrated by vocatives and imperatives, e.g., "Tom! Come inside and eat!"

³ Consider (a) *The glass was broken* vs. (b) *The glass broke*. Sentence (a) involves an agent, and the meaning is thus passive; sentence (b) involves no agent, and the meaning is thus medio-passive. In Arabic both meanings may be conveyed by either /inkasar/ whereas /tkassar/ only conveys the medio-passive meaning.

⁴ This pattern *fa'lal* is reserved to four-consonant roots, e.g., *daḥraj* 'to roll'.

However, these morphological affixes in the verb system are by no means trivial linguistic elements. They frequently relate to an elaboration of the meaning. Here, the extra meaning elements are referred to as *semantic affixes*. Non-singletons exhibit the strongest correlation between morphological and semantic affixes (Levie et al. 2020), that is, in sets of verbs (two or more) with distinct verb patterns but derived from a single consonantal root. Derivational relations, primarily seen in transitivity alternations and other forms of semantic relations, exist between same-root verbs in diverse patterns, like [\pm stative] or [\pm eventive] versus [\pm agentive] and [\pm causative]; as well as feature like [\pm inchoative], [\pm reflexive], and [\pm reciprocal] (see Fassi Fehri, 1994; Glanville, 2011; Guerssel & Lowenstamm, 1996; Hallman, 2006; Jastrow, 2004; Ouhalla, 2014; Ryding, 2005; Younes, 2000; Wittig, 1990; among others).

The current study compares narratives written in digital media by adolescents who are native Arabic speakers and are in different grades (7th, 9th and 11th). The adolescents chose to write their stories in Arabic, Arabic written in Latin script, or Hebrew script, depending on which writing system they preferred. Our investigation focuses on both the macrostructure and microstructure, examining variations in narrative composition among age groups and across diverse writing systems and verb patterns.

Study Questions

Research Question 1: How does the writing system impact the macrostructure of narrative among students in different grade levels?

Research Question 2: what is the relationship between the macrostructure and the use of verb patterns?

Research Question 3: How does the use of verb tense, semantic features of verbs, and verb patterns correlate with the system among different grade levels?

Methods

Participants

The data for this study was drawn from a sample of three Arabic school grades in north Israel: 7th grade (29 students, 37.2 %), 9th grade (23 students, 29.5%), and 11th grade (26 students, 33.3%). Of these students, 35 were boys (45 percent) and 43 were girls (55 percent). The data was text evaluated by multiple parameters, which were divided by macro and micro elements. Beyond grade level differences,

the choice of WS was an additional factor. The majority, 39 students (50.0 %) chose Hebrew script, while 23 (29.5 percent) chose Arabic script and the remaining 16 (20.5 percent) chose Latin Script. Across 7th grade, the choice of WS was relatively balanced, that is, Arabic: 37.9 percent, Hebrew script 31.0 percent, Latin script 31.0 percent. However, WS choice switched among older students, who choose Hebrew script for the text writing: 56.5 percent among 9th grade, and 65.4 percent among 11th grade, while only one student chose Latin Script among the latter (Pearson's χ^2 test for age X language dependency: $\chi^2=10.80$, $df=4$, $p=.029$).

Table 2
General Information of the Data and Participants

Grade	N	Percentage	Gender		Writing System		
			Male	Female	Arabic	Hebrew	Latin
7th	29	37.2%	14	15	11	9	9
9th	23	29.5%	12	11	4	13	6
11th	26	33.3%	9	17	8	17	1
Total	78	100%	35 (45%)	43(5%)	23(29.5%)	39 (50.0%)	16 (20.5%)

Pearson's χ^2 test for age X language dependency: $\chi^2=10.80$, $df=4$, $p=.029$

Participants were randomly selected from a pool of middle and high school students in the same geographic region. All participants were reported by their schools to be typically developing students with no history of language, learning, or cognitive difficulties. Their general language proficiency in Arabic was considered age-appropriate, based on school performance and teacher reports.

Narrative elicitation took place across two sessions. In each session, students watched a silent 5-minute video depicting scenes of unresolved interpersonal conflict (e.g., a fight in school, exclusion by peers). Immediately after viewing, they were asked to write a narrative inspired by the video, reflecting on a similar situation or constructing an imagined conflict scenario. Students used their mobile phone Notes application to compose their texts, in line with their habitual digital writing practices. They were given the freedom to choose the dialect (Spoken or Standard Arabic) and script (Arabic, Latin, or Hebrew) that felt most natural to them. This method allowed for the collection of spontaneous digital narratives in an ecologically valid format reflective of their daily communication habits.

Data Analyses

All analyses were conducted in R (R Core Team, 2012).

RQ1. First, to test the impact of WS and Grade on total macrostructure score, a two-way ANOVA analysis was performed. Next, to test the effects of WS and Grade on the use of individual SG elements, a Generalized Linear Mixed Models (GLMM) analysis with Binomial distribution was performed with WS, Grade, and SG as fixed factors and Participant as the random factor. Importantly, we tested interactions of SG and the other fixed factors, since we were interested in understanding whether WS and Grade had a different impact across SG elements. To test the significance of each fixed factor and of interactions, Likelihood Ratio Tests were performed using ANOVA function with the values of AIC, BIC, logLik, deviance, Chi-square, and p. The first model included SG factor, followed by WS, SG*WS interaction, Grade, SG*Grade interaction, WS*Grade interaction, and finally the three-way SG*WS*Grade interaction.

RQ2. To test the relationship between performance on macrostructure and the use of verbal patterns⁵, correlation analyses were performed between the total macrostructure score, verbal tokens and types in standard and spoken varieties.

RQ3. To test whether students used different tenses and whether it was related to WS and/or Grade, we ran a GLMM analysis with Poisson distribution with WS, Grade, and Tense as fixed factors and Participant as the random factor.

To test the effect of WS on semantic features of verbal patterns, a series of GLMM analyses were performed separately for Agentivity (stative/eventive), Transitivity (transitive/intransitive), and Semantic features (Inchoative, causative, reflective, reciprocal). In each analysis, features were tested in interaction with WS and Grade aiming to examine whether the different features were affected by WS and/or Grade. GLMM analyses with Poisson distribution were chosen to explore the use of raw frequencies. Moreover, Verb-pattern was analyzed for the effects of WS, Grade, and their interactions using GLMM analyses with Poisson distribution.

For ANOVAs, the *aov* function was used along with the *EtaSq* function for the amount of explained variance. For GLMMs, the *glmer* function from the *lme4* package was used (Bates et al., 2014). Models were tested using Likelihood Ratio Tests which included AIC, BIC, logLik, deviance, chi-square, and p-values. For these analyses a single participant who used an English WS in 11th grade was excluded.

The full list of the parameters resulting from testing all fixed factors are included in the Tables in Appendix. The package *emmeans* (Lenth, 2019) was used

⁵ ifa'all and tfa'lal were never used and excluded from the analyses.

to conduct post-hoc analyses of interaction effects in GLMMs. The package *sjPlot* (Lüdtke, 2021) was used to plot the predicted values based on the results.

Results

To contextualize the quantitative findings and gain a deeper understanding of both the macrostructural organization and the students' orthographic choices in narrative construction, the appendices include authentic sample narratives drawn from the research dataset. These examples—presented in Arabic script, Romanized Arabic (Latin script), and Hebrew-script Arabic—offer insight into the diverse ways students' express conflict-based stories within digital environments. Reviewing these samples (see Appendices A9–A11) allows for a closer examination of how narrative structure, linguistic features, and script preference interact, providing a deep understanding the numerical analysis.

RQ1: How does the writing system impact the macrostructure of narrative among students in different grade levels?

Table 3 presents means and standard deviations of the total macrostructure score per grade and WS.

Table 3
Means and Standard Deviations of Total Macrostructure Score

Grade	Arabic N=23	English N=16	Hebrew N=39
7th	4.18 (1.33)	5.00 (1.41)	5.56 (1.01)
9th	4.25 (1.71)	4.00 (1.55)	5.23 (1.36)
11th	4.63 (1.85)	3.00 (only one)	6.06 (1.09)

A two-way ANOVA with WS and Grade as independent variables revealed a significant main effect of WS, $F(2,71)=7.94$, $p<.001$, $\eta^2=.15$. Post-hoc analyses with Tukey corrections showed that texts in Hebrew got higher scores than texts in Arabic ($p=.001$) and then texts in English ($p=.03$), and the difference between Arabic and English was not significant ($p=.84$). To test whether WS affected the use of individual SG elements across grades and whether these effects differed across SG elements, a GLMM analysis was applied. It revealed a significant main effect of SG, $\chi^2 = 130.69$, $p < .001$ of WS, $\chi^2 = 20.29$, $p < .001$, and a significant SG*WS interaction, $\chi^2 = 26.83$, $p = .01$. The SG*Grade interaction was also significant, $\chi^2 = 27.84$, $p < .001$. The effect of Grade, $\chi^2 = 1.85$, $p = .17$, WS*Grade interaction, $\chi^2 = 2.13$, $p = .35$, and SG*WS*Grade interaction, $\chi^2 = 11.82$, $p = .62$,

were not significant. The resulting parameters for each model are included in Table 1A in Appendix. The two significant interactions were explored using the *plot_model* function (see Fig. 1 and 2).

Figure 1

Predicted Probability of Producing SG Elements in the Three WS

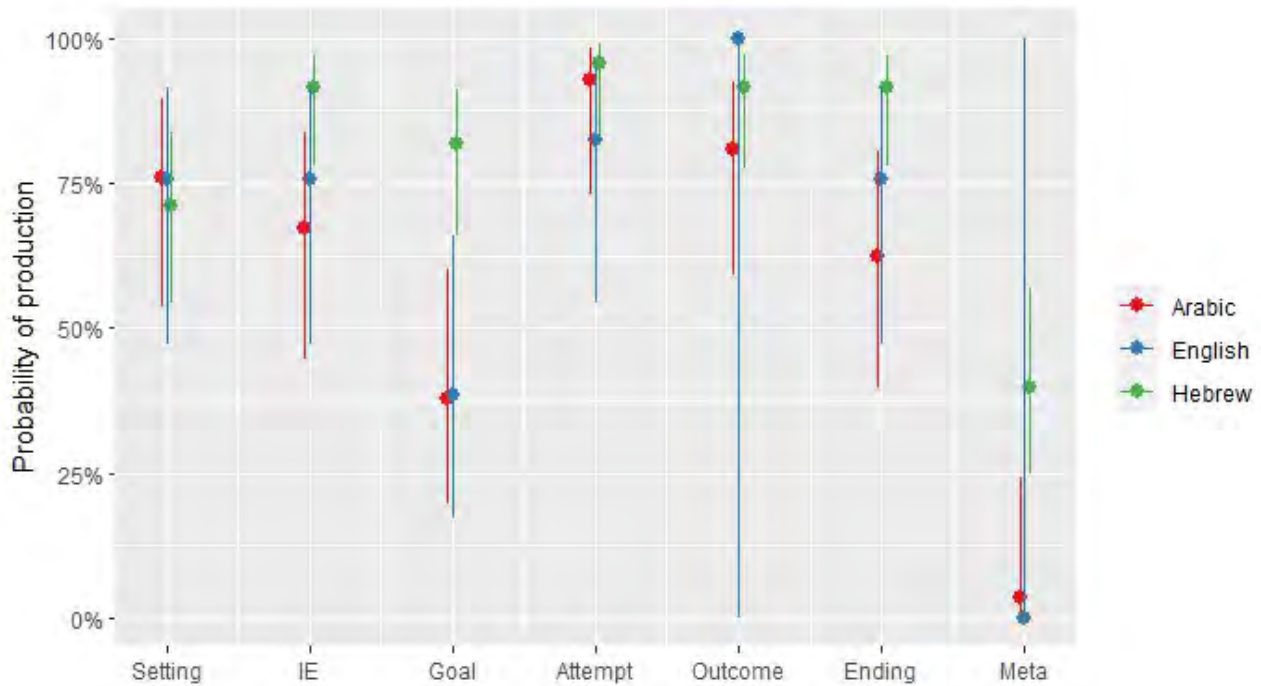
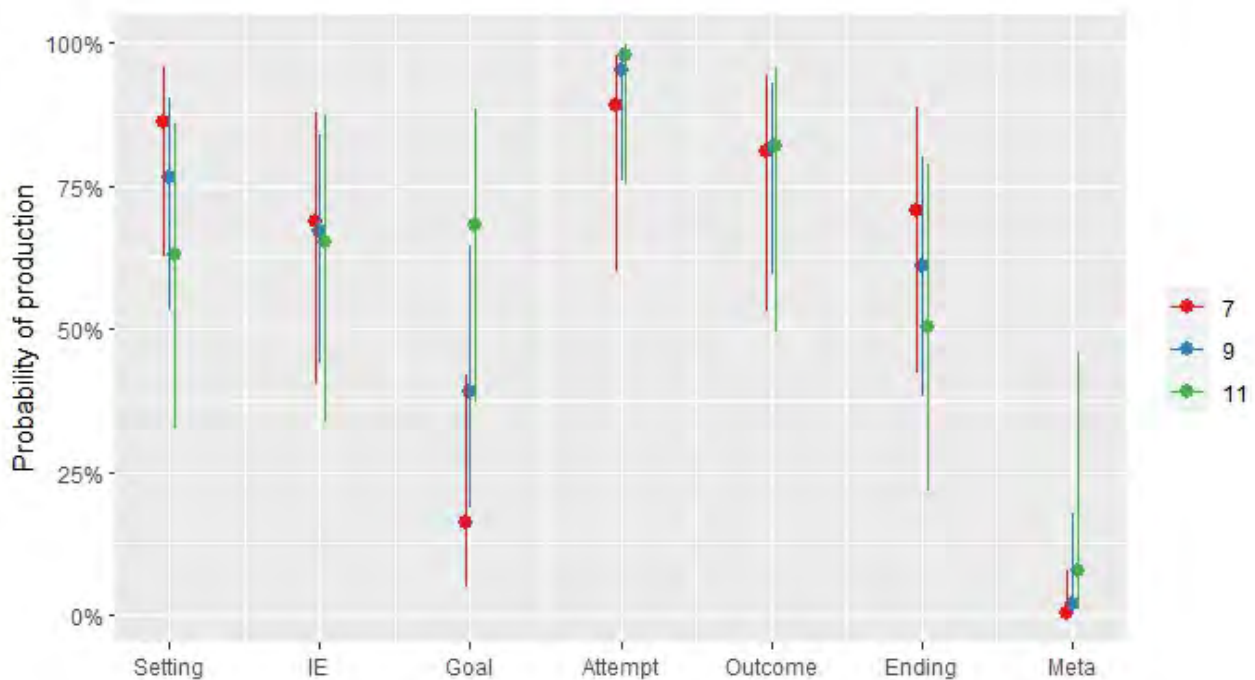


Figure 1 shows that probability to produce the following SG elements was high: Setting, IE, Attempt, and Outcome. In these SG elements, the three WS did not differ much. However, in the more challenging SG elements, such as Goal and Ending, Hebrew showed higher predicted probability. Meta ending was produced by very few participants. Figure 2 shows that, again, Goal was one of the challenging elements and it was mainly produced by older students from the 11th grade.

Figure 2
Predicted Probability of Producing SG Elements by Grade



RQ2: what is the relationship between the macrostructure and the use of verb patterns? Pearson correlation analyses were performed between frequencies of verbal tokens and types and the total macrostructure score. The analyses revealed a significant positive correlation only between macrostructure score and root types in Arabic WS, $r=0.45$, $p=.04$. All other correlations were not significant (see Table 2A).

RQ3. How does the use of verb tense, semantic features of verbs, and verb patterns correlate with the system among different grade levels?

Verb Tense:

Table 3 shows frequencies and percentages of the use of verbs in three tenses – Past, Present, and Passive.

Table 4
Means and Standard Deviations of Verb Frequencies and Percentages in Present, Past, and Passive Forms.

Grade	Arabic N=23						English N=16						Hebrew N=39					
	Past		Present		Passive		Past		Present		Passive		Past		Present		Passive	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7 th	8.00 (2.76)	70	3.33 (2.66)	29	.09 (.31)	1	9.67 (6.56)	72	4.56 (5.46)	25	0.44 (0.73)	3	10.67 (3.54)	7	4.22 (4.06)	26	0	0
9 th	6.00 (3.16)	59	3.75 (1.71)	41	0	0	8.67 (4.50)	65	4.33 (3.67)	34	0.17 (0.41)	1		6		35	1	1
11 th	6.43 (3.05)	56	5.71 (3.55)	44	0	0							9.59 (2.94)	77	3.18 (2.79)	23	0	0

**imperative was used only once and was excluded

Table 4 shows that the majority of verbs were used in the Past tense, but it occurred mainly in the 7th and the 9th grade. To test whether Tenses were used depending on WS and Grade, we ran a GLMM analysis. The analysis revealed a significant effect of Tense, $\chi^2 = 832.81$, $p < .001$ and a significant interaction of Tense*WS, $\chi^2 = 13.30$, $p = .04$. The effect of WS, $\chi^2 = 1.84$, $p = .40$, of Grade, $\chi^2 = 853.93$, $p = .61$, were not significant. The model testing a three-way interaction of Tense*WS*Grade failed, due to a large number of 0 in the Passive tense when split into WS and Grade. The full results of the Likelihood Ratio Tests are included in Table 3A in Appendix.

Figure 3

*Frequency of Verbs Predicted by the Tense*WS Interaction*

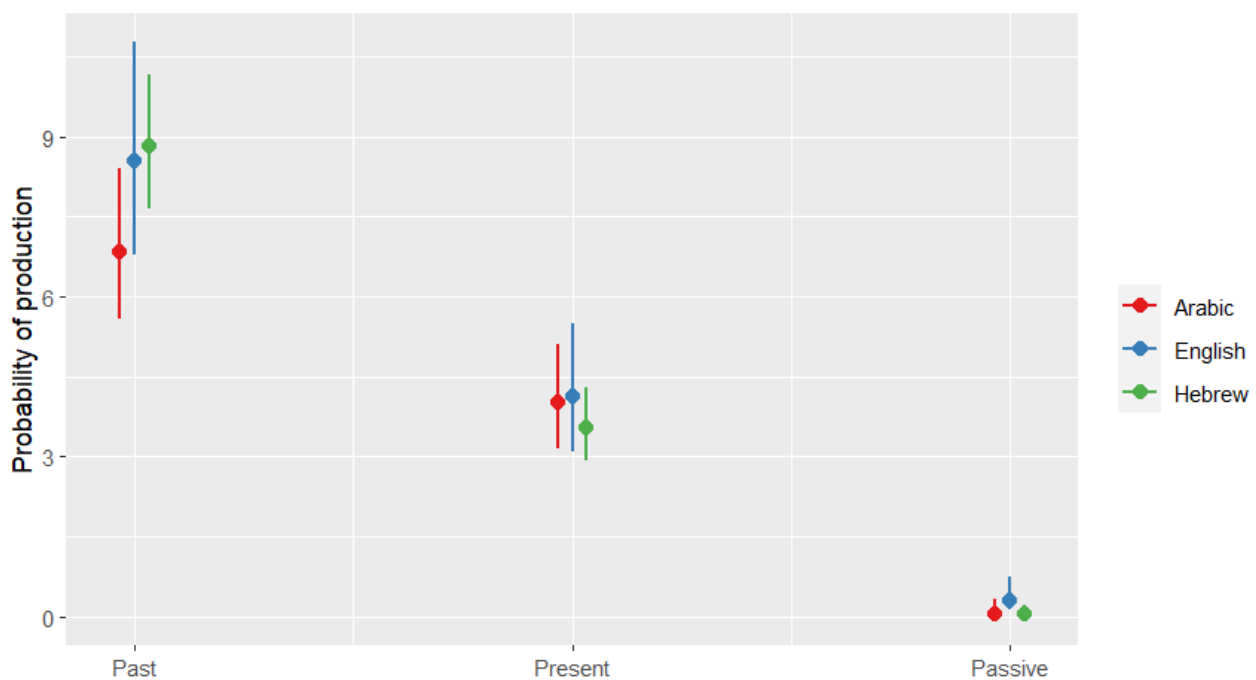


Figure 3 displays the predicted frequencies of verbs based on the interaction factor, and shows that the Past tense was used most frequently in all WSs and the Passive forms were the least frequent. Past was used more frequently in English and Hebrew WS, and Passive was more frequent in English. We tested the interaction using post-hoc analysis with Tukey corrections. The analysis failed to reveal significant results of pairwise comparisons in all WS.

Verb Semantic Features

In this section, verbs were coded according to three classifications: stative vs. eventive verbs; transitive vs. intransitive verbs; and inchoative vs. causative vs. reflexive verbs and reciprocal.

Stative vs. eventive. Table 5 shows raw frequencies and percentages of stative and eventive verbs in each WS per grade.

Table 5

Means and Standard Deviations of Verb Frequencies and Percentages of Stative and Eventive Verbs

Grade	Arabic N=23				English N=16				Hebrew N=39			
	Stative		Eventive		Stative		Eventive		Stative		Eventive	
	N	%	N	%	N	%	N	%	N	%	N	%
7th	5.18 (2.44)	50	5.00 (1.79)	50	5.44 (3.47)	43	7.22 (5.31)	5	5.78 (2.95)	43	7.79 (3.31)	57
9th	4.50 (3.42)	40	5.00 (2.16)	60	5.33 (3.32)	41	7.22 (5.31)	5	5.44 (2.70)	44	7.22 (2.77)	56
11th	5.43 (2.76)	45	6.43 (2.94)	55	2.00	33	4.00	6	4.94 (2.56)	38	7.88 (3.16)	62

To test the effect of WS across grades on the frequency of stative and eventive verbs, a GLMM analysis was performed with WS, Grade and Agentivity as fixed factors and Participant as the random factor. The analysis revealed a significant effect of Agentivity, $\chi^2 = 18.59$, $p < .001$. students used more eventive than stative verbs. None of the interactions which were tested came out significant (see Table 4A in the Appendix). Thus, students in all grades and independent of WS used more eventive than stative verbs.

Transitive vs. Intransitive

Table 6 shows raw frequencies and percentages of transitive and intransitive verbs in each WS per grade.

Table 6

Means and Standard Deviation of Verb Frequencies and Percentages of Transitive and Intransitive Verbs

	Arabic N=23				English N=16				Hebrew N=39			
	Transitive		Intransitive		Transitive		Intransitive		Transitive		Intransitive	
Grade	N	%	N	%	N	%	N	%	N	%	N	%
7th	6.73 (2.24)	68	3.27 (1.95)	32	7.67 (4.64)	61	4.89 (3.37)	39	8.33 (2.12)	67	4.33 (2.35)	33
9th	5.75 (2.63)	59	3.75 (1.50)	41	8.83 (0.98)	73	4.00 (3.52)	27	8.08 (3.30)	68	3.69 (1.44)	32
11th	8.43 (4.43)	70	3.43 (0.98)	30	2.00	33	4.00	67	7.29 (3.44)	56	5.53 (2.43)	44

Similar to agentivity, GLMM analysis revealed a significant effect of transitivity, $\chi^2 = 72.83$, $p < .001$, however, effect of WS, nor interaction of WS and transitivity were not significant (see Table 4A).

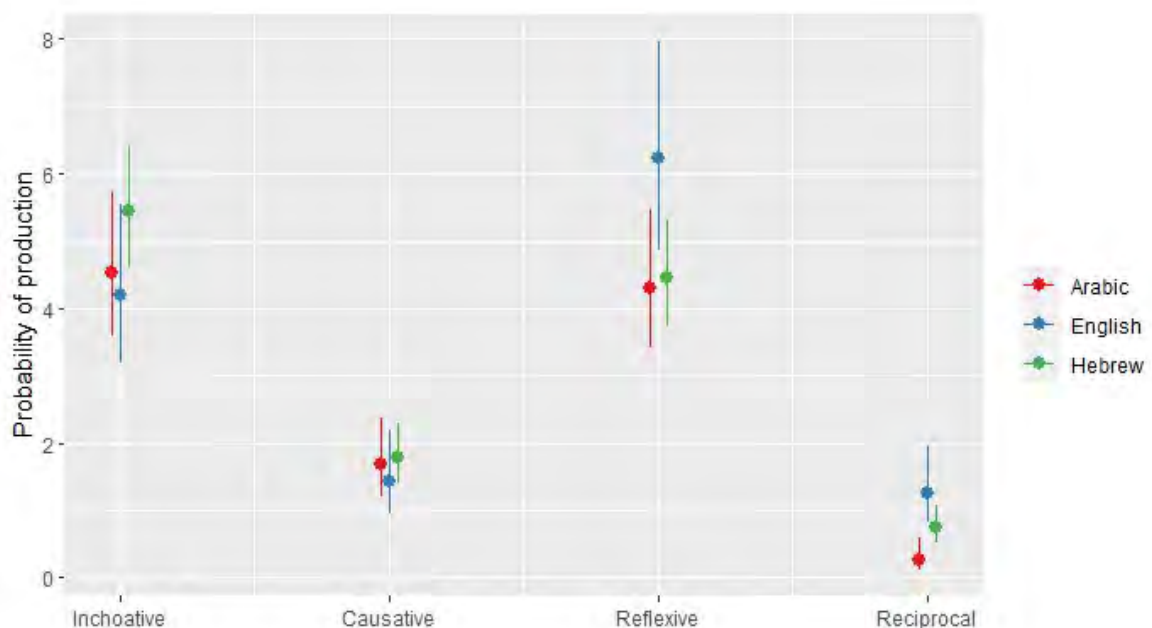
Inchoative, Causativity, Reflexivity, Reciprocity

Table 6A (see Appendix) shows means and standard deviations of verbs by four semantic categories.

To test the effect of WS on semantic properties of verbs, a GLMM analysis revealed a significant effect of semantic category, $\chi^2 = 387.09$, $p < .001$, a significant semantic category*WS interaction, $\chi^2 = 21.58$, $p = .01$, and a significant Semantic category*Grade interaction, $\chi^2 = 23.37$, $p < .001$. The three-way interaction of Semantic category*WS*Grade was not significant, $\chi^2 = 8.00$, $p = .40$ (see Table 5A for the results of the Likelihood Ratio Tests). For the *Mean (and standard deviation) of verb frequencies and percentages of Inchoative, Causative, Reflexive, and Reciprocal*, see Table 6A in the appendix.

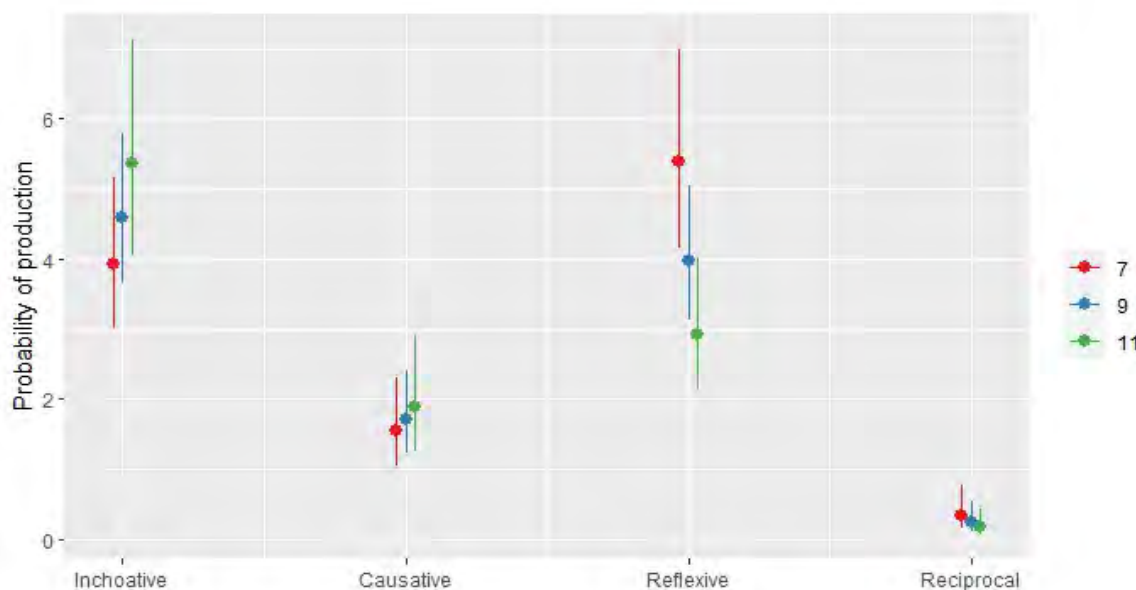
The significant interactions are displayed in Figures 4 and 5. To explore the interactions, post-hoc analyses with Tukey corrections were performed. For the Semantic category*WS interaction, the post-hoc analyses revealed that students used Reciprocal verbs more in English WS than in Arabic ($p=.002$) and in Hebrew more than in Arabic ($p=.05$). In the Reflexive verbs students used more of this category in English WS than in Arabic or Hebrew, but the significance was not reached after the corrections ($p=.08$ and $p=.07$ respectively).

Figure 4
Predicted Probability of Producing Verbal Patterns by Semantic Category



For the Semantic category*Grade interaction, the post-hoc analyses revealed that for the Reflexive category students used more patterns in the 7th grade than in the 9th grade ($p < .001$) and more than in the 11th grade ($p = .002$). The rest of the comparisons did not produce significant results after Tukey adjustments were applied.

Figure 5
Predicted Probability of Producing Verbal Patterns by Semantic Category



Verb Pattern

Figure 6

Percent of Verbal Types by Pattern in All Grades by WS

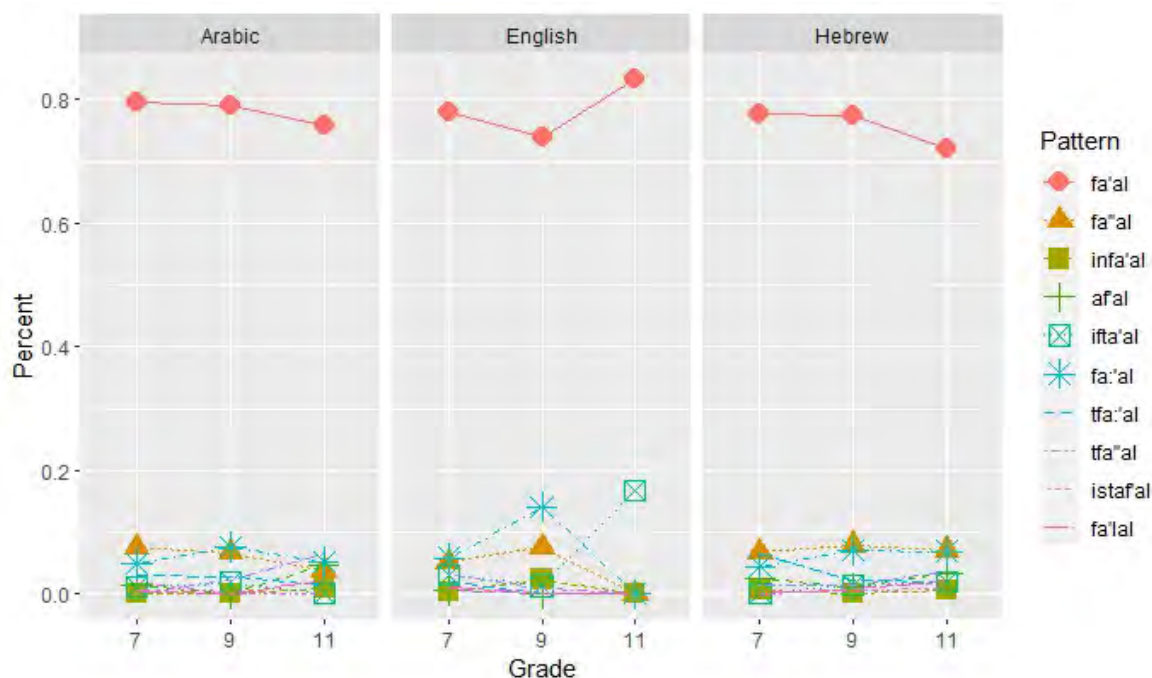


Figure 6 displays the percent of verbs used in each WS by pattern, shows that fa'al was the most frequent pattern in all grades and WSs. To examine whether the frequency was affected by WS, Grade, and their interaction, GLMM analysis was performed with WS, Grade, Pattern, and their interactions as the fixed factors and Participant as the random factor. The analysis revealed a significant effect of Pattern, $\chi^2 = 2459.7$, $p < .001$ (see Table 7A parameters of models testing the use of verbs by pattern). Post-hoc analyses with Tukey corrections revealed that fa'al was used more frequently than any other pattern ($p < .001$). In addition, a significant Patterns*Grade interaction emerged, $\chi^2 = 19.98$, $p = .02$ (See Table 8A: Post-hoc analyses with Tukey corrections Patterns*Grade interaction, in the Appendix).

Discussion

The present study examines digital narratives written by native Arabic-speaking adolescents in grades 7, 9, and 11 who used their preferred writing systems for digital media (Arabic, Arabic transcribed into Roman script, or Hebrew script). This study examines both the macrostructure and microstructure of narratives and analyzes the variations in the story written

between different grade levels as well as the influence of different writing systems on verb patterns.

The answer to the first question about how the writing system affects the macrostructure of the narrative for students at different grade levels, is that the writing systems differed at the macrostructure level. Specifically, the highest number of macro-elements produced was found among Hebrew script users and the lowest among Arabic script users. In other words, Hebrew script users produced more than five elements, while Arabic users produced four of the seven elements. The gender effect was insignificant for all macro-elements. However, girls were more likely to choose the Arabic script, while boys were more likely to choose the Hebrew script. This can be attributed to social factors. Boys go out/work in Jewish cities, they also present themselves as young men who are independent, travel alone with friends and can communicate in Hebrew. However, girls generally read more Arabic novels and use Arabic more often at home and in the city. Likewise, no age difference could be determined. This finding of the advantage of the Hebrew writing system over the Arabic writing system in macrostructure can be attributed to two fundamental factors. First, the nature of diglossia in Arabic is widely believed to have a negative impact on the acquisition of basic language skills (Ibrahim et al., 2007). Students learn to extract knowledge and express themselves in their usual written form, which is different from spoken. The second factor is the specific orthographic complexity of Arabic (Asaad & Eviatar, 2013; Ibrahim et al., 2002; Saiegh-Haddad & Schiff, 2016). Arabic orthography presents a challenge to reading and language skills compared to Hebrew (Al Ghanem & Kearns, 2015). The preference for Hebrew script may reflect not only linguistic familiarity but also a pragmatic adaptation to digital writing norms. Khalil (2022) observes that Arabic speakers often shift to hybrid or colloquial registers online to reduce orthographic and syntactic complexity, a strategy likely unavailable to students constrained by formal Arabic in academic settings.

In addition, we assume that typing in the Arabic writing system places significant cognitive demands on students. Therefore, when typing in Arabic, students are aware of the importance of creating StA instead of SpA and switching between the two forms. We suggest that students must inhibit SpA forms in order to correctly use the StA lexical forms. In addition, students must demonstrate cognitive flexibility and be able to switch between SpA and StA. Therefore, this process can affect the macrostructure in the Arabic writing system, while when using the Hebrew script, they are aware that it is acceptable to only use SpA forms that they have mastered. Accordingly, the co-occurrence of diglossia and specific Arabic orthographic complexity makes it

difficult for Arabic learners to compose narratives in a language such as Arabic and prefer to compose high-quality narratives in less complex languages such as Hebrew. These findings support the present study's interpretation that Arabic script use in digital narratives may impose higher cognitive demands than Hebrew, particularly in spontaneous written expression. (Akbar 2019; Sullivan 2017)

Makaruk (2016) provides valuable insight in this regard, arguing that contemporary digital communication increasingly relies on multimodal strategies that blend verbal and non-verbal elements—such as symbols, visuals, and alternative scripts—to optimize meaning and efficiency. Her concept of “multimodal literacy” reflects the evolving communicative repertoire of digital users, who actively select semiotic resources based on context, cognitive ease, and communicative intent. In this light, our participants' script preferences can be viewed not merely as linguistic choices, but as multimodal strategies shaped by both cognitive constraints and the affordances of digital platforms. These findings align with a growing body of research emphasizing the interplay between orthographic systems, language ideology, and digital fluency in multilingual youth populations.

In answering the second question of our study, we addressed the complicated relationship between macrostructure values and verb usage in different WS. Our investigation revealed a crucial discovery: there is a strong positive correlation between macrostructure values and the diversity of root types used in the Arabic writing system. This finding highlights the fact that in the context of Arabic writing, a wider range of root types is directly associated with improved macrostructural performance. In contrast, such a correlation was not shown to be significant in other writing systems, particularly Hebrew and English, suggesting that root type diversity does not have a comparable influence on the macrostructure of these languages. This differential influence highlights the unique position of the Arabic writing system in terms of macrostructural performance. Our analysis assumes that the cognitive demands of using a non-native writing system, different from that deeply embedded in the learner's cognitive framework from an early age (in this case Arabic), limit the author's capacity for linguistic creativity and diversity can affect verb use. The inherent familiarity and fluency of the Arabic writing system, acquired at an early age, appears to give writers the cognitive latitude to experiment with a richer range of verb roots, thereby enriching the macrostructure of their narratives.

Furthermore, this association between a diverse use of root types and improved macrostructural performance in Arabic is consistent with findings from previous studies, particularly those of Tallas-Mahajna & Abu Elhija

(2022); and strengthens the argument for the special linguistic features of Arabic and their Consequences Effects on written expression. This aspect of our study sheds light on the nuanced interplay between Arabic linguistic features and their influence on narrative macrostructure and provides valuable insights into the complexity of multilingual contexts in digital media analysis.

Regarding the third question, how are tenses, verb patterns, and semantic aspects of verbs related to the system at different grade levels?

Verb Tense

The study focused on the relationship between verb tense use and writing systems at different grade levels. The predominant use of the past tense across writing systems indicates a general preference in narrative writing due to its ability to present events chronologically, a common narrative style in educational settings. This makes it easier for students to construct stories or describe past experiences. However, the present tense is occasionally used, particularly in higher grades, for specific narrative purposes or teaching contexts, such as creating immediacy, establishing a direct connection with the reader, or describing ongoing actions or general truths (Park et al., 2011).

The variation in tense use reflects different narrative strategies and linguistic choices in various educational contexts and writing systems. This finding aligns with Fludernik (2003), who argues that tense use in narratives is complex and often influenced by generic reasons rather than simply reflecting historical events. The narrative past tense typically foregrounds the fictionality of a text, creating a distancing effect and locating events in an unspecified past, distinct from the deictic past of historiographical texts. Conversely, the narrative present tense can convey fictionality more strongly by deviating from expected temporal conventions. It is used deictically to allude to the present moment, sporadically to highlight important points, or consistently throughout long passages to emphasize psychological depth, mark climaxes, or indicate changes in perspective. This manipulation of tense enhances the experiential and psychological depth of the narrative, contributing to its atmospheric and visual qualities and bringing the characters' psyches to the forefront, potentially transforming the narrative into a dream-like sequence.

Verb Semantic Features

All participants used eventive verbs more frequently than stative verbs, regardless of age. The significant finding indicating that students across all grades and regardless of writing system (WS) prefer to use eventive rather than

stative verbs is academically interesting. This trend may be influenced by the nature of narrative and descriptive writing tasks in educational institutions, which often emphasize actions, events, and processes. Eventive verbs are inherently more dynamic and can make narratives more exciting and livelier. Students in this age group are more likely to use active verbs that describe actions than stative verbs that describe states or conditions. This tendency is attributed to students' cognitive developmental stage in which action-oriented verbs are acquired earlier and appear more frequently in the stimuli provided (Ari, 2014; Tallas-Mahajna et al. 2023). The lack of significant interaction effects suggests that this trend is consistent across different linguistic and educational contexts.

Transitive verbs, which require an object to express a complete action, are fundamental to constructing clear and coherent narratives. The consistency of their use across different WSs and grades implies a universal aspect of language development and narrative construction in educational settings. Transitive verbs were used more frequently than intransitive verbs across all WSs and grade levels, with an overall significant effect of transitivity observed. This finding suggests a general narrative preference for verbs denoting actions involving direct objects, perhaps because such verbs can convey more specific information about interactions and relationships within the narrative context. The lack of significant WS or WS*transitivity interactions suggests that this preference is a general feature of narrative construction and is not influenced by the specific linguistic or syntactic features of a particular WS.

The preference for transitive verbs across writing systems observed in our study reflects a universal narrative strategy that emphasizes actions with direct objects for clearer communication. This is consistent with study on the structure of verb arguments, which suggests that both grammaticality judgments and production preparation methods point to a fundamental role of transitive verbs in language use and acquisition. This broader applicability of transitive verbs, independent of linguistic or syntactic features, highlights their importance in narrative construction and supports the idea that transitivity improves narrative clarity and specificity in different linguistic contexts (Bidgood et al., 2021).

The results indicate a significant interaction between semantic features and WS. Students used more reflexive and reciprocal verbs in English WS than in Arabic. We suggest that when writing Arabic in English script, the student may lose or change certain semantic features and nuances of Arabic. Dewaele's studies (2004, 2006, and 2008) examined bilinguals' use of emotional words and expressions in multiple languages. The study focused on participants' preferred language for expressing emotions such as anger and swearing, as well

as the perceived emotional intensity of phrases in different languages. Participants tended to experience greater emotional intensity with highly emotional phrases in their native language. Multilingual people preferred their native language for swearing and expressing emotions such as anger. Furthermore, study on code-switching, such as the work of Bond and Lai (1986), suggests that discussing sensitive topics may be easier in a second language, suggesting a coping mechanism and distancing function in such situations. Because students in this study were asked to write about a conflict they faced, the stories were full of emotions and feelings. Therefore, we tend to think that writing a word or a taboo word in Arabic with a different writing system (script change or writing system change as suggested by Abu Elhija (2019)) weakens the emotional impact of its meaning on the reader.

Verb Pattern

The dominance of the Fa'al pattern across all WSs and classes, with significant differences in usage compared to other patterns, highlights its fundamental role in verb formation and usage in these linguistic contexts. The significant interaction between pattern and grade suggests that students' use of specific verb patterns may evolve across grade levels, although fa'al remains a constant. From a developmental perspective, the diverse use of verb patterns other than "fa'al" at different grade levels may reflect students' growing linguistic repertoires and cognitive development. As students age and increase in cognitive ability, they become better at understanding and applying verb patterns with greater morphological complexity (Tallas-Mahajna et al. 2023; 2025). This pattern of mastering simpler and more commonly used structures is typical of language development. Students gradually begin to experiment with and apply more complex patterns as they become more comfortable with the language and aware of its intricacies. Their growing language and educational environment as well as their cognitive maturation all influence this development.

Conclusion

This study delves into the complexities of narrative production among Arabic-speaking adolescents in a multilingual context, examining the interplay between writing systems, macrostructure, and verb patterns. It reveals that the choice of writing system significantly affects narrative macrostructure, with Hebrew script users demonstrating superior performance. This may be

attributed to the cognitive demands and linguistic challenges presented by the Arabic orthographic system and the diglossic nature of Arabic language use.

The study also highlights a positive correlation between the diversity of root types in Arabic writing and macrostructure performance, suggesting that the Arabic script facilitates a richer linguistic expression in narratives. This relationship underscores the unique challenges and opportunities that the Arabic writing system presents in narrative construction.

One of the most pressing pedagogical needs is to scaffold narrative skills with an explicit focus on macrostructural elements and verb usage. The study found that students across writing systems often omitted complex components of story grammar, such as goals and endings, which are vital for narrative coherence. This suggests that while students can recount events, they may struggle to construct fully developed story arcs. Educators should incorporate strategies like story planning templates, narrative frameworks, and guided writing exercises that explicitly model and reinforce the use of all key macrostructural elements. Moreover, emphasizing the use of diverse and contextually appropriate verb patterns can enhance narrative depth and cohesion. By teaching students how to select and manipulate verbs according to narrative function—such as using eventive verbs to drive action or reflexive forms to express internal conflict—educators can help learners produce richer, more nuanced texts.

Equally important is the need to address the cognitive and orthographic challenges associated with the Arabic script. The study highlights that Arabic's diglossic nature, along with the complexity of its script, imposes considerable demands on students' cognitive resources during writing. In this context, students must not only manage intricate orthographic rules but also shift between spoken and standard varieties of Arabic. This dual processing burden can negatively impact their ability to construct coherent narratives. To mitigate these challenges, educators should provide explicit instruction on the functional use of both Spoken Arabic (SpA) and Standard Arabic (StA), as well as opportunities to practice transitions between them. Encouraging students to first draft narratives in SpA and then translate them into StA could foster both fluency and metalinguistic awareness. Additionally, introducing tools such as spelling checkers, visual verb conjugation aids, and phoneme-to-grapheme mapping charts may reduce the orthographic load and support students' written expression.

A related instructional priority is to cultivate morphological awareness and root diversity in verb usage. The study found that greater diversity of verb roots correlated with stronger macrostructural narrative performance—especially when students wrote in Arabic script. This finding speaks to the

unique value of Arabic's root-based morphology as a tool for semantic expansion and narrative enrichment. Educators should prioritize verb morphology instruction, not simply as a memorization task, but as a creative resource for meaning-making. Activities that challenge students to generate multiple verb forms from a single root and incorporate them into a story, or collaborative games that involve matching roots to narrative contexts, can stimulate both morphological agility and narrative sophistication.

Finally, the emotional and psychological dimensions of language choice must be considered, particularly in sensitive narrative contexts. The study found that students were more likely to use reflexive and reciprocal verbs in Latinized Arabic than in Arabic script, possibly due to the reduced emotional salience of non-native scripts. This suggests that script choice can serve as a distancing mechanism, enabling students to discuss emotionally charged or taboo topics more comfortably. Educators should recognize the affective role of script selection and create classroom environments that support emotional storytelling across scripts. This might include allowing students to choose their preferred script for personal narratives, especially in early drafts, and using such moments as opportunities to discuss how language and emotion interact.

In conclusion, the findings underscore the need for nuanced, flexible, and culturally responsive approaches to teaching narrative writing in multilingual, diglossic settings. By scaffolding narrative structure, addressing orthographic complexity, embracing digital literacy practices, promoting verb diversity, and acknowledging the emotional dimensions of script use, educators can empower students to express themselves more fully and effectively across a range of linguistic domains.

Disclosure Statement

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Appendix

Table 1A

Parameters of models testing macrostructure performance by SG elements

	AIC	BIC	logLik	deviance	Chisq	Df	Pr(>Chisq)
SG	541.54	575.86	-262.77	525.54	130.69	6	<.001
WS	525.26	568.15	-252.63	505.26	20.285	2	<.001
SG*WS	522.43	616.8	-239.21	478.43	26.831	12	.008
Grade	522.58	621.24	-238.29	476.58	1.8497	1	.174
SG*Grade	508.59	632.99	-225.29	450.59	27.839	7	<.001
WS*Grade	510.46	643.44	-224.23	448.46	2.1286	2	.345
SG*WS*Grade	524.79	709.25	-219.4	438.79	11.816	14	.62

Table 2A

Pearson Correlation Between Frequencies of Verbal Tokens and Types and the Total Macrostructure Score

English					
	<i>Macro</i>	<i>Spoken</i>	<i>Standard</i>	<i>RootsTokens</i>	<i>RootsTypes</i>
<i>Macro</i>		.40	.22	.39	.42
<i>Spoken</i>			.55 [*]	.97 ^{***}	.91 ^{***}
<i>Standard</i>				.72 ^{**}	.79 ^{***}
<i>RootsTokens</i>					.97 ^{***}
<i>RootsTypes</i>					
Arabic					
	<i>Macro</i>	<i>Spoken</i>	<i>Standard</i>	<i>RootsTokens</i>	<i>RootsTypes</i>
<i>Macro</i>		.19	.11	.23	.41
<i>Spoken</i>			-.08	.77 ^{***}	.68 ^{***}
<i>Standard</i>				.57 ^{**}	.62 ^{**}
<i>RootsTokens</i>					.96 ^{***}
<i>RootsTypes</i>					
Hebrew					
	<i>Macro</i>	<i>Spoken</i>	<i>Standard</i>	<i>Roots Tokens</i>	<i>Roots Types</i>
<i>Macro</i>		.18	-.18	.04	.19
<i>Spoken Arabic</i>			-.07	.79 ^{***}	.83 ^{***}
<i>Standard Arabic</i>				.56 ^{***}	.44 ^{**}
<i>RootsTokens</i>					.96 ^{***}
<i>RootsTypes</i>					

Table 3A

Parameters of Models Testing the Use of Verbs by Tenses

	AIC	BIC	logLik	deviance	Chisq	Df	Pr(>Chisq)
Tense	875.48	889.19	-433.74	867.48	832.81	2.00	<.001
WS	877.63	898.21	-432.82	865.63	1.84	2.00	.40
Tense*WS	874.18	908.47	-427.09	854.18	13.30	6.00	.04
Grade	875.93	913.65	-426.96	853.93	.25	1.00	.61
Tense*Grade	877.61	922.19	-425.80	851.61	2.57	3.00	.46

Table 4A

Parameters of Models Testing the Use of Verbs by Transitivity

	AIC	BIC	logLik	deviance	Chisq	Df	P
Transitivity	725.22	734.33	-359.61	719.22	72.83	1.00	<.001
WS	726.46	741.65	-358.23	716.46	2.75	2.00	.25
Transitivity*WS	728.78	750.04	-357.39	714.78	4.44	4.00	.35
Grade	726.93	739.08	-359.47	718.93	.29	1.00	.59
Transitivity*Grade	727.65	742.83	-358.82	717.65	1.57	2.00	.45
Transitivity*WS*Grade	735.52	775.00	-354.76	709.52	9.70	10.00	.46

Table 5A

Parameters of Models Testing the Use of Verbs by Semantic Features

	AIC	BIC	logLik	deviance	Chisq	Df	P
Semantics	1165.2	1183.90	-577.62	1155.20	387.09	3.00	<.001
WS	1166	1192.10	-575.98	1152.00	3.28	2.00	.19
Semantics*WS	1159.7	1208.20	-566.83	1133.70	21.58	8.00	.01
Grade	1161.6	1213.80	-566.81	1133.60	.04	1.00	.83
Semantics*Grade	1144.3	1207.70	-555.15	1110.30	23.37	4.00	<.001
Semantics*WS*Grade	1152.8	1246.10	-551.42	1102.80	7.45	8.00	.49

Table 6A
Means and Standard Deviation of Verb Frequencies and Percentages of Inchoative, Causative, Reflexive, and Reciprocal

		Arabic N=23						English N=16					
Grade	N	Inchoative	%	N	Causativity	%	N	Reflexivity	%	N	Reciprocity	%	N
7	345 (2.58)	32	1.45 (0.82)	15	4.82 (2.09)	50	0.27 (0.47)	3	3.33 (2.54)	28	1.44 (0.88)	11	7.11 (7.17)
9	400 (1.63)	44	2.00 (0.82)	25	3.25 (2.36)	28	0.25 (0.50)	3	6.17 (2.40)	47	1.67 (0.52)	14	4.33 (1.97)
11	600 (2.31)	54	2.14 (1.21)	18	3.43 (2.70)	24	0.29 (0.49)	4	3	50	1	17	2
												33	0

Table 7A
Parameters of Models Testing the Use of Verbs by Pattern

	AIC	BIC	logLik	deviance	Chisq	Df	p
Patterns	1372.3	1423.4	-675.17	1350.3	2459.7	9	<.001
WS	1374.9	1435.3	-674.46	1348.9	1.4055	2	.49
Patterns*WS	1397.4	1541.4	-667.68	1335.4	14.965	20	.77
Grade	1373.9	1429.7	-674.97	1349.9	.3978	1	.52
Patterns*Grade	1372.0	1469.5	-664.97	1330.0	19.983	9	.02
Patterns*WS*Grade	1437.1	1859.9	-627.54	1255.1	62.12	60	.40

Table 8A

*Post-hoc Analyses with Tukey Corrections Patterns*Grade Interaction*

Grade 7

contrast	estimate	SE	df	z.ratio	p.value
fa''al - af'al	1.608830	0.444	Inf	3.620	0.0110
fa'al - af'al	3.904046	0.410	Inf	9.529	<.0001
fa'al - fa''al	2.295216	0.190	Inf	12.058	<.0001
fa'la' - af'al	-0.692653	0.702	Inf	-0.986	0.9931
fa'la' - fa''al	-2.301483	0.601	Inf	-3.827	0.0051
fa'la' - fa'al	-4.596698	0.576	Inf	-7.976	<.0001
fa:'al - af'al	1.251666	0.460	Inf	2.721	0.1650
fa:'al - fa''al	-0.357164	0.283	Inf	-1.263	0.9617
fa:'al - fa'al	-2.652380	0.224	Inf	-11.819	<.0001
fa:'al - fa'la'	1.944319	0.613	Inf	3.171	0.0489
ifta'al - af'al	-0.185358	0.602	Inf	-0.308	1.0000
ifta'al - fa''al	-1.794188	0.481	Inf	-3.734	0.0072
ifta'al - fa'al	-4.089404	0.449	Inf	-9.114	<.0001
ifta'al - fa'la'	0.507294	0.726	Inf	0.699	0.9995
ifta'al - fa:'al	-1.437024	0.495	Inf	-2.903	0.1046
infa'al - af'al	-1.101709	0.812	Inf	-1.357	0.9401
infa'al - fa''al	-2.710539	0.727	Inf	-3.731	0.0073
infa'al - fa'al	-5.005755	0.706	Inf	-7.091	<.0001
infa'al - fa'la'	-0.409056	0.908	Inf	-0.451	1.0000
infa'al - fa:'al	-2.353375	0.736	Inf	-3.197	0.0452
infa'al - ifta'al	-0.916351	0.832	Inf	-1.101	0.9848
istaf'al - af'al	-0.407679	0.642	Inf	-0.635	0.9998
istaf'al - fa''al	-2.016509	0.529	Inf	-3.810	0.0054
istaf'al - fa'al	-4.311725	0.501	Inf	-8.613	<.0001
istaf'al - fa'la'	0.284974	0.759	Inf	0.375	1.0000
istaf'al - fa:'al	-1.659345	0.543	Inf	-3.059	0.0681
istaf'al - ifta'al	-0.222321	0.667	Inf	-0.333	1.0000
istaf'al - infa'al	0.694030	0.862	Inf	0.806	0.9985
tfa''al - af'al	-0.003370	0.574	Inf	-0.006	1.0000
tfa''al - fa''al	-1.612200	0.445	Inf	-3.624	0.0109
tfa''al - fa'al	-3.907416	0.410	Inf	-9.523	<.0001
tfa''al - fa'la'	0.689283	0.703	Inf	0.981	0.9934
tfa''al - fa:'al	-1.255036	0.461	Inf	-2.725	0.1634
tfa''al - ifta'al	0.181988	0.603	Inf	0.302	1.0000
tfa''al - infa'al	1.098339	0.812	Inf	1.352	0.9413
tfa''al - istaf'al	0.404309	0.642	Inf	0.630	0.9998
tfa:'al - af'al	1.040132	0.472	Inf	2.204	0.4538
tfa:'al - fa''al	-0.568698	0.302	Inf	-1.885	0.6796
tfa:'al - fa'al	-2.863914	0.248	Inf	-11.554	<.0001
tfa:'al - fa'la'	1.732784	0.622	Inf	2.786	0.1412
tfa:'al - fa:'al	-0.211534	0.324	Inf	-0.652	0.9997
tfa:'al - ifta'al	1.225490	0.506	Inf	2.421	0.3127
tfa:'al - infa'al	2.141841	0.744	Inf	2.880	0.1111
tfa:'al - istaf'al	1.447810	0.553	Inf	2.620	0.2081
tfa:'al - tfa''al	1.043502	0.472	Inf	2.209	0.4504

Grade 9

Grade = 9:

contrast	estimate	SE	df	z.ratio	p.value
fa''al - af'al	2.495003	0.735	Inf	3.395	0.0240
fa'al - af'al	4.639911	0.710	Inf	6.536	<.0001
fa'al - fa''al	2.144908	0.214	Inf	10.004	<.0001
fa'la' - af'al	-0.683949	1.220	Inf	-0.561	0.9999
fa'la' - fa''al	-3.178952	1.015	Inf	-3.132	0.0549
fa'la' - fa'al	-5.323860	0.997	Inf	-5.341	<.0001
fa:'al - af'al	2.535642	0.734	Inf	3.455	0.0196
fa:'al - fa''al	0.040639	0.284	Inf	0.143	1.0000
fa:'al - fa'al	-2.104269	0.211	Inf	-9.994	<.0001
fa:'al - fa'la'	3.219591	1.014	Inf	3.175	0.0483
ifta'al - af'al	0.704825	0.864	Inf	0.816	0.9984
ifta'al - fa''al	-1.790178	0.536	Inf	-3.338	0.0290
ifta'al - fa'al	-3.935086	0.501	Inf	-7.849	<.0001
ifta'al - fa'la'	1.388774	1.111	Inf	1.250	0.9642
ifta'al - fa:'al	-1.830817	0.535	Inf	-3.423	0.0219
infa'al - af'al	0.012141	0.996	Inf	0.012	1.0000
infa'al - fa''al	-2.482863	0.731	Inf	-3.398	0.0238
infa'al - fa'al	-4.627771	0.705	Inf	-6.560	<.0001
infa'al - fa'la'	0.696089	1.217	Inf	0.572	0.9999
infa'al - fa:'al	-2.523501	0.730	Inf	-3.459	0.0194
infa'al - ifta'al	-0.692684	0.860	Inf	-0.806	0.9985
istaf'al - af'al	-0.678604	1.218	Inf	-0.557	0.9999
istaf'al - fa''al	-3.173607	1.012	Inf	-3.135	0.0544
istaf'al - fa'al	-5.318515	0.994	Inf	-5.350	<.0001
istaf'al - fa'la'	0.005345	1.404	Inf	0.004	1.0000
istaf'al - fa:'al	-3.214246	1.011	Inf	-3.178	0.0479
istaf'al - ifta'al	-1.383429	1.109	Inf	-1.247	0.9646
istaf'al - infa'al	-0.690744	1.215	Inf	-0.569	0.9999
tfa''al - af'al	0.703458	0.864	Inf	0.815	0.9984
tfa''al - fa''al	-1.791546	0.537	Inf	-3.338	0.0289
tfa''al - fa'al	-3.936453	0.502	Inf	-7.847	<.0001
tfa''al - fa'la'	1.387406	1.112	Inf	1.248	0.9645
tfa''al - fa:'al	-1.832184	0.535	Inf	-3.424	0.0218
tfa''al - ifta'al	-0.001367	0.702	Inf	-0.002	1.0000
tfa''al - infa'al	0.691317	0.860	Inf	0.804	0.9985
tfa''al - istaf'al	1.382061	1.109	Inf	1.246	0.9649
tfa:'al - af'al	0.415939	0.910	Inf	0.457	1.0000
tfa:'al - fa''al	-2.079064	0.608	Inf	-3.417	0.0223
tfa:'al - fa'al	-4.223972	0.578	Inf	-7.310	<.0001
tfa:'al - fa'la'	1.099888	1.148	Inf	0.958	0.9944
tfa:'al - fa:'al	-2.119703	0.607	Inf	-3.491	0.0173
tfa:'al - ifta'al	-0.288886	0.759	Inf	-0.381	1.0000
tfa:'al - infa'al	0.403799	0.907	Inf	0.445	1.0000
tfa:'al - istaf'al	1.094543	1.146	Inf	0.955	0.9945
tfa:'al - tfa''al	-0.287518	0.759	Inf	-0.379	1.0000

Graden

Grade = 11:

contrast	estimate	SE	df	z.ratio	p.value
fa'al - af'al	0.698050	0.368	Inf	1.899	0.6700
fa'al - af'al	3.009843	0.308	Inf	9.781	<.0001
fa'al - fa'al	2.311793	0.222	Inf	10.406	<.0001
fa'al - af'al	-0.600962	0.505	Inf	-1.190	0.9740
fa'al - fa'al	-1.299012	0.458	Inf	-2.838	0.1238
fa'al - fa'al	-3.610805	0.411	Inf	-8.782	<.0001
fa'al - af'al	0.602774	0.374	Inf	1.613	0.8422
fa'al - fa'al	-0.095276	0.307	Inf	-0.310	1.0000
fa'al - fa'al	-2.407069	0.232	Inf	-10.373	<.0001
fa'al - fa'al	1.203736	0.463	Inf	2.602	0.2164
ifta'al - af'al	-1.005487	0.580	Inf	-1.732	0.7772
ifta'al - fa'al	-1.703537	0.540	Inf	-3.155	0.0514
ifta'al - fa'al	-4.015330	0.501	Inf	-8.012	<.0001
ifta'al - fa'al	-0.404525	0.641	Inf	-0.631	0.9998
ifta'al - fa'al	-1.608261	0.544	Inf	-2.956	0.0908
infa'al - af'al	-1.699118	0.764	Inf	-2.224	0.4402
infa'al - fa'al	-2.397168	0.734	Inf	-3.267	0.0364
infa'al - fa'al	-4.708960	0.706	Inf	-6.672	<.0001
infa'al - fa'al	-1.098155	0.811	Inf	-1.354	0.9409
infa'al - fa'al	-2.301892	0.737	Inf	-3.124	0.0563
infa'al - ifta'al	-0.693631	0.860	Inf	-0.806	0.9985
istaf'al - af'al	-1.292807	0.647	Inf	-1.997	0.6011
istaf'al - fa'al	-1.990857	0.611	Inf	-3.257	0.0375
istaf'al - fa'al	-4.302650	0.577	Inf	-7.454	<.0001
istaf'al - fa'al	-0.691845	0.702	Inf	-0.985	0.9931
istaf'al - fa'al	-1.895581	0.615	Inf	-3.082	0.0636
istaf'al - ifta'al	-0.287320	0.759	Inf	-0.379	1.0000
istaf'al - infa'al	0.406311	0.907	Inf	0.448	1.0000
tfa'al - af'al	0.246556	0.401	Inf	0.615	0.9998
tfa'al - fa'al	-0.451494	0.340	Inf	-1.329	0.9472
tfa'al - fa'al	-2.763287	0.274	Inf	-10.091	<.0001
tfa'al - fa'al	0.847518	0.485	Inf	1.748	0.7679
tfa'al - fa'al	-0.356219	0.346	Inf	-1.029	0.9906
tfa'al - ifta'al	1.252042	0.563	Inf	2.223	0.4407
tfa'al - infa'al	1.945673	0.751	Inf	2.590	0.2219
tfa'al - istaf'al	1.539363	0.632	Inf	2.436	0.3042
tfa'al - af'al	-1.006144	0.581	Inf	-1.733	0.7768
tfa'al - fa'al	-1.704194	0.540	Inf	-3.155	0.0513
tfa'al - fa'al	-4.015987	0.501	Inf	-8.011	<.0001
tfa'al - fa'al	-0.405182	0.641	Inf	-0.632	0.9998
tfa'al - fa'al	-1.608918	0.544	Inf	-2.956	0.0907
tfa'al - ifta'al	-0.000657	0.703	Inf	-0.001	1.0000
tfa'al - infa'al	0.692974	0.860	Inf	0.805	0.9985
tfa'al - istaf'al	0.286663	0.759	Inf	0.378	1.0000
tfa'al - tfa'al	-1.252700	0.563	Inf	-2.224	0.4403

A9. Examples of narratives of transcriptive choice in Arabic student (AAF) 9th grade:

“اسمعي ...

اياها اخرفك وحابه شغله معي صارت اليوم

عند رحت اظلمها ومحبيتش البنات متهمه حالي حسيت ليش عارفه مش بس بمستواي مش حكي عني كتبت الجديده الطالبه اليوم لاني مني بدك وشو وكيف ليش اقولها عندها ارواح محبيتش كتبت اللي البنات هاي عنجد انو وشفت الكاميرا وفتحتي المدير حالي اورط بديش

”معها وحكت بالاشي اهتمت وهي صار شو وخرفتھا المستشاره عند رحت

“Listen...

Today something happened to me, and I'd like to tell you about it.

The new girl wrote things about me that were disrespectful, but I didn't know why. I felt like I was accusing her and didn't want to judge her unfairly. I went to the principal and he opened the camera footage. I saw that it really was that girl who wrote it. I didn't want to confront her and ask 'why' and 'what do you want from me,' because I didn't want to get myself into trouble.

I went to the counselor and told her what happened, and she took care of it and spoke to the girl.”

A10. Examples of narratives of transcriptive choice in English student (SR) 7th grade:

“Mra bket wana sf 5ames ka3de 7d naden ma 4erha hsa ajt eman bt3rfeha wsart tfsed bena hsa ana bketesh a3ref eno bdo yeje yom nftrek be 3n b3d hsa ba5r yom mn alfls altane ro7et bde atasafihen fkrt ene 3njd 4l6ane b7khen wlazm atasafihen blsodfe laket eman saltha wen mona wnaden? Kaltle b3rfsh koltlha 6yb dro7 adawer 3lehen l7ale ro7et wmalkethenesh komet ro7et 3nd bnat alsf ntfrij 3lsf whome yrkoso wydbko weshe ela mona wnaden dash3at 3ly bkolenle absr sho wb3y6en wheka bkolhen ana sho swet wmalken?! Kamt naden sarat tkole eno ana kolet leman kbl shway ano mona wnaden sbb mot o5then wna enjnet y3ne sho jab ljab blfls elthane 7awlt eman eno trj3 also7be zy ma bkt lene anabtha kther bs ana mkbltesh bsohole ene asol7hen leno hene mtakadnesh eda hada al7ke s7 wkman oslobhen msh oslob s7?! Almohem...,tsol7na w3rfn 4l6hen aked y3ne b3d ma etasafnle”



“Once, I cried when I was in fifth grade, sitting next to Nadeen.

Suddenly, Eman came and started turning us against each other. I didn't cry then, but I knew the day would come when we'd drift apart.

On the last day of the second semester, I went to apologize to her because I thought I was really at fault. I wanted to talk to her. By chance, I found Eman and asked her, 'Where are Mona and Nadeen?' She said she didn't know. I told her, 'Okay, I'll go look for them myself.' I went and didn't find them. Then I went to the other girls in class, and we watched a video of Mona and Nadeen dancing and clapping, and they were making fun of me, saying who knows what. I asked, 'What did I even do?'

Then Nadeen started saying that I told Eman earlier that Mona and Nadeen were the reason their sister died. I was shocked. What does that have to do with anything?!

In the second semester, Eman tried to fix the friendship like she wrote, but I couldn't easily forgive them because I wasn't even sure if what they said was true—and their way of handling it wasn't right.

Anyway... we reconciled in the end, and I realized I had been wrong, especially after she apologized to me."

A11. Examples of narratives of transcriptive choice in Hebrew student (AN) 9th grade:

"לעבנא ולעבנא בעדהא לטאבה וטלענא נלעב לסתאד אעטאנא ראיח עלא דרס אלריאדא מע ספי אגא מרא בקית לחקם אינו לחק עסאחבי מיש על ארד וקאל לטאבה מן סאחבי עשאן אגיב גוול למא גית אוכדהא מנו וקע גיית אוכד ומסצו אידיי ומערפתש פיי אגו סחאבי מסצוני ובדרב וילא הוי לאחקני מא שופית עליי ואכדת לטאבה וצמלת ען חאלי וקאם דרבני בזיאדי ומזעלי אואעייה ובקאש פי סתאד ולא מעלם קומת רחת ענד לבואביי וקעדת אדאפע סירי לאהלי שו אואעיק רוחתת עירת אועיי ומגבתש שו סאר קליי רוח עדאר עיר אנאדי קאם אגא לסתאד וכרפתו ומש מאכד ולא אי עקאב ומציףף סאר מעיי וגייית על מדרסיי לקייית לולד בדחץ

"Once I was going to PE class with my friend.

The teacher gave us the ball, and we went out to play. After a while, I went to get the ball from my friend to score a goal. When I tried to take it, he fell on the ground and told the referee it was my fault, even though it wasn't.

I got the ball and acted as if I didn't hear him, but he ran after me and hit me. My friends grabbed me and held my hands. I didn't know how to defend myself. He kept hitting me harder, and I got upset and lost consciousness. I didn't tell the teacher. I went to the gate crying and called my father.

The teacher came and asked what happened. I told him everything. He told me to go home and rest. I didn't tell my parents exactly what happened.

The next day at school, I saw the boy laughing and joking around like nothing happened—and no one took any disciplinary action."

Academic English in Exile: Mapping the Research Publication Challenges of Displaced Ukrainian Scholars in the UK

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Abstract. For displaced Ukrainian scholars fleeing war and continuing their research abroad, English has rapidly shifted from a foreign language to the primary medium of institutional integration, academic visibility, and professional continuity. In this context, effective research dissemination increasingly depends on advanced competence in English for Research Publication Purposes (ERPP). This study investigates how displaced Ukrainian researchers, hosted in the United Kingdom through the British Academy’s Researchers at Risk programme, navigate academic writing in English, focusing on how their language proficiency, prior international exposure, and professional experience shape their ability to meet the demands of international research communication. A survey conducted in October – November 2024 with 125 RaR fellows examined participants’ self-reported CEFR-aligned proficiency levels, international mobility experience, certification profiles, and engagement with core academic writing tasks in English. Although many reported high general proficiency and held international language certificates, this did not always translate to strong ERPP skills. Even those with a strong track record of academic writing faced challenges with disciplinary genres, rhetorical structure, and literature synthesis. The findings highlight a clear distinction between general English competence and the specialised skills needed for research publishing. While participants regularly engaged in emails, abstracts, and conference presentations, many struggled with article structuring, source synthesis, and referencing. Institutional support, where available, was often limited or insufficiently targeted. These insights underscore the need for tailored, discipline-sensitive ERPP support to enable meaningful academic participation in exile.

Keywords: *Academic writing, English for Research Publication Purposes (ERPP), English language proficiency (ELP), displaced scholars, Ukrainian academics.*

Торубара Оксана. Академічна англійська у вимушеній еміграції: як переміщені українські вчені у Великій Британії долають труднощі публікації наукових досліджень.

Анотація. Для українських науковців, які були змушені покинути країну через війну та продовжують дослідницьку діяльність за кордоном, англійська мова стрімко

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перетворилася з іноземної на головний засіб академічної комунікації, професійної взаємодії та інституційної інтеграції у приймаючій країні. За таких умов поширення та просування результатів наукових досліджень дедалі більше залежить від володіння навичками академічного письма англійською мовою, зокрема для наукових публікацій (English for Research Publication Purposes, ERPP).

У центрі дослідження - досвід переміщених українських вчених, які перебувають у Великій Британії в межах програми Researchers at Risk Британської академії, та намагаються адаптуватися до академічного письма англійською мовою в умовах вимушеної мобільності. Опитування, проведене у жовтні - листопаді 2024 року серед 125 учасників, охоплювало оцінку рівня володіння англійською за шкалою CEFR, досвід роботи та проживання в англomовному середовищі, наявність міжнародних сертифікатів і ступінь залученості до письмової академічної діяльності. Попри високий загальний рівень володіння англійською та наявність сертифікатів, багатьом респондентам не вистачає спеціалізованої мовної компетентності, необхідної для підготовки публікацій у міжнародних наукових виданнях.

Найбільш типовими видами письмової діяльності для учасників виявилися завдання, пов'язані з повсякденною академічною комунікацією - зокрема, листування, підготовка анотацій, презентацій та виступів. Ці навички є важливими, однак багато хто все ще відчуває брак впевненості у написанні академічних текстів вищого рівня, зокрема у формулюванні структури статті, роботі з джерелами та дотриманні вимог цитування. Наявна інституційна підтримка здебільшого неадаптована до ERPP-потреб. Отримані результати засвідчують необхідність розробки цільових форматів підтримки, адаптованих до реального контексту роботи переміщених дослідників, що сприятиме їхній успішній академічній інтеграції та розвитку компетентності у сфері ERPP.

Ключові слова: академічне письмо, англійська для наукових публікацій (ERPP), англomовна компетентність (ELP), переміщені науковці, українські вчені.

Introduction

What happens when academic expertise is uprooted overnight and transplanted into an unfamiliar linguistic and institutional landscape? This question has become deeply personal for many Ukrainian scholars, including the author of this paper, who became one of 177 researchers hosted by UK institutions under the British Academy's Researchers at Risk programme following the full-scale Russian invasion of Ukraine in 2022 (British Academy, n.d.). While this programme offers vital refuge and continuity for displaced academics, it also exposes the psycholinguistic and communicative challenges of sustaining scholarly identity, research productivity, and voice in a foreign language, whether it is considered second or additional, under conditions of trauma and uncertainty (Gimenez & Morgan, 2017; Khuder & Petrić, 2020, 2022a; 2022; 2023; Lillis & Curry, 2006; 2010; 2018; Tusting et al., 2019).

In this context, English could more accurately be described as an Additional Language (EAL) rather than a Second Language (ESL) (Kubota & Lin, 2009), as it

acknowledges both scholars' multilingual repertoires and their evolving academic identities. Adopting an EAL perspective allows for a more equitable framing of displaced researchers: not as deficient learners but as experienced professionals negotiating complex linguistic and institutional demands (Lillis & Curry, 2010; Canagarajah, 2002; Khuder & Petrić, 2022a).

This paper emerges from both professional commitment and a personal journey. As a Ukrainian TESOL specialist and one of the displaced scholars, I have been navigating unfamiliar academic territory - not only geographically and institutionally, but also linguistically and emotionally. Being an English teacher, yet in exile I found myself unexpectedly struggling to sustain my own academic voice in that very language. If someone trained in and deeply immersed in English like me could feel such linguistic disorientation, one can only imagine the amplified challenges faced by scholars in other fields, for whom English has always been peripheral. Alongside over a hundred fellow scholars from Ukraine, I have had to re-establish my academic voice in a language that, while being taught as a foreign language in Ukraine, now functions for us as the primary medium for research, teaching, and publication in exile (Elnathan, 2021; Gimenez & Morgan, 2017; Khuder & Petrić, 2023). The urgency of this transition, compounded by trauma, uncertainty, and cultural dislocation, foregrounds the intricate interplay between language, identity, and academic survival.

These personal and professional tensions are intensified by the cognitive and emotional demands of academic writing in a non-native language, as highlighted in psycholinguistic research. Writing involves constant mental coordination for planning, translating, and reviewing that places high demands on attention, memory, and linguistic control (Flower & Hayes, 1981). This load increases when scholars engage with complex content in unfamiliar contexts (Kellogg, 2023). For displaced academics, it is further complicated by emotional exhaustion, trauma (Hron, 2018), and the pressure to maintain scholarly credibility in an additional language. Anxiety and shaken confidence can significantly hinder fluency, given the close link between cognition and emotional self-regulation (Dörnyei, 2005). In this light, academic writing in exile is not merely a technical task, but a complex psycholinguistic act shaped by cognitive strain, emotional endurance, and disrupted identity.

Despite their resilience and academic expertise, many displaced Ukrainian researchers face significant challenges in adapting to English-dominant research environments (Jaroszewicz et al., 2025; Lutsenko et al., 2023; Meryl et al., 2022). Such core components of scholarly activity as academic writing and publishing, require not only advanced English proficiency but also familiarity with disciplinary conventions, rhetorical structures, and international publication standards (Shykhnenko & Sbruieva, 2024; Strochenko et al., 2025). These

demands are often increased by the emotional strain of exile and the need to re-establish professional credibility in a new context (Khuder & Petrić, 2023). While Ukraine has introduced national policies promoting English in academia, such as the B2 language requirement for academic titles (Abramo et al., 2023) and increased encouragement of English-medium instruction (Bolitho & West, 2017), these initiatives often overlook the actual levels of English language proficiency among academics and the nuanced English for Academic Purposes (EAP) and English for Research Publication Purposes (ERPP) demands. Meanwhile, UK host institutions, though offering institutional refuge and support, may lack the disciplinary or cultural sensitivity needed to provide displaced researchers with effective, tailored academic writing support. As a result, displaced scholars must often pursue research publication with limited scaffolding and inconsistent access to mentoring or training opportunities.

This situation reveals a significant gap in both research and practice. So far, little is known about the actual English language proficiency levels, academic writing experiences, and perceived ERPP support needs of Ukrainian academics working in exile. Most existing support frameworks rely on assumptions, either institutional or policy-driven, about scholars' capabilities and challenges. To design effective interventions, it is essential to understand how displaced researchers assess their own EAL competence, how they apply English writing skills in academic settings, and what forms of support they find meaningful and necessary. English Language Proficiency (ELP) in this study refers to an individual's ability to use English effectively across listening, speaking, reading, and writing. It is described according to the Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2001), which classifies proficiency from A1 (basic user) to C2 (proficient user), including academic and professional domains.

This study aims to investigate the EAP and ERPP needs of displaced Ukrainian researchers currently based in the UK. It is grounded in survey data collected within the British Academy's Researchers at Risk programme. The research explores participants' prior international exposure, their self-assessed ELP levels, and the diverse pathways through which they have developed their language competence. It also examines their academic writing practices to explore key barriers to research communication and to identify the types of instructional and institutional support that might be most useful. Situated within the evolving realities of Ukrainian academia and the UK host context, this study contributes to broader discussions on multilingualism in academia, scholarly displacement, and linguistic equity in global research communication while remaining grounded in the specific needs of a Ukrainian academic community in transition.

This paper addresses the following research questions:

1. What are the English language proficiency levels of displaced Ukrainian researchers in the UK?
2. How do these researchers apply English writing skills in academic settings?
3. What ERPP-related challenges and support needs do they experience?

The paper is structured as follows. First, the Research Design and Methods section details the survey structure, a participant profile, and analytical approach. The Results section presents findings in two parts: (1) contextualising participants' English proficiency backgrounds, including self-assessed English proficiency levels, previous international exposure, and certification profiles, (2) examining their application of English academic writing skills. The Discussion interprets these findings in relation to broader challenges faced by displaced researchers, and the Conclusion reflects on the study's implications for targeted academic writing support and future research directions.

Method

Research Design and Tools

This study employed a mixed-methods, exploratory research design, combining quantitative and qualitative approaches. The primary instrument was an online survey targeting displaced Ukrainian academics based in the UK and supported by the British Academy's Researchers at Risk (RAR) programme, launched in response to the full-scale Russian invasion of Ukraine in 2022. Complementing the survey, the researcher's dual role as a TESOL specialist and a RAR fellow allowed for reflexive insights, drawing on informal conversations and autoethnographic observations, though these were used only to support interpretation of the survey results, not as formal data sources.

The survey formed the first phase of a broader research programme titled "SURE Project: Writing for Research: Supporting Ukrainian Researchers in Exile in Developing Their Academic Writing". The programme includes multiple stages: (1) conducting the survey to identify language skills gaps in general and academic writing skills in particular which hinder the publication process, (2) conducting semi-structured interviews to deepen understanding of the issues identified, (3) developing a set of instructional materials for a targeted ERPP course, based on the findings from the survey and interviews, (5) piloting the group training course/individual coaching/mentoring programme, and (6) offering it to a wider cohort of displaced academics. This paper reports specifically

on the findings from Part 2 of the survey, which focused on English language proficiency and academic writing practices.

The survey was administered online via Microsoft Forms during October – November 2024. Participants were recruited through the British Academy Early Career Researchers Network (ECRN), personal contacts, and snowball sampling. A total of 125 responses were collected from a pool of 177 researchers (response rate: 70.6%). The survey contained four main sections: (1) Personal Information, (2) Academic and Writing Proficiency in English, (3) Writing for Research as a Process, and (4) Language Support. The sections featured a diverse range of question types, including multiple-choice, Likert scale, ranking, yes/no, and open-ended questions, allowing for both quantitative and qualitative analysis. This paper draws on data from Section 2 only, analysing six targeted questions using both descriptive statistics and thematic analysis of open-ended responses.

Quantitative data were analysed using basic descriptive statistics to identify frequency distributions, ranking patterns, and response trends. Qualitative data from open-ended questions were subjected to thematic analysis to extract emerging patterns related to language confidence, academic writing practices, and perceived skill gaps. No external software was used beyond Microsoft Excel for quantitative summaries; qualitative coding was carried out manually by the researcher.

Ethical approval for the study was obtained from the Lancaster University Research Ethics Committee prior to data collection (Reference: FASSLUMS-2024-4573-RECR-2). Participants were fully informed about the voluntary and anonymous nature of the survey and could withdraw at any stage. Given the trauma and vulnerability associated with forced academic displacement, additional care was taken to design the survey in a supportive and empathetic manner, highlighting the shared experience between the researcher and the participants. Many respondents welcomed the opportunity to contribute, viewing the study as a way to enhance international academic support structures.

The following section presents findings related to participants' English proficiency, their engagement with English-medium academic writing, and the challenges they face in meeting ERPP demands.

Results

Contextualising English Language Proficiency Among Ukrainian Researchers at Risk

The participants were first asked whether they had any prior experience living or working in English-speaking countries before joining the British Academy's

Researchers at Risk (RAR) fellowship. A significant majority of respondents, 78% or 97 individuals, reported no prior experience of residential fellowships or professional stays in English-speaking countries. Only 22% or 28 respondents indicated they had such experience (Fig. 1). This finding highlights that for most participants, the RAR fellowship represented their first sustained exposure to an English-speaking academic environment, which likely intensified both the linguistic and cultural adjustments they faced.

Figure 1

Proportion of BA RAR Fellows with Previous Experience in Residential Fellowships or English-Speaking Contexts

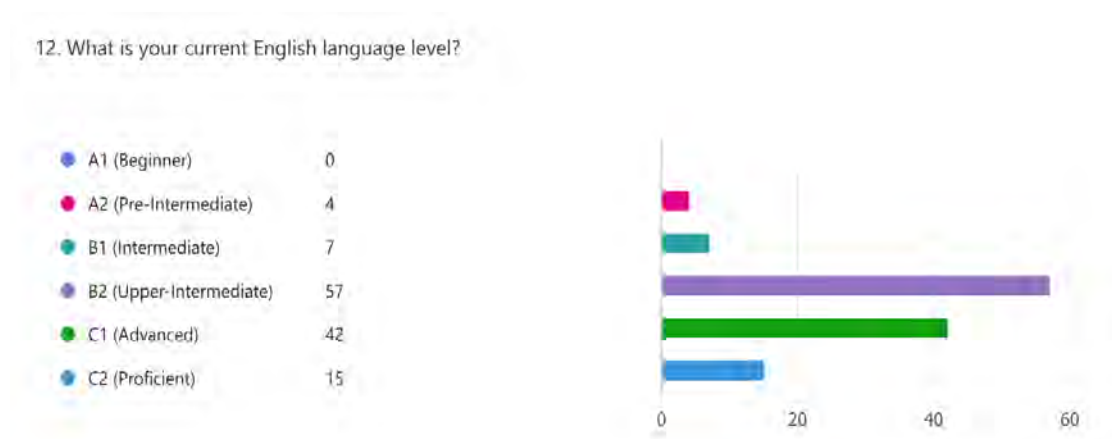


To better understand the starting point of their engagement with English-medium academia, participants were next asked to indicate their current English language proficiency level using the Common European Framework of Reference (CEFR), which ranges from A1 (beginner) to C2 (proficient). The responses indicate a predominantly high level of English competence. Nearly half of the participants (57; 46%) reported a B2 (Upper-Intermediate) level, followed by 42 (34%) who identified as C1 (Advanced), and 15 (12%) at C2 (Proficient). Lower proficiency levels were rare: 7 participants (6%) selected B1, and only 4 (3%) chose A2. No respondents identified as A1 (Figure 2). These results show that over 90% of respondents rated themselves as upper-intermediate to proficient users of English. This suggests the survey captured individuals already equipped with substantial English skills—an important consideration when interpreting their academic writing experiences and support needs.

The survey findings highlight a notable relationship between prior exposure to English-speaking academic environments and current English language

proficiency (ELP). As shown in Figure 1, only 22 percent of respondents had previous experience of residential fellowships or professional stays in English-speaking countries before starting their BA RAR fellowship. Despite this, self-assessed ELP levels reveal a highly proficient cohort: 46 percent reported B2 (Upper-Intermediate) proficiency, 34 percent C1 (Advanced), and 12 percent C2 (Proficient). Altogether, 91 percent of participants assessed their proficiency at B2 level or higher, meeting or exceeding the minimum requirement for academic positions set by Ukrainian language policy. This pattern suggests that while international immersion may have supported language development for some, high levels of English competence were also achieved through other learning pathways. This might reflect the participants' strong motivation and sustained efforts to develop academic English skills even in the absence of extended immersion in English-speaking environments.

Figure 2
Self-Reported English Language Proficiency Levels Among BA RAR Fellows



An important contextual factor is Ukraine's state-driven language policy aimed at enhancing international research engagement. Since 2016, English has been actively promoted as part of Ukraine's academic modernisation strategy. That year, the government declared the "Year of the English Language," signalling a shift towards European integration. This was followed by a series of reforms, including the introduction of mandatory B2 English proficiency requirements for the awarding of academic titles, the promotion of English-medium instruction, and the establishment of English language benchmarks for students and academic leadership. These measures contributed to a steady increase in English language awareness and competence among Ukrainian scholars. However, the uniform B2 requirement across diverse academic levels and roles does not fully account for the varying linguistic demands of complex academic communication.

Although B2 proficiency allows for general academic functioning, higher-level skills typically found at C1 and C2 are often needed for effective academic writing, presenting at conferences, and publishing in international journals.

The high proportion of RaR fellows with advanced English proficiency can therefore be seen as the outcome of multiple, intersecting factors: sustained national policy efforts, individual proactive engagement with English, and the selection dynamics of the fellowship programme itself. Many participants were likely already conscious of the importance of English for research communication, and some may have had academic connections abroad prior to the war, which facilitated their transition. Others may have significantly improved their proficiency after arriving in the UK, as the survey was conducted over two years after the programme's start. This timeframe suggests a strong commitment to developing language skills, indicating that participants are not only adapting to the demands of English-medium academia but are also likely to return home with enhanced capacities for international scholarly interaction.

To better understand how participants assessed their English proficiency, the survey also asked "How do you know your English language level? Please, specify if you have any English language proficiency certificate". Out of 125 responses, 52 participants reported having English language certificates. These included a range of qualifications, from international tests like IELTS, TOEFL, and Cambridge English exams to UK-specific ESOL and Functional Skills certificates.

40 respondents (32%) had taken international tests, with several mentioning Cambridge English exams at different levels (FCE, CAE, Business English), including both recent (2023 – 2024) and older (2015 – 2019) certificates. 10 participants (8%) had British Council certificates (APTIS test), and another 10 (8%) held UK-based ESOL/Functional Skills qualifications. While some certificates were reported as 'expired', they still provide insight into past levels of English competence, though it is possible that participants' proficiency may have changed, either improved through continued use or declined due to lack of practice, since the time of testing.

12 respondents (9.6%) reported having university degrees or diplomas in English philology, English studies, Germanic languages, or interpreting - an important factor that may help explain the generally high levels of English language competence observed in the sample. It is important to note, however, that combining language specialists with those for whom English is not a professional focus may mask meaningful differences in experience and challenges. The needs of these two groups are likely to differ, particularly in academic writing contexts. This distinction will be explored further in the next stage of the research through follow-up interviews.

Finally, fifteen participants (12 percent) reported relying on self-assessment or work-related evaluations of their English proficiency, for example: "My

subjective assessment. Have never been tested” and “My level of English was estimated by testing in an IT company several years ago. I do not have English language proficiency certificates.” Another 31 respondents (24.8 percent) said they either had no certificate or had never been formally tested. These results show that while many participants do have formal proof of their English skills, a considerable number rely on informal assessments or personal judgement. Still, the wide presence of certificates among almost half of the cohort supports the earlier self-assessment data, confirming generally high levels of proficiency (B2 - C2).

The variety of learning paths and types of evidence highlights the different ways participants have developed and used their English in academic and professional contexts. Some open-ended responses to the question about English proficiency also reveal strong personal commitment, as several participants shared that they are currently investing in their language skills through self-study or private tuition. For example, there were such responses: “Not yet, but I bought the C1 course and am studying myself” and “My English teacher notice but don't have a certificate.” The wording of the responses is reproduced as written by participants to preserve authenticity and to illustrate that not all respondents have fully achieved high levels of English proficiency. Other participants, in response to the question “How do you know your English language level?”, shared examples such as “writing articles,” “giving lectures,” and “confidently working with teaching and learning materials for C1.” These individual voices clearly demonstrate that, for many, lived experience and functional use of academic English is perceived as a more authentic and meaningful indicator of proficiency than formal certification.

Although some participants based their survey self-reports on subjective judgments or informal evaluations, the majority referred to documented proof of their English proficiency, such as IELTS, TOEFL or Cambridge certificates. This suggests that most self-assessed levels in the sample were anchored in standardised assessment, offering a semi-validated indication of their language competence.

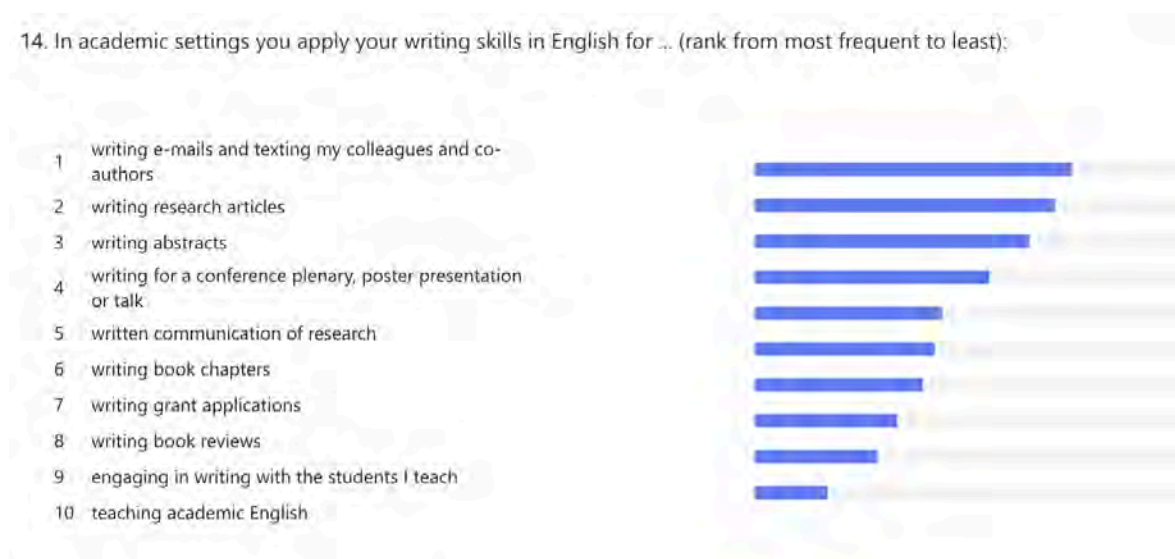
Interestingly, a few respondents mentioned qualifications such as GCSE or SCQF. While these are valid achievements, they may reflect limited access to appropriate advice or a lack of awareness about more relevant certification options for academic professionals. Some participants also reported receiving English language certificates from their home institutions, “my Ukrainian university’s linguistic centre”, pointing to grassroots or institution-level efforts to support English development in the absence of a unified national framework. It remains uncertain how well such qualifications align with the expectations of English-medium academia, particularly in international research contexts.

Application of English Writing Skills in Academic Settings

To further explore how participants use their English skills in practice, the survey included two closely related questions that offered complementary perspectives. Question 14 asked participants to rank the types of academic writing they most frequently engage in, while Question 15 asked them to indicate, using a five-point scale ("never," "rarely," "sometimes," "often," "very often"), how often they actually apply these writing skills in academic settings. Analysing the responses to these questions together provides a more complete understanding of both the perceived importance of different academic writing tasks and the frequency of their real-world application.

The ranking data (Fig. 3) reveal that participants prioritise English writing primarily for collaborative and research dissemination purposes. Writing e-mails and texting colleagues and co-authors was ranked as the most frequent activity, followed by writing research articles, writing abstracts, and preparing conference presentations or posters. These were perceived as the core applications of their English academic writing skills. Activities such as writing book chapters, grant applications, book reviews, engaging in written communication with students, and teaching academic English were ranked considerably lower, suggesting they are less central to participants' academic workflows or immediate professional demands.

Figure 3
Prioritised English Academic Writing Tasks Reported by BA RAR Fellows



The frequency data (Fig. 4) largely confirm these priorities but introduce important nuances. Writing e-mails and texting colleagues or co-authors is not only prioritised but also performed "often" or "very often" by the overwhelming majority of respondents, indicating a strong alignment between perceived

importance and everyday practice. Similarly, writing abstracts and communicating research within networks are reported as relatively frequent activities. However, while writing full-length research articles is considered highly important, it is undertaken less consistently, with responses distributed between "sometimes" and "often." More demanding and resource-intensive activities, such as writing book chapters, book reviews, and grant applications, show even lower engagement, with many participants reporting "rarely" or "sometimes." Teaching academic English and engaging in writing with students are the least frequent activities across the sample, mirroring their lower prioritisation in the rankings.

It is important to note, however, that 9.6% of the total participants sample reported holding university degrees or diplomas in English philology or interpreting. The presence of these language specialists in the sample partially explains the engagement with activities such as "teaching academic English" and "engaging in writing with the students I teach," despite these being low-frequency categories for the cohort overall. This finding must also be understood in the broader context of Ukrainian higher education, where English-medium instruction (EMI) practices, although gaining momentum due to globalisation and internationalisation pressures, remain relatively limited. Most Ukrainian universities have only recently begun to promote EMI initiatives systematically, and institutional support structures for teaching through English are still under development (Bolitho & West, 2017).

Figure 4

Frequency of Applying English Writing Skills in Academic Settings Among BA RAR Fellows



In practice, opportunities for engaging in writing with students in English are not widespread and are often confined to specific faculties, programmes, or individual initiatives. While the language specialists in the sample likely feel more confident navigating English-medium teaching and support roles, the survey data do not differentiate their responses from those of the broader group. This issue requires further exploration at later stages of the project, particularly through in-depth interviews or when designing tailored language support initiatives that can better account for the disciplinary, institutional, and language proficiency differences among displaced scholars.

To complement the analysis of English language proficiency and writing practices, participants were asked to self-evaluate a range of academic writing subskills on a five-point scale (1 = very low competence; 5 = very high competence). As illustrated in Figure 5, the results provide important insights into participants' confidence across different stages of academic text production.

The responses show a relatively high level of self-assessed competence. Skills such as planning the structure of a text, formulating the title and main idea, and writing abstracts were most frequently rated at 4 or 5, suggesting that the cohort feels relatively confident with the foundational elements of research writing. Similarly, processing collected information and analysing data for the results section received strong ratings, indicating familiarity with basic academic research procedures.

Figure 5
BA RAR Fellows' Self-Rated Proficiency in Key Academic Writing Components



However, slightly lower levels of confidence were noted for writing literature reviews, developing introductions, and writing methods and discussion sections. These stages typically require more sophisticated rhetorical organisation, critical engagement with sources, and adherence to specific genre conventions, which may explain the modest dip in self-ratings. Making the list of citations and references, and drawing conclusions, while generally well-rated, also revealed a slight spread towards mid-scale ratings, suggesting that referencing practices and synthesis skills could benefit from further strengthening.

Participants generally rated their competence highly across a range of academic writing skills. While the self-evaluations demonstrate strong confidence, they should be interpreted with some caution, given that self-assessment may not always align perfectly with external standards of academic writing quality. Overall, these findings are significant in understanding English language development within this cohort. They indicate that displaced Ukrainian researchers at risk are generally equipped with strong foundational academic writing skills, particularly in structuring, summarising, and presenting primary research. Nonetheless, the slight hesitations around more complex academic genres point to areas where additional, targeted support could further consolidate their competence. Advanced academic writing requires more than just linguistic accuracy. It also demands skills usually associated with higher proficiency levels (C1–C2) like genre awareness and rhetorical sophistication. These findings support earlier observations that a B2 level, while functional, may not fully meet the requirements of international academic publishing.

Discussion

This study explored the English language proficiency and academic writing practices of displaced Ukrainian researchers participating in the British Academy's Researchers at Risk fellowship, with particular attention to challenges related to their English for Research Publication Purposes competence and potential targeted instructional support.

The findings provide a detailed picture of a highly motivated and linguistically capable cohort. Despite the fact that 78 percent of participants had no prior experience living or working in English-speaking countries, a remarkable 91 percent assessed their English proficiency at B2 level and above. This is a striking contrast to broader national trends in Ukraine, where research shows that most academics rate their English proficiency between A2 and B2 levels. The high proficiency within this cohort can be attributed to

multiple, intersecting factors: national language policies promoting English since 2016, individual efforts to master academic English, and the selective nature of the RaR fellowship itself, which likely attracted researchers already motivated and positioned for international engagement. In addition, most participants had been living in the UK for nearly two years by the time of the survey, a period during which many likely improved their English further while actively seeking both personal and professional integration in an English-speaking academic environment. However, while overall proficiency levels appear strong, it is essential to consider how well these skills align with the specific demands of research ERPP.

Importantly, while formal certification through international tests (IELTS, TOEFL, Cambridge exams) was present for a significant portion of the sample, many participants also relied on informal validation through academic activities or workplace-based assessments. This underscores the idea that for these scholars, lived academic experience, such as writing articles, delivering lectures, or preparing teaching materials, is often viewed as a more authentic measure of English competence than passing standardised tests. Yet standardised language certificates primarily assess general proficiency and may not fully capture the specialised academic writing abilities required for success in ERPP contexts.

Although international English proficiency tests have academically targeted versions such as IELTS Academic, TOEFL iBT, and Cambridge C1 Advanced, they are primarily designed for students entering higher education rather than for experienced researchers or faculty. Given this gap, developing a national English language certification tailored to the Ukrainian academic context could provide a more nuanced and appropriate assessment framework. Such an initiative would better reflect the diverse roles and needs of scholars, clarify qualification standards, and support further professional and scholarly development.

Accessibility also remains a significant issue, as the cost of international test sitting often represents a challenge for an average academic's monthly salary in Ukraine. Without financial support, taking an international language test risks becoming a barrier rather than a motivator. Subsidised testing opportunities, institutional funding schemes, or the creation of field-specific EAP/ERPP assessments could better align language policy goals with academic realities. Moreover, certification systems that include detailed feedback could serve not only as evaluation tools but also as drivers of individual language advance.

The analysis of academic writing practices further supports the data interpretation. Participants prioritised collaborative and research-focused writing tasks, like emailing co-authors, writing abstracts, preparing conference presentations, and drafting research articles, over less frequent activities such as book chapters, grant applications, or teaching academic English. These writing activities closely reflect the core genres associated with ERPP, where researchers must effectively communicate complex findings to international audiences. The pattern suggests that while the cohort is actively engaging with research communication tasks, deeper mastery of more complex academic genres essential for successful publishing may still require additional support.

Self-assessments of academic writing subskills generally showed high confidence in foundational writing stages, such as structuring texts, formulating main ideas, and summarising results. However, slightly lower ratings were observed for writing literature reviews, developing introductions, handling citations, and synthesising conclusions - skills that demand higher-level genre awareness and rhetorical sophistication characteristic of ERPP writing. These findings align with previous observations that while B2 proficiency supports functional academic participation, achieving the stylistic and structural expectations of international research publishing often requires the more advanced capabilities associated with C1 and C2 levels.

These patterns point to a wider need for strategic interventions aimed at strengthening academic writing competencies among displaced Ukrainian researchers and support their long-term integration into international academic networks. In Ukrainian context, supporting scholars' development of advanced ERPP competencies will be crucial for the country's reintegration into the global academic community and the long-term strengthening of its higher education and research sectors. Building institutional capacity for ERPP training, both within Ukraine and in collaboration with international partners, should be seen as a strategic priority.

In the UK context, and more broadly across host countries, these findings underscore the need for academic support frameworks that go beyond general language training. Targeted ERPP-focused initiatives, including mentoring, academic writing groups, targeted workshops, and publication support schemes, can empower displaced scholars not only to continue their research abroad but also to become active contributors to their host institutions' academic life.

Several limitations must be acknowledged. The study relied on self-assessment data, which, while valuable, may not fully align with external measures of academic writing quality, particularly in ERPP contexts. Moreover,

approximately 10 percent of participants had formal backgrounds in English philology or related fields, which may have elevated the overall language competence reported. Combining language specialists with those from non-linguistic disciplines could mask important differences in experiences and needs, a distinction that will be explored further through planned qualitative interviews. These limitations should be considered when interpreting the findings and designing future support initiatives.

Conclusion

The findings suggest that displaced Ukrainian researchers at risk possess strong foundations for engaging in English-medium academia. However, they would benefit from targeted support in developing the advanced academic writing skills required for ERPP. Future initiatives should focus on validating academic English competence through real engagement with research communication tasks, rather than relying solely on formal certification. Tailored ERPP training, combined with discipline-sensitive language coaching, mentoring and peer-reviewing, maintaining writing retreats and communities of practice, could play a critical role in strengthening this cohort's ability to contribute to international scholarship and rebuild academic capacities within Ukraine.

More broadly, the study highlights the urgent need to develop sustainable support structures for forced academic migrants and displaced researchers in an increasingly unstable world. As conflict, political instability, and displacement continue to disrupt scholarly communities, it is essential to create academic environments that recognise and nurture the research potential of displaced scholars. Investing in their academic and linguistic integration is not only an act of solidarity but also a strategic investment in the resilience, diversity, and future innovation of the global academic landscape.

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The immediate and delayed effects of direct versus indirect written corrective feedback on Turkish EFL learners' accuracy development in using Past Counterfactual Conditionals



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Abstract. Written corrective feedback (WCF) research has extensively examined the effectiveness of direct versus indirect feedback approaches, yet findings remain inconsistent regarding their relative impact on complex grammatical structures. The acquisition of past counterfactual conditionals presents particular challenges for second language learners due to their syntactic and semantic complexity, with limited research investigating feedback effectiveness for this structure. This gap limits theoretical understanding of how different feedback types engage cognitive processing mechanisms during the acquisition of linguistically complex features. This quasi-experimental study investigated the differential effects of direct and indirect WCF on Turkish EFL learners' acquisition of English past counterfactual conditionals. Ninety-four first-year university students were randomly assigned to three groups: Direct WCF (n=32), Indirect WCF (n=32), and Control (n=30). Using a pretest-posttest design with immediate and delayed posttests, participants completed reconstruction tasks over an eight-week period. The Direct WCF group received explicit corrections with correct forms provided above errors, while the Indirect WCF group received metalinguistic clues requiring self-correction. Results showed that direct WCF demonstrated superior immediate effectiveness, but this advantage diminished at delayed posttest, where both treatment groups performed comparably while significantly outperforming the control group. The findings indicate that direct feedback facilitates immediate accuracy improvement in complex grammatical structures, while both feedback types achieve equivalent long-term effectiveness. These results support instructional approaches that employ direct feedback when immediate accuracy is prioritized and suggest that both feedback types engage cognitive processing mechanisms that support sustained learning of complex grammatical features.

Keywords: *cognitive processing, direct feedback, indirect feedback, past counterfactual conditionals, written corrective feedback.*

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Анотація. Дослідження письмового коригувального зворотного зв'язку (ПКЗЗ) широко вивчали ефективність прямих та непрямих підходів до надання зворотного зв'язку, проте результати залишаються суперечливими щодо їх відносного впливу на складні граматичні структури. Засвоєння минулих контрфактичних умовних речень становить особливі труднощі для тих, хто вивчає другу мову, через їх синтаксичну та семантичну складність, при цьому обмежена кількість досліджень вивчає ефективність зворотного зв'язку для цієї структури. Ця прогалина обмежує теоретичне розуміння того, як різні типи зворотного зв'язку залучають механізми когнітивної обробки під час засвоєння лінгвістично складних особливостей. Це квазі-експериментальне дослідження вивчало диференційні ефекти прямого та непрямого ПКЗЗ на засвоєння англійських минулих контрфактичних умовних речень турецькими студентами, які вивчають англійську як іноземну мову. 94 студенти першого курсу були випадково розподілені на три групи: Прямий ПКЗЗ (n=32), Непрямий ПКЗЗ (n=32) та Контрольна група (n=30). Використовуючи дизайн попереднього та підсумкового тестування з негайними та відстроченими підсумковими тестами, учасники виконували завдання з реконструкції протягом восьми тижневого періоду. Група прямого ПКЗЗ отримувала явні виправлення з правильними формами, наданими над помилками, тоді як група непрямого ПКЗЗ отримувала металінгвістичні підказки, що вимагали самокорекції. Результати показали, що прямий ПКЗЗ продемонстрував вищу негайну ефективність, але ця перевага зменшилася при відстроченому підсумковому тестуванні, де обидві експериментальні групи показали подібні результати, водночас значно перевершуючи контрольну групу. Результати вказують на те, що прямий зворотний зв'язок сприяє негайному покращенню точності у складних граматичних структурах, тоді як обидва типи зворотного зв'язку досягають еквівалентної довгострокової ефективності. Ці результати підтримують навчальні підходи, які використовують прямий зворотний зв'язок, коли пріоритетом є негайна точність, і свідчать про те, що обидва типи зворотного зв'язку залучають механізми когнітивної обробки, які підтримують стійке вивчення складних граматичних особливостей.

Ключові слова: когнітивна обробка, прямий зворотний зв'язок, непрямий зворотний зв'язок, минулі контрфактичні умовні речення, письмовий коригувальний зворотний зв'язок.

Introduction

Written corrective feedback (WCF) has remained one of the most extensively researched and debated topics in second language (L2) writing and acquisition for over four decades. The controversy surrounding its effectiveness was notably intensified by Truscott's (1996) influential claim that grammar correction in L2 writing classes is ineffective and potentially harmful, sparking a sustained scholarly debate that continues to shape contemporary research directions. While substantial empirical evidence has since emerged supporting the general efficacy of WCF (Kang & Han, 2015; Bitchener & Storch, 2016), questions regarding the relative effectiveness of different feedback types remain contentious and require further investigation.

The distinction between direct and indirect WCF represents one of the most fundamental typological divisions in corrective feedback research. Direct WCF provides learners with the correct linguistic form, while indirect WCF merely indicates that an error exists without supplying the correction (Ellis, 2009). Despite extensive research comparing these approaches, findings have been inconsistent, with some studies favoring direct feedback (Van Beuningen et al., 2012; Karim & Nassaji, 2020) and others supporting indirect approaches (Ferris, 2006; Sherpa, 2021). This inconsistency may be attributed to various moderating factors, including target structure complexity, learner proficiency, and contextual variables that influence feedback effectiveness.

Most WCF research has focused on relatively simple, rule-based grammatical features such as English articles, simple past tense, and subject-verb agreement (Bitchener, 2008; Sheen, 2007). However, the effectiveness of different feedback types on complex grammatical structures remains underexplored. Past counterfactual conditionals represent a particularly challenging target structure due to their syntactic complexity, semantic intricacy, and the cognitive demands they place on L2 learners (Shintani et al., 2014). For Turkish EFL learners specifically, these structures present additional challenges due to significant typological differences between Turkish and English conditional systems.

The present study addresses this gap by investigating the comparative effectiveness of direct and indirect WCF on Turkish EFL learners' acquisition and retention of English past counterfactual conditionals. By employing a pre-test, immediate post-test, and delayed post-test design, this research aims to contribute to our understanding of how different feedback types facilitate both immediate learning and long-term retention of complex grammatical structures in EFL contexts.

Literature Review

Theoretical Foundations of Written Corrective Feedback

The theoretical underpinnings of WCF research draw from multiple SLA frameworks, including Schmidt's (2001) Noticing Hypothesis, Swain's (1985, 2005) Output Hypothesis, and skill acquisition theory (DeKeyser, 2007). Schmidt's Noticing Hypothesis posits that conscious attention to linguistic forms is necessary for acquisition, suggesting that WCF may facilitate learning by drawing learners' attention to the gap between their interlanguage and target language forms. The Output Hypothesis (Swain, 2005) emphasizes the role of language production in promoting acquisition, with feedback serving as

a catalyst for noticing and subsequent restructuring of interlanguage systems. From a skill learning perspective, repeated exposure to corrective feedback on specific linguistic features should lead to the proceduralization of declarative knowledge, ultimately resulting in more accurate and fluent language production (DeKeyser, 2015).

To fully understand how different feedback types engage cognitive processing mechanisms during the acquisition of linguistically complex features, it is also essential to integrate psycholinguistic perspectives that illuminate the underlying cognitive architecture supporting feedback processing. For instance, Baddeley's (2012) multicomponent model of working memory provides crucial insights into how learners process WCF. Working memory, comprising the central executive, phonological loop, visuospatial sketchpad, and episodic buffer, serves as the cognitive workspace where feedback information is temporarily stored and manipulated during processing (Li, 2023). Direct WCF may reduce working memory demands by providing explicit corrections, thereby freeing cognitive resources for form-meaning mapping and integration processes. However, Li and Roshan (2019) found that the relationship between working memory and corrective feedback effectiveness is more complex and depends on the specific type of feedback and whether revision is required. Their study revealed that complex working memory (involving both storage and processing) was a significant positive predictor of metalinguistic explanation effectiveness, suggesting that indirect feedback approaches requiring learners to process rule explanations and detect errors actually place greater demands on working memory resources. Conversely, direct corrective feedback alone showed no significant association with working memory capacity, indicating that providing explicit corrections may indeed alleviate cognitive load. Interestingly, when revision was required, direct corrective feedback plus revision showed a positive association with complex working memory but a negative association with phonological short-term memory, suggesting that the cognitive demands vary depending on whether learners must reconstruct their texts after receiving feedback.

Sweller's (2017) Cognitive Load Theory (CLT) offers another psycholinguistic perspective for understanding WCF effectiveness. CLT distinguishes between intrinsic cognitive load (inherent task complexity), extraneous cognitive load (poorly designed instruction), and germane cognitive load (processing that contributes to learning) (Sweller, 2017). Complex grammatical structures like past counterfactual conditionals impose high intrinsic cognitive load due to their syntactic and semantic complexity. From a CLT perspective, direct WCF may be more effective for complex

structures because it reduces extraneous cognitive load by eliminating the need for learners to generate corrections independently. This allows more cognitive resources to be allocated to germane processing—the integration of corrective information into existing linguistic knowledge (Sweller, 2017). The theory predicts that as learners develop expertise with target structures, they can better handle the additional cognitive demands imposed by indirect feedback approaches.

Recent theoretical developments have also emphasized the importance of cognitive processing in feedback effectiveness. Bitchener's (2021) cognitive processing model suggests that feedback effectiveness depends on learners' ability to notice, understand, and incorporate corrective information into their developing interlanguage systems. This model highlights the potential differential effects of direct and indirect feedback types, as they may engage different cognitive processes and place varying demands on learners' processing resources.

These theoretical frameworks may suggest a pattern of effectiveness for the present study. Immediate effects may favor direct WCF due to reduced cognitive load and enhanced noticing (Schmidt, 2001; Sweller, 2017), particularly given the complexity of past counterfactual conditionals and the working memory demands of reconstruction tasks. However, delayed effects may show convergence between feedback types as both approaches provide sufficient input for procedural knowledge development (DeKeyser, 2015), with indirect feedback potentially demonstrating more stable retention due to deeper processing requirements (Swain, 2005). These insights directly inform the research questions and expected outcomes of the present study.

Direct versus Indirect Written Corrective Feedback

A central debate in WCF research concerns the relative effectiveness of direct and indirect feedback. Direct WCF provides learners with the correct form, while indirect WCF signals the presence of an error without supplying the correction, requiring learners to self-correct. The majority of early studies (Lalande, 1982; Semke, 1984; Sheppard, 1992) found no significant differences between the two approaches. However, these studies have been criticized for methodological limitations, such as the absence of true control groups and a focus on revision accuracy rather than long-term learning (Guenette, 2007; Bitchener, 2021).

More recent and methodologically rigorous research has provided a more comprehensive pattern. Several studies (Van Beuningen et al., 2008, 2012; Bitchener & Knoch, 2010) have found that direct WCF is particularly effective

for improving grammatical accuracy, especially in the long term and for complex structures. For example, Van Beuningen et al. (2008, 2012) demonstrated that direct WCF led to greater long-term gains in grammatical accuracy, while indirect WCF was more effective for non-grammatical features such as spelling and punctuation. Recent meta-analytic evidence provides additional insights into this debate. Lim and Renandya (2020) conducted a comprehensive meta-analysis of 35 studies examining WCF effectiveness, revealing an overall moderate effect size that supports the general efficacy of WCF. Importantly, their analysis found that direct feedback demonstrated a larger effect size compared to indirect feedback, though these differences were not statistically significant.

However, not all research supports the superiority of direct WCF. Some studies (Sherpa, 2021; Karim & Nassaji, 2020) have found that indirect feedback can be equally or more effective, particularly for certain learner populations or error types. For instance, Sherpa (2021) reported that indirect WCF was more effective than direct WCF for Bhutanese learners' use of past tense and articles, while Karim and Nassaji (2020) found that although all feedback types improved revision accuracy, transfer effects to new writing were limited and inconsistent, with no significant delayed effects. Further evidence for the complexity of direct versus indirect WCF effectiveness comes from Nameni (2023), who compared direct WCF and coded WCF among Iranian medical students. The study found that coded WCF with revision significantly outperformed direct WCF across organization, grammar, and mechanics, suggesting that self-correction using coded feedback led to greater awareness of error patterns and improved language acquisition. However, overall writing performance remained unsatisfactory, potentially due to low proficiency levels, highlighting the interaction between feedback type and learner characteristics.

Research with Turkish EFL learners further illustrates this complexity. While some studies (Buckingham & Aktuğ-Ekinci, 2017; Berkant et al., 2020) support the effectiveness of direct WCF, others (Valizadeh, 2020, 2022) have found that both direct WCF and metalinguistic explanation can be effective, with direct WCF showing particular benefits for syntactic complexity. Importantly, these studies also address concerns that direct WCF might lead to oversimplified writing, finding no evidence of such negative effects. Recent comprehensive reviews have further illuminated the complexity of WCF effectiveness. Nguyen and Chu (2024) found that despite extensive research, findings remain debatable with no consensus on the most effective WCF type for EFL students. Their review revealed mixed results, with some studies demonstrating higher effectiveness of direct WCF compared to no feedback,

while others found no significant differences. Particularly relevant to the present study, research with Turkish EFL learners has yielded inconsistent findings, with some studies favoring direct WCF and others showing unsuccessful attempts with indirect correction codes, underscoring the need for more targeted research examining specific grammatical structures in particular EFL contexts.

Grammatical Complexity and Feedback Effectiveness

A growing body of research suggests that the complexity of the target grammatical structure moderates the effectiveness of WCF. Most studies to date have focused on relatively simple, rule-based features such as English articles and simple past tense (Bitchener, 2021; Bitchener & Knoch, 2010; Sheen, 2007; Ellis et al., 2008). These studies generally report positive effects for both direct and indirect feedback. However, research examining more complex structures is limited. Shintani et al. (2014) addressed this gap by comparing the effects of direct WCF and metalinguistic explanation on Japanese learners' acquisition of both simple (indefinite articles) and complex (hypothetical conditionals) grammatical features. Their findings revealed that direct feedback followed by revision was most effective for the complex conditional structure, supporting the view that explicit correction is particularly beneficial for cognitively demanding features.

Granena and Yilmaz (2021) provided a comprehensive synthesis of studies targeting specific grammatical structures, categorizing them by formal and semantic complexity. Their meta-analysis found that feedback effectiveness was highest for simple forms and lowest for structures that were complex both formally and semantically (e.g., passives, question formation). This suggests that corrective feedback alone may be insufficient for the most complex structures, which may require additional instructional support or extended treatment.

The evidence indicates that grammatical complexity is a key moderator of feedback effectiveness, with complex structures posing greater challenges for both learners and instructors. However, most research has focused on simple features, and there is a clear need for more studies examining the impact of WCF on complex grammatical structures, particularly in diverse learner populations.

Immediate and Delayed Effects of Written Corrective Feedback

The temporal dimension of WCF effectiveness is another critical issue in the field. Early studies often measured only immediate revision accuracy, which has been criticized as an inadequate indicator of genuine acquisition (Truscott, 2007). More recent research has incorporated delayed post-tests to assess retention and

transfer, providing a more comprehensive understanding of feedback effectiveness.

Longitudinal studies have revealed mixed patterns regarding the durability of WCF effects. Bitchener and Knoch (2010) demonstrated that focused direct feedback can maintain its effectiveness over extended periods, with gains persisting up to 10 months post-treatment. Similarly, Van Beuningen et al. (2012) found that direct WCF produced sustained improvements in grammatical accuracy over time. Recent longitudinal research has provided more robust evidence for sustained WCF effects. Shao et al. (2024) demonstrated that both direct and indirect WCF maintained their effectiveness on regular past tense learning six weeks post-treatment, with large effect sizes persisting on both receptive and productive measures. The authors argued that such delayed effects indicate genuine learning rather than mere retention, supporting the long-term value of WCF interventions. However, they noted that prior knowledge about the target structure may influence the durability of effects, with learners possessing adequate prior knowledge showing equal benefits from both direct and indirect feedback.

Studies examining comprehensive feedback have reported more limited outcomes. Karim and Nassaji (2020) found that while all feedback types improved immediate revision accuracy, transfer effects to new writing were limited and inconsistent, with no significant delayed effects observed after several weeks. Meta-analytic evidence provides additional insights into temporal patterns. Granena and Yilmaz (2021) confirmed that delayed effects are generally smaller than immediate effects, particularly for complex structures, while simple forms may even show increased delayed effects due to consolidation processes.

These findings suggest that the durability of WCF effects depends on multiple factors, including the complexity of the target structure, the type of feedback provided, and the intensity of treatment. While WCF can produce immediate gains, sustaining these effects—especially for complex structures—may require ongoing reinforcement or more intensive intervention. The limited research on delayed effects of WCF for complex grammatical structures represents a significant gap that requires further investigation.

The Present Study

The literature review reveals several key patterns and gaps that inform the present study. First, while substantial evidence supports the general effectiveness of WCF, the relative superiority of direct versus indirect feedback remains contested, with

effectiveness appearing to depend on multiple moderating factors including target structure complexity, learner characteristics, and contextual variables.

Second, most WCF research has focused on simple, rule-based grammatical features, leaving the effectiveness of different feedback types on complex structures largely unexplored. The limited research on complex features suggests that direct feedback may be particularly beneficial for cognitively demanding structures, but this finding requires replication across different learner populations and target structures.

Third, the temporal dimension of WCF effectiveness reveals that while immediate effects are consistently reported, delayed effects are more variable and generally smaller in magnitude. This pattern is particularly pronounced for complex structures, suggesting that sustained learning of challenging grammatical features may require different or more intensive feedback approaches.

Finally, research with Turkish EFL learners, while growing, remains limited and has not specifically examined the acquisition of complex conditional structures through WCF. Given the typological differences between Turkish and English conditional systems, this population represents an important context for investigating feedback effectiveness.

These gaps collectively point to the need for research examining the comparative effectiveness of direct and indirect WCF on complex grammatical structures in specific learner populations, with particular attention to both immediate and delayed effects. The present study addresses this need by investigating Turkish EFL learners' acquisition of English past counterfactual conditionals.

Drawing on the theoretical frameworks and empirical findings reviewed above, the present study addresses the following research questions:

Research Question 1: What is the immediate effect of direct and indirect WCF on the accurate use of past counterfactual conditionals?

Research Question 2: What is the long-term effect of direct and indirect WCF on the accurate use of past counterfactual conditionals?

Research Question 3: Is there a significant difference between the effectiveness of direct and indirect WCF in both immediate and delayed performance?

Method

Research Design

This study employed a quasi-experimental design to investigate the comparative effectiveness of direct and indirect written corrective feedback on Turkish EFL learners' acquisition of English past counterfactual conditionals.

The research utilized a pretest, immediate posttest, and delayed posttest design spanning eight weeks to examine both immediate and delayed effects of the treatments. Three groups participated in the study: a Direct WCF group, an Indirect WCF group, and a Control group, allowing for systematic comparison of feedback effectiveness across different treatment conditions.

Participants

A total of 94 first-year university students from a public university in Turkey volunteered to participate in this investigation. The participants were enrolled in various engineering disciplines, including mechanical, computer, biomedical, civil, electrical, naval architecture, and marine engineering programs. All participants were native speakers of Turkish who had received formal English instruction during their secondary and high school education. Prior to commencing their disciplinary studies, all participants had successfully completed a one-year intensive English preparatory program and demonstrated their English competency by passing an in-house proficiency examination certifying B1 level or above according to the Common European Framework of Reference for Languages. This requirement ensured a relatively homogeneous proficiency level across participants, which was essential for maintaining the validity of between-group comparisons throughout the study.

The participants were distributed across three groups with the following composition: 32 students in the Direct WCF group, 32 students in the Indirect WCF group, and 30 students in the Control group. The slight variation in group sizes resulted from the voluntary nature of participation and natural attrition that occurred during the study period.

The study received approval from the university's institutional ethics committee prior to data collection. All participants provided informed consent after receiving detailed explanations of the study's purpose, procedures, and their rights as research participants. Participants were explicitly informed of their right to withdraw from the study at any time without penalty or negative consequences. Throughout all phases of data collection and analysis, participant anonymity was strictly maintained through the use of coding systems that prevented identification of individual participants.

Target Structure

The investigation focused specifically on English past counterfactual conditionals, exemplified by structures such as "If he had become a doctor, he would have earned a lot of money." Past counterfactual conditionals are hypothetical conditional statements that express situations contrary to past

reality—they describe what would have happened if past circumstances had been different from what actually occurred (Celce-Murcia & Larsen-Freeman, 1999). These structures are characterized by their distinctive grammatical pattern: the if-clause (protasis) employs the past perfect tense (had + past participle), while the main clause (apodosis) uses the conditional perfect form (would/could/might + have + past participle). Semantically, these conditionals express unrealized possibilities in the past, requiring learners to understand both the hypothetical nature of the proposition and the temporal relationship between the imagined condition and its potential consequence.

The selection of this particular linguistic feature was motivated by two primary considerations related to its complexity. First, the syntactic complexity of past counterfactual conditionals involves intricate clause arrangements with main and subordinate clauses requiring specific structural combinations and precise tense sequencing. Second, these structures present considerable semantic complexity due to subtle meaning variations that depend on specific tense usage, such as employing past tense forms to refer to present situations or past perfect forms to reference past events.

The challenging nature of this target structure is well-documented in the literature, with Celce-Murcia and Larsen-Freeman (1999) noting that conditional sentences, particularly counterfactual conditionals, pose significant difficulties for English second language learners due to their combined semantic and syntactic complexities. This assessment is further supported by empirical evidence from Izumi et al. (1999), who found that while their participants possessed some explicit knowledge of conditional structures, they failed to demonstrate solid command of accurate usage in production tasks. More recent empirical evidence from (Uludağ, 2025) corroborates these findings, demonstrating that Turkish EFL learners at both B1 and B2 proficiency levels experienced considerable difficulty with English past counterfactual conditionals. The findings indicated that only 27% of production opportunities resulted in correct initial responses without corrective feedback, with 71% of erroneous utterances containing structural errors in the target conditional form. This evidence underscores the persistent challenges that past counterfactual conditionals present to L2 learners, even at intermediate to upper-intermediate proficiency levels, highlighting the need for targeted pedagogical interventions to address these complex grammatical structures.

Instruments

Data collection was conducted using reconstruction tasks specifically adapted from Shintani and Aubrey (2016). These tasks were deliberately chosen for

their effectiveness in eliciting multiple instances of the target structure within contexts where past counterfactual conditionals would naturally occur. Each reconstruction task comprised three components: audio-recorded texts containing multiple instances of past counterfactual conditionals, structured note-taking sheets with organized tables for participants to record key information while listening, and writing sheets for text reconstruction based on the notes taken during the listening phase.

To ensure methodological rigor and avoid practice effects, three parallel reconstruction tasks were developed for the pre-test, immediate post-test, and delayed post-test phases. These tasks maintained comparable difficulty levels and content complexity while featuring different thematic content to prevent familiarity effects that might confound the results.

The validity of all reconstruction tasks was established through a pilot study conducted with a separate group of students possessing similar proficiency levels. This piloting process confirmed appropriate difficulty levels and verified the tasks' effectiveness in eliciting the target structure. Additionally, two experienced EFL instructors reviewed all tasks to ensure content validity and confirm structural parallelism across the three testing phases.

Procedure

The study was implemented over an eight-week period and consisted of three distinct phases, each serving specific research objectives. During the first week, all participants completed the pre-test phase, which involved administering the baseline reconstruction task to establish initial knowledge levels of past counterfactual conditionals. Participants listened to the audio recording twice, took notes using the provided structured table, and reconstructed the text within a standardized 20-minute time frame.

The treatment phase occurred during the second week, when all groups completed a new reconstruction task following identical procedures to the pre-test. Following this initial writing phase, the treatment groups received their respective feedback interventions. The Direct WCF group received explicit corrections where errors in past counterfactual conditionals were underlined and correct forms were provided directly above the erroneous structures. For example, corrections appeared as "*If he had become a doctor, he would have earned a lot of money*" with the correct forms clearly marked above the original errors.

In contrast, the Indirect WCF group received feedback that underlined errors but provided metalinguistic clues rather than direct corrections. These

clues took the form of grammatical labels such as "*Past Perfect Tense Form*" or "*wrong aux. past participle form*" positioned above the relevant errors, requiring participants to generate the correct forms independently. The Control group received no feedback on the target structure, serving as a baseline comparison for natural improvement over time.

To prevent direct copying during the revision process, feedback was provided on photocopied versions of the original texts, which were collected after participants had ten minutes to review the feedback. All participants then received 20 minutes to produce revised versions of their texts, with treatment groups incorporating their respective feedback types while the control group revised without any corrective input.

The immediate posttest phase was conducted during the third week, when all groups completed a new reconstruction task featuring different content but maintaining similar complexity levels to measure immediate effects of the treatments. Importantly, no feedback was provided during this phase to assess genuine learning rather than temporary performance enhancement. The delayed posttest was administered during weeks seven and eight, occurring four to five weeks after the treatment phase to evaluate long-term retention of the target structure.

Data Analysis

The analysis of written productions focused on accuracy within obligatory contexts for past counterfactual conditionals. The coding procedure involved systematic identification of contexts where past counterfactual conditionals were required based on the semantic and pragmatic demands of each reconstruction task. Each obligatory context was subsequently coded as correct or incorrect according to predetermined criteria that emphasized appropriate tense sequencing and modal verb usage.

To ensure objectivity and reliability, all texts underwent blind coding by two independent raters who remained unaware of group assignments and testing phases throughout the coding process. Inter-rater reliability was established by having both raters code a minimum of 20% of all collected data, with Cohen's kappa calculated to determine the degree of agreement between coders.

The statistical analysis plan proceeded through several stages, beginning with preliminary analyses that included descriptive statistics for all variables and a one-way ANOVA on pre-test scores to verify group comparability at baseline. If groups demonstrated comparability at pre-test, the main analysis employed repeated measures ANOVA to examine changes across the three

time points, with Group serving as the between-subjects factor and Time as the within-subjects factor. In cases where initial group differences existed, ANCOVA with pre-test scores as covariates was planned for both immediate and delayed post-test analyses.

Post-hoc analyses included Bonferroni-corrected pairwise comparisons to identify specific between-group differences, effect size calculations using Cohen's d for pairwise comparisons and partial η^2 for ANOVA effects, and gain score analyses to examine improvement patterns between testing points. The dependent variables included percentage accuracy calculated as correct usage divided by total obligatory contexts multiplied by 100, error rates expressed as the number of errors per obligatory context, and gain scores representing difference scores between testing points to quantify improvement.

Results

The present study examined the differential effects of direct and indirect written corrective feedback on Turkish EFL learners' acquisition of English past counterfactual conditionals. Prior to conducting the main analyses, the data were examined for normality and homogeneity of variance assumptions. The Shapiro-Wilk test indicated normal distribution across all groups and time points (all $p > .05$), and Levene's test confirmed homogeneity of variance ($F(2, 91) = 1.23, p = .298$). Inter-rater reliability for the coding of past counterfactual conditionals yielded substantial agreement between two independent raters ($\kappa = .87, p < .001$).

A preliminary one-way ANOVA confirmed that the three groups were comparable at pre-test, with no statistically significant differences among the Direct WCF group ($M = 23.45, SD = 8.12$), Indirect WCF group ($M = 24.18, SD = 7.89$), and Control group ($M = 22.87, SD = 8.34$), $F(2, 91) = .34, p = .712, \eta^2 = .007$. This finding established a solid foundation for subsequent comparisons by confirming equivalent baseline knowledge across groups.

To address the research questions, a 3×3 mixed-design repeated measures ANOVA was conducted with Group (Direct WCF, Indirect WCF, Control) as the between-subjects factor and Time (Pre-test, Immediate Post-test, Delayed Post-test) as the within-subjects factor. The dependent variable was the percentage accuracy of past counterfactual conditional usage in obligatory contexts. The analysis revealed a significant main effect of Time, $F(2, 182) = 47.23, p < .001, \eta^2 = .342$, indicating that accuracy scores changed significantly across the three testing phases. The main effect of Group was also statistically significant, $F(2, 91) = 12.67, p < .001, \eta^2 = .218$, suggesting overall differences in

performance among the three groups. Most importantly, the Time \times Group interaction was statistically significant, $F(4, 182) = 8.94$, $p < .001$, $\eta^2 = .164$, indicating that the groups showed different patterns of change across the testing phases.

To explore the significant interaction effect, separate one-way ANOVAs were conducted for each testing phase, followed by Bonferroni-corrected pairwise comparisons. At the immediate post-test phase, significant between-group differences emerged, $F(2, 91) = 15.78$, $p < .001$, $\eta^2 = .258$. The Direct WCF group ($M = 67.34$, $SD = 12.45$) significantly outperformed both the Indirect WCF group ($M = 58.92$, $SD = 11.78$, $p = .012$, $d = .71$) and the Control group ($M = 45.23$, $SD = 13.67$, $p < .001$, $d = 1.74$). Additionally, the Indirect WCF group demonstrated significantly higher accuracy than the Control group ($p = .001$, $d = 1.05$). These findings suggest that both feedback types were effective immediately following treatment, with direct feedback showing superior effectiveness.

The delayed post-test analysis revealed a different pattern of results. While the one-way ANOVA remained significant, $F(2, 91) = 8.45$, $p < .001$, $\eta^2 = .157$, the post-hoc comparisons showed that both the Direct WCF group ($M = 61.78$, $SD = 14.23$) and Indirect WCF group ($M = 59.45$, $SD = 13.89$) significantly outperformed the Control group ($M = 47.12$, $SD = 12.34$, $p < .001$ and $p = .002$, respectively). However, the difference between the two treatment groups was no longer statistically significant ($p = .634$, $d = .17$), indicating that the initial advantage of direct feedback had diminished over time.

Examination of within-group changes over time revealed distinct learning trajectories for each group. The Direct WCF group showed significant improvement over time, $F(2, 62) = 89.34$, $p < .001$, $\eta^2 = .742$, with significant gains from pre-test to immediate post-test ($p < .001$, $d = 4.12$) and from pre-test to delayed post-test ($p < .001$, $d = 3.58$). However, there was a slight but non-significant decline from immediate to delayed post-test ($p = .089$, $d = .48$), suggesting some attrition in performance over time. Similarly, the Indirect WCF group demonstrated significant changes across time points, $F(2, 62) = 67.23$, $p < .001$, $\eta^2 = .684$, with significant improvement from pre-test to immediate post-test ($p < .001$, $d = 3.21$) and from pre-test to delayed post-test ($p < .001$, $d = 3.45$). Notably, this group showed no significant decline from immediate to delayed post-test ($p = .892$, $d = .04$), suggesting better retention of gains compared to the direct feedback group. The Control group showed minimal change over time, $F(2, 58) = 12.45$, $p < .001$, $\eta^2 = .301$, with small improvements from pre-test to immediate post-test ($p = .023$, $d = .67$) and from pre-test to delayed post-test ($p = .034$, $d = .71$) that were substantially smaller

than those observed in the treatment groups and likely reflected practice effects or natural development.

The effect sizes for the main comparisons revealed large practical significance for the treatment effects. The immediate post-test comparisons yielded large effect sizes for Direct WCF versus Control ($d = 1.74$) and medium to large effect sizes for Indirect WCF versus Control ($d = 1.05$) and Direct WCF versus Indirect WCF ($d = .71$). At the delayed post-test, both treatment groups maintained large effect sizes compared to the Control group (Direct WCF: $d = 1.23$; Indirect WCF: $d = 1.08$), while the difference between treatment groups became negligible ($d = .17$).

The results demonstrate that both direct and indirect written corrective feedback were effective in promoting the acquisition of English past counterfactual conditionals among Turkish EFL learners. Direct feedback showed superior immediate effects, but this advantage was not maintained at the delayed post-test, where both treatment approaches demonstrated comparable effectiveness. Both feedback types significantly outperformed the control condition at both immediate and delayed testing phases, indicating sustained benefits of corrective feedback for this complex grammatical structure.

Discussion

The present study investigated the differential effects of direct and indirect written corrective feedback on Turkish EFL learners' acquisition of English past counterfactual conditionals. The findings contribute to the ongoing theoretical debate regarding the relative effectiveness of different feedback types and provide insights into the cognitive mechanisms underlying feedback processing in second language acquisition.

The results demonstrate that both direct and indirect written corrective feedback were significantly more effective than no feedback in promoting learners' acquisition of the target structure, thereby refuting Truscott's (1996, 1999) claim that written corrective feedback is ineffective or even harmful for L2 development. This finding aligns with the growing consensus in the field that WCF, when appropriately implemented, can facilitate second language learning (Bitchener & Storch, 2016; Nassaji, 2016). The substantial effect sizes observed in this study (ranging from medium to large) provide compelling evidence for the practical significance of written corrective feedback in L2 grammar instruction.

Regarding the long-term effectiveness of WCF (RQ₂), the delayed post-test results demonstrate that both direct and indirect WCF produce sustained

learning effects that persist four to five weeks post-treatment. Both treatment groups maintained significantly higher accuracy levels compared to the control group at delayed testing, with large effect sizes. Importantly, while both feedback types demonstrated durability, the indirect WCF group showed more stable retention patterns with no significant decline from immediate to delayed post-test, whereas the direct WCF group experienced a slight, though non-significant, performance decline. These findings indicate that WCF, regardless of type, facilitates genuine learning rather than temporary performance enhancement for complex grammatical structures.

The superior immediate effectiveness of direct feedback over indirect feedback observed in this study in the immediate posttest supports the theoretical arguments advanced by researchers who contend that explicit feedback provides learners with clearer information about the mismatch between target and non-target forms (Bitchener & Knoch, 2010; Ellis et al., 2008). The immediate advantage of direct WCF also supports Schmidt's (2001) Noticing Hypothesis and CLT predictions (Sweller, 2017) that explicit corrections facilitate attention to form and reduce cognitive load for complex structures. However, the convergence at delayed testing aligns with Skill Acquisition Theory (DeKeyser, 2015), suggesting both feedback types equally support procedural knowledge development over time. The stable retention in the indirect WCF group may reflect Output Hypothesis (Swain, 2005) predictions about deeper processing benefits from self-correction. These findings suggest attention-based theories explain immediate effects while skill-based theories account for long-term patterns, with structural complexity moderating these relationships.

The complexity of the target structure in this study provides additional theoretical insights. Past counterfactual conditionals represent what Hulstijn and De Graaff (1994) would classify as a complex grammatical structure, requiring learners to coordinate multiple grammatical criteria including tense sequencing, modal auxiliary selection, and hypothetical meaning construction. Research on the interaction between grammatical complexity and feedback type suggests that complex structures may benefit more from explicit instruction and feedback (DeKeyser, 1995; Robinson, 1996). The immediate advantage of direct feedback observed in this study supports this theoretical position, as learners appeared to benefit from the explicit provision of correct forms when dealing with this cognitively demanding structure.

However, the delayed post-test results reveal a more detailed picture of feedback effectiveness. The convergence of performance between the direct and indirect feedback groups at the delayed testing phase suggests that the initial advantage of direct feedback may not be sustained over time. This pattern can be interpreted through skill acquisition theory (DeKeyser, 2015),

which distinguishes between declarative and procedural knowledge. While direct feedback may facilitate the initial acquisition of declarative knowledge about the target structure, the development of procedural knowledge—necessary for automatic and sustained use—may require different cognitive processes that are equally supported by both feedback types over time.

The retention patterns observed in this study also provide insights into the cognitive processing mechanisms underlying feedback effectiveness. The slight decline in performance from immediate to delayed post-test in the direct feedback group, contrasted with the stable performance in the indirect feedback group, suggests that different feedback types may engage different cognitive processes. Indirect feedback, by requiring learners to engage in problem-solving and hypothesis testing, may promote deeper processing that leads to more durable learning (Ferris, 2006). This interpretation aligns with the levels of processing theory, which suggests that deeper, more effortful processing leads to better retention.

The present findings demonstrate both convergence and divergence with previous research conducted across diverse EFL contexts, with particular relevance to Turkish learners. The superior immediate effectiveness of direct feedback observed in this study aligns with international research supporting direct WCF's advantages for complex structures (Van Beuningen et al., 2012; Bitchener & Knoch, 2010), while also converging with Turkish-specific studies by Buckingham and Aktuğ-Ekinci (2017) and Berkant et al. (2020) that support direct WCF effectiveness for Turkish EFL learners. However, the long-term convergence between direct and indirect feedback effectiveness observed in our delayed post-test provides a more nuanced picture that resonates with mixed findings in the international literature. While some studies have found sustained advantages for direct feedback (Van Beuningen et al., 2012), others have reported comparable long-term effects between feedback types (Karim & Nassaji, 2020; Sherpa, 2021), suggesting that contextual and structural factors may moderate these relationships. Within the Turkish EFL context specifically, this pattern aligns with Valizadeh's (2020, 2022) research, which found that both direct WCF and metalinguistic approaches can be effective for Turkish learners' syntactic development. Particularly relevant to the present study is Valizadeh's finding that direct WCF showed benefits for syntactic complexity without evidence of oversimplification effects—a pattern that appears consistent with our results for the complex structure of past counterfactual conditionals and supports broader theoretical arguments about explicit feedback's benefits for cognitively demanding features (DeKeyser, 1995; Robinson, 1996). The effectiveness of our metalinguistic indirect feedback approach further supports the growing international consensus that learners

can benefit from various feedback types when targeting complex grammatical structures, while simultaneously demonstrating that Turkish EFL learners' processing patterns align with broader theoretical predictions about feedback effectiveness and structural complexity.

The present findings should be interpreted within the context of the methodological approach employed. While reconstruction tasks effectively elicit multiple instances of the target structure within controlled contexts, they may not fully capture learners' ability to spontaneously deploy past counterfactual conditionals in unconstrained writing situations. The structured nature of reconstruction tasks, while ensuring systematic data collection, may potentially underrepresent the effectiveness of indirect feedback, which theoretically promotes deeper processing and autonomous error correction (Ferris, 2006). Indirect feedback's emphasis on learner-generated corrections may be more advantageous in spontaneous writing contexts where learners must independently recognize the need for and appropriately construct complex conditional structures without external prompts or contextual scaffolding.

The findings provide clear answers to the three research questions posed. Regarding immediate effects (RQ₁), direct WCF demonstrated superior effectiveness over indirect WCF, with both feedback types significantly outperforming the control condition. For long-term effects (RQ₂), both direct and indirect WCF maintained their effectiveness four to five weeks post-treatment, with large effect sizes persisting compared to the control group, indicating that corrective feedback facilitates sustained learning of complex grammatical structures. Concerning differential effectiveness (RQ₃), while direct feedback showed initial advantages, this superiority diminished over time, with both treatment approaches demonstrating comparable long-term effectiveness and significantly outperforming the control condition at delayed testing.

Conclusion

While the present findings provide preliminary insights into potential cognitive mechanisms underlying feedback processing, the limited sample size suggests that broader theoretical implications should be interpreted cautiously and require replication with larger, more diverse populations.

From a pedagogical standpoint, the findings suggest that teachers should consider adopting a flexible approach to feedback provision, potentially combining both direct and indirect strategies depending on instructional

contexts and learning objectives. For immediate accuracy improvement, particularly with complex grammatical structures, direct feedback may be more effective. However, for promoting long-term retention and learner autonomy, indirect feedback appears equally beneficial and may engage cognitive processes that support more durable learning.

Several limitations should be acknowledged in interpreting these findings. First, the study focused on a single complex grammatical structure with intermediate-level learners in a specific EFL context. Future research should investigate the generalizability of these findings across different grammatical structures, proficiency levels, and learning contexts. Second, the reconstruction task format, while methodologically rigorous for eliciting target structures, may have constrained the assessment of feedback effectiveness in several important ways. The structured nature of these tasks may underestimate the effects of indirect feedback, which theoretically promotes learner autonomy and deeper cognitive processing that may be more evident in spontaneous, unconstrained writing contexts. Additionally, reconstruction tasks may limit insights into long-term transfer effects and spontaneous use of the target structure, as they provide contextual support and prompts that are absent in authentic writing situations. Future research should incorporate free writing tasks alongside controlled elicitation methods to provide a more comprehensive assessment of feedback effectiveness across different production contexts. Third, the three-week interval between immediate and delayed post-tests, while providing insights into short-term retention, may not capture longer-term learning effects. Longitudinal studies with extended follow-up periods would provide more comprehensive understanding of feedback effectiveness over time.

Additionally, this study did not examine individual difference factors that may moderate feedback effectiveness, such as working memory capacity, language learning aptitude, or learner beliefs and preferences. Research by Sheen (2007, 2011) and Stefanou and Revesz (2015) has demonstrated that such factors can significantly influence how learners process and benefit from different feedback types. Future investigations should incorporate these variables to develop more nuanced theoretical models of feedback processing.

The study also calls for more research employing process-oriented methodologies to understand the cognitive mechanisms underlying feedback processing. Think-aloud protocols, stimulated recall interviews, and eye-tracking studies could provide valuable insights into how learners attend to, process, and utilize different types of corrective feedback. Such research would contribute to the development of more sophisticated theoretical models that

can better predict and explain feedback effectiveness across different learning contexts.

Finally, the field would benefit from more research examining the interaction between feedback type and grammatical complexity. While this study focused on a single complex structure, systematic investigation of how different feedback types affect the acquisition of structures varying in complexity would provide more comprehensive theoretical understanding and practical guidance for educators.

Despite these limitations, this study makes important contributions to WCF research by providing evidence for the differential temporal effects of direct and indirect feedback on complex grammatical structures. The findings support a comprehensive view of feedback effectiveness that considers both immediate and long-term learning outcomes, offering valuable insights for both theoretical understanding and pedagogical practice in second language instruction.

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Appendix

Sample Reconstruction Task

Audio Script: "Career Choices and Life Paths"

[This text would be audio-recorded and played twice to participants]

"Mehmet always dreamed of becoming a software engineer, but his family wanted him to study medicine. If he had followed his passion for technology from the beginning, he would have graduated with a computer science degree by now. His friend Ayşe made a different choice. She wanted to study abroad, but her parents couldn't afford the tuition fees. If her family had had more financial resources, she would have studied international business in Germany.

Now both friends work in Istanbul, but they often wonder about their alternative life paths. Mehmet thinks that if he had been more determined about his career choice, he would have convinced his parents to support his decision. Ayşe believes that if she had applied for more scholarships, she would have found a way to study overseas.

Their stories show how family expectations and financial constraints can shape our futures. If they had made different decisions five years ago, their lives would have taken completely different directions. However, both have learned that success can be achieved through various paths, regardless of the initial choices we make."

Note-taking Sheet

Character	Original Dream	Family / Financial Situation	What would have happened if
Mehmet			
Ayşe			

Writing Instructions

Based on your notes, reconstruct the text you heard. You have 20 minutes to complete this task. Try to include all the important information and use appropriate grammatical structures.

Little words, big meaning – Ideational and pragmatic markers in fictional war discourse

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Abstract. War discourse has gained importance amid today's global instability due to war-related trauma. Because war often involves trauma, its fictional representation may disrupt language coherence. Discourse coherence, marked by specific linguistic cues, helps readers connect ideas. Without such markers, structure remains implicit, potentially hindering interpretation. From this perspective, ideational and pragmatic discourse markers – little linguistic items that structure and organise text – are vital. These connectives have “procedural meaning” (Blakemore, 2002), guiding readers towards comprehension with less cognitive effort. This article aims to examine how such words and other ‘little words’ function in fictional non-war and war discourse. Using the Ukrainian version of LIWC2015 and a Welch Two-Sample t-test in R, based on the specific weights of categories in the two sets of texts, it was possible to identify markers of trauma discourse in Bohdan Lepky's wartime stories. The results showed that war fiction had a statistically significant reduction in both ideational and discourse-pragmatic markers of coherence. Additionally, there was a trend towards higher lexical density and the use of ‘tentative’ words, or ‘mitigation’ pragmatic markers, and ‘affect’ words, including indicators of anxiety with a focus on the present. These findings offer new insights into how discourse and other pragmatic markers shape the representation of traumatic experiences in the works of individual authors or fictional characters.

Keywords: *discourse markers, ideational markers, pragmatic markers, procedural meaning, LIWC, Bohdan Lepky, fictional war discourse.*

Анотація. У сучасних умовах глобальної нестабільності військовий дискурс набуває особливого значення. Оскільки війну часто супроводжує травма, її художнє зображення може порушувати мовну когерентність. Когерентність дискурсу, маркована специфічними мовними сигналами, допомагає читачеві пов'язувати між собою його ідеї. За відсутності таких маркерів дискурсивна структура залишається імпліцитною, що може ускладнювати інтерпретацію. З цього погляду, семантичні та прагматичні маркери дискурсу — малі лінгвістичні одиниці, що структурують і

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організують текст — мають виняткове значення. Ці сполучники мають «процедурне значення» (Blakemore, 2002), допомагаючи читачам зрозуміти текст із меншими когнітивними зусиллями. У цій статті автор має за мету проаналізувати, як такі слова з процедурним значенням, а також інші «малі слова» функціонують у невоєнних та воєнних прозових творах. Використання української версії LIWC2015 та двовимірного t-критерію Велча в R на основі встановленої конкретної ваги категорій дало змогу встановити маркери дискурсу травми у воєнних оповіданнях Богдана Лепкого. Результати дослідження засвідчили статистично значуще зниження сигналів когерентності, а саме дискурсивних маркерів, – семантичних і прагматичних у воєнних текстах. Крім того, зафіксовано тенденцію до вищої частотності слів-позначників «непевності», тобто прагматичних маркерів «пом'якшення», та «афекту», включаючи мовні індикатори тривоги з акцентом на теперішньому. Одержані дані дають змогу по-новому поглянути на вплив дискурсивних та інших прагматичних маркерів на структурування травматичних переживань окремих авторів або персонажів, зображених у художній літературі.

***Ключові слова:** дискурсивні маркери, семантичні маркери, прагматичні маркери, процедурне значення, LIWC, Богдан Лепкий, художній воєнний дискурс.*

Introduction

Linguistic Cues to Understanding Trauma Discourse

War discourse has become increasingly important due to today's turbulent period. The term 'war fiction' may be applied to military-related texts that describe war events, everyday activities, and the military-cultural aspects of civilians' and combatants' lives during times of war (Kočote & Smirnova, 2016). In a broader context, war testimonies, including war poetry, are viewed as an essential medium for articulating the psychological turmoil of combatants, particularly in relation to trauma, madness, and the fragmentation of the self (Kusumitha, 2025, p. 19). The textual ruptures reflect the fractured consciousness of combatants whose minds have been severely impacted by war. The war-induced literary works of Siegfried Sassoon, Wilfred Owen, Isaac Rosenberg, and Ivor Gurney, deeply analysed in Kusumitha (2025) through the lens of Freudian and Lacanian psychoanalysis, were a linguistic fabric full of incoherent and disrupted syntax, surreal imagery, and spectral voices to encapsulate the psychodynamics of madness.

Deppermann and Lucius-Hoene (2005) note that expressions of traumatic experiences exist on a spectrum that ranges from fully developed and organised narratives to disruptive accounts marked by gaps, pauses, and interruptions. This spectrum also reflects a tension between a deep, personal, and emotional engagement and a seemingly detached narrative that removes

the storyteller from their own experience. Because the description of war is often associated with trauma-related events, the language of war may become more disruptive, i.e., less coherent (Bifulco, 2022; Brewin, 2022; van der Kolk, 2014).

Discourse coherence has its markers. The markedness of discourse structure helps readers build meaningful connections between information segments. Without verbal markers, the ideational and pragmatic structure of discourse remains implicit. While this does not significantly hinder understanding, it can complicate interpretation and affect the relevance of information for the reader.

In this study, the terms ‘discourse marker’ and ‘pragmatic marker’ are treated separately (see also Zasiakin, 2016). While the former can also receive discourse-pragmatic status, it primarily refers to expressions in written or oral discourse that are used both ideationally and pragmatically (Redeker, 1990), serving a structuring and organisational function. These ‘connectives’ do not belong to the truth conditions of the adjacent propositions/utterances. Instead, they signal connections between them, allowing readers to achieve a higher cognitive effect with less cognitive processing effort (Sperber & Wilson, 1995). From the experimental pragmatics perspective (Gibbs & Colston, 2020), these linguistic cues save time and total cognitive effort required to process a particular kind of pragmatic meaning at the phrasal or sentence level. More to the point, their instrumental function is not limited to local coherent relations but can also be extrapolated to a global, i.e., topical, discourse level. Hence, the availability of discourse markers of local and ‘global coherence (Lenk, 1998) is essential for avoiding disruptions in text interpretation. These ‘products of grammaticalisation’ (Nicolle, 2007) include not only conjunctions or prepositional phrases, but also adverbs (now, well, then, still, yet, thus, anyway), phrases (after all, in other words, in addition, at last, what’s more, in any case, in that/this case, by the way, by the time, for example), verbs (listen, look), adverbial phrases (speaking of X, talking about/of), subject-predicate constructions (I mean, you know/see). Used as discourse markers, these linguistic items that previously had ‘conceptual meaning’ developed out of lexical expressions and gained ‘procedural meaning’ (Blakemore, 2002).

As a result, due to the loss of conceptual meaning, these ‘little words’ acquire the status of disjuncts, because they no longer belong to the truth-conditional propositional content in the discourse, serving as ‘keys’ to the proper interpretation of adjacent or distant discursive chunks – either utterances (pragmatic aspect) or propositions (ideational aspect).

Unlike discourse markers with a connective status, a group of words, which comprises parenthetical expressions, is referred to here as pragmatic markers of the speaker's (author's) attitude towards the propositional content. In other words, they convey a separate message that has the cognitive status of complementarity to the adjacent proposition/utterance. They are not markers of text coherence but modifiers of the illocutionary force of the adjacent speech act towards increasing or 'mitigating' (Caffi, 2013) its categoricity. They also have a status of 'disjuncts' capable of encoding a pragmatic relation as they are not part of the proposition/utterance.

Now, it seems important to distinguish between the linguistic items that convey procedural meaning and do not belong to the propositional content, and other 'little words' that also convey procedural meaning but meet the truth-conditions of the proposition, being part of it (Wilson, 2011). These include pronouns, which are also products of grammaticalisation, whose function is to help the addressee fulfil the task of reference (Nicolle, 2007). Thus, pronouns constitute a special group of linguistic items that convey procedural meaning. From the perspective of cognitive grammar (Langacker, 2008), they profile nominal grounding. Grounding is a grammatical means of marking the epistemic status of a thing, e.g., a noun, or a process (temporal relation), e.g., a verb, or a state (atemporal relation). The latter group includes interjections, particles, modal words, discourse markers, prepositions, and conjunctions that offer clear procedures for constructing higher-order explicatures, forming either the speaker's (author's) attitude to the propositional content or connecting (parts of) propositions into a logical sequence (Alves & Gonçalves, 2013, p. 111).

Today, these linguistic units are the focus of attention not only of linguists, but also of psycholinguists, cognitive, clinical and social psychologists (Brewin & Field, 2024; Pennebaker, 2007). Pennebaker and colleagues (2015) refer to the entire group of encoders of procedural meaning as functional or 'style' words, which account for around a third of the words used in an average speaker's discourse in Ukrainian and about half in English. Notably, their number is only 500-600 words (approximately 0.5-0.6 per cent) of all words in a language.

Thus, the paper aims to examine the role ideational and pragmatic discourse markers of coherence and pragmatic markers – modifiers of speech acts – play in the structuring of the fictional war discourse by Bohdan Lepky. The study is informed by the theoretical frameworks and empirical findings reviewed above, and accordingly addresses the following research questions:

Research Question 1: How does the author's use of ideational and pragmatic markers of coherence change in non-war and war stories?

Research Question 2: What other linguistic and psychological markers characterise fictional trauma-related war discourse?

Method

Material

As Searle (1975) noted, the utterance acts in fiction are indistinguishable from the utterance acts of serious discourse, so there is no textual property that will identify a stretch of discourse as a work of fiction (pp. 327-330). Most fictional stories contain nonfictional elements. Fictional war discourse can be created both by writers and poets who were active duty combatants and by those who did not have any war experience. However, the latter attempt to provide their readers with the opportunity to perceive events that may be relatively distant in time and space as something close and realistic (Cobley, 1995). As Eisler (2022) argues, a skilled writer can use their imagination to create a realistic portrayal of war (p. 1).

Bohdan Lepky (1872–1941), a prolific Ukrainian writer who skillfully depicted the tragic chapters of the Ukrainian nation's history (Zasiakin, 2024), was not on the front line of the war. However, the peculiarity of his fictional discourse lies in the difference between naturalistic novels, fairy tales, and science fiction, which is defined by the extent to which the author commits to representing specific facts about war. As Lepky's war testimonies are realistic fiction, the author references real places and events, depicting “violent, traumatic reality” (Blacker, 2021, p. 4) of cities and towns and associating these with fictional ones, thus making it possible to treat his fictional stories as an extension of our existing knowledge about the war. The study analysed Lepky's 33 fictional non-war and 24 war stories on the First World War. The first sample size is 82,376 words, while the second is 33,252 words.

Tools

A comparative analysis of the chosen corpora of Lepky's fictional non-war and wartime short stories employed the Ukrainian version (Taraban et al., 2022) of the Linguistic Inquiry and Word Count (LIWC2015) software tool (Pennebaker et al., 2015). Nowadays, LIWC is a popular tool for linguists and psychologists who deal with language related to trauma, aiming to analyse a wide range of

issues – from responses and participant self-reported narratives of trauma experiences to self-reported measures of trauma, adverse childhood experiences, and positive childhood experiences (see Ryan, 2023).

LIWC consists of two main components: a processing block and a set of dictionaries. The program is designed to assign detected words in the text to one or more appropriate categories, so that each in-text word is linked to a corresponding word in the dictionary (cf Zasiiekin et al., 2022). This distinction is made between function words and full-meaning words for categorisation purposes. The 2015 Ukrainian version of the software includes over 10,000 words grouped into categories such as grammatical, psychological, social relations, and personal themes (e.g., friend, female, male, work, religion, family, home, leisure, death, money). Function, or 'style' words, play a special role in LIWC because they serve as linguistic and psychometric indicators of aspects that are not immediately apparent in text – they can measure the social and psychological experiences of the speaker (Tausczik & Pennebaker, 2010).

The current analysis involved calculating and comparing the LIWC-processed text data in terms of the percentages of words belonging to over eighty predefined linguistic and psychological categories. In the LIWC₂₀₁₅ categories, ideational and discourse-pragmatic markers are encoded as 'conj' and 'filler', respectively. Pragmatic modifiers are labelled 'tentat', meaning hedges, and 'certain', meaning boosters.

The statistical analysis of the data obtained from LIWC₂₀₁₅ employed a Welch Two-Sample t-test using the R package. This version of the t-test is considered more reliable than Student's t-test when the two samples have unequal sample sizes (Lu & Yuan, 2010).

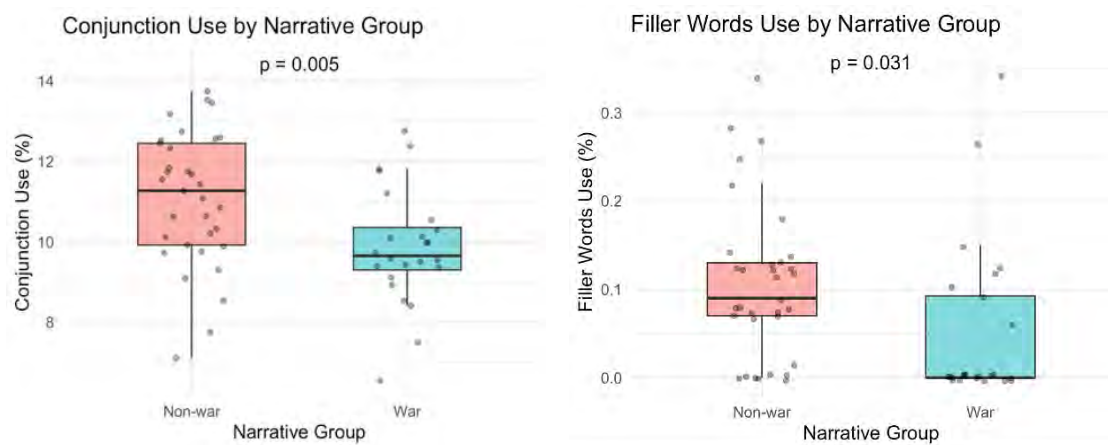
Results

Based on the established specific weight of categories in the comparable sets of texts, it was possible to identify and then compare function words under study, including ideational discourse markers of local coherence, e.g. *i* (*and*), *бо* (*because*), *але* (*but*), and pragmatic markers of 'global coherence' (Lenk, 1998), like *ну* (*well*), *втім* (*anyway*), *тобто* (*I mean*), *знаеш* (*you know*), in the discourse of Lepky's non-war and wartime short stories.

As the statistical analysis showed, the language of Lepky's war stories tends to be less abundant in discourse markers. The results demonstrated that war discourse exhibited a significant reduction in ideational connectives (Mean=11.07 to 9.85) and a decrease in pragmatic markers of global coherence (Mean=.11 to .05) (see Fig. 1).

Figure 1

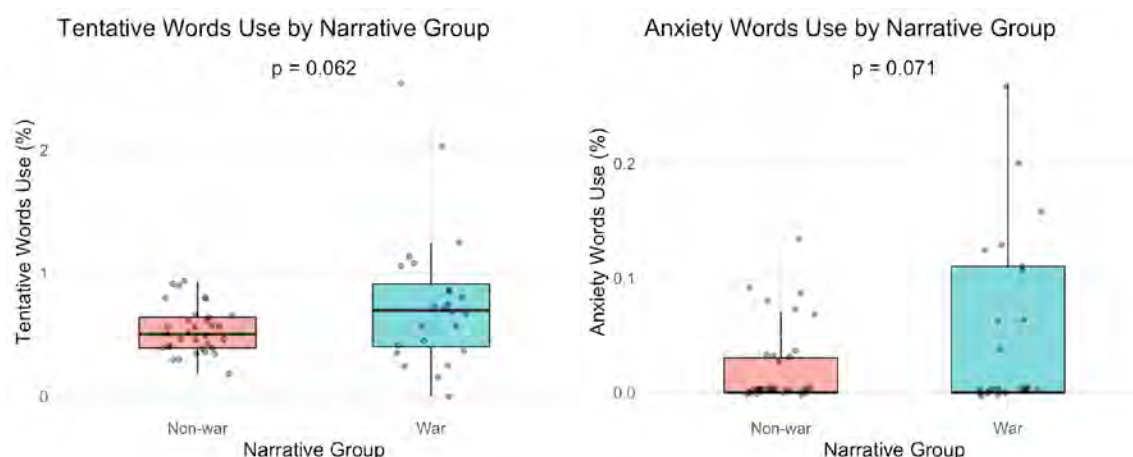
T-test Outcomes for Ideational and Discourse-Pragmatic Markers in Lepky's Non-War (n=33) and War Stories (n=24)



However, there was a trend towards more frequently used 'tentative' language (Mean = .53 to .77), viewed as signals of a mitigation strategy supported by negative emotion words, such as anxiety (Mean = .02 to .05), which fall into the LIWC's broader category of 'affect' (see Fig. 2).

Figure 2

T-test Outcomes for Pragmatic Markers of Mitigation and Anxiety in Lepky's Non-War (n=33) and War Stories (n=24)



Besides, the war corpus gained a more significant focus on the present (Mean = .78 to 1.37) with fewer verbs (Mean = 1.81 to 1.48) (see Fig. 3) and first-person singular pronouns (Mean = 1.76 to .95), but with a higher weight of third-person plural pronouns (Mean = .27 to .59, respectively) (see Fig. 4).

Figure 3

T-test Outcomes for Verb Use and Focus on Present in Lepky's Non-War (n=33) and War Stories (n=24)

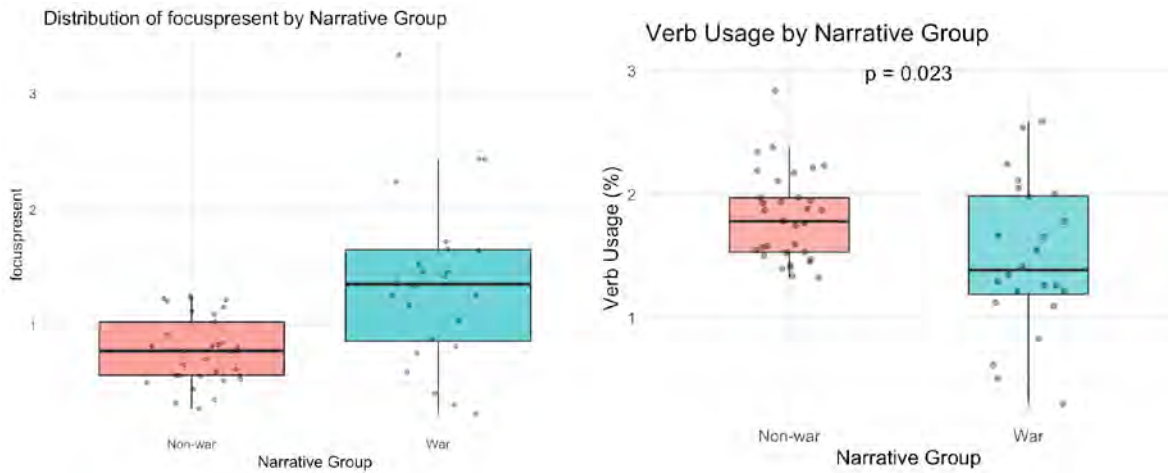
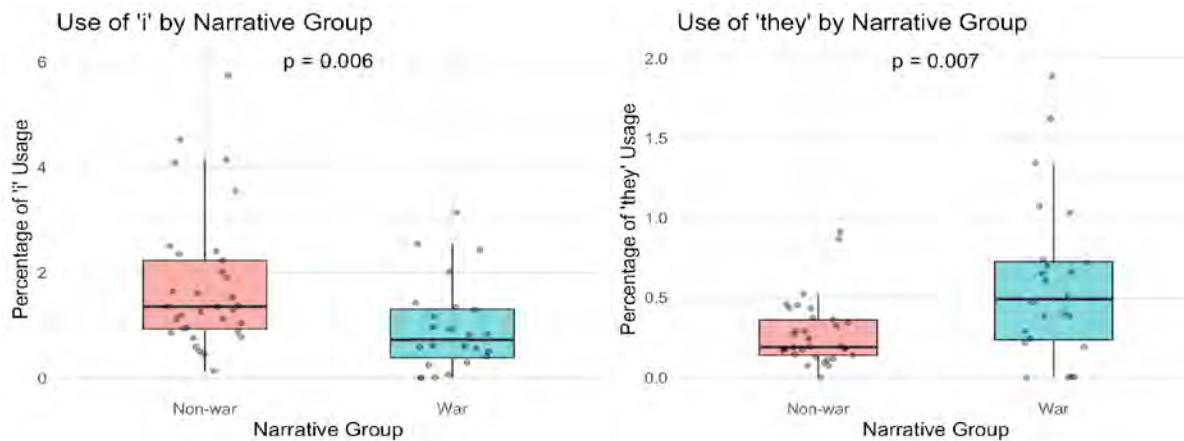


Figure 4

T-test Outcomes for 'I' and 'They' Use in Lepky's Non-War (n=33) and War Stories (n=24)



The lexical density showed a slight upward trend in wartime stories (Mean = 21.16, 22.63, respectively).

Discussion

Although being fictitious, the writer's short stories are also deep reflections on war and testimony to 'personal histories' (Antonissen, 2020, p. 370) of depicted characters that model how they were differently affected when experiencing traumatic events of war and how they would deal with personal and social relations in the times of war. Moreover, these are realistic stories not only about combatants but also about civilians who went through military violence and even atrocities. Despite the expected coherence in discourse structuring, as Lepky recreated testimonies in the form of *pre-fabricated* texts, the stories tended to lose their discourse coherence due to a decreased ratio of discourse markers of local and global coherence.

Reduced use of coherence markers suggests disruption, aligning with research on trauma narratives. As Busch and McNamara (2020) note, narratives produced in traumatic contexts often fail to meet institutional expectations in terms of coherence and accuracy. Fewer filler words imply weaker coherence of discourse macrostructure (Beaudreau et al., 2006), and a lack of global coherence markers negatively affects thematic continuity. In line with the experiment recounting a personal story by Beaudreau and colleagues (2006), our data demonstrated that using filler words, which function as indicators of topic introduction, resumption, or deviation, may suggest the degree to which the story is well-formed. Thus, fewer markers of topical shifts, e.g.: *втім* (anyway), *отож* (so), causes incoherence in the macrostructure. In our case, their decreased ratio negatively contributes to the textual thematic structure, i.e. global coherence in the sense of well-formedness. From the perspective of Relevance Theory (Sperber & Wilson, 1995) and the procedural-conceptual meaning distinction (Blakemore, 2002), the availability of ideational and pragmatic discourse markers facilitates higher cognitive effects with minimal processing effort, thereby increasing the relevance of the communicated utterance(s) for the reader. Therefore, a significant decrease in ideational and discourse-pragmatic connectives may indicate a disruptive 'trauma discourse' (Matei, 2013).

The more frequent use of 'tentative' words, or pragmatic markers of mitigation, combined with a significant drop in the use of ideational and discourse-pragmatic markers of local and global coherence, may suggest that the author was insecure about the topic (Tauczik & Pennebaker, 2010) and was unable to form it into a coherent story. This phenomenon is evidenced in Holmes and colleagues' work (2007), where the markers of uncertainty may also indicate a lack of traumatic event processing by the author himself. In

other words, when people are insecure about their topic, they tend to use tentative language combined with discourse markers as indicators of being unsure about the described events. Pragmatic markers of mitigation revealed in the study, such as *здаю* (I guess), *можливо* (maybe), and *ніби* (sort of), repetitions or hesitations, often reflect uncertainty, trauma, or fear. At the same time, they can indicate stress, emotional struggle or even moral injury (see also Zasiiekin et al., 2025). Lepky explicitly revealed his moral injury in the autobiographical story *The Fugitive's Notes*. The shift from “own eyes” to “observer” (Wardell et al., 2023; King et al., 2024) perspective reinforces our assumptions regarding the attempt to distance from painful recollections. With ‘anxiety’ in the background, a considerable shift in the war stories from ‘I’ to ‘they’ perspective also manifests the author’s alienation of the concepts “we” and “others” (adversaries).

Furthermore, a tendency to a higher lexical density in the war stories is in line with Menne and colleagues’ (2025) research describing the negative sentiment (e.g., anxiety) prevalence and the use of less frequent words in PTSD participants’ speech. Combined with the previously discovered (Zasiiekin, 2024) significant prevalence of ‘anger’ markers in Lepky’s war narratives compared to the reference corpus, the ascending trend of anxiety markers’ use in the present study amplifies the author’s immersion in traumatic events (Holmes et al., 2007).

Finally, more static war discourse, characterised by a significant decrease in verb use and the first-person singular pronoun, in particular, and a present-tense focus in general, may be a hallmark of the author's discourse when discussing an undisclosed event (Pasupathi, 2007). While the use of the past tense verb may be indicative of increased psychological distance and a higher degree of resolution for disclosed events, discourse with a greater focus on the present may indicate a path to reexperiencing the traumatic event (Brewin, 2025).

Conclusions and Interdisciplinary Implications

Overall, the act of storytelling serves as a means for the author to disclose individual painful experiences that have not been shared before. Social psychologists acknowledged this strategy as a mechanism for relieving traumatic stress (Pennebaker & Seagal, 1999). By embedding the studied ‘little words’ in the fabric of his war stories, Lepky mimics oral storytelling and potential trauma loops in characters. In war fiction, pragmatic markers can contribute to naturalistic dialogue, helping to differentiate characters based on

their background, rank, or experience and making conversations sound more authentic and immersive.

Regarding Research Question 1, this study of functioning ‘little words’ in war fiction affirms that Lepky’s war stories exhibited fewer discourse markers of local and global coherence. As for Research Question 2, the study discovered that fictional trauma-related war discourse tended to contain a higher lexical variety, a greater degree of ‘tentative’ language, laden by increased negative emotion words indicating anxiety. Besides, while third-person plural pronouns carried more weight, the war stories focused on the present and were more static, with less narrator agentivity due to fewer verbs and fewer first-person singular pronouns.

To conclude, the results reported here shed new light on the role ideational and pragmatic markers play in the individual author’s, often “beyond pain” (Lepky, 1922), or characters’ traumatic experiences reflected in fiction. In light of these findings, the study offers prospects and implications for the further psycholinguistic analysis of the current war testimonies shared by today’s civilians and combatants, with a possible step toward ‘the land’ of the pragmatics of trauma discourse. The study can also be of interest for computational linguists and experts in machine learning in creating a nomenclature of linguistic markers of posttraumatic stress disorder and moral injury. Also, for translators, being mindful of ‘little words’ means not omitting them or, conversely, adding them because they may mark meaningful discourse experiences.

Limitations

Although the findings may reveal some specific semantic and pragmatic markers of fictional war discourse structure, this study is far from unveiling a set of reliable markers of ‘language of trauma’ because it requires a more considerable corpus of war fiction discourse. Regarding the focus on the present, as Lepky wrote his war stories chronologically later, there might be a time factor – a tendency, as Pennebaker and Stone (2003) noted, of ageing writers to pay more attention to the present and decrease their use of the first-person singular over time.

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BOOK REVIEWS

Florence Bonacina-Pugh (2024). *Language Policy as Practice: Advancing the Empirical Turn in Language Policy Research*.

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Abstract. This review explores the theoretical, methodological, and empirical contributions of *Language Policy as Practice*, edited by Florence Bonacina-Pugh. The book represents a significant shift in the study of language policy from normative and macrostructural approaches toward empirical ones that foreground language practices in real social contexts. Across eleven diverse chapters, the contributors present ethnographic studies and in-depth interactional analyses of language policy as it unfolds in various domains, including classrooms, higher education institutions, transient communities, and households. The book's central focus is on how language policies are not merely top-down directives but are interpreted, negotiated, and enacted situationally by local actors in their everyday lives. This review appreciates the "language policy as practice" approach advanced in the book while also addressing its conceptual and methodological challenges. By emphasizing a human-centered perspective, the book invites readers to envision a future of language policy that is more inclusive, equitable, and grounded in the lived experiences of its users.

Keywords: *language policy, language practices, multilingual education, negotiated policy.*

Анотація. Ця рецензія досліджує теоретичний, методологічний та емпіричний внесок книги "Language Policy as Practice", за редакцією Флоренс Бонасіна-П'ю.

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Видання становить важливий зсув у дослідженні мовної політики – від нормативних і макроструктурних підходів до емпіричних, які акцентують на мовних практиках у реальних соціальних контекстах. В одинадцяти розділах автори презентують етнографічні дослідження та поглиблений аналіз взаємодії мовної політики в різних сферах, зокрема в класах, закладах вищої освіти, мобільних спільнотах, та в домогосподарствах. Основна увага книги зосереджена на тому, що мовна політика – це не лише директиви згори, а й процеси, які локальні учасники інтерпретують, узгоджують і реалізують ситуативно у своєму повсякденному житті. В рецензії схвально оцінено запропонований у книзі підхід «мовна політика як практика», водночас розглянено його концептуальні та методологічні виклики. Зосереджуючи увагу на людині, книга пропонує читачам уявити майбутнє мовної політики більш інклюзивним, справедливим і заснованим на реальному досвіді її користувачів.

Ключові слова: мовна політика, мовні практики, багатомовна освіта, узгоджена політика.

The book *Language Policy as Practice*, edited by Florence Bonacina-Pugh, comprises eleven interconnected chapters that engage readers through their cohesive and compelling narratives. As a powerful introduction, the first two chapters critically and reflectively map out a new direction in contemporary language policy studies. David Cassels Johnson and Florence Bonacina-Pugh, in turn, articulate what they refer to as the Empirical Turn, a paradigmatic shift away from normative and structuralist approaches toward a focus on everyday language practices and individual agency in the creation, negotiation, and enactment of language policy. These chapters not only lay out the theoretical framework that informs the subsequent contributions but also propose the concept of practiced language policy as an analytical lens that bridges formal policy texts, social norms, and actual language practices. Drawing on ethnographic methods, conversation analysis, and transdisciplinary thinking, the authors productively challenge the binary of top-down vs. bottom-up policy perspectives and expand our understanding of language policy as dynamic, situational, and embedded in social interaction.

Chapter 3 deepens the understanding of practiced language policy as a dynamic, contextual, and continuously negotiated social practice. Florence Bonacina-Pugh critiques normative approaches to language policy and offers an alternative framework that emphasizes policy not as a fixed set of rules, but as the outcome of social interaction shaped by domains, participants, and power relations. Drawing on Fishman's domain theory and the principle of reciprocity of perspectives, she argues that language policy is inherently flexible shifting with context, interpreted differently by speakers, and evolving through emergent norms. Using conversation analysis of interactions in multilingual classrooms, Bonacina-Pugh illustrates how conversational repair moments reflect the negotiation of linguistic norms in practice. She offers a

robust theoretical and methodological approach to viewing language policy as a flexible and evolving social process.

Chapter 4 authored by Hao Zhang, makes a significant contribution to expanding our understanding of language policy by shifting the focus from normative and textual approaches to a praxis-oriented perspective rooted in the interactional dynamics of the classroom. Employing conversation analysis of interactions in a Mandarin language class at a Scottish primary school, Zhang demonstrates that language policy is not merely embodied in formal documents or institutional regulations but is better understood as the outcome of continuous social negotiation between teachers and students in the learning context. He reveals that language choice in the classroom is not arbitrary but conditioned by the type of pedagogical activity taking place each bringing its own set of linguistic norms. This approach highlights how shifts in pedagogical framing for instance, from instruction to discussion or drilling, lead to corresponding shifts in the language medium used, thereby presenting language policy as a dynamic, contextual, and multilayered phenomenon.

Chapter 5 presents a significant contribution to language policy studies by emphasizing that policy is not a fixed normative entity, but rather a dynamic social practice negotiated in everyday life. Drawing on the *Second Wave of Southern Perspectives* (SWaSP), Sangeeta Bagga-Gupta examines the languaging practices of users of Swedish and Swedish Sign Language to expose structural inequalities experienced by marginalized groups, such as individuals with sensory disabilities. Through an in/un-disciplinary approach and WPR (What's the Problem Represented to be) analysis, she distinguishes between policy-as-promised and policy-as-practiced, illustrating how language serves as a contested site for identity and accessibility struggles. This chapter not only broadens methodological horizons through multi-scalar and cross-sectoral approaches but also serves as an epistemic intervention, challenging universalist tendencies in language policy scholarship and advocating for solidarity and social justice.

Chapter 6 explores the relationship between formal language policy and actual language practices within a multilingual university in Finland. Solin and Pienimäki examine the use of the institution's three official languages Finnish, Swedish, and English in administrative contexts, particularly in the curriculum documents of a master's degree program. Through ethnographic methods and discourse analysis, the chapter reveals how curriculum texts not only reflect policy but also expose ongoing negotiations, constraints, and habitual practices on the ground. Their study finds that the trilingual policy often functions symbolically, as its implementation is hindered by resource limitations and

coordination challenges. By focusing on curriculum writing practices, Solin and Pienimäki provide fresh insights into the ideological dynamics and practical complexities of language policy implementation at the institutional level.

Chapter 7 offers a significant methodological contribution by extending language policy studies into the multimodal realm through the use of Ethnomethodological Conversation Analysis (EMCA). By analyzing video recordings of EMI (English Medium Instruction) and CLIL (Content and Language Integrated Learning) classrooms, Jakonen and Duran demonstrate that gestures, facial expressions, and bodily movements play a key role in managing linguistic norms. This approach highlights the body as an integral component of embodied language policy practices. However, the chapter's strong focus on micro-sequential analysis risks overlooking broader ethnographic and political dimensions, potentially reducing the body to a neutral instrument rather than recognizing it as an active ideological site. While Jakonen and Duran open up new understandings of multimodality in language policy, they fall short of fully addressing issues of power and authority in determining language legitimacy within educational institutions.

Chapter 8 written by Rizwan-ul Huq, contributes to language policy scholarship by adopting a Multimodal Analysis approach to investigate interactional practices in two English-medium schools in Bangladesh. Through detailed analysis of classroom video recordings that capture the use of both English and Bengali, Huq reveals how language choice norms are enacted situationally and performatively not only through verbal speech but also through bodily actions and gestures. This approach effectively dissolves the boundaries between formal policy and everyday practice, illustrating how students and teachers strategically employ multimodal resources to shape and negotiate language norms within pedagogical interactions. The chapter's primary contribution lies in its methodological innovation in reconstructing language policy as a locally realized and context-sensitive process. However, despite the richly reflective classroom ethnography, the analysis leaves room for a more critical exploration of the ideological and sociopolitical dimensions framing the role of English in Bangladesh's private education system.

Chapter 9 *Practiced Language Policy in Family Language Policy Research*, emphasizes that language policy within families is not imposed top-down but is dynamically negotiated through everyday practices particularly in interactions between children and caregivers, including parents and the broader environment. Drawing on in-depth ethnographic studies of minority-language-speaking families in Ireland and Scotland, Smith-Christmas illustrates how family language practices reflect collaborative negotiations that

blur the lines between language “management” and “practice,” and are infused with affective and creative meaning. While this chapter significantly enriches Family Language Policy (FLP) perspectives through micro-interactional approaches and robust theoretical reflection, its analysis could be strengthened by further connecting these dynamics to broader structures of power, such as global language hegemony and the social inequalities that shape family language choices.

Chapter 10 highlights that language policy does not always manifest in formalized ways but can emerge organically within transient social configurations, such as workplaces or temporary communities. Using micro-longitudinal video data from two cases a group of interdisciplinary academics at a Danish university and a musical ensemble at a concert venue Mortensen, Hazel, and Brandt demonstrate how norms of language choice gradually take shape through interactions among individuals with no shared history of socialization. Combining Conversation Analysis, Interactional Sociolinguistics, and Linguistic Ethnography, the chapter reveals that language policy practices are not only local but also deeply intertwined with broader language ideologies. This approach enhances our understanding of language policy as a complex social process and invites critical reflection on issues of power and exclusion in multilingual practices. However, the chapter’s dense academic style may pose challenges for non-specialist readers.

Chapter 11 authored by Teresa L. McCarty, offers a reflective conclusion on the direction and values of language policy research, emphasizing the importance of humanistic approaches grounded in real-world practices. McCarty traces the intellectual trajectory of language policy scholarship from the 1990s to the present, asserting that language policy should be understood as a dynamic, contextual social process enacted by individuals in their everyday lives rather than merely as a product of formal documents. She underscores how ethnographic research has opened up space for person-centered approaches that prioritize relationality, empathy, and reciprocal engagement between researchers and participants. By reaffirming language policy as an ongoing practice, McCarty closes the volume with a compelling call to envision a more just and meaningful future for language policy, one shaped by the voices and lived experiences of those most intimately involved.

CALENDAR

PSYCHOLINGUISTIC RESEARCH EVENTS

International Conference on Translation and Interpreting Process Studies – TrIPS 2026

Host institution: University of Mons, Belgium

Deadline for submitting abstracts: 5th October, 2025

Location: Mons, Belgium

Start Date: 6th May, 2026

Contact: Ena Hodzik

E-mail: tripsconference2026@umons.ac.be

URL: <https://www.tripsconference2026.com/>

South Asian Forum for the Acquisition and Processing of Language 2025 (Boulder CO) – 2025 SAFAL

Host institution: University of Colorado Boulder, USA

Deadline for submitting abstracts: 31st August, 2025

Location: Boulder CO, USA

Start Date: 17th November, 2025

Contact: Bhuvana Narasimhan

E-mail: safal.boulder.2025@gmail.com

URL: <https://live-ucbdev-safal2025.pantheonsite.io/>

Ontology as Structured by the Interfaces with Semantics 5 – OASIS 5

Host institution: University of Edinburgh, UK

Deadline for submitting abstracts: 7th April, 2025

Location: Edinburgh, United Kingdom

Start Date: 3rd December, 2025

Contact: Daniel Lassiter

E-mail: dan.lassiter@ed.ac.uk

URL: <https://oasis-5.webflow.io/cfp>

Second Language Teaching/Acquisition in the Context of Multilingual Education – SeLTAME 2025

Host institution: Tbilisi State University, Georgia

Deadline for submitting abstracts: 10th August, 2025

Location: Tbilisi, Georgia

Start Date: 24th October, 2025

E-mail: seltame@tsu.ge

URL: <https://seltame.tsu.ge/>

Syntax, Semantics, and Pragmatics (Workshop @ÖLT49)

Host institution: University Klagenfurt, Austria

Deadline for submitting abstracts: 1st September, 2025

Location: Klagenfurt, Austria

Start Date: 5th December, 2025

Contact: Madeleine Butschety

E-mail: synsemprag.workshop@gmail.com

URL: https://conference3.aau.at/event/149/attachments/85/193/OeLT-2025_1_Circular.pdf

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