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Усі співавтори статті мають однаковий ступінь відповідальності за неї. Одночасне подання одного й того самого рукопису до кількох журналів є неетичним і неприйнятним.

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ARTICLES

Masked cognate translation priming with Arabic-English bilinguals: Further support for the morphological account

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Abstract. The aim of this study is to test the two accounts that have been posited as how cognates are represented in the bilingual mind: the morphological account and the phonological account. More specifically, this study exploits the unique feature of pluralization in Arabic (i.e., concatenative vs. non-concatenative process of pluralization) to investigate how cognates are represented in the bilingual mind of different-script bilinguals (Arabic-English bilinguals) using the masked priming technique. Two types of cognates were used: cognates that are pluralized concatenatively and cognates that pluralized non-concatenatively in Arabic. In concatenative pluralization, the phonology of the singular form is intact such as هرمون /hormōn/ (hormone in English), which is pluralized as هرمونات /hormōnat/ (hormones in English). On the other hand, in non-concatenative pluralization, the phonology of the singular form is broken when a word is pluralized non-concatenatively as in ترم /tirm/ (term in English) and أترام atrām/ (terms in English). The results show a comparable priming effect for both types of pluralizations indicating that cognates in Arabic-English bilinguals may have a shared morphological representation since the magnitude of priming was not affected by the type of pluralization. This similar priming effect for concatenative and non-concatenative pluralization indicates that cognates may share a special kind of morphological representation as suggested by the morphological account.

Keywords: cognates, non-concatenative, morphology, bilinguals.

Алзахрані Алхасан. Маскований переклад когнатів з арабсько-англійськими білінгвами: Додаткове свідчення на користь морфологічного підходу.

Анотація. Мета цього дослідження – дослідити за допомогою техніки маскованого праймінгу, як свідомість білінгвів репрезентує слова-когнати. Було використано два типи когнатів: ті слова, які в арабській мові утворюють множину шляхом конкатенації, або «зрощування», та слова, які не утворюють множину за допомогою конкатенації. У випадку утворення множини шляхом конкатенації фонологічна форма однини залишається незмінною, наприклад, هرمون /hormōn/ (гормон в англійській мові), яка у множині має форму هرمونات /hormōnat/ (гормони в англійській мові). З іншого боку, у разі неконкатенативного способу утворення множини фонологічну форму однини порушено, як, наприклад, у ترم /tirm/

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(термін в англійській мові) та أنترام /atrām/ (терміни в англійській мові). Результати показують зіставний ефект праймінгу для обох типів утворення множини, що вказує на те, що когнати в арабсько-англійських білінгвів можуть мати спільну морфологічну репрезентацію, оскільки на величину праймінгу не впливав тип утворення множини. Подібний ефект праймінгу для конкатенативної та неконкатенативної множини вказує на те, що когнати здатні мати особливий тип морфологічної репрезентації, як це передбачає морфологічний підхід.

Ключові слова: когнати, неконкатенативний, морфологія, білінгви.

Introduction

One of the important topics in bilingual research is how multiple languages are processed and represented in the bilingual mind. A key issue that has been of great interest to language researchers is how cognates are represented in the bilingual mind (e.g., Ferré, Sánchez-Casas, Comesaña, & Demestre, 2017; Nakayama, Sears, Hino, & Lupker, 2013; Poort & Rodd, 2017; Sánchez-Casas & García-Albea, 2005; Vanlangendonck et al., 2020; Voga & Grainger, 2007). One of the widely used techniques to investigate lexical representation and lexical processing is the masked priming technique (Forster & Davis 1984), which involves presenting a prime word rapidly so that it is perceived unconsciously affecting the participant's recognition of the target word. Previous masked priming studies (e.g., Voga & Grainger 2007) have found that lexical decision responses to L2 targets that are preceded by their L1 cognate translation equivalents (i.e., words that have a high level of phonological, semantic, and/or orthographic overlap between two languages) are faster and more accurate compared to those preceded by unrelated words. This priming advantage was observed for same-script bilinguals in which cognates share orthography, phonology, and semantics (e.g., Davis et al., 2010; De Groot & Nas 1991) and for different script bilinguals whose cognates share phonology and semantics only with no orthographic similarity (e.g., Gollan et al., 1997; Voga & Grainger 2007). This differential sensitivity to related and unrelated primes is assumed to reflect either the shared representation or connectivity of prime-target pairs with related words having a shared representation while unrelated words do not (Sanchez-Casas et al., 1992), which seems to be the case even with bilingual children (see e.g., Koutamanis et al., 2024, for a review). The present study investigates the representation of cognate translation equivalents for different-script bilinguals (Arabic-English bilinguals) using the masked priming paradigm.

Two accounts have been proposed to explain the cognate translation priming effect found in lexical decision tasks (LDT). The first one, *The Morphological Account*, that has been proposed by some researchers (e.g., García-Albea et al., 1998; Sánchez-Casas & García-Albea, 2005) assumes that the priming effect for cognate pairs is attributed to a language-independent morphemic representation shared by the prime-target pairs. This morphemic unit is captured by a general learning mechanism that detects form (phonology and/or orthography) and meaning similarity within and across languages in which the priming effect size is not expected to vary as a function of form overlap. Based on this account, the priming effect produced by cognate pairs should not differ significantly from morphologically related words within the same language that share form and meaning as well. Incorporating into the BIA model, cognates across languages

are activated in the retrieval of these morphological units in related words from the lexicon at the intermediary level between form and meaning (Sánchez-Casas & García-Albea, 2005, p. 244). Sánchez-Casas and García-Albea (2005) stated that the possibility that priming effects of cognate translations occur at a morphological level that is intermediary between form and meaning. At the intermediary level between form and meaning, a convergence of phonological representations from bottom-up and semantic meaning from top-down occurs. Bilingual speakers use a lexicon where words (i.e., cognates) are retrieved and related by reference to morphological units, not by phonology or semantics alone. Sánchez-Casas and García-Albea (2005) claim that this occurs across all languages whether speakers are monolingual or bilingual. In other words, this is a language-independent process that speakers retrieve words by morphological units of a general learning mechanism whether it is their first or second language. Sánchez-Casas and García-Albea (2005) based this idea on the finding that a priming effect was only found when stimulus onset asynchrony (SOA) was set at 30 ms for false friends; 30 ms, 60 ms, and 250 ms for cognates; and 250 ms for non-cognates (p. 234 and 238). False friends share only similar phonology that is only found to prime among least proficient bilinguals set at 30 ms, and, crucially, bilinguals lacking a particular level of proficiency will not be found to exhibit priming effects set at 60 ms and 250 ms for cognates because they have not reached a level of proficiency to process shared morphological units set at 60 ms and 250 ms and can only process shared phonological representations set at 30 ms. Therefore, the phonological account does not seem plausible to explicate priming effects when the SOA is set at 60 ms and 250 ms. Furthermore, non-cognates are found to have priming effects set at 250 ms because they require more time for semantic representations that are only shared among words to show priming effects at 250 ms in which non-cognates do not show to occur otherwise when set at 60 ms and 30 ms (Sánchez-Casas and García-Albea, 2005, p. 245-6). Cognates share these morphological units and, therefore, are represented in the mind of bilinguals because of a convergence between phonological and/or orthographic representations from a bottom-up processing and semantic representations from a top-down processing that creates shared morphological representations that all words share, refuting that phonological representations alone are responsible for cognate priming found among bilinguals. It is therefore possible that “Words that share form and meaning will undergo conjoint learning, such that when a word becomes more fluent because of practice, other related words will also benefit,” (Kroll and De Groot 2005, p. 236). Further research for cognate priming among bilinguals was conducted within and across languages providing clear evidence that the priming effect for morphologically related words within the same language is similar to that produced by cognate translation equivalents across languages (Davis et al., 2010; Sánchez-Casas & García-Albea, 2005). In their third experiment, Davis et al., (2010) with same-script bilinguals (Spanish-English bilinguals) have shown that reaction times to targets were almost identical when these targets were preceded by either their cognate translation equivalents or identity primes (570 ms vs 566 ms). Despite the phonological and orthographic differences between Spanish-English cognate pairs, the facilitation observed for identity priming was almost the same as that for cognate primes. Taken together, the results of these studies support the claim that cognate translations across languages are considered a

special kind of morphological relations since they are assumed to be represented in much the same way morphologically related words within the same language are represented. Even though this account has received some empirical evidence from masked priming studies with bilinguals whose languages use the same script, it might be difficult to use it to account for the findings from different-script bilinguals (Nakayama et al., 2014; Voga & Grainger 2007). Nakayama et al. (2014) pointed out that this difficulty could imply that cognate translation equivalents are represented differently for different-script bilinguals compared to same-script bilinguals. The present experiment has been designed to investigate the underlying representation of cognate translation equivalents, and whether this account can be extended to include different-script bilinguals (Arabic-English bilinguals).

An alternative account, *The Phonological Account*, has been proposed by other researchers to explain the cognate priming advantage for translation equivalents (e.g., Nakayama et al. 2014; Voga & Grainger 2007). This account assumes that cognate priming advantage of cognates can be attributed to two separate effects: conceptual similarity and phonological similarity. Employing the masked priming paradigm, Voga and Grainger (2007) provided empirical support for the phonological account using different-script languages (French and Greek). In their experiment 1, each French target word was primed by either a cognate word (e.g., *κανόνι*—*canon*), which means cannon in English, a morphologically related word to the Greek cognate prime (e.g., *κανονιά*—*canon*), which means cannon-shot, or an unrelated word (*κανόνας*—*canon*), which means rule. Two prime durations were used in this experiment: 50 ms and 66 ms, and each subject was tested at both durations. With the 50 ms prime duration, a significant priming effect was obtained for cognate translation equivalents (36 ms), but no priming effect was produced for morphologically related words to the cognate primes. On the other hand, with the 66 ms prime duration, both prime types produced a significant priming effect, but the priming effect for cognates (50 ms) was significantly larger than that for morphologically related primes (34 ms). This experiment was designed with the aim of testing the morphological account that attributes the priming advantage for cognates to the shared language-independent morphemic representation. Based on this account, no difference in the priming advantage was expected from both cognates and morphologically related cognates, which was not supported by the results of this experiment. Therefore, an alternative account was proposed by Voga and Grainger (2007) that can better explain the priming observed for their bilinguals, the phonological account. This priming effect according to this account, as Voga and Grainger (2007) stated, is composed of two additive effects: phonological and conceptual similarity. The stronger priming effect observed for cognates compared to non-cognates was due to the fact that cognate translations share both components (semantic and phonological similarity) while non-cognates share one component (semantics). This study has been criticized by later researchers (e.g., Nakayama et al., 2014; Zhang et al., 2018) because Greek and French have some orthographic overlap. For instance, the *πιάνο*–piano cognate pairs share one phoneme /o/, which makes it difficult to distinguish the role of orthography on the cognate facilitation effect. Therefore, the results, as Zhang et al. (2018) indicated, do not fully support the phonological account. The present study will

further examine the cognate priming effect for Arabic-English bilinguals using languages that use completely different orthographies.

Additional support for the phonological account was provided by a masked priming study with different-script bilinguals (Japanese-English bilinguals) in Nakayama et al. (2014). In this study, Nakayama et al. (2014) examined Japanese-English bilinguals using cognate and non-cognate translation equivalents. In their study, Nakayama et al. (2014) had English targets that were primed by two types of primes conditions: high and low similarity prime conditions with Katakana words being used as cognate primes and Kanji words being used as non-cognate primes. Since the phonological account assumes that cognate priming effect consists of two additive effects (phonological and conceptual facilitation), it was predicted that the magnitude of priming will be affected by the degree of phonological similarity between primes and targets. Therefore, the goal of this study was to examine this prediction using cognates with high and low phonological similarity. This study found that the cognate priming advantage was significantly larger for high-phonologically similar primes than for low-phonologically similar primes supporting the existence of two additive effects in the cognate priming advantage. Even though this study clearly supports the phonological account, other researchers (e.g., Zhang et al., 2018) found it problematic to use two different scripts for Japanese-English cognates and non-cognates (Katakana and Kanji respectively). One of the differences between these writing systems is that Katakana is a shallow writing system with a clear correspondence between orthography and phonology, while the correspondence between orthography and phonology is less transparent for Kanji words (Zhang et al., 2018). This, as Zhang et al. (2018) indicated, is considered a violation of the homogeneity of cognate and noncognate primes. As a result, this study could not sufficiently provide clear evidence to support the phonological account. Taken together, this study tests the magnitude of priming for phonologically similar cognate pairs (i.e., cognates that are pluralized concatenatively) compared to phonologically less similar cognates pairs (i.e., cognates that are pluralized non-concatenatively). We will begin by laying out the morphological system of Modern Standard Arabic (MSA), which consists of two derivations comprising its morphology (concatenative and non-concatenative derivation). Then we will demonstrate how these two types of derivations apply to the Arabic plural system.

Arabic Morphology in MSA: Concatenative vs. Non-concatenative Derivation

The Arabic morphology is known for its richness and complexity. Words in Arabic can be derived in two different ways. First, words are derived by attaching suffixes to the base form linearly with no change in the phonological properties of the base, which is known as the concatenative derivation. For instance, the formation of the possessive form in (1) is realized by the suffixation of *-i* to the base form, while the phonology of the nominal base is intact.

1. kitab-i
book-my
“My book”

The second method of derivation does not employ the simple suffixation process that is used in the concatenative derivation. Instead, it is done through the mapping of a consonantal root onto a template (as shown in 2), which is referred to as the non-concatenative derivation (McCarthy, 1979).

2. Kaatib
CaaCiC
“writer”

The word *kaatib* ‘writer’ is derived from the verbal base *katab* ‘wrote’. The consonantal roots are mapped onto the template CaaCiC in which the vowels (i.e., –aa–i–) are already determined by the template and cannot be changed without changing the meaning entirely (i.e., thus resulting in unrelated words).

The pluralization process in Arabic utilizes both methods of derivations, (McCarthy, 1979). In the concatenative method of pluralization, apart from case, the suffix –*un*, –*in* or –*at* is appended directly to the base form as shown in (3).

3. *muʔallim-un*
teacher-masc.pl
‘teachers’

In the case of feminine plural as Holes (1995) stated, the feminine plural marker –*at* is suffixed to the base form. If the noun has a feminine plural marker as in *muʔallim-a* ‘female teacher’ that is pluralized as *muʔallimat* ‘female teachers’, the feminine plural marker is suffixed to the base form after removing the feminine plural marker –*a*. Traditional grammarians refer to this type of pluralization as the *sound plural*, (McCarthy & Prince 1990). The reason for calling the first type “sound plural”, as Boudelaa and Gaskell (2002) indicated, is not because it does not involve any modification of the singular form, but because the inflectional process involves very little (as in feminine plural) or no change to the stem word. In the present study, only the feminine plural suffix –*at* was used to generate the feminine sound plural.

Unlike concatenative pluralization which involves almost no change to the base form, in the case of non-concatenative pluralization, which is traditionally known as the broken pluralization (McCarthy & Prince, 1990), the pattern of the singular form is broken down through morphological processes within the base form. In the non-concatenative pluralization, the only shared elements between the base form and its plural counterpart are the consonantal roots. The root is defined as a consonantal unit that denotes the abstract meaning of all possible derivations of that root (McCarthy & Prince, 1990). The pattern or the vocalic melody of the base form, often changes partially or completely as in (4).

4. *kitaab* ‘book’ → *kutub* ‘books’

Example (4) shows that the vocalic pattern of the singular form was changed from *i-a* to *u-u*, but the consonantal root *k t b* remained intact in the base and the derived form.

The Goal of the Study

The goal of the present study is to investigate cross-language translation priming effect in Arabic-English bilinguals. The current research is another examination of the phonological and the morphological account. According to the morphological account, the priming effect for cognate translations across languages is linked to a special kind of morphological representational status in bilingual language processing. This account proposes that the general learning mechanism that is responsible for detecting morphemically related words that share form and meaning within a given language is the same learning mechanism that is responsible for identifying form and meaning similarity across languages (i.e., cognate translation equivalents across languages). According to this view, priming based on morphological relations is not assumed to be sensitive to the degree of phonological similarity of cognate translation pairs. On the other hand, according to the phonological account, the cognate priming effect is attributed to the additive effects of phonology and semantics of the cognate pairs. This account predicts that the priming effect will be modulated by the degree of phonological similarity between prime-target pairs. This prediction was tested in this experiment by using Arabic-English cognate translation equivalents that are highly phonologically similar to their targets (i.e., pluralized concatenatively) compared to Arabic-English cognate translation equivalents that are less phonologically similar to their targets (i.e., pluralized non-concatenatively). Arabic is an ideal language allowing a better test for these two accounts since morphologically complex words in Arabic are formed by either: (i) constructing a linear sequence of morphemes (sequential concatenation of morphemic units) in which the phonology of the stem is intact when a word is pluralized concatenatively, (ii) constructing a non-linear sequence in which root letters are intertwined with the pattern of the word. This contrasts with English, and other Indo-European languages. The non-concatenative pluralization found in Semitic languages such as Arabic provides valuable cross-linguistic contrast and offers an opportunity to assess these two accounts in a more clear-cut manner since the two morphemes of a complex word in Arabic is appended in a different way than concatenative languages.

Considering previous evidence from bilingual lexical decision studies with cognate translations, we predicted that if the advantage of processing cognates is due to the sum of phonology and semantics between cognate pairs, then greater priming effect is expected for morphologically complex cognates that are pluralized concatenatively since the phonology of the base form is preserved when a word is pluralized concatenatively in Arabic. By contrast, less priming effect for those that are pluralized non-concatenatively is expected because the internal structure of the base form is modified when a word is pluralized in a non-concatenative manner. On the other hand, if the cognate advantage in masked priming is due to a language-independent morphemic representation shared by the prime and target in English and Arabic, then a comparable priming effect for complex words that are pluralized concatenatively and non-concatenatively is expected. If this is indeed the case, then there should be a shared morpheme between English and Arabic creating this priming

effect regardless of how the prime is pluralized in Arabic, concatenatively or non-concatenatively, providing strong evidence that morphology is the critical principle of bilingual lexical organization as suggested by Sánchez-Casas and García Albea (2005). The ultimate goal of this study is to address the question of how cognates are stored and represented in the bilingual mind.

Method

Participants

A total of 54 male Arabic-English bilinguals with normal to corrected-to-normal vision participated voluntarily in this experiment. All the participants were either graduate or undergraduate students in Dallas-Fortworth area, Texas, USA. Ten of the participants were excluded due to their high error rates (>20%). The participants completed a language-background questionnaire in which they stated their native language (Arabic), self-reported their dominant language (Arabic), their age (18-38 years old), and their latest language proficiency tests such as TOEFL or IELTS (average 80/120 for TOEFL test and 6.5/9 for IELTS test). All the participants had reported studying English for an average of 12 years. The participants' L2 proficiency was also measured using the Lextale test (Lemhöfer & Broersma, 2012), which is a 5-minute vocabulary proficiency test. Due to the lack of a widely accepted standardized vocabulary-size test, the Lextale test was chosen specifically because it has been proven to correlate well with general English proficiency and experimental word recognition data but not self-ratings. The scores of the participants ranged between 63 and 80 with an average of 71 out of 100. In their study, Lemhöfer and Broersma (2012) have shown that the average score for proficient bilinguals is 70.5 out of 100, which is very close to the average score obtained by the participants in the current study.

Materials

The experiment consisted of 160 target items, 80 Arabic-English cognate translation equivalents and 80 pronounceable nonword targets. The targets were presented in English (L2) and primes were presented in Arabic (L1). Each English word target was primed by four Arabic prime types: (i) its cognate translation equivalent in Arabic such as computer-كمبيوتر /kombūtar/, (ii) its cognate translation equivalent in Arabic that was morphologically complex (i.e., pluralized either concatenatively using the Arabic feminine plural marker *-at* or non-concatenatively) such as computer-كمبيوترات /kombūtarat/ or filter-فلتر /falātīr/ respectively, (iii) simple unrelated word such as plastic-التزام /iltizām/ meaning obligation, (iv) unrelated word that was morphologically complex (i.e., pluralized either concatenatively or non-concatenatively) such as computer-مقاسات /maqāsat/ or filter-كتب /kutub/ respectively (see Table 1 and 2 for more examples of all prime types). The English targets were selected to form two sets: The first set (40 English word

targets) were paired with morphologically complex primes that can only be pluralized concatenatively in Arabic; and the second set (40 English word targets) were paired with morphologically complex primes that can only be pluralized non-concatenatively in Arabic. Primes that are pluralized concatenatively had phonological and semantic overlap with their targets since the base form is intact when a word is pluralized concatenatively in Arabic while the primes that are pluralized non-concatenatively had less phonological similarity with their targets due to the internal modification of the stem.

English targets that were paired with Arabic primes that are pluralized concatenatively were 3-10 letters in length ($M= 6.5$ letters) and had a mean written Celex frequency of 34.22 per million. Whereas English targets that were paired with Arabic primes that are pluralized non-concatenatively were 3-9 letters in length ($M= 5.4$ letters) and had a mean written Celex frequency of 31.87 per million. The prime and target frequencies were accessed using the N-Watch database (Davis, 2005). Four experimental lists were created in which the targets were rotated across these four conditions so that each target cannot appear more than once for each subject. The targets were presented in bold capital letters using Courier New font of size 14, and the primes were presented in bold using the Courier New font of size 12. The font size for both the hash marks and the target words was a bit larger than that of the primes to make sure that the diacritical dots of the Arabic primes are completely masked. The nonword targets were created using the ARC database (Rastle, Harrington, & Coltheart, 2002) while respecting the phonotactic constraints of English. The nonword primes were created to mimic the word primes in terms of concatenativeness and phonological overlap with their targets. The nonword targets that were paired with nonword primes that are pluralized either concatenatively or non-concatenatively were very similar to the word targets in terms of the length of letter strings: nonword targets in the concatenative condition were 4-8 letters in length ($M= 5.17$), and nonword targets in the non-concatenative condition were 4-7 letters in length ($M= 5.42$).

Table 1

Sample Stimuli of All Priming Conditions for Cognates That Are Pluralized Concatenatively

Arabic Primes				
English Targets	Simple translation	Complex translation	Simple control	Complex control
HORMONE	هرمون /hormōn/ (hormone)	هرمونات /hormōnat/ (hormones)	مهرجان /mahrajān/ (festival)	مهرجانات /mahrajānat/ (festivals)
PLASTIC	بلاستيك /blāstik/ (plastic)	بلاستيكات /blāstikat/ (plastics)	إلهام /ilhām/ (inspiration)	إلهامات /ilhāmat/ (inspirations)

Table 2

Sample Stimuli of All Priming Conditions for Cognates That Are Pluralized Nonconcatenatively

Arabic Primes				
English Targets	Simple translation	Complex translation	Simple control	Complex control
BANK	بنك /baŋk/ (bank)	بنوك /bunuuk/ (banks)	جبل /jabal/ (mountain)	جبال /jibāl/)mountains(
TERM	ترم /tirm/ (term)	أترام /atrām/ (terms)	محبس /maḥbas/ (prison)	محابس /maḥbis/ (prisons)

Procedure

Each participant was tested individually. The software that was used for presenting the stimuli and measuring the reaction times (RTs) is the DMDX (Forster & Forster, 2003). Three-field masked priming paradigm was used in which, first, eleven hash marks appeared for 500 ms. Then, the mask was immediately followed by the L1 prime with an exposure duration of 50 ms., which was followed by an upper-case L2 target that was presented for 500 ms. The subjects completed 8 practice items before the experimental items to familiarize themselves with the task. The subjects were instructed to make lexical decisions on the targets as quickly as possible by pressing a response key using the right hand when the letter string they saw is a word and pressing another response key using the left hand when the letter string they saw is not a word in English. Their responses were immediately followed by feedback, printed on the screen. The feedback indicates whether the response is right or wrong and it also includes the latency of the response. The participants were also asked to take a short vocabulary knowledge test known as the Lextale test, which is available at <http://www.lextale.com/takethetest.html>. The purpose of this test was to measure their L2 proficiency as noted earlier.

Results

Word Analysis

Reaction times for correct responses were averaged across subjects and items. To minimize the effect of outliers, reaction times that were outside a range of two standard deviations above or below the subject's mean were replaced with the appropriate cutoff value. All response latencies beyond the range of 300 ms -1500 ms were discarded and excluded from the analysis. In addition, all responses on which an

error occurred were discarded. The treatments were applied to 11.8 % of the data (averaged across files). All participants whose error rates were greater than 20% (n = 10) were replaced.

Separate analyses of variance (ANOVAs) were calculated, one by subjects (F1) and one by items (F2). The data were analyzed using a 2 x 2 x 2 x 4 ANOVA with RT as the dependent variable and morphological complexity (morphologically-simple vs. morphologically-complex), relatedness (related vs. unrelated), concatenativeness (concatenative vs. non-concatenative), and 4 lists/item groups as the independent variables. Morphological complexity and relatedness were repeated measures for both subject and item analyses, while concatenativeness was a repeated measure for subject analysis but non-repeated for item analysis since an item can be pluralized either concatenatively or non-concatenatively. Lists/item groups was non-repeated for both subject and item analyses. Table 3 shows the mean reactions times and error rates from the subject analysis.

Table 3

Mean Lexical-Decision Times (in Milliseconds) and Error Rates Obtained with Arabic-English Bilinguals in Cross-Language (LI -12) Priming Lists

	Morphologically-simple				Morphologically-complex			
	concatenative		non-concatenative		concatenative		non-concatenative	
	RT	ER	RT	ER	RT	ER	RT	ER
Related	821	.12	842	.14	839	.12	840	.13
Control	884	.18	885	.22	874	.15	889	.18
Priming	***63	*.06	**43	***.08	**35	.03	***49	*.05

*** p < .001; ** p < .01; * p < .05

RT= reaction time, ER= error rate

The analysis of reaction times showed a significant effect for relatedness by subjects and by items, $F1(1,40)= 44.54, p<.001, F2(1,72)= 48.37, p<.001$, indicating that related items were generally responded to faster than unrelated items. There was a marginally significant main effect of concatenativeness by subjects only, $F1(1, 40)= 3.45, p=.07, F2(1,72)= .60, p=.44$. The main effect of complexity was not significant, $F1(1,40)= .21, p=.65, F2(1,72)= .40, p=.53$. Most importantly, we expected to get a significant three-way interaction between concatenativeness, complexity and relatedness with concatenative complex words being responded to faster than non-concatenative complex words if the cognate priming advantage was

due to the additive effect of phonology that is available for Arabic-English cognates that are pluralized concatenatively; however, the interaction between them failed to reach significance, $F_1(1,40)=1.35$, $p=.25$, $F_2(1,72)=.27$, $p=.57$. No further interactions were expected or found (all p 's > .05).

Two two-way ANOVAs were conducted for simple and complex items separately with concatenativeness (concatenative vs. non-concatenative) and relatedness (related vs. unrelated) as the independent variables and the reaction time (RT) as the dependent variable. The two-way ANOVA for simple items revealed a significant main effect of relatedness by subjects and by items, $F_1(1,40)=32.45$, $p<.001$, $F_2(1,72)=25.21$, $p<.001$, indicating that simple related items were responded to faster than their unrelated controls irrespective of how these simple items can be pluralized, concatenatively or non-concatenatively. To determine if the priming effect for each stimulus type in the simple condition (i.e., simple concatenative and simple non-concatenative) was statistically reliable, simple pairwise comparisons were conducted for each stimulus type individually. First, for the simple concatenative condition, related words were responded to faster than unrelated words by subjects and by items, $F_1(1,40)=22.71$, $p<.001$, $F_2(1,72)=12.08$, $p<.01$. A similar pattern of results was found for the simple non-concatenative condition in which the effect of relatedness was also significant by subjects and by items, $F_1(1,40)=8.50$, $p<.01$, $F_2(1,36)=13.21$, $p<.001$. Again, the two-way ANOVA for complex words show a main effect of relatedness by subjects and by items, $F_1(1,40)=25.24$, $p<.001$, $F_2(1,72)=22.99$, $p<.001$, indicating that related items were responded to faster than their unrelated controls regardless of they are actually pluralized, concatenatively or non-concatenatively. To confirm that the effect of relatedness was statistically reliable for each stimulus type in the complex condition (i.e., complex concatenative and complex non-concatenative), simple pairwise comparisons were conducted for each stimulus type separately. Again, the effect of relatedness was significant by subjects and by items for complex concatenative words, $F_1(1,40)=7.68$, $p<.01$, $F_2(1,36)=5.95$, $p<.05$. Similarly, the effect of relatedness was significant by subjects and by items for complex non-concatenative words, $F_1(1,40)=5.32$, $p<.05$, $F_2(1,36)=6.24$, $p<.05$.

The ER analysis revealed a significant main effect of concatenativeness in the by subject analysis only, $F_1(1,40)=7.24$, $p<.05$, $F_2(1,72)=.47$, $p=.50$. Also, there was a significant main effect of relatedness in the error by subjects and by items, $F_1(1,40)=22$, $p<.001$, $F_2(1,72)=20.86$, $p<.001$, indicating that related words were responded to more accurately than unrelated words. The main effect of complexity was not significant by subjects and by items, $F_1(1,40)=2.48$, $p=.12$, $F_2(1,72)=2.42$, $p=.12$. The interaction between complexity and relatedness was marginally significant, $F_1(1,40)=3.25$, $p=.08$, $F_2(1,72)=2.38$, $p=.13$. No further interactions were significant, all F s < 1.

Similar to the RT analysis, two two-way ANOVAs were conducted for simple and complex error data separately. The two-way ANOVA for simple items showed a significant main effect of relatedness by subjects and by items for simple, $F_1(1,40)=25.53$, $p<.001$, $F_2(1,72)=19.31$, $p<.001$, indicating that simple related

targets that were preceded by their simple translation equivalents had less errors regardless of their concatenativeness status. The main effect of concatenativeness was only marginally significant, $F(1,40)=3.58$, $p=.07$, $F(1,72)=.5$, $p=.48$. No interactions were found, all $F_s < 1$.

Again the two-way ANOVA for complex words revealed a significant main effect of relatedness by subjects and y items, $F(1,40)=6.50$, $p<.05$, $F(1,72)=6.25$, $p<.05$, indicating that English targets primed by their complex translation equivalents (whether they were pluralized concatenatively or non-concatenatively) were responded to more accurately than those preceded by unrelated primes. There was a marginally significant main effect of concatenativeness, $F(1,40)=3.15$, $p=.08$, $F(1,72) = .35$, $p=.56$. No interactions were found, all $F_s < 1$.

Discussion and Conclusions

The main goal of this paper was to investigate how cognates with different degrees of form overlap (phonological overlap in this case) are represented in the bilingual mind of different-script bilinguals (Arabic-English bilinguals, given the different scripts). The experiment was designed to test two accounts that have been put forward as an explanation for the cognate priming effects across languages: the phonological account and the morphological account. The first one, the phonological account, assumes that the cognate priming effect is attributed to the combined effects of phonology and semantics that are available for cognate pairs in which the priming effect can be modulated by the degree of phonological overlap with high-phonologically similar cognates producing more statistically reliable priming compared to less-phonologically similar cognates. The second one, the morphological account, assumes that cognate translation priming is due to a language-independent shared morphological representation by cognate pairs in the two languages of a bilingual. According to this account, morphologically related words within the same language that share form and meaning are assumed to create a robust priming effect similar to that produced by words that share form and meaning across languages (i.e., cognates). Therefore, based on this account, it is possible that the general learning mechanism that is responsible for detecting words that share form and meaning within the same language is the same mechanism used to detect form and meaning similarity across languages.

The phonological account predicts that the magnitude of cognate priming will be affected by the degree of phonological similarity between the primes and targets. This prediction was tested in this experiment. In the current study, the priming effect for cognates that are phonologically similar to their L2 cognate translation equivalents (i.e., cognates that are pluralized concatenatively) was compared to the priming effect for cognates that are less phonologically similar to their targets (i.e., cognates that are pluralized non-concatenatively). We found that the magnitude of priming produced by both types of prime conditions (i.e., primes that are pluralized concatenatively and non-concatenatively) did not differ significantly from each other (35 ms vs. 49 ms).

Therefore, the degree of phonological overlap alone may not play an additional role in how cognates are processed by bilingual speakers. In other words, cognates may have a shared morphological representation in both lexicons that can be processed quickly irrespective of the degree of the phonological overlap for cognate translation pairs. A search in either form (i.e., the singular or the plural form in this case) will access that shared representation.

Even though the phonological account has received some empirical support from a number of masked priming studies (e.g., Nakayama et al., 2014), this account has some difficulty explaining why concatenative pluralization in which the base form of the singular and the plural word is always intact, and non-concatenative pluralization in which the internal structure of the plural form is phonologically different from the singular one had a comparable priming effect. One possible difference between Nakayama et al.'s (2014) study and the current study was that in addition to using two different Japanese scripts for cognates and noncognates primes in their study, the rating of phonological similarity adopted in both studies are also different. In Nakayama et al.'s study, different participants were asked to rate the degree of phonological similarity between primes and targets. The current study used improved prime stimuli that can better test the effect of phonological similarity in cognate translation equivalents. High and low phonological similarity of cognate pairs was not based on participants' ratings of phonological similarity but based on the characteristics of the Arabic plural system (the concatenative vs. non-concatenative pluralization) that allows for testing the validity of both accounts (i.e., the phonological and the morphological account) in a perspicuous manner. In the concatenative pluralization, the phonology of the base form for the prime-target pairs is very similar. In contrast, in the non-concatenative condition, the phonology of the base form is always broken due to the internal modification of the base form. The lack of a shared script between Arabic and English and the distinctive properties of the Arabic morphological system make Arabic-English bilinguals an ideal participant group to test the morphological and the phonological account.

The results of our study are in line with previous studies (Boudelaa & Marslen, 2011; Boudelaa & Marslen-Wilson, 2005; Frost, Forster & Deutsch, 1997) that emphasize the importance of the morphological effects in visual word recognition in Semitic languages such as Arabic. In their study, Boudelaa and Marslen-Wilson (2005) suggest that words in Arabic are parsed and processed simultaneously into two identifiable morphemes (roots and patterns) in visual word recognition, and root identification is assumed to win the race. According Boudelaa and Marslen-Wilson (2005), the earlier priming effect for roots over patterns reflects the nature of accessibility for both morphemes; roots are fully specified and can be accessed directly from the written form, which is not the case with word patterns that are partially specified and require phonological mediation to be accessed (i.e., only long vowels are specified, while the rest of pattern letters are automatically inferred by adult readers of Arabic). In other words, the extractability of roots from the orthographic input in Semitic languages such as Arabic may not be greatly influenced by the properties of the pattern; the root letters will always win the race. The

insensitivity to the phonological difference in the concatenative vs. non-concatenative pluralization in Arabic might be attributed to the earlier priming for root letters resulting in equal priming effect for all English targets irrespective of how primes are pluralized in Arabic. Therefore, the phonological account might not work with Semitic languages that rely heavily on roots that are always fully specified in the orthographic form of visual primes compared to word patterns that are partially specified (i.e., only long vowels are represented as full graphemes).

As noted earlier, the results of the current study showed very robust priming effect for both prime conditions (i.e., primes that are pluralized concatenatively and non-concatenatively) when measured against unrelated controls with no significant difference between them (35 ms vs. 49 ms) indicating that cognate translation priming effects do not appear to result merely from form (phonological form in this case) and meaning similarity. These results led us to reject the possible contribution of phonological similarity between cognate pairs and to consider the possibility that cognate translations across languages could be a special kind of morphological relations. This possibility imply that cognates have a representational status similar to morphologically related words within a single language. More interestingly, the above findings are consistent with the view that morphology is the critical principle for lexical organization not only in monolingual lexicons but also in bilingual lexicons as suggested by the morphological account, Sánchez-Casas and García-Albea (2005). Even though previous studies supporting the morphological interpretation of cognate priming effects across languages used same-script languages, this study used different-script languages (Arabic and English). However, the results of the current study suggest that this account may not be restricted to same-script languages as stipulated by Voga and Grainger (2007), but it could be extended to include different-script languages. This, then, reinforces the claim that cognate translations across languages cannot be reduced to form and meaning similarity per se, but the priming should be a consequence of the activation of shared morphological representation shared by the cognate pairs.

One potential way for explaining the insensitivity to the phonological differences in the current study appears to be related to the question of whether cognate translations have special kind of representational status similar to morphologically related words within the same language as suggested by Sánchez-Casas and García-Albea (2005). This account assumes that the basis of learning morphologically related words within the same language which is the similarity in form and meaning could be the same basis that detects how cognates should be related across languages. In other words, bilingual speakers would use the same learning mechanism used for learning morphologically related words within their native languages, and this general learning mechanism is responsible for how cognates are represented in the bilingual mind, which is a language-independent process. According to this model, the priming effect produced by cognates should not be modulated by phonological similarity between cognates because cognates are assumed to be connected to a shared morphological representation.

One way to explain the form of that shared representation across languages would be to assume that there is a shared morphological unit that captures the correlation between form and meaning across languages. The way the facilitation effect for Arabic-English cognates occur could be as follows. When an Arabic-English cognate word is presented as the prime to an Arabic-English speaker (in this case, it is the word *فلم* /film/ in Arabic), he would do a morpho-orthographic decomposition to extract the root *flm*, which is a bound morpheme in Semitic languages and is assumed to have a meaning by itself. Then this root morpheme will send activation to a higher level of representation, which is assumed to be a morphological level of representation at which the shared morphemic unit between cognate pairs is represented. Therefore, when the L2 target word FILM is presented, its corresponding morphemic unit that is represented at the morphological level would already be activated by the prime, which should facilitate lexical decision response to the L2 target word FILM. Based on this analysis, all words that share form and meaning will be activated via the same morphological unit shared between cognate translation pairs. In the case of Arabic-English cognates, the shared morphemic unit mediating priming effects is assumed to be the root letters in the speaker's L1 (Arabic) since these root letters carry the core meaning of a word in Arabic, and they are phonologically shared between the cognate pairs. An alternative proposal regarding the form of the shared morphemic unit between the two languages would be to assume that there is a language-independent simple form (phonological form in this case) of prime-target pairs shared between the two languages of a bilingual (Arabic and English) that is represented at the morphological level. The general learning mechanism that detects form and meaning similarity is assumed to detect all possible forms of the word FILM in both languages as intra-lingual variations within the speaker's L1, which implies that phonological differences between these "morphologically related" forms is not critical for lexical representations. There is some, though indirect evidence, suggesting that cognates can be equated with genuine morphological relationships. Crepaldi et al. (2010) found that irregularly inflected words such as *fell*-*FALL* yielded significant priming effects than pseudo-irregular pairs such as *tell*-*TALL* and orthographic control pairs such as *full*-*FALL* with no effect of subregularities that underly irregularly inflected words even though there is no identifiable morpheme shared between *fell* and *fall*. If the manipulation of orthographic similarity, which, in turn affects their phonology, did not show any pattern, then this indicates that morphological priming cannot be reduced to form and meaning similarity. This seems to be the case even with cognates that involve special kind of morphological relations across languages with no effect of the degree of phonological similarity. Once an Arabic-English cognate word is presented as the prime, it will activate all possible forms of that word in both languages as if it were a genuinely morphologically related within his L1.

If Arabic-English cognate translation equivalents can be equated to morphologically related words within the same language that is assumed be mediated by a shared morphemic representation as suggested by the morphological account, then similar priming effects are expected for cognate translations across languages

and morphologically related words within the same language. In fact, the only factor that was manipulated in this study is the phonological factor, and the findings revealed that the manipulation of phonological overlap does not seem to account for the cognate priming effects. This study provided preliminary support for the morphological account, but further work on different-script languages, especially root-based languages such as Arabic or Hebrew is needed to investigate the nature of representation of cognates and to see whether parallels can be drawn between cognates and morphologically related words in the same language. Based on the results obtained from Arabic-English bilinguals, it seems likely that the morphological account is not only compatible with same-script languages, but also seems to provide a good explanation for the representational status of Arabic-English cognates. As far as we know, there are no reported studies that compared the priming effects for cognate words and morphologically-related words within a single language using different-script languages. The data that are in agreement with the predictions of the morphological account have been conducted using same-script languages (e.g., Spanish-English) showing that cognate representations closely resemble morphologically related words within a given language (see García-Albea et al., 1998 for an extensive review). Future studies should also investigate the degree of semantic overlap with cognates and noncognates across languages (Arabic and English in this case) by selecting cognate and noncognate pairs with complete and partial semantic overlap. In this case, cognates should not be affected by the semantic condition, but noncognates should be affected because they do not have a shared morphemic representation compared to cognates that are assumed to have a morphemic unit shared by the two languages of a bilingual.

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Ukrainian Biaspectuality: An Instantiation of Compositional Aspect in a Verbal-Aspect Language

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Abstract. Aspect, the perfective-imperfective contrast, is a universal phenomenon, part of man's cognitive organization to reflect objective/subjective reality by conceptualizing referents of verbs and of nominals/NPs standing for participants in situations as temporal entities, residing in speaker-hearers' heads and interacting between each other. Aspect is instantiated across languages through two archetypes: verbal aspect (VA) – grammatical, as in the Slavic languages, including Ukrainian; compositional aspect (CA) – complex semantico-syntactic, sporadically dependent on pragmatic discourse elements, as in English. The paper explores Ukrainian language data to, first, confirm that CA, realized mainly as a very complex interplay of sentence components, exists not only in CA languages but, albeit peripherally, also in VA languages, including Ukrainian. Second, to find out how Ukrainian aspect is realized in sentences with biaspectual verbs and particular numbers of situation-participant NPs: three, two, one. The referents of verbs and of nominals/NPs standing for participants in situations in both VA and CA languages are part of the never-ending process of thinking and perpetual resorting to memory and is not some abstract self-contained system of symbols divorced from human cognition. Phrased otherwise, aspect, especially CA, cannot be understood within the domain of traditional grammar and mainstream linguistics with their naivist notions ignoring man's cognitive capacity and maintaining, inter alia, that nominals/NPs are concrete/physical or abstract entities. The study of matter is ordained to physics. Linguistics is obliged to investigate not the material world but how language reflects this world and other possible (imaginable) worlds. A simple analogue is a woman in a mirror: it is not a material object but an image of a woman; likewise, a woman referred to through language is not a material object but a token of a woman. Hence, NP referents of material things are not physical entities but *images* of such entities, fully describable, and their kineticism is handled by verb referents, whereby the intricate CA mechanism, which is cognitive, can be observed, albeit peripherally, also in VA languages, including Ukrainian.

Keywords: *compositional and verbal aspect, Ukrainian, biaspectuality, NP-V-NP mapping of (non-)boundedness.*

Бакарджиєва-Моріканг Світлана, Кабакчієв Красимир. Двохаспектність в українській мові: приклад композиційного аспекту у вербально-аспектній мові.

Анотація. Аспект, протиставлення доконаного й недоконаного виду, є універсальним явищем, частиною когнітивного процесу людини, для відображення об'єктивної/суб'єктивної реальності шляхом концептуалізації референтів дієслів та номіналів/NPs, які означають

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учасників ситуацій тимчасовими сутностями, які знаходяться в головах мовця та слухача, і взаємодіють між собою. У мовах аспект/вид інстанціюють два архетипи: вербальний – граматичний, як у слов'янських мовах, включно з українською, та композиційний, який є складним семантико-синтаксичним, спорадично залежним від прагматичних елементів дискурсу, як, наприклад, в англійській мові. У статті досліджено україномовні дані, щоб перше, підтвердити, що композиційний аспект, який реалізується переважно як складна взаємодія компонентів речення, існує не лише в мовах композиційного виду, але, хоч і периферійно, також у мовах вербального виду, включно з українською. По-друге, з'ясувати, як реалізується український вид у реченнях з двовидовими дієсловами та певною кількістю NP учасників ситуації (трьома, двома чи одним). Референти дієслів та номіналів/NPs, що позначають учасників ситуацій як у вербальному, так і в композиційному видах є частиною безперервного процесу мислення та постійного сортування пам'яті, а не якоюсь абстрактною самодостатньою системою символів, відокремлених від людського пізнання. Інакше кажучи, вид, особливо композиційний, не можливо зрозуміти в межах традиційної граматики та популярної лінгвістики, з їхніми наївистичними уявленнями, які ігнорують когнітивні можливості людини та стверджують, зокрема, що номінали/NP є конкретними/фізичними чи абстрактними сутностями. Вивчення матерії є цариною фізики. Лінгвістика має досліджувати не матеріальний світ, а те, як мова відображає цей світ та інші можливі/уявні світи. Простий аналог – жінка в дзеркалі: це не матеріальний об'єкт, а відображення жінки; так само ця жінка не є матеріальним об'єктом, а символом жінки. Таким чином, NP-референти матеріальних речей є не фізичними сутностями, а образами таких сутностей, які повністю описуються, їх кінетичність обробляється дієслівними референтами, завдяки чому складний механізм композиційного аспекту, який є когнітивним, можна спостерігати, хоч і периферійно, також в мовах вербального виду, зокрема в українській.

Ключові слова: композиційний аспект, вербальний аспект, українська мова, біаспектнуальність, відображення (не)обмеженості NP-V-NP.

Introduction

Mapping (Non-)Boundedness from the Verb onto Situation-Participant NPs and Vice Versa

Published in *East European Journal of Psycholinguistics* (10/1) is a paper describing the mapping of (non-)boundedness from the verb component onto situation-participant NPs in Bulgarian sentences with perfect verb forms with aorist and imperfect participles, respectively (Kabakčiev, 2023), as part of the general phenomenon of aspect arising from man's cognitive and linguistic capacity. This capacity underlies the realization across languages of the major structural instantiation of aspect, the perfective-imperfective distinction (Ukrainian *dokonano-ho-nedokonano-ho vydu*) – among other aspect distinctions, e.g., the contrasts between aorists-imperfects or progressives-nonprogressives. This paper offers further illustration of our conceptualization of aspect, hence it would best be read in conjunction with the previous one.

In our understanding, the universal category of aspect exists structurally in various disguises, but languages can be categorized into two archetypes: VA languages and CA languages. In the former, aspect, and in particular perfectivity, is typically located in verbs as lexical entries and is grammaticalized. In the latter, aspect is realized at the

sentence level as an extremely complex interplay between the verb and the relevant nominal components – situation-participant NPs.¹ Representatives in Europe of VA languages are all the Slavic ones, Lithuanian, Greek, Georgian. Outside Europe, a major example of a VA language is Chinese. CA languages in Europe are the modern Germanic ones, with English as the most studied, the Romance languages, Finnish, Albanian. CA was discovered as a cross-language phenomenon in 1971 by Henk Verkuyl (1972; 1993; 2022). The discovery triggered the development of CA theory, further sophisticated until the present day by Verkuyl himself and other researchers (Heinämäki, 1974/1978; Dowty, 1979; Carlson, 1981; Krifka, 1989; 1998; Kabakčiev, 1984; 2000; 2019; Bulatović, 2013; 2020; 2022; Vounchev, 2007; Dimitrova, 2021, to name but a few). According to a long-established model followed here (Kabakčiev, 1984; 2000; 2019), in VA languages it is the verb that determines the aspect of a sentence as perfective or imperfective and, conversely, aspect in CA languages is identified primarily on quantificational information carried by NPs standing for situation participants.² But in VA languages, although aspect in the sentence is directly denoted by the verb and the other components have little or no impact on it, the aspect value of the verb governs the temporal range and some other semantic values of situation-participant NPs. In CA languages, aspect is not anchored in the verb, it is an interplay between features of the verb, NPs and adverbials, plus some other factors. In VA languages the same is observed in sentences with biaspectual verbs, where aspect is again not a feature of the verb but an interplay of sentence components.

Ukrainian Aspect and the Biaspectuality Phenomenon

Ukrainian grammars and other linguistic publications deal exclusively with VA. CA theory is not used on Ukrainian data; publications very rarely discuss it, peripherally (e.g., Chaika, et al., 2024). For Ukrainian linguists, aspect resides entirely within the confines of verbal lexical semantics and morphology (Bezpoiasko et al., 1993; Pavliuk, 2010; Kalko, 2012; Gladush & Pavliuk, 2019; Sokolova, 2016; 2020), whether regarded as grammatical or hybrid, lexico-grammatical. This understanding follows – expressly or tacitly – Jakobson’s (1957) conception of aspect as a phenomenon that has nothing to do with participants in situations. Jakobson’s definition, proposed by a respected author and highly acclaimed for decades, ultimately turned out to be wrong, as, according to the CA theory, aspect does not belong to the verb but results from a very complex interplay between sentence components and especially NPs, whereby the verb, being aspectually ambivalent, plays a relatively minor role in the effectuation of aspect.

As for biaspectuality, in contrast to most Slavic languages where it is a well-known phenomenon (Kabakčiev, 2021), research on Ukrainian biaspectuality is infrequent, due to the preoccupation of researchers with Soviet and/or Slavic linguistic models that

¹ Adverbials also take part, but this issue is skipped for lack of space; on situation-participant NPs see Kabakčiev (2023, p. 54–55).

² Quantificational in broad terms, encoding (directly) or explicating (indirectly) boundedness/non-boundedness.

either bypass CA, or their followers are ignorant of it, despite its discovery five decades ago (Verkuyl, 1972). Two contrastive Ukrainian-English grammars (Pavliuk, 2010; Gladush & Pavliuk, 2019) not only fail to mention the existence of biaspectuality but uphold obsolete theses: “the English language has no perfective/imperfective aspects”; it has two aspects, “common and continuous”; “there is no direct correspondence between English and Ukrainian aspects” (Gladush & Pavliuk, 2019, p. 56). In another Ukrainian grammar, written by foreigners, Pugh and Press (1999, p. 203) sidestep biaspectuality, possibly unaware of its existence, and launch a wrong conjecture: “practically every verb in Ukrainian exists as a member of an aspectual pair”. Two analyses of Aktionsarten and of Ukrainian aspectual pairs (Sokolova, 2016; 2020), otherwise detailed, also, strangely, sidestep biaspectuality. The considerable presence of biaspectual verbs in Ukrainian is beyond doubt (Ginzburg, 2009). They are certainly in the hundreds, and in every other Slavic language there are at least as many or more. Pchelintseva (2022, p. 173), studying Ukrainian nouns with situational meanings, found 320 derived from biaspectual verbs (*akumulivati* ‘accumulate’, *evropeizuvati* ‘Europeanize’, etc.) – which indicates that the total number of biaspectuals is higher, approaching the numbers found in other Slavic languages.

Understanding Biaspectuality

Aims of the Study

The fact that in Slavic and other VA languages the aspect of a sentence is encoded in the verb tends to portray it as if something unproblematic, easy to recognize and conceptualize. This might sound even more plausible if biaspectuality, an anomalous feature (as it were) did not exist. Well-known since the very beginning of Slavic studies, biaspectuality has been widely studied, but usually with little success. It consists in having a verb that refuses to exhibit aspect – both in isolation or in a sentence, unless the context somehow reveals it. Biaspectuality is not a Slavic phenomenon. It also exists in Greek (Dimitrova & Kabakčiev, 2021), a VA language like the Slavic ones but genealogically different within the Indo-European family. Hence, biaspectuality must be regarded neither as a Slavic phenomenon, nor as Greek, nor as language-specific. It is *universal* and, therefore, its description should be carried out in a cross-language perspective, based on man’s cognitive apparatus.

We view biaspectuality as equally well-represented in Greek and the Slavic languages, notwithstanding its exact prevalence, whereby the aspectual ambivalence of verbs as lexical entries echoes the aspectual ambivalence of verbs in English and the other modern Germanic languages. Note, however, that Greek biaspectuality appears less prevalent than Slavic biaspectuality, for partly unclear reasons.

The article-aspect interplay, which underlies the mechanism of CA, can most precisely be observed in sentences in CA languages with three situation-participant NPs, where the bounded/non-bounded NP interplay triggers aspectual differences.

Consider the following English sentences, constructed, with three situation-participant NPs and the verb form *convoyed*:³

- (1) a. Two mountaineers convoyed the wild horse to drink from the nearby river
 b. Mountaineers_{SLEAK} convoyed the wild horse to drink from the nearby river
 c. Two mountaineers convoyed wild horses_{SLEAK} to drink from the nearby river
 d. Two mountaineers convoyed the wild horse to drink from nearby rivers_{SLEAK}

These are *four uses* of the aspectually ambivalent form *convoyed*.⁴ The first, with three quantified NPs, is perfective, belonging to Verkuyl's perfective schema. The other three, each with a single de-quantified NP, belong to Verkuyl's imperfective schema and effectuate imperfectivity, due to the so-called leak(s). For detail on Verkuyl's leaks and aspect schemata, see Kabakčiev (2023, p. 54–55). After Verkuyl's discovery and the development of a full-fledged CA theory, today there is no doubt that sentences like (1a) prototypically explicate perfectivity, while sentences like (1b-d) explicate imperfectivity. But why exactly is (1a) perfective? And why are the rest imperfective?

Sentence (1a) is perfective because it contains only “plus-values” – bounded/quantified NPs and a telic verb, matching Verkuyl's perfective schema. Verkuyl's imperfective schema obligatorily features a leak/leaks: at least one de-quantified situation-participant NP or an atelic verb. The other three sentences are imperfective because each contains a leak, a non-quantified/non-bounded NP. In (1b) the leak is in *mountaineers*, in (1c) it is in *wild horses*. In (1d) it is in *nearby rivers* – which can be read as an adverbial or an indirect object. Thus, clearly, the sentences of pattern (1) with the same verb and identical or similar NPs offer a very efficient explanation of CA, though it still calls for a clarification of the role of articles.

Translated into Ukrainian, the correspondences of (1) would have to contain a perfective verb in the first sentence and an imperfective one in the other three:

- (2) a. Dvoie horian vidvely_{PFV} dykoho konia pyty vodu z blyzkoi richky (=1a)
 b. Horiany vodyly_{IMPFV} dykoho konia pyty vodu z blyzkoi richky (=1b)
 c. Dvoie horian vodyly_{IMPFV} dykykh konei pyty vodu z blyzkoyi richky (=1c)
 d. Dvoie horian vodyly_{IMPFV} dykoho konia pyty vodu z blyzkykh richok (=1d)

Ukrainian biaspectual verbs are usually of Romance and Germanic origin, rarely domestic (Ginzburg, 2009). To avoid aspectual ambiguity, they are often “naturalized” by adding a relevant prefix to the imperfective/biaspectual variant, but this tendency was previously not popular in prescriptivist grammars. Presently both forms (prefixed and prefixless) are used. If the biaspectual verb *konvoiuvaty* ‘convoy’ is to be used here, the Ukrainian native speaker would tend to perfectivize it by

³ As argued in Dimitrova & Kabakčiev (2021, p. 193), such sentences with three situation-participant NPs are “rare, difficult to encounter or construct, hence valuable”.

⁴ While *convoyed* is an aspectually ambivalent form, the progressive *was convoying* is not, it is imperfective.

adding the prefix *vid-* (*vidkonvoiuvaty*). However, following the aims of this study, we need to use the truly biaspectual verb *konvoiuvaty* to check if there will be a difference vis-à-vis the aspectually ambivalent *convoy* in English:

- (3) a. Dvoie horian konvoiuvaly_{BIASP} dykoho konia pyty vodu z blyzkoi richky (~1a)
 b. Horyany konvoiuvaly_{BIASP} dykoho konia pyty vodu z blyzkoi richky (~1b)
 c. Dvoie horian konvoiuvaly_{BIASP} dykykh konei pyty vodu z blyzkoyi richky (~1c)
 d. Dvoie horian konvoiuvaly_{BIASP} dykoho konia pyty vodu z blyzkykh richok (~1d)

Recall that, despite containing an aspectually ambivalent verb, the English sentences in (1) have very clear aspect meanings, arising as a result of the NP-V interplay. The Ukrainian sentences (3), which appear to be translation equivalents of (1), even literal, also contain three situation-participant NPs and an aspectually ambivalent verb. Hence, they ought to explicate aspect. Do they? No! The first sentence is ambiguous vis-à-vis aspect: it can be perfective or imperfective. Similarly with the other three, again ambivalent: perfective or imperfective. Where does the difference come from?

It arises due to something absent in the Ukrainian sentences. Although structurally they appear identical to the English ones and the verb is aspectually ambivalent as in English, the difference, which regularly escapes the attention of researchers, is: *articles*. In the seemingly literal Ukrainian translations above the articles simply disappear, but most linguists remain unperturbed – taking articles for granted or as if something negligible.⁵ According to a study on Slavic data (Kabakčiev, 2021, p. 21),

the lesser the number of situation-participant NPs in a simple sentence with a biaspectual verb (one at best, or two), the higher the opportunities for disambiguating the aspectual interpretation of a biaspectual verb. As for sentences with two or three situation-participant NP and a biaspectual verb, the precise manner in which aspect is systematically disambiguated would obviously have to be a serious matter for future research.

Or, similarly phrased, “the higher the number of bare NP situation participants in a sentence, the higher the possibilities for ambiguity of the situational meaning of the relevant sentence” (Kabakčiev, 2021, p. 15). What is the reason for this? It is the impossibility in Ukrainian and in other Slavic languages without articles to assign a value – (non-)quantified/(non-)bounded, to the relevant NP in the absence of articles (*a/the*, zero). This generalization on Slavic data leads to a hypothesis that it ought to be valid for similar languages with VA and no articles. But a hypothesis like this must be checked on concrete language data, and the major aim of this study is to determine – roughly – the extent to which Ukrainian sentences with a biaspectual verb and certain numbers of situation-participant NPs are capable of explicating aspect.

⁵ A key question, remaining for future studies, concerns the definiteness-indefiniteness values: are they *not* transferred from languages with articles into languages without articles? And if they are, exactly how?

Method

Underlying Philosophy and the Psycholinguistic Aspect of Aspect

As in the previous *East European Journal of Psycholinguistics* publication (Kabakčiev, 2023), the approach to aspect in this paper is not the traditional grammatical one, inductive, exploring formal language devices (e.g., Slavic verbal morphology), but is deductive, formulating universal features and searching for their realization across languages (Dimitrova 2021). Although Verkuyl's discovery of CA in 1971 has hardly ever been regarded as obtained by a deductive approach, actually it was. Verkuyl launched his enterprise by conceptualizing the Slavic perfective-imperfective contrast as a universal feature and started searching for entities in the Germanic languages effectuating these concepts.

With regard to the conceptualization of NP referents as temporal entities, the approach here is psycholinguistic, exploring man's cognitive capacity through universal and cross-language elements. Psycholinguistics, launched as a scientific trend by Osgood and Sebeok (1954), views language not as a static set of formal entities (phonological, grammatical – morphological, periphrastic, etc.), as is done in traditional linguistics and grammar, but as an integral facet of cognition based on human perception, memory and categorization, from which, in Langacker's (2008, p. 8) words, it cannot be segregated. Stoyanova (2021, p. 21), in a similar vein, argues that language capacity should not be viewed as an abstract system of symbols but as a psychic/mental construct related to memory and thinking. Furthermore, speech production itself, as described in Stoyanova (2021, p. 112-120), is a mental procedure, i.e., processes outside and prior to the involvement of language structure, comprising purely cognitive elements. In other words, language production (speech, parole), and hence the language structure resulting from it as a global product of the collective human brain, cannot be divorced from thinking and explained independently from it.

In this case aspect, viewed as one of the innumerable elements of language structure, is a result of the workings of the human brain, and this paper demonstrates that aspect cannot be understood and explained simply as a notion of formal (morphological etc.) language structure. With its deductive, universal approach to language in general and not to separate languages, this work cannot follow mainstream grammatical descriptions also for a particular reason. A major tenet in it is that situation-participant NP referents *must not* be regarded as physical entities even when they refer to physical entities in objective reality. They are conceptualized as temporal ones interacting with each other and the verb referent (mainly). The idea that the referents of NPs otherwise standing for living things and other material/spatial objects – people, animals and other similar things in objective reality, are “physical entities”, could even be called illogical and absurd. A woman in a mirror is *not* “a material object”. It is *an image of a woman*, a non-spatial entity. Analogously, something called “woman” in a natural language *is not a physical*

object. It is an image/token of a woman encoded within the language structure through specific symbols – and when associated with a verb, it appropriates kinetic features.

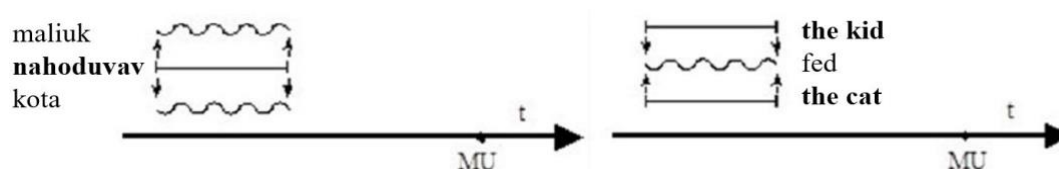
The idea that NPs referring in objective reality to living things and other material objects must be interpreted as temporal instantiations of such objects was introduced a long time ago (Kabakčiev, 1984, p. 644–645) and contains the following assumption. NPs like *the kid* and *the cat* in sentences such as (4a) below are *not* physical entities, as traditional grammar would have us believe. They are temporal ones, like Carlson’s (1980) “slices/stages of individuals”. Clearly, standard grammar cannot maintain an assumption of physical entities as temporal instantiations (slices/stages) of individuals/objects, because its tradition is to treat the referents of such NPs as atemporal things: physical/material. The treatment of such NPs as temporal, kinetic entities residing in speakers’/hearers’ minds and interacting there can only be done within a different framework: not in the traditional linguistic but in the psycholinguistic one. This specific approach requires, furthermore, that all NPs corresponding to *the kid* and *the cat* in sentences like English (4a) below, with referents that are temporally bounded, be recognized as mental concepts *in any language*, not as symbols in a self-contained grammatical system of a particular language.

Investigated here is the Ukrainian language. Therefore, let us compare (4a) – in English as a metalanguage, and Ukrainian – in (4b) and (4c):

- (4) a. The kid fed the cat
 b. Maliuk nahoduvav kota (=4a)
 Kid fed [completely, once] cat
 ‘The kid fed the cat’
 c. Maliuk hoduvav kota
 Kid fed cat
 ‘The kid fed habitually the cat/was feeding the cat’⁶

Fig. 1 demonstrates that CA is a mirror image of VA. And, vice versa, VA is a mirror image of CA:

Figure 1
Compositional Aspect and Verbal Aspect Relations



⁶ The imperfective preterit *hoduvav* ‘fed’ in (4c) has either a habitual or a progressive reading but in both cases the referent of *hoduvav* triggers non-bounded instantiations of *maliuk* and *kota* – recurrent images of a kid and a cat in the habitual reading; non-recurrent images, again non-bounded, in the progressive reading. For detail on the latter, see (Kabakčiev, 2000, Chapter 8).

Clearly, in languages like Ukrainian (left diagram sector) perfectivity is effectuated by the verb. In CA languages (right sector), conversely, it is realized by a complex NP-V interplay. But in both cases there is mapping/transfer of boundedness: from the verb to the NPs in Ukrainian, and from the NPs onto the verb in English. The left part of the diagram is thus valid for all the Slavic languages and for all other languages featuring perfective verbs. Note that the four NPs *the kid*, *the cat*, *maliuk* ‘kid’ and *kota* ‘cat’ and the two verbs, *fed* and *nahoduvav* ‘fed’ have referents that cannot be adequately explained in traditional descriptive terms. In the present theoretical model, the referents of *the kid* and *the cat* in English map their temporal feature boundedness onto the V-referent, forcing it into perfectivity: temporal boundedness plus reached telos. In Ukrainian, conversely, the temporal boundedness of the V-referent, surfacing as perfectivity and consisting in temporal boundedness plus reached telos in (4b), is mapped onto the referents of *maliuk* and *kota*, whereby these NP referents acquire temporal features radically different from the features of *maliuk* and *kota* in sentences like (4c) – see also the discussion below. Thus the concept of aspect in the present framework is not a static structural language phenomenon but a result of a complex interplay in speakers’/hearers’ minds between the boundedness and the telos component in the lexical meaning of the verb and features of NP referents such as temporal boundedness/non-boundedness. Lexical meaning here is a standard linguistic feature. But the temporal boundedness of situation participant NPs is not, it is a concept immensely distanced from standard grammatical frameworks and related to the mechanisms of processing language entities in the human mind.

The description of certain grammatical features cannot be successful without taking into account specific aspects of language structure and language use that pertain to processes realized in the human brain. If these processes are not properly accounted for in linguistic studies, many systematic cross-language and universal grammatical and semantico-syntactic regularities remain unexplained. We find that this happens in studies investigating native and/or foreign language acquisition by children and adults, etc. of aspectual, aspecto-temporal, tense and similar features. Such studies are often carried out without an adequate understanding of what aspect is. A typical mistake is that aspect is treated as a phenomenon belonging solely to the verb, after Jakobson’s (1957) wrong conception of aspect as something unrelated to situation participants. There are many studies investigating acquisition and comprehension of language (native, second, foreign, etc.) by infants, children, adults, etc., but there are few or no studies investigating the role of articles for the effectuation of aspect in CA languages – or in VA languages with verbs unmarked for aspect. As a consequence, the opposite impact, a huge one, of the aspectual value of the verb exerted on the temporal values of situation participants remains a *terra incognita*, although it is a key element in any information communicated through language.

To give a simple example, while *maliuk* and *kota* in (4b) above are *one-off, bounded kinetic instantiations* of a kid and a cat, in the habitual reading of (4c) the referents of *maliuk* and *kota* are *recurrent, non-bounded kinetic images* of a kid and a

cat. This observation could also be made within the confines of mainstream grammar. Yet, such a revelation almost never arises.⁷ The first researcher to report a difference between NP referents associated with a perfective verb and referents associated with an imperfective one was Vounchev (2007, p. 86–87), on Greek and Bulgarian data. By doing so, the author corroborated the conceptualization of NP referents as temporal entities – with NPs otherwise standing for physical objects in the minds of language speakers. The conceptualization of NPs as temporal entities was initially launched in Kabakčiev (1984) on Bulgarian and English data. Later it was sophisticated and shown in detail in Kabakčiev (2000).

The reasoning outlined above ultimately led to the understanding of VA as a mirror image of CA, and vice versa (Kabakčiev, 2000, Ch. 7). The deductive approach employed there, as well as here, proved capable of not only pinpointing structural entities effectuating aspect across languages of different types but also of predicting what kind of grammatical and/or semantico-syntactic and similar entities would be present in any given language in the absence of other entities. It also led to the formulation of the “inverse relationship between markers of boundedness in verbs and nouns”:

When a certain language lacks markers of boundedness in the verbs, they are present in nouns; and vice versa, when a language lacks markers of boundedness in nouns, they are present in verbs (Kabakčiev, 2000, p. 156).

This inverse relationship, whose finding was made possible only after, and thanks to, Verkuyl’s (1972) epochal discovery of CA, was first subscribed to by Abraham & Leiss’ (2012, p. 326), who wrote: “the first researcher to note that languages develop either a category of aspect or an article system was the Bulgarian linguist Kabakčiev (1984; 2000)”. A year later, endorsing the regularity, Bulatović (2013, p. 65) described “the cornerstones of what is known today as compositional aspect” as found in the works of Vendler, Verkuyl and Kabakčiev.

But alongside this cross-language formal categorization of aspect devices, more reasoning is needed on human cognitive capacity, regarding the way “material entities” like *kid* or *cat* are conceptualized as temporal. The explanation was provided using a so-called TV representation (Kabakčiev, 2000, p. 99–100) that can be summarized thus: for a speaker to produce a sentence like English (4a) or Ukrainian (4b) and for the hearer to understand them correctly, the speaker must have perceived or imagined, etc. a kid and a cat suddenly appear before the speaker’s eyes. This is where the “existence” of the two entities starts. And when/after the cat is fed, the kid and the cat disappear from the eyes of the beholder. Hence, within the situation in (4a) on a screen, they constitute temporal entities, as well as in the speaker’s mind: appearing before the feeding and disappearing after it. Are *kid* and *cat* “material things” then? Are they not temporal entities? Moving in time and having definite starting- and end-points when bounded? The answer is: yes. They *are* temporal

⁷ To the best of the authors’ knowledge.

entities – kinetic, moving with time. As for the effectuation of perfectivity-imperfectivity, see Kabakčiev (2000) for further detail. But, in any case, it is clear now that the human brain – the collective one governing the development of language, uses the articles *the* and *a* to mark situation-participant NPs as bounded, and the abstract entity called zero article to mark them as non-bounded (cf. Bulatović, 2022, p. 503). The relevant value – boundedness or non-boundedness, is then transferred onto some other component(s) in the sentence.

Procedure

Ukrainian Sentences with a Biaspectual Verb and a Smaller Number (Two/One) of Situation-Participant NPs

The analysis here, and previously elsewhere, of sentences in Slavic languages with biaspectual verbs and three situation-participant NPs shows that such sentences generally fail to explicate aspect. Only some of them can, partially. Therefore, let us now have English sentences with aspectually ambivalent verb forms that contain *not* three situation-participant NPs but *only two*. In (5), the previous order is reversed: the first two sentences are imperfective, the third perfective:

- (5) a. EU states are to confiscate assets of the aggressor
b. Ten EU states are to confiscate assets of the aggressor
c. Ten EU states are to confiscate these assets of the aggressor⁸

Sentence (5a) belongs to Verkuyl's imperfective schema, with two leaks: in the subject *EU states* and in the syntactic object *assets*. The non-boundedness of *EU states* (also called de-quantification vis-à-vis NPs like *ten EU states*, *these EU states*, etc.) and of *assets* is mapped onto *confiscate*, triggering in it non-boundedness – more particularly iterative/non-bounded repetition, hence imperfectivity.

Now consider their Ukrainian counterparts with the biaspectual verb *konfiskuvaty*:

- (6) a. Derzhavy EU maiut konfiskuvaty aktyvy ahresora (≠5a)
b. Desiat derzhav EU maiut konfiskuvaty aktyvy ahresora (≠5b)
c. Desiat derzhav EU maiut konfiskuvaty tsi aktyvy ahresora (=5c)

Note that the imperfectivity of English (5a) cannot be transcoded to the otherwise seemingly equivalent Ukrainian (6a). Why? Because the NP *derzhavy EU* 'EU states' cannot be assigned non-boundedness. It can mean *three totally different things*. First, *derzhavy EU* can be regarded as a zero-article NP, hence non-bounded, just like *EU states* in English. Second, *derzhavy EU* can be read as if containing a covert quantifier (English *some*), hence it cannot be non-bounded. Third, *derzhavy*

⁸ Note that *the aggressor* in the phrase *assets of the aggressor* is not a situation-participant NP. Situation-participant NPs in (5) are *EU states/ten EU states* and *assets/these assets*.

EU could be interpreted as if with a definite article – and again cannot qualify as non-bounded. Phrased otherwise, *derzhavy EU* in (6a) has *three-fold ambiguity*: definite and bounded (equal to English *the EU states*), indefinite and bounded (equal to *some EU states*), and non-bounded (equal to *EU states*). All this means that:

- Ukrainian (6a) is *not* equal to English (5a). It fails to explicate aspect (imperfective).
- Ukrainian (6b) is *not* equal to English (5b). It fails to explicate aspect (imperfective).
- However, Ukrainian (6c) is roughly equivalent to English (5c). It broadly renders the perfectivity of Ukrainian (6b) through the boundedness of the two NPs.

Conclusions of this kind, valid beyond any doubt, destroy some major postulates of traditional aspectology – which used to advocate for two centuries that Slavic aspect is a very special, unique phenomenon absent in all other languages, hence not even worthy of research. Recall Issatschenko’s (1974, p. 141) well-known remark that Slavic aspects are “awe-inspiring and mystical categories” to be treated only by the initiated, the native speaker (but Issatschenko’s remark contains irony too). Our authors’ intuition points to Slavic linguistic writings, mainly Russian/Soviet, predominant in Slavic studies due to the large numbers of linguists, as the main factor behind the myth that Slavic aspect is a special phenomenon.⁹ Note that here, slashing the hype, sentences in English, a language persistently labeled “aspectless”, clearly exhibit aspect, while the corresponding ones in Ukrainian, an “aspect language”, fail to effectuate aspect.¹⁰

The Ukrainian sentences that can render the aspect in the English sentences (5) will be (7), through the forms *budut vidbyraty*, imperfective (7a,b), and the perfective *vidberut*, (7c):

- (7) a. Derzhavy EU *budut vidbyraty aktyvy ahresora*
 b. Derzhavy EU *budut vidbyraty aktyvy ahresora*
 c. Desiat derzhav EU *vidberut tsi aktyvy ahresora*

Now let us have another group of English sentences, (8), with aspectually ambivalent verbs and again two situation-participant NPs. This time the first sentence (8a) explicates perfectivity, the other two imperfectivity (8b-c):

- (8) a. Two experts reconstructed the face of Ramses II
 b. Experts reconstructed the face of Ramses II
 c. Experts reconstructed faces of pharaohs

Let us translate them into Ukrainian with a biaspectual verb to check if aspect will be properly explicated:

⁹ Similar to the idea of “a Russian soul” – implying that other nations have no soul.

¹⁰ But in our opinion scientists should not rebuke obsolete theses, and could even be grateful for certain misconceptions – that sometimes open modern eyes more effectively.

- (9) a. Dvoie ekspertiv rekonstruiuvaly oblychchia Ramzesa II (=8a)
b. Eksperty rekonstruiuvaly oblychchia Ramzesa II (≠8b)
c. Eksperty rekonstruiuvaly oblychchia faraoniv (≠8c)

Ukrainian (9a) broadly transfers the perfectivity of English (8a) – thanks to the boundedness of the NPs *dvoie ekspertiv* ‘two experts’ and *Ramzesa II*, the latter effecting boundedness by its proper-name status.¹¹ However, (9b-c) fail to transfer the imperfectivity of English (8b-c) because of the unclear quantificational status of the relevant NPs. *Eksperty* and *faraoniv* are three-fold ambiguous. They can mean ‘the experts’, ‘some experts’ or ‘experts’, and ‘the pharaohs’, ‘some pharaohs’ and ‘pharaohs’, respectively. In other words, both *eksperty* and *faraoniv* can be interpreted as *either* definite *or* indefinite, and *either* bounded *or* non-bounded.

As previously established (Kabakčiev, 2021), when decreasing the number of situation-participant NPs from two to one, as in English (10) below, Slavic sentences with biaspectual verbs may explicate perfectivity, as in (11a), or imperfectivity, as in (11b):

- (10) a. How to organize a rock concert?
b. How to organize rock concerts?
(11) a. Yak orhanizuvaty rok-kontsert?
b. Yak orhanizuvaty rok-kontserty?

But this does not hold for (12a,b):

- (12) a. How to organize the New Years’ party?
b. Yak orhanizuvaty novorichnu vechirku?

When aspect is not explicated in CA terms, as in (12), pragmatic circumstances surrounding the situation (“knowledge of the world”) take over aspect effectuation. On pragmatic factors in aspect effectuation, see Kabakčiev (2000, Chapter 14). Unlike in (10) and (11), the aspect value in (12) is ambiguous in both English and Ukrainian. The hearer cannot understand what the speaker has in mind: a one-off situation, a single New Years’ party, or New Years’ parties in general.

Examples with two situation-participant NPs or only one and a biaspectual verb show that in VA languages additional factors take part in aspect effectuation: neither grammatical, nor semantic but pragmatic, involving “knowledge of the world”. In any case, serious research is needed for making adequate generalizations about how definiteness, indefiniteness, boundedness and non-boundedness are signaled in VA languages with no articles like Ukrainian.

Results and Discussion

At the beginning of this project, aimed at investigating Ukrainian biaspectuality, we, the authors, knew the phenomenon exists but did not know its prevalence. We

¹¹ A proper name, e.g. *John*, effectuates definiteness and boundedness – it roughly means “*the* man called John”.

checked the available literature. It showed that biaspectuality is well-represented, but it was not clear to what degree. Our own and others' publications suggest that biaspectuality is represented differently in the different VA languages. It is frequent in Bulgarian, has a lower prevalence in the other Slavic languages and is rare in Greek (Dimitrova & Kabakčiev, 2021), where, of course, it also exists (further research is necessary). Its relatively moderate prevalence in Ukrainian is similar to the other Slavic languages and its higher prevalence in Bulgarian is explained by the presence of a definite article, exercising NP quantification. This means that aspectual ambivalence in Ukrainian verbs of foreign origin (entering the language in areas such as computer science), must be counterbalanced by prefixed perfective verbs to counter the biaspectuality of the initial borrowing (*konvoiuvaty*>*vidkonvoiuvaty* 'convoy'). In Bulgarian no prefixation is used to counter biaspectuality in this case, but is observed in other similar borrowings. The analysis here showed not only that Ukrainian behaves similarly to other Slavic languages, with more intensive prefixation to counter biaspectuality, but also that aspect in Ukrainian is effectuated in compositional terms just like in other Slavic languages. This phenomenon is peripheral and mainly occurs in sentences with biaspectual verbs and situation-participant NPs fewer than three.

There are some specific cases too. Analyzing aspectual verb paradigms, Sokolova (2016, p. 80) describes the Ukrainian pair *tantsiuvati*>*vitantsiovuvati* as imperfective>perfective, i.e., in traditional grammatical terms, not compositional. We find that, just like in Bulgarian, see (13a), the Ukrainian unprefixated verb *tantsiuvati* can also be treated as biaspectual. In Ukrainian (13b), a sentence from the Internet, the seemingly imperfective (actually biaspectual) *tantsiuvati* is compositionally coerced into perfectivity by *odin tanets* 'a dance' and *mi* 'we' simultaneously. The temporal boundedness of the two NPs is mapped onto the verb referent – in both Bulgarian and Ukrainian – as in the English section of Fig. 1 above:

- (13) a. Vchera tantsuvah edin tants s uchitelkata si
 'Yesterday I danced a dance with my female teacher'
 b. U Chernivtsiakh same prokhodyv parad narechenykh i my razom z yoho uchasnytsiamy
 tantsiuvaly odyh tanets
 'In Chernivtsi there was a bridal parade and we danced a dance together with its female participants'

The analyses here and in previous publications exploring the interplay between article and biaspectuality (first shown in Kabakčiev, 1984), reconfirm the special place of Bulgarian in the Slavic world with its definite article. Along these lines, confirmed in the paper is also the preliminary expectation that Ukrainian ought to behave similarly to the other Slavic languages without articles, whereby the lack of a non-boundedness device (bare NP/zero article) hampers the systematic marking of non-boundedness. This, in turn, firstly, reasserts the high significance of the problem of English articles (*a*, *the*, zero) having no exact correspondence(s) in Ukrainian, in need of serious research. Secondly, it reinforces the thesis that the *raison d'être* of articles across languages is to realize aspect compositionally, while their functions as

markers of definiteness-indefiniteness, specificity, non-specificity, etc. are residual. As recently argued by Bulatović (2022, p. 503), “it is the [\pm boundedness] role of articles that is primary, and their [\pm definiteness] role is secondary”. Here it is worth recalling Leiss’ (2000) remarkable discovery of the interdependence in three Proto-Germanic languages between the demise of perfectivity and the rise of a definite article – which advanced further in modern Germanic and was followed by the rise of a systematic use of indefinite articles, whereby the two articles (English *the* and *a*) started to serve the effectuation of perfectivity.

Finally, the analysis also confirmed the expectation, stemming from similar studies on Slavic languages, for Ukrainian aspect to be realized in a particular fashion in sentences with biaspectual verbs and particular numbers of situation-participant NPs: three, two, one. Aspect, the perfective-imperfective contrast, can rarely be effectuated in sentences with biaspectual verbs and three situation-participant NPs. It can somewhat more frequently be realized in sentences with two situation-participant NPs, and much more systematically in sentences with one situation-participant NP – through the use of nominal determination markers other than articles, or in pragmatic terms, through “knowledge of the world”.

Conclusion

The analysis corroborates previous observations that Ukrainian biaspectuality tends to be somewhat restricted – like in other similar Slavic languages with no articles, due to the frequent prefixation of biaspectuals (*konvoiuvaty*>*vidkonvoiuvaty*; *tantsiuvati*>*vitantsiovuvati*). Still, biaspectuality remains a living phenomenon in Ukrainian, appropriate for the investigation of important issues such as the realization in languages without articles of (in)definiteness, (non)specificity, (non)genericity, etc. The analysis of Ukrainian biaspectuality also confirmed the idea that aspect, conceptualized as a perfective-imperfective contrast in the effectuation of both VA and CA, is a *universal* phenomenon that can in all probability be found not simply across languages but in *any natural language*, whatever its geography or genealogy, yet, of course, in different structural disguises. This is because aspect is mainly a result of the cognitive and linguistic capacity of man and is not so much – or is not at all – influenced by factors such as language contact or internal mechanisms such as language economy (on the latter, see Symeonidis, 2020).

Also confirmed is the conjecture that VA languages can peripherally feature CA and this is demonstrated here through the use of Ukrainian biaspectual verbs. Due to the absence of an article system, CA in Ukrainian is best pronounced in sentences with one situation-participant NP, less so in sentences with two situation-participant NPs, where it is possible to a certain degree. In sentences with three situation-participant NPs it is difficult to observe and restricted to cases in which *all* the situation-participant NPs are quantified within the specific Ukrainian nominal-determination system without articles – to trigger perfectivity.

Finally, this study on Ukrainian biaspectuality definitively supports the understanding of CA as:

an all-pervading and perpetual process of mapping temporal features between elements of the sentence, especially between referents of verbs and of nominals that are participants in situations (Kabakčiev 2019, p. 212).

Unfortunately, CA has for a long time been – and to a large extent still is – a *terra incognita* in Slavic aspectological research, especially in Slavic languages with no articles. We hope that this paper, exploring Ukrainian data, will be regarded in the future as a decent initial attempt to introduce the theory of CA to Ukrainian studies.

Division of Labor

Svitlana Bakardzhieva-Morikang is responsible for the Ukrainian data. Krasimir Kabakčiev is responsible for the theoretical model.

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Enhancing media literacy skill building in pedagogical universities: Our view and experience

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Abstract. The article presents a review of the integration of media literacy content in foreign language courses at pedagogical higher education institutions. This study is aimed to share and present for academic discussion some of the authors' perspectives that proved to be successful in mastering media literacy skills as well as in developing language competencies in EFL learners. A particular focus has been made on the methodological base, the principles and strategies of media literacy skill building as well as on the criteria for the selection of learning materials and techniques that ensure the effective implementation of media literacy programs into the existing syllabi. The use of contemporary teaching methods such as flipped classroom, problem-based learning, group projects, capitalizing on higher order thinking skills and interactive classroom activities is viewed as an integrated approach aimed to develop critical perception of media products alongside with a range of sociocultural and communicative competences in students of pedagogy. One of the main objectives of integrating media literacy content into a variety of tertiary courses is to enhance emotional resilience to manipulative influences of the media which is achieved through activating critical thinking skills referring to information flow as well as to students' own media consumption habits. The pilot implementation being conducted in the terms of the international project "Learn to Discern", preserved its original methodological constituents which included media literacy as such, information literacy, critical thinking, digital and visual literacy and fact checking skills.

Keywords: *media literacy, Content and Language Integrated Learning (CLIL), higher-order thinking skills, blended learning, socio-cultural competencies, learners.*

Бучацька Світлана, Зарічна Олена, Матієнко Олена, Хуртенко Оксана. Формування навичок з медіаграмотності в педагогічних університетах: наш погляд та досвід.

Анотація. У статті представлено результати інтеграції інфо-медійної грамотності в іншомовні навчальні курси у педагогічних закладах вищої освіти (ЗВО). Особливу увагу сфокусовано на методичній базі, принципам та педагогічним умовам, а також критеріях відбору навчальних матеріалів та методичних прийомів, які забезпечують ефективне впровадження програм медіа грамотності в існуючі силабуси. Використання сучасних методів навчання, таких як обернений клас, проблемне навчання, групові та дискусійні форми роботи, актуалізація операцій мислення вищого порядку та інтерактивні форми роботи в аудиторії розглядаються як

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інтегрований підхід, спрямований на розвиток критичного сприйняття медіа-продуктів, а також ряду соціокультурних на комунікативних компетенцій у майбутніх педагогів. Однією з головних цілей інтеграції інфо-медійної грамотності в різноманітні освітні курси та навчальні дисципліни є підвищення емоційної стійкості до маніпулятивного впливу медіа, що досягається шляхом активізації навичок критичного мислення щодо потоку інформації, а також особистих навичок споживання медіа у студентів. У пілотному впровадженні в рамках міжнародного проєкту «Вивчай та розрізняй» були збережені оригінальні методичні складові, серед яких медіаграмотність як така, інформаційна грамотність, критичне мислення, цифрова та візуальна грамотність та навички перевірки фактів (факт чекінг). Ця стаття має за мету поділитися деякими ідеями авторів, які виявилися успішними в опануванні навичок медіаграмотності, а також у розвитку мовних навичок у тих, хто вивчає англійську мову як іноземну.

Ключові слова: *медіаграмотність, предметно-мовне інтегроване навчання (CLIL), операції мислення вищого порядку, змішане навчання, соціокультурні компетенції, студенти.*

Introduction

The digital age we live in and the information we consume daily encompasses a diversity of media and the content they broadcast or post on each platform can seriously affect the lives of people. In the conditions of a constant increase of manipulative content in modern mass media, the absence of a legislative framework that could establish the standards of journalistic ethics as well as track and neutralize the means of massive influence on people's consciousness, a critically low number of quality media products, implementation of media literacy courses or at least relevant modules in general educational disciplines of higher educational institutions appears to be a matter of pivotal importance.

The International Research and Exchanges Board (IREX), supported by the Embassy of the United States of America and the Embassy of Great Britain in Ukraine, in partnership with the Ministry of Education and Science of Ukraine and the Ukrainian Press Academy initiated an educational project aiming to help Ukrainian schoolchildren and students acquire skills of critical information perception and realize the value of high-quality information by means of integrating special modules into the school subject syllabi (IREX, 2019). The project is being widely implemented in the educational practice of secondary schools, and the proposed methodologies ensure the development of an effective sustainable model of media literacy development in schoolchildren.

However, the question of implementing the proposed model into the curriculum of higher education institutions (HEIs) still remains open. The training of future teachers, who are actually supposed to provide school students with media literacy skills while giving instruction in their subject fields, still requires methodological argumentation, determination of psycho-pedagogical conditions, and the implementation of this content into the existing courses and syllabi. In the framework of the international project "Learn to Discern" several pilot projects of implementing media literacy knowledge and skills in the syllabi of major and elective disciplines or special courses for students of higher education institutions according to the project methodology were conducted by the teachers of Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University. Among the

certified syllabi we had analysed were “Methods of teaching foreign languages (English)” (Kynal, Dovhaliuk, & Krykun, 2020) for undergraduates majoring in English and German languages and “The methodology of teaching literature: development of competences through the integration of media literacy” (Vinnychuk et al., 2020) for students majoring in Ukrainian Language and Literature and Ukrainian and English language and whose outcomes and ideas were exploited in our implementation project.

The aim of this article is to present as well as subject to academic discussion the methodological basis for integrating media literacy into foreign language courses at HEIs based on materials from a pilot study conducted within the international project “Learn to Discern” (IREX, Learn to Discern in Education, 2020).

Among the points that we intend to cover in the article are the following:

- The goals of the experimental course.
- Procedural principles and strategies of the implementation.
- The content and subject lines of the course.
- A model of binary planning.
- An analysis of the learning outcomes through the study of the students’ achievements in singular media literacy skills.

Literature Review

The need for an urgent response of the academia to the unprecedentedly fast and in large unrestricted expansion of manipulative media content was met by a conglomerate of researchers, who in their collaborative effort developed a solid theoretical base for implementing media literacy in educational programs.

The field of media literacy emerged in the late 1970s, marked by focused efforts on developing curricula and conducting research (Arke, 2012; Aufderheide, 1993). The 1992 National Leadership Conference on Media Literacy initiated by leading media scholars was the starting point of the media literacy movement to expand notions of literacy and help people understand, produce and negotiate meanings in a culture made up of powerful images, words and sounds. The event’s most sound and significant aims for scholars and educators, which is crucially important for Ukrainian media consumption now, were to shape a national framework for media literacy and agree on a basic definition which spelled out media literacy as “the ability to access, analyze, evaluate and communicate messages in a variety of forms” (Aufderheide, 1993).

The comprehensive research initiatives in media literacy supported by UNESCO have been followed by curricula development and media leaders’ reports and discussions providing policy guidance. The successful example of efficient ongoing surveys on media literacy among adults and children provided by British Ofcom (the UK's Office of Communication) and Canadian MediaSmarts may be taken into consideration by Ukrainian educators and media experts in testing the impact of media education on media literacy and producing research and policy recommendations aimed at promoting

safe media usage. Although Ukraine lacks a national policy for media literacy education now, the Ministry of Education and Science of Ukraine and organizations such as the Ukrainian Press Academy in partnership with The International Research and Exchanges Board (IREX), have made an attempt to advocate Media Literacy Education for state-level policies.

The above concepts of media literacy education have been enhanced by Renee Hobbs, who claims that media literacy is a dynamic practice, fostering both individual and communal engagement with media as informed citizens. This refers to a flexible approach that combines personal and collective aspects, aiming not just to protect against harmful messages but to empower individuals to interact with media as active citizens (Hobbs, 2010; Hobbs, 2017).

Analysing the extension of the concept of media literacy from its traditional focus on print and audiovisual media to encompass the internet and other new media, S. Livingstone emphasizes on the understanding of media literacy so as to exploit the historically and culturally conditioned relationship among three processes: the symbolic and material representation of knowledge, culture and values; the diffusion of interpretative skills and abilities across a (stratified) population; and the institutional, especially, the state management of the power that access to and skilled use of knowledge brings to those who are 'literate' (Livingstone, 2011).

The significance of media education is evident in the policies adopted by European nations and the Council of Europe with the established teacher-training programs aimed at promoting and developing media education in recent years. The research focused on the nature of "media literacy" in an era of digital culture, the role of computer games and other media in the formation of "moral panics," and the history and practice of media education in Britain has been a valuable example of implementing media literacy in educational programs (Buckingham, 2003). Although the vast range of studies focus on theoretical foundations of media literacy and the impact of media literacy education on the ability to identify, access, and use electronic information from the network, we found the lack of research suggesting effective syllabi for undergraduate students improving their literacy skills to be productive and effective in both their personal and professional lives.

The joint venture of IREX and Ukrainian universities on introducing media literacy content in the university syllabi was the first step of addressing the issue of the absence of standardized national curricula for media literacy mentioned by Lemish and Potter (Lemish, 2015; Potter, 2013).

The evolution of the theoretical background for educators' response to the situation of hyper-informationalism can be traced to the stage of developing strategies and approaches in the educational milieu. These can be found in academic writings of e.g. Bulger and Davison who suggested a scheme of action consisting of five consequential steps: developing a coherent understanding of the media environment; improving cross-disciplinary collaboration; leveraging the current media crisis to consolidate stakeholders; prioritizing the creation of a national media literacy evidence base,

developing curricula for addressing action in addition to interpretation (Bulger, & Davison, 2018).

A neat conceptual scheme enjoying huge success in educational endeavors throughout the world was introduced, by the Learn to Discern project (L2D) of IREX (IREX, 2019). Its fast and celebratedly successful implementation on different stages of education is majorly due to exclusively practical and universally implementable model of media literacy training as well as institutional support and enthusiasm of all the participating individuals and institutions. The initiative was eagerly and duly supported by educational institutions of school and tertiary education all around Ukraine.

The two-year pilot project on dissemination of the L2D training program found its ardent response in the introduction of special Media Literacy modules into the existing university syllabi. The collaborative efforts of Ukrainian universities on developing training materials for English classes are featured in the manual “The Curriculum for Teaching English through Media Literacy” (Goshylyk et al., 2022). The focus was made on interactive methods of media literacy training and internalization as well as a conscious approach to the parameters of emotional intelligence and their effect on personal media choices.

Method

Context of Research and Participants

Integration of specific learning modules related to media literacy was carried out at Vinnytsia State Pedagogical University (VSPU) through mutual collaborative efforts of the administration bodies, the academic staff and a wide sector of the student theatre comprising groups of various fields of study, both philological and non-philological (278 students in total) within 2020-2023 years. The participants who enrolled in Media Literacy course were divided into three groups according to their proficiency level: Basic, Intermediate and Advanced.

Data Collection and Analysis

With the purpose of objectively assessing the effectiveness of introducing media literacy content into the subject matter of the EFL (English as a Foreign Language) courses we applied a set of criteria reflecting media literacy competences for a direct observation and an analysis of a commented feedback from students.

Pilot Project Design

The goal setting of the project was determined by the fundamental competencies that constitute the content of media literacy:

1. Media Literacy (understanding how media work: owners, journalistic standards, editorial policies; ability to analyze advertising products, identify types of advertising messages).

2. Information Literacy (ability to track and work with sources and primary sources; ability to discern facts from opinions).

3. Critical Thinking (ability to evaluate and interpret events; ability to trace causal relationships and analyze motivations and reasons for actions).

4. Digital Literacy (understanding the digital footprint, privacy management; ability to prevent risks in communication – cyber bullying, grooming).

5. Visual Literacy (ability to analyze visual images i.e. photos, logos, symbols, infographics, the influence of color schemes on information perception).

6. Resilience to influences, fact checking (ability to identify manifestations of propaganda; ability to identify fakes and manipulation tools, including those rendered through pseudo-experts, clickbait headlines, manipulative photos, videos, texts, statistics).

The procedural principles for the implementation of the project were established in compliance with those that IREX strives to meet in all its trainings:

1. Exercising the learner-centered approach;

2. Provide comfortable formats of interaction heeding inclusion sensitive participants;

3. Using a variety of activities involving multisensory as well as kinesthetic approaches;

4. Relying on the background knowledge, experience and personal involvement of the students in the subject matter;

5. Engaging in direct observation and deriving feedback from students immediately before and after each stage of the project.

Seeking an optimal mixed-content scenario for the project that would logically incorporate into the course of EFL learning and meet the topical structure of the respective courses, our working group developed a training module on media literacy, which was included in the syllabus “Foreign language for professional communication”. Apart from it we tested a training module of “Practical Course of English” implementing Very Verified online, interactive media and information literacy course developed by IREX for English language learners (Buchatska & Zarichna, 2020). Based on the Learn to Discern curriculum, Very Verified focuses on critical and analytic thinking skills, with an emphasis on teaching how to consume news without dictating what to consume (Very Verified, 2019). It is tailored around the following topics:

- *Media and information landscape.*
- *Human cognitive biases.*
- *The incentive structures behind the media and information sectors (ranging from media ownership to social media algorithms).*
- *How information structures and human cognitive biases can make those who engage with information vulnerable to manipulation.*

As mentioned above, we strived to design our trainings considering our audience’s needs, interests and media consumption habits in order to fully engage the students’ cognitive structures and thus derive the most reliable data for the project analysis. The subject-thematic content of this module is presented in Table 1.

Table 1
Content and learning objectives of the training module on media literacy

<i>Topic 1. Media Landscape. Media Owners</i>	
Competencies	<ul style="list-style-type: none"> • Identify personal media consumption habits • Recognize how the media evoke emotional reactions from the consumers • Understand how the media work: owners, journalistic standards, editorial policy • Tracing the influence of sharing certain media content within a friends’ or professional community • Reflect on how ownership might (or might not) affect content • Learn strategies to help them better recognize and understand the emotional reactions they might have to news and media
	<p><i>Topic 2. Media Content. Analysis of media messages.</i></p> <ul style="list-style-type: none"> • Recognize different types of media content and different ways of conveying information, such as informing, propaganda, social and commercial advertising, PR • Be able to distinguish facts from judgments • Identify bots and trolls, the ability to counter them • Emotional intelligence (recognizing the impact on our emotions) • Identify and counter hate speech • Identify fakes and tools of manipulation (experts, headlines, photos, videos, text, statistics, etc.)
	<p><i>Topic 3. Social Media. Identification of one's own stereotypes</i></p> <ul style="list-style-type: none"> • Learn to question the authenticity of social media accounts • Learn the common signs of fake accounts • Understand the concept of stereotype and the mechanisms of its occurrence • Be able to identify stereotypes and discrimination • Understand the role of algorithms in social media • Learn ethical communication skills • Further develop critical thinking and analytical skills for assessing media
	<p><i>Topic 4. Misinformation and Manipulation. Manipulative Technologies</i></p> <ul style="list-style-type: none"> • Improve their understanding of major principles of media • Understand the difference between information and persuasion • Understand visual material as text • Be able to analyze/read images and symbols of visual text • Understand the meaning and impact of the meaningful and historical context

of an image

- Identify manifestations of propaganda
- Be able to analyze and verify photo forgeries, detect manipulative image effects

Topic 5. Search and verification of information

- Be able to effectively search for information
 - Improve fact checking skills: text checking, photo checking, video checking
 - Learn strategies for managing their emotions when looking at news and other content
 - Understand copyright and plagiarism
 - Be aware of the Internet search algorithm by keywords, the use of symbols and hash tags
 - Be able to find and work with sources and primary sources
-

Considering the specifics of the content and taking into account the functional features of communicative methods, we defined the following strategies for the effective integration of media literacy course materials in English classes both for English language and non-language majors:

1. Ensuring the subjective student's point of view throughout the entire process of working out the problem situation, from planning to assessment and conclusions.
2. Implementation of content and language integrated learning (CLIL) in the context of which professional content (fundamentals of journalism, advertising, psycholinguistics) is at the same time a means of learning English, as well as the development of media literacy (Dafouz et al., 2007).
3. Actualization of the psycho-emotional factor of information perception and analysis, development of emotional intelligence and resilience to influences.

Procedures

The integration of media literacy into language courses involves binary planning (separately for language and subject content) and conducting the educational process in two parallel directions. In this regard, we developed a special model of the lesson plan of content and language integrated learning, which reflected this feature (Zarichna et al., 2020).

It should be noted that the structure of goals in this model also included a social-communicative aspect, as well as the development of higher-order thinking operations (H.O.Ts) according to Bloom's theory (Fortanet-Gómez, & Bellés-Fortuño, 2008). It was also suggested that the logics of subject-language integrated learning involves a gradual transition from the activation of basic day-to-day communicative skills – BICS (basic interpersonal communicative skills) to the development of cognitive/academic language competencies CALP (cognitive/academic language proficiency) (Cummins, 1984).

Table 2

A Sample of Binary Planning According to the Concept of Content and Language Integrated Learning

General Topic	Media Literacy. Mass Media
Content of the subject aspect	Enhancing emotional resilience
Language Means/Tools	Psychological terminology: <i>emotional intelligence: recognizing emotions, anger management, mental filters etc.</i> Adjectives characterizing emotional states: <i>excited, impressed, anxious, confused, puzzled, etc.</i> Present Simple active and passive tenses, degrees of comparison of adjectives and adverbs Grammatical structures for expressing a point of view and giving advice: <i>should, had better, why not..., a good idea is..., in my view, as far as.... is concerned etc.</i>
H.O.T. skills	Predictive/Prognostic thinking; analytical and critical thinking; comparison, classification, cause-and-effect, emotional intelligence skills
Communicative competences	Communicative competences
BICS stage	1) Introductory discussion 2) Creation of an infographics that conveys the individual emotional experience of consuming media products and its analysis (wheel of emotions). Algorithm "cause-effect-solution". 3) Creation of a group poster based on the results of the discussion.
CALP stage	1) Introduction of subject content with preliminary processing of linguistic means and psychological terminology. 2) Work with subject-language hand-outs using memorization techniques. 3) Self-assessment and feedback.

A sample of BICS stage exercise:

Team 1. You will receive a list of questions for a survey. Move around the classroom and interview your fellow-students. Analyze the answers of the respondents and deliver a team report on the data collected.

Team 2. Answer the questions of the interviewers. Try to remember your first time at university in detail. Be specific about the things you did as well as your feelings.

A sample of CALP stage exercise:

You are a student counselor. Analyze the following problems first-year students face. Identify the stage of culture shock, specify the symptoms. Discuss possible solutions.

The general criteria for the selection of educational content are determined by the need for maximum involvement of students in understanding, transforming the material, as well as creating, on this basis, their own ideas of the informational phenomena under consideration. Among them, we highlight the following:

1. *Communicative resource*: the information offered for discussion should engage all the mental filters of the participants - memory, associations, ideas, reasoning, evaluations, etc. Besides, the topic should be based on the personal and professional interests of the participants, as well as update their knowledge and experience as much as possible.

2. *Multifacetedness of the problem*: consideration of different thematic directions from the standpoint of critical analysis and problem-based learning is provided by the ambiguity of the topic, the presence of different approaches to its consideration and interpretation.

Designing the course we took Experiential Learning Theory (ELT) as the ground for our experiential learning which is a holistic, cyclical process that emphasizes that effective learning occurs when direct experience is tied to personal reflection, opportunities to make relevant connections to the experience, and the ability to demonstrate the appropriate use of the knowledge or skill (Tsang, 2021).

Therefore, active training enabled students to engage with training content in an interactive manner, shaping and supporting a participant's learning processes. The drafted activities were tailored so that the participants were acquiring knowledge, skills, and attitudes rather than simply receiving them. Warming up and brainstorming activities are most effective when you have a group of people and are able to build on each other's ideas.

The short overview of Module 2 procedure (see Table 2):

Activity 1: My information consumption (15 min)

At the beginning the students are asked to complete the log, filling in what media they consume regularly (YouTube, twitter, radio, TV shows, etc.), and what content they consume on each platform. For example, they might check Facebook or Instagram as soon as they wake up, listen to a podcast on the way to university on the bus, and watch some show on YouTube or favourite TV channel at lunch. Everyone is told to list as much as possible and whatever comes to mind. The participants are reminded to include all media here — it doesn't just have to be the news.

Activity 2: Video Discussion (20 min)

The students watch video from https://study.ed-era.com/courses_online course on media literacy in which they learn about types of media content and how to identify markers of persuasive content.

Activity 3: Team work (30 min)

The trainer divides the students into groups and gives each group a different type of communication content: "*reporting*," "*opinion*," "*advertising*," "*social advertising*," "*PR*," or "*propaganda*." Each group will choose one example from their category to

analyze. They should decide whether their content type counts as “*information*” or “*persuasion*,” and write the content type in the relevant box.

Results

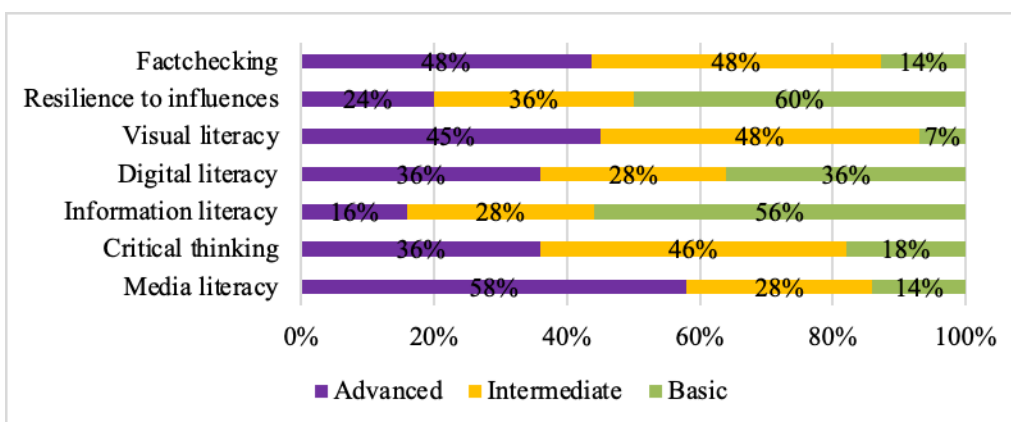
To investigate the effectiveness of the model of content and language integrated learning in the context of the development of information and media literacy, we conducted testing of participants at the beginning and at the end of the pilot training. How the metrics split is shown in the charts below (Fig. 1 and Fig. 2).

Learning outcomes show improvements in all areas of media and information literacy and ability to detect and resist manipulation. As demonstrated in table 3, there is significant increase (20%) of media literacy skills in the advanced level group of students who proved to be successful in understanding how media work and recognizing how the media evoke emotional reactions from the consumers. The participants learned to reflect on how ownership might (or might not) affect contents, which turned to be quite difficult for respondents of the intermediate and basic level groups though.

Based on the results of the pivotal training, it can be concluded that practicing in visual images analysis and verifying photo forgeries was beneficial for participants to improve their visual literacy skills (31%) in the advanced group. However, for the intermediate group representatives the tools exploited in the training seemed complicated to understand visual material as text and analyze images and symbols of visual texts.

Fig. 1 and Fig. 2 illustrate the significant increase (24%) of students’ resilience to influences and their ability to identify manifestations of propaganda; ability to identify fakes and manipulation tools.

Figure 1
Indicators of Media Literacy Before Pilot Training



Unexpectedly, the results revealed no notable differences in information literacy (10%) as well as in critical thinking (5%) after pilot training. Obviously, ability to discern facts from opinions along with ability to evaluate and interpret events; trace

causal relationships and analyze motivations and reasons for actions are essential for evaluating media messages effectively and requires much time and efforts.

It should be noted that less improvement in digital literacy skills (18%) in basic level group does cause concern, since this particular skill enables students to prevent risks in communication – cyber bullying, and especially in privacy management.

Figure 2
Indicators of Media Literacy After Pilot Training

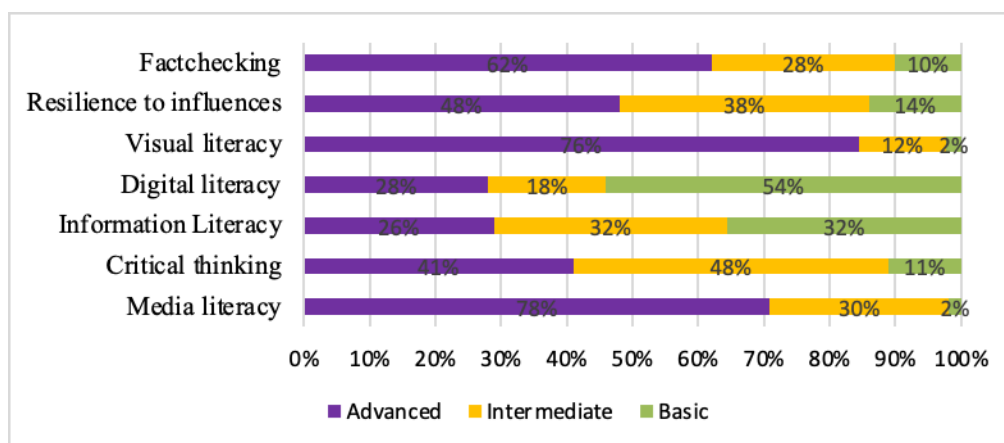


Table 3
Dynamics of Media Literacy Development Before and After Pilot Training

Media literacy indicators	Levels of students' media literacy skills development					
	Before pilot training			After pilot training		
	Basic	Intermediate	Advanced	Basic	Intermediate	Advanced
Media Literacy	14%	28%	58%	2%	30%	78%
Information Literacy	56%	28%	16%	32%	32%	26%
Critical Thinking	18%	46%	36%	11%	48%	41%
Digital Literacy	36%	28%	36%	54%	18%	28%
Visual Literacy	7%	48%	45%	2%	12%	76%
Resilience to influences	60%	36%	24%	14%	38%	48%

The research demonstrated that media literacy training cannot only promote students' critical approaches to media consumption and increase awareness of media effects but also influence behavioral changes

Within our project implementation, the team of colleagues were eager to find pedagogical tools that help their students engage in conversations about media, popular culture, and digital communication technology as a means to guide their learning. Our responsibility as media literacy mentors was and is to reach out, to learn from our colleagues in other fields, and to bridge the various disciplines by making the critical connections necessary to enlarge the field. Learning to analyze news and advertising, distinguishing between propaganda, opinion and information, examining the representation of gender, race and class in entertainment and information media, understanding media economics and ownership, and exploring the ways in which violence and sexuality are depicted in media messages continue to matter as important life skills.

Discussion

In addition to the significant increase in the relevant parameters of media literacy shown in the diagram, students demonstrated an increase in motivation to study modern means of media influence on human life, the development of their own emotional intelligence and resilience to influences, as well as to the integrated study of content and a foreign language.

The results of our experimental study proved that students who participated in a 6-week English integrated media course incorporated extensive critical media analysis of print, audio, and visual texts that media literacy instruction improved their text analysis skills, including the ability to identify the purpose, target audience, point of view, construction techniques used in media messages, and the ability to identify omitted information from a news media broadcast in written, audio, or visual formats.

The participants learned how to identify their own media consumption habits, recognize how media evokes emotional reactions from the consumers and what is more, realized their responsibility when sharing media content. Learning strategies which were exploited helped them better recognize and understand the emotional reactions they might have to news and media.

Conclusions

Due to the fact that media literacy is no longer a “talk-shop” concept discussed in exclusively academic circles, a predominant number of the project participants, possessing certain awareness of the subject, showed certain overconfidence in their media literacy skills and habitual media consumption practices. In the course of the project, however, such parameters as e.g. emotional resilience and visual literacy had to undergo considerable improvements. Having certain general knowledge of manipulative strategies, the students at the same time get easily affected by quite recognizable manipulations in feed algorithms, especially combinations of visual images and

clickbait. This leads to the conclusion that the awareness of media manipulations and recognition of one's own unhealthy media consumption habits does not at all guarantee the proper behavior in the media environment. This calls for close collaboration of educators with representatives of cognitive psychology who would provide us with effective tools of developing emotional intelligence in its parameters of identification and proper management of one's own emotions and thus enhancing emotional resilience against surging manipulative influences of the media.

The study of the main pillars of media literacy in the form of singular modules integrated in non-degree university courses, with all its remarkable results in the realization of the initial goals, is yet, in our view, not a perfect method of developing media literacy in students of pedagogy who will further translate its standpoints to the young generation and act or will act as voters and media consumers themselves. This form of content integration lacks substantiality and consequentiality of a wholesome course which ought to belong to the compulsory block of university courses and thus involve sufficient psychological trainings, investigations, projects, debates et cetera. Thus we would advocate the creation of a standardized syllabus for pedagogical higher educational institutions relying of close collaboration with all the parties having been involved in the Learn to Discern initiative.

In this regard, we would opt for flexible and adaptable formats of syllabus structure that would react immediately to the rapidly growing complexity, and variedness of media manipulations and keep pace with them (e.g. the AI capacities and potential as the object of misuse or the challenges posed by AR).

An extra plea would relate to the successiveness of secondary school media literacy content and that belonging to the university stage of education: so far the content introduced on these two stages is, with admittedly proper age adaptations, has been the same. In our view, the manipulative strategies with all their subtlety und sophistication can be reviewed and analyzed at a deeper level than is featured in the hitherto developed IREX dissemination materials. This urgently calls for close cross-disciplinary collaboration and maximization of the applicability of the professional content for courses of non-degree syllabi.

Notwithstanding the fact that the general thematic lines, strategies and practical implementation guidelines have been already organized into a systematic conception, there is a set of open questions for whose discussion we kindly invite the academic community: 1) whether media literacy syllabi should be developed with regard of narrow specialization of university courses or whether they should remain independent of the degree course content; 2) how flexible modules should work, through the traditional annual adaptation of university syllabi conducted by teachers, or in cooperation with students, journalists and psychologists in a non-traditional format of off-plan, rather keep-pace interventions into the existing syllabi; 3) how educators can reach audiences that do not belong either to the school or to the university stage; 4) how educators can ensure the prevention of media literacy "backfire" which might result in

overskeptical perception of media content and avoidance of active citizenship and participation in the political life.

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Deformations in translating modern Ukrainian war fiction into English – A psycholinguistic study of "Інтернат"/*The Orphanage* by Serhiy Zhadan

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Abstract. The article is focused on analysing linguistic deformations in translating modern Ukrainian war fiction into English. The research material is the novel "Інтернат"/ *The Orphanage* by Serhiy Zhadan and its translation into English. Translation deformations, or "deforming tendencies" (Berman, 2000), are viewed as systemic psycholinguistic distortions, arbitrary and non-arbitrary, of formal and content source text characteristics. Three main groups of translation deformations have been identified in the text under analysis – lexical, stylistic, and grammatical. Lexical deformations include calque translation, concretisation and modulation. Due to their low frequency, they are not viewed as typical. Stylistic deformations fall into synonymous substitution, logisation, explication, expressivation, modernisation, antonymous translation, and compensation. Synonymous substitution and logisation are the most frequent types; therefore, they may be considered prototypical. They are mainly concerned with reproducing characters' names and descriptions, names or descriptions of military and civil vehicles and tools, colloquial expressions and 'surzhyk'. Grammatical deformations constitute the most significant group. They comprise substitutions and permutations of different types, deletion of words/phrases/sentences, addition of words/phrases, and changes in punctuation. The style of Serhiy Zhadan is characterised by specific syntactical-stylistic features, such as the tendency to use extremely long sentences, high frequency of repetitions of different types, and specific punctuation. Therefore, deleting repetitions, intensifiers, discourse markers, and even sentences is the most recurrent type of grammatical deformation, followed by substitution–division of sentences, which may be treated as prototypical grammatical deformations in the analysed text. The results of the psycholinguistic analysis show the availability of normalisation, implicitation, emotional amplification, levelling-out, and simplification in the target version of the novel.

Keywords: *war fiction, translation deformations, Serhiy Zhadan, The Orphanage, Ukrainian, English, LIWC, psycholinguistics.*

Каліщук Діана, Засєкін Сергій. Деформації в англійському перекладі сучасної української воєнної прози: психолінгвістичне дослідження твору Сергія Жадана «Інтернат»/«The Orphanage».

Анотація. Статтю присвячено аналізу перекладацьких деформацій у перекладі сучасних українських військових текстів англійською мовою, матеріал дослідження – роман Сергія Жадана «Інтернат» та його переклад англійською «The Orphanage: A Novel». Перекладацькі деформації трактовано як системні свідомі чи несвідомі викривлення формальних та змістових характеристик джерельного тексту, що призводять до значних відхилень від авторського

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творчого задуму, невідповідного відтворення певних рис індивідуального стилю автора та поєднують кількісні і якісні зміни джерельного тексту на різних мовних рівнях, таким чином впливаючи на цілісну прагматику джерельного тексту, яка конструюється об'єктивною точністю відтворення одиниць джерельного тексту та суб'єктивним ставленням перекладача. Було виокремлено три основні групи перекладацьких деформацій: лексичні, стилістичні та граматичні. Лексичні деформації поділено на калькування, конкретизацію, генералізацію та модуляцію. Вони є нечисленими, тому не можуть вважатись типовими. Стилiстичні деформації включають синонімічні заміни, логізацію, експлікацію, експресивацію, модернізацію та антонімічний переклад. Синонімічні заміни та логізація є найчастотнішими, отже, прототиповими. Переважно, йдеться про відтворення імен персонажів твору, описів людей, назв чи описів військових або цивільних транспортних засобів та інструментів, розмовних виразів і суржику. Найбільшу групу складають граматичні перекладацькі деформації. Вони поділяються на заміни та перестановки (пермутації) різних видів, вилучення слів/словосполучень/речень, додавання слів/словосполучень, зміни в пунктуації. Індивідуальний стиль Сергія Жадана характеризується особливими синтактико-стилістичними рисами, такими як схильність до використання надзвичайно довгих речень, висока частотність вживання повторів різних типів, особлива пунктуація тощо. Саме тому вилучення повторів, підсилювачів, дискурсивних маркерів чи навіть цілих речень в тексті перекладу є найчастотнішим типом граматичних деформацій. Наступні за частотністю вживання типи – пунктуація та заміна, що передбачає членування речень, поділ на окремі речення. Ці граматичні деформації можуть вважатись прототиповими в аналізованому тексті. Результати психолінгвістичного аналізу засвідчили наявність нормалізації, імпліцитації, емоційної ампліфікації, вирівнювання та спрощення в цільовій версії роману.

Ключові слова: *воєнна проза, перекладацькі деформації, Сергій Жадан, «Інтернат», українська мова, англійська мова, LIWC, психолінгвістика.*

Introduction

After the Russian-Ukrainian war started in 2014 and especially after the full-scale invasion in 2022, the topic of war has become one of the most widely exploited in all genres of texts. The number of war fiction books written by modern Ukrainian authors is constantly growing as they directly reflect the situation in Ukraine, describing atrocities of war, heroic resistance, and the price Ukrainians pay for their freedom. Many books have been translated into English since they serve one of the best ways to inform the world about the actual state of things.

According to Basaraba (2022), Kočotea and Smirnova (2016), the term “war fiction” may be applied to military-related texts which describe war events, everyday activities, military-cultural aspects of people’s lives in times of war. Unlike military texts, war fiction is not aimed at military professionals solely, it is not so rich in military terms that allow one possible interpretation and are limited in the sphere of application. The audience of war literature is much broader, with different levels of knowledge and competencies, though military terminology and jargon are indispensable constituents of such fiction.

War fiction texts are written by authors who do not always have any war experience. However, they try to provide their readers with the opportunities to perceive the events that may be rather far from them in time and distance as something close and realistic (Cobley, 1995). They carefully select linguistic means (lexical, grammatical, stylistic, etc.) to describe the events as accurately as possible and make the readers feel involved, sympathetic, appalled, terrified, etc., to achieve the effect planned. Therefore,

translating war fiction is even more challenging than other types of literary translation and undoubtedly involves different translation deformations. According to Karaban (2012), the translation of military-related texts is characterized by significant peculiarities in terms of the genre of the texts, as well as principles, regularities and difficulties of translation.

Despite numerous studies into translation deviations of different types in general and translation deformations in particular, the issue of the expediency of using such transformations is still a subject of hot debate, as is their influence on the recipient of the target text, their contribution to adequacy of translation, the level of the target text and author’s intention deformation, etc.

In modern translation studies, the opinion that deformations are unavoidable in the context of translatability/non-translatability of fiction is relatively common (Miller, 1996; Cherednychenko, 2007; Rebenko, 2014). Still, translation deviations of various types are assessed differently and often criticized. Some scholars treat them as a set of factors which make a translator deviate from the primary goal (Berman, 2004) while trying to create a more transparent, more understandable or fuller version of the text in the target language than in the source one (Chapman, 2009), emphasizing negative phenomena of culturological nature (Cooper, 2011) that may arise. They claim that in many cases, the reason for utilizing translation deformations is the translator’s subjective choice within their strategy of translation.

According to other points of view, translation deformations are considered to be acceptable because in most cases target and source languages have systemic discrepancies. Thus, deviations in translation contribute to preserving national and stylistic specifics of the source text, expanding expressive possibilities of the target language and culture (Cherednychenko, 2007). Different scholars have elaborated different typologies of translation deformations depending on the criteria applied and the main goals of the analysis conducted.

However, the phenomenon of translation deformations still requires in-depth investigation, especially regarding differentiation between translation transformations and translation deformations.

Many studies are devoted to translating of war literature from English into Ukrainian, both military texts and military-related texts, such as war fiction. However, investigations of war literature translations from Ukrainian into English are rather scarce.

This research aims to analyse translation deformations in translating modern Ukrainian war fiction into English and their types to identify prototypical ones, their influence on the recipient of the target text, and to assess the level of deformation of the author’s creative intent, the imagery constructed by the author, as well as the reality described.

Method

Linguistic Analysis

Translation deformations are treated in this study as systemic distortions of formal and content text characteristics which lead to significant deviations from the author’s

creative intent or goal, conscious and subconscious, which embrace both qualitative and quantitative changes of the source text on different levels (Karaban 2012; Rebenko, 2014) from the perspective of the integrated approach. The deformations may result in the fact that the reader of the target text receives the understanding of events, situations, and characters described in the source text, relations among them, and attitudes towards reality through the prism of the translator's subjective understanding, which may differ greatly from that of the author.

Material

The material of this research is the novel "Інтернат" by Serhiy Zhadan in the original (Zhadan, 2017) and its translation into English – "The Orphanage: A Novel" (Zhadan, 2021) made by R. Costigan-Humes and I. Stackhouse Wheeler.

Literary translation, in general, and translation of war fiction, in particular, are complicated processes since they are concerned not only with linguistic restrictions of different types caused by systemic and structural differences between the two languages but also with cultural peculiarities, including conceptual and ideological ones. Awareness of the source language culture, dominating ideology, and a set of values is an essential requirement the translator has to meet to adequately interpret the source text and render it by applying the available means of the target language, utilizing translation transformations of different types and in such a way creating some new reality (Das, 2005).

Zasiiekin (2016) claims that literary translation is a complex creative psycholinguistic process of the translator's semiotic transformation of the source text into the target text, which results in creating a cognitive asymmetric new text in which conceptual information has been preserved (p. 125-127). Still, this new text has undergone deformations of syntactic-stylistic and pragmatic features of different levels. Coherent pragmatics of the target text is constructed by both the objective accuracy of the source text unit reproduction and the subjective attitude of the translator within the translation strategy chosen.

One of the main criteria for translation deformation analysis is the category of the author's individual style – idiostyle. The peculiarities of adequate representation of the author's style may be studied only by taking into consideration the interrelated mutually determined system of quantitative text characteristics, namely linguistic units of different levels (morphological, lexical, syntactic, etc.) and qualitative text parameters, such as the author's communicative and creative intent, author's modality, imagery created by the author (Rebenko, 2014). To prevent the deformation of conceptual, stylistic or genre features of the source text and adequately represent the author's modality, the translator has to take into account objective-linguistic as well as pragmatic factors.

Objective-linguistic factors, i.e. structural and systemic differences of source and target languages, as well as discrepancies between linguistic worldviews of the author of the text and the translator, are the significant causes for applying translation transformations on different levels striving for adequate translation of the source text

and evoking the reaction in the recipient of the target text which aligns with the communicative intent of the author. The main goal of literary translation is adequate representation, yet reproduction, of the author’s style. Therefore, the translation strategy should be chosen accordingly.

The translation of Serhiy Zhadan’s prose and poetry is challenging due to the peculiarities of his idiosyncrasy. The specific rhythm of his prose, persistent repetitions, usage of parallel constructions, rather peculiar punctuation and sentence structures, his tendency to use slang, jargon, colloquial expressions, and swearing, epithets, comparisons and neologisms created by him and other peculiar features of his style are complicated to reproduce in translation.

As Tymothy Snyder, the American historian, writes in the foreword to the translation of Zhadan’s novel *The Orphanage* published by Yale University Press in 2021, “To say that Serhiy Zhadan is a great Ukrainian novelist of whom you might not have heard does not begin to cover it. Serhiy Zhadan is one of the most important creators of European culture at work today. His novels, poems and songs touch millions. This loving translation is a chance to see Ukraine in terms other than the familiar, but more importantly a chance to allow prose to mend your mind” (Zhadan, 2021).

The Orphanage tells about three days of the life of an average school teacher, Pasha, during the war in the Donbass in 2015. It is a local story about a person who experiences deadly dangers when all his life may dramatically change within minutes. The author tries to show the war from the inside, from the point of view of those living at the front line, focusing on their behaviour, goals, motives, decisions they have to make each and every moment, and their feeling of being lost and abandoned. The main character of the novel and the other characters are fictional. It is some collective image of people who for all their lives have been trying to avoid getting involved in anything, being indifferent to the political and social situation in the country, genuinely believing they cannot influence anything, being unable to use their initiative and seeing no point in it. The choice of linguistic means to describe the reality of war, reproducing tension, emotions and attitudes of the characters complies with the author’s creative intent.

The selection of the material goes through several steps. First, we traced the changes, i.e. transformations, the translators applied trying to their subjective opinion to make the translation adequate and comprehensible for the English-speaking audience. We focused on three main groups of transformations: lexical, grammatical and stylistic, though most of the selected extracts included complex deformations – a combination of several types.

Lexical transformations, according to Selivanova (2006), are divided into formal (comprising transcription, transliteration, calque translation) and lexical-semantic transformations (comprising concretization, generalization, modulation). Grammatical transformations were divided into lexical-grammatical within which we identify the addition of words (also called amplification), deletion of words/phrases, part of speech substitution, and grammatical transformations of syntactic levels, such as substitutions of different types – division of the sentences, combining sentences,

the substitution of sentence types, the substitution of the kinds of syntactic connections, also a permutation of words/members of the sentence, permutation of sentences, deletion of word-groups or whole sentences (Karaban, 2004), changes in punctuation. Stylistic transformations include explication, synonymic substitutions, compensation, logisation, expressivation, modernization, and antonymic translation (Anderman & Rogers, 2003; Ostapenko, 2022). We used this classification to provide a structured description of the findings obtained.

Then, the selected extracts were analysed to see whether the identified transformations were necessary and justifiable, whether they were caused by objective factors, such as systemic and structural differences between the two languages, etc., or rather by translators' subjective choice, whether they contributed to the adequacy of translation or vice versa – distorted the content of the source text, changed the author's creative intent, imagery, author's modality, etc. Elements of quantitative analysis were applied to investigate quantitative changes leading to qualitative distortions, and to single out the most frequent, thus prototypical, translation deformations traced. For some quantitative calculations, namely, to identify the number of sentences and the longest sentence in both versions, we applied Textanz 2.3 software.

The corpus of the research comprises 1,126 examples of systemic distortions of formal text characteristics – lexical, grammatical, and stylistic, which, to our mind, can be viewed as translation deformations.

The lexical deformations are the least frequent, we traced only twenty cases, which constitute 1, 8% out of all the samples analysed; stylistic deformations take 42 % – 473 examples; grammatical deformations are the most numerous – 633 instances were identified, which is 56,2 % of the total number (see Fig. 1).

Figure 1
Translation Deformations in The Orphanage

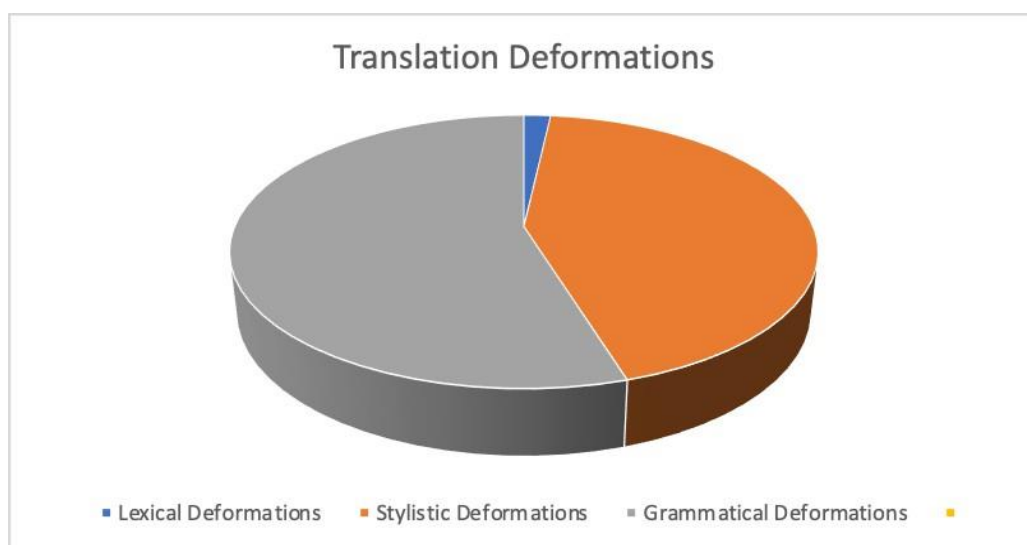


Table 1 shows the breakdown of lexical deformation types:

Table 1
Lexical Deformations in The Orphanage

Lexical Deformation Types	Number
Calque translation	6
Concretization	8
Generalisation	4
Modulation	2
Total	20

Examples of concretization are the most frequent, though not so numerous, as other lexical transformations applied in the target text did not result in any considerable distortions of the source text conceptual information and were not included in the research.

Table 2 illustrates the breakdown of stylistic deformation types:

Table 2
Stylistic Deformations in The Orphanage

Stylistic Deformation Types	Number
Explication	27
Synonymic Substitution	230
Compensation	1
Logisation	179
Expressivation	6
Modernization	17
Antonymous Translation	13
Total	473

As Table 2 shows, synonymic substitution is the most numerous type of stylistic deformations, followed by logisation, the second most frequent type. All the other stylistic deformations are less numerous, though.

In Table 3 the breakdown of grammatical deformation types is presented:

Table 3
Grammatical Deformations in The Orphanage

Grammatical Deformation Types	Number
Addition of words (amplification)	54
Deletion of words, phrases, sentences	179
Part of speech substitution	15
Substitution (division of sentences)	132
Substitution (combining sentences)	25

Substitution of types of syntactic connection	12
Substitution of sentence types	22
Punctuation	145
Permutation of words/members of the sentence	22
Permutation of sentences	28
Total	219

As shown in Table 3, deletion of words, phrases, and sentences, changes in punctuation, as well as substitution, namely division of sentences, are far more frequent than any other types of grammatical deformations.

Psycholinguistic Analysis

Tools

This analysis will use two tools – LIWC 2015 and Textanz 2.3 softwares to examine the original and translated texts. The LIWC software developed by Pennebaker et al. (2015) is a commonly used tool for analyzing text. It employs a collection of word lists associated with various semantic categories relevant to understanding the text writer's psychological states and linguistic preferences. These categories include positive and negative emotions, motivation, thinking styles, and social relationships. The LIWC categorizes words in the input texts according to these predefined categories, which are based on around 6,400 words and cover over eighty categories (Pennebaker et al., 2015).

Tausczik and Pennebaker (2010, p. 25) state that the words individuals use in their daily lives reflect their identities and the social relationships they are involved in. With this in mind, we utilized specific LIWC semantic categories to quantify and underscore the differences between the two texts. The analysis focused on the percentage of words falling under linguistically and psychologically relevant categories.

Additionally, we explored the writing style of the texts by using the Categorical-Dynamic Index (CDI) as a reliable marker of the text author's narrative or analytic style (Jordan & Pennebaker, 2017). This index indicates that the more authors follow formal, and logical, and paradigmatic thinking patterns in their text, the more explicit their abstract thinking and cognitive complexity will likely be. By contrast, authors with low CDI, i.e., having more narrative thinking, tend to write and think using language that is more impulsive, intuitive and personal.

Results

Linguistic Findings

Analysing the translation of the novel, we identified different types of translation deformations, which we conditionally divided into three groups: lexical,

grammatical, and stylistic. Lexical deformations found in the text include calque translation, concretization and modulation (Selivanova, 2006). The cases when specific changes of lexical units were utilised to contribute to the adequacy of translation and did not result in distortions of any features of the source text, be it stylistic, emotional, associative, etc., were not taken into account. Thus, lexical deformations are not numerous in the text – only 20 cases (see Table 1), less than 2 % out of the total number (see Fig. 1). Calque translation or usage of direct translation in the examples found led to violations of the author’s creative intent, for instance:

У камуфляжному бушлаті з коміром із **якогось дохлого бобра** у випрасуваних, зі стрілкою, брюках, заправлених у сині **гумаки** (Zhadan, 2017).
 ... in a camo jacket with a collar **made of some dead beaver** and iron pleated pants tucked into his blue **rubber boots** (Zhadan, 2021).

In the given extract calque translation of the idiom created by the author *якогось дохлого бобра* – *made of some dead beaver* changes the author’s modality, as the implied ironic or even sarcastic meaning – some fur of doubtful origin, perhaps artificial, obviously cheap – is lost. The sample is a case of complex deformation as it is also concerned with changes in style and distortion of evaluative-aesthetic feature of the text, which is enhanced by applying logisation – usage of standard English phrase *rubber boots* to render colloquial Ukrainian word *гумаки*. The image of the military official as fairly comic and full of himself in the original is replaced by a rather neutral representation in the translation.

However, such low frequency does not allow us to view lexical deformations as systemic in the text under analysis.

According to the obtained results, stylistic deformations are systemic, the total number is 473 (42 %) (see Fig. 1). Due to high frequency, synonymic substitutions and logisation may be considered prototypical – 230 and 179 cases out of total. Other types of stylistic deformations are explication, compensation, expressivation, modernization, antonymic translation (see Table 2).

In all the cases of syntactic substitution found, usually in combination with other types of translation deformations (amplification, permutation, logisation, etc.), the choice of a particular lexical unit out of a set of synonymous expressions, even in cases of choosing the direct equivalent led to violations of author’s creative intent, distortions of the readers’ perception of the events and situations described, creation of false images, etc., for example:

Білявка відбігає вбік, **навчено** пірнає під стіну (Zhadan, 2017).
 The blonde woman runs **nimbly** diving towards the wall (Zhadan, 2021).

The word *навчено* in the original implies that this woman knows how to behave in case of threat or danger, describing the reality of war people in the Donbass lived – readiness for everything, being alert all the time, getting skills essential to surviving. The word *nimbly* in the translation means “in a way that quick and exact either in movement or thought” (Cambridge Dictionary). The author’s modality has been

completely changed and the new reality created is different from the one in the source text. In another example the whole sentence has been translated using synonymous substitutions of words and phrases:

— Та ладно, — відповідає на це малий. — **У тебе ж теж не державний гімн стоїть.** Хоча міг би й поставити, ти ж учитель. Бюджетник. (Zhadan, 2017).
"Whatever," the kid replies. "**What, do you want him to use the national anthem?** Well, maybe you should. You are a teacher, after all. A government employee." (Zhadan, 2021).

In the target text the meaning of sarcasm and reproach of Sasha towards his uncle *У тебе ж теж не державний гімн стоїть* - "**What, do you want him to use the national anthem?**" is lost and the continuation of his speech sounds strange as the reason to use *should* is unclear, and the reference to the final part *You are a teacher, after all.* is loose.

Rather recurrent are the cases of reproducing names or descriptions of military and civil vehicles or tools, well-known to Ukrainian readers without any explanation, using equivalents with different connotative or associative meanings, having wider or narrower meanings, etc., and in such a way deforming the situation described, presenting it as more "civilised", not so savage as it is in reality, for example, *old army ambulance* for *стара коричнева «таблетка»*, *special-purpose vehicles* for *важкі «крази»*, *sedans with Polish license plates (the drivers clearly haven't paid any customs duties on them)* for *нерозмитнені легковики з польськими номерами*.

Another frequent subtype of syntactic substitution, usually in combination with logisation, is traced in reproducing the description of people, for instance:

У нормальному житті – **яка-небудь бюджетниця**, що вміє брати хабарі (Zhadan, 2017).
In her regular life, she's **probably a government official** who knows how to take bribes (Zhadan, 2021).

Ukrainian lexeme *бюджетниця*, colloquial and derogatory, intensified by the pronoun *яка-небудь* omitted in the translation, expresses a lack of respect towards those called in this way, showing their low status in society due to non-prestigious and low-paid jobs. In the target text, the usage of *a government official*, (*government employee* in another example) neutral and standard, meaning "an official who works for a government department" (Collins COBUILD), evokes "neutral" emotions in the reader, thus deforming the author's modality.

Other examples of such synonymic substitutions, rather numerous in the text under analysis, are *a little woman* (the criterion is height and weight) for *жіночка* (a diminutive-affectionate name which generally has nothing in common with physical appearance); *lady / little ladies* (neutral) for *баба / бабоньки* (derogatory, colloquial); *security guard* – *вахтерка*, *a seasoned educator* – *ветеран педагогічної діяльності*, *the gym's teacher* – *фізрук*, *noncombatants/ civilian population* – *громадянське населення* (different images about different social and cultural realia, statuses, titles and attitudes to them); several options, such as *old-timer* (a veteran, a person who lives rather long), *Pasha's dad*, *Pasha's old man* for the same lexeme

старий – a word which is used to speak about parents, in its modern connotation the attempts to hide affection towards parents, to sound more cynic among peers can be traced; one variant *soldiers* for several lexical units in the original – *бійці, військові, солдати*, etc.

Another group comprises examples of translators’ attempts to adequately reproduce names created by the author to describe characters in the novel, for instance, *Round Mug* for *круглопикий*, *No Nose* for *безносий*, *The Arctic Fox* for *лисоподібний*, also *сивий*, *Stocky* for *приземкуватий*, *Hoof Lady* for *копитонога*, *Yellow Teeth* for *жовтозубий*, *the Beaver* for *бобер*, *Mouse Eyes with the high-pitched voice* for *тонкоголосий, із мишачими очима*, etc. The author used metonymic transposition to describe characters and the adjectives created for this purpose are all derogative, showing little if any respect to those people. It reflects the tendency among some representatives of lower layers of society, mostly less successful, worse-educated, and less wealthy, to make up different nicknames, mocking people for some features of their physical appearance or cognitive abilities. In the translation, these implications are lost.

Examples of logisation, i.e. usage of stylistically neutral equivalent instead of the emotional-expressive lexical unit from the original (Anderman, Rogers, 2003), are numerous in the text (179 samples out of 473 cases of stylistic deformations defined), as in such instances as *розчахнутий настіж* – *wide open*; *пахучий* (negative) – *fragrant* (positive); *снігове ошмаття* – *shreds of snow*. In most cases we traced complex deformations – a combination of syntactic substitution and logisation (see examples above). The author uses a lot of slang, colloquial expressions, some archaic lexical units, and especially Surzhyk (a Ukrainian-Russian pidgin) to reflect the way people in Donbas speak, for example: *який-неякий бюджетник* – *he was on the government payroll*; *жениціна* – *woman*; *дєдушка* – *old man*; *дядя* – *mister*; *наляканий тлум* – *frightened crowd*; *значь так* – *so*; *бать* – *Pops*; *посьолок* – *the town/the neighborhood/the residential area*, etc.

The differences in referring to people either using first names only or full names or some other versions of addressing are also examples of logisation, rather frequent in the target text:

— Про це, — перебиває вона, — саме про це: про страх та безвідповідальність. Ось ви, **Пал Іванич**, зі своїми дітьми про війну говорите? (Zhadan, 2017).

"That's exactly what he was talking about - about fear and irresponsibility. And you, **Pasha**, do you talk to your kids about the war?" (Zhadan, 2021).

The way Nina, the headteacher of the orphanage, a well-educated person who speaks fluent and correct Ukrainian, addresses Pasha, the main character – **Пал Іванич** – using a contracted form of a Russian-like name/patronymic, shows her utter disrespect to him, which is not reproduced in the target text – **Pasha**.

In translation, these essential features, necessary for understanding the reality constructed in the novel, and, to some extent, the reasons for the Ukrainian-Russian war are lost.

The biggest group of translation deformations singled out in the text is grammatical deformations. We found 633 cases, which constitute 56,2 % of the total number (see Figure 1). This group contains substitutions and permutations of different types (each type was analysed separately), deletion of words, phrases and sentences, addition of words, and changes in punctuation (see Table 3). Due to high frequency, deletion of the words/phrases/sentences (179 cases), changes in punctuation (145 instances), and substitution – sentence division (132 cases) may be viewed as typical grammatical deformations in the text under analysis, thus in the majority of cases in combination with other types they served as constituents of complex deformations.

In psycholinguistics, deletion (information deletion) is viewed as one of the tactics of suggestion, a type of manipulation, if used consciously. In the text under analysis the cases of deletion of words, phrases and even sentences are too numerous and systemic to be treated as transformations contributing to adequacy of translation. They are rather instances of quantitative changes of formal text characteristics caused by translators' subjective decisions made in the translation process, resulting in distortion of the source text conceptual features and imagery, leading to alteration of the effect on the reader of the target text.

The individual style of Serhiy Zhadan is characterized by a high frequency of repetitions of different types and usage of parallel constructions, which in the translation are either reproduced using some other types of constructions or simply omitted. Rather recurrent are the cases when translators omit discourse markers, particles, intensifiers or conjunctions, reducing the tempo of narration, degree of tension, etc. Therefore, some parts of the target text seem to be written in a different style since they do not preserve the peculiarities mentioned above, for example:

Мав би говорити **державною, панікує Паша, державною**, місяць тому тут стояла частина звідкись з Житомира ... (Zhadan, 2017).

"He must be speaking some **official language**". Some unit from Zhytomyr ... (Zhadan, 2021).

In the given extract, there is no repetition **державною, ... державною**, and an essential part of the sentence **панікує Паша** is omitted. The function of the repetition is to emphasize the anxiety of the main character, his panicking, which is highlighted by the omitted phrase **панікує Паша**. In translation, we see no emotions and feelings of Pasha, simply a neutral state of the fact.

In the original, the author uses repetitions very often, perhaps too often for the translators. Still, all such examples illustrate a high degree of tension in the air, people on the edge of their endurance due to the conditions of uncertainty, threat, and danger they have to live under, for instance:

... вихлипує із себе: **зняли, каже, зняли** просто з руки, **зняли**, поки ми спали (Zhadan, 2017).

... – it's more of a forced sob, actually: "**Took** it right off my hand ... while we were sleeping" (Zhadan, 2021).

The repetition of *зняли, ... зняли ... зняли* reproduced by *Took* creates a visible image of a person crying out in despair, together with *каже*, which in this case serves as some kind of intensifier they allow visualization of the scene accompanied by a rather audible sound of sobbing. In the translation such effect is completely lost.

In some cases, translators omitted the whole sentences, for instance:

*Представники кандидата зачинились із військовими в кабінеті директора, довго про щось говорили. **У результаті військові поїхали, а представники кандидата зробили все, що хотіли.** Добре, що я за нього не агітував, заспокоював Паша сам себе (Zhadan, 2017).*

The candidate's representatives and the soldiers locked themselves in the principal's office. They were talking for a while. “It's a good thing I didn't campaign for him,” Pasha reassures himself (Zhadan, 2021).

The given extract is an example of a complex deformation, a combination of substitution – several sentences instead of one, deletion, and changes in punctuation. The sentence in bold in the original omitted in the target text is essential for understanding the situation since the implied meaning is to state the fact of election falsifications, accompanied by corruption, which was rather common for some Ukrainian regions at those times. Thus, it is unclear to the reader of the target text why Pasha feels so relieved for not taking part in the pre-election campaign. The impression of the main character's reflections is lost due to punctuation of direct speech in the translated text. In another example the omission of the sentence makes the whole situation unclear:

*Ніна теж особливо теплих почуттів у нього не викликає, але й цей ось фізрук у пальті викликає хіба що відразу. **Паша дивиться йому в очі.** Валера не витримує, відводить погляд, сидить, п'є з незалежним виглядом (Zhadan, 2017).*

Nina doesn't exactly elicit warm feelings, but this gym teacher guy in the black coat doesn't really elicit any feelings except disgust, maybe. Valera cracks, averts his eyes (Zhadan, 2021).

The omission of the sentence *Паша дивиться йому в очі* in the target text makes the usage of the subsequent part *Valera cracks, averts his eyes* illogical.

The reverse procedure – amplification or addition of words or phrases is also rather standard (32 samples) in the text under analysis, for example:

Є так, ніби над малим вже давно стоїть знак смерті. І сама смерть – лише питання часу. Якоїсь миті сестра просто здала його сюди, не попередивши ні Пашу, ні батька (Zhadan, 2017).

*It feels like the sign of death has been hanging over the kid for a while now. And his death is just a matter of time. Then his sister has just sent him here, **to live with orphans and the children of drug addicts**, without warning Pasha or her father (Zhadan, 2021).*

The infinitive phrase in bold in the given sample of the target text is added by the translators. It reflects stereotypical attitudes and opinions, not always justifiable

since, according to the definitions provided in the Dictionary of the Ukrainian Language (Slovnyk.UA), *інтернат* (*orphanage* in the target text) is a type of educational institution where children study and live. They are not always concerned with children from dysfunctional families or the disabled.

Punctuation as a type of syntactic deformation in the text under analysis is of particular interest. It is the second most frequent type. In all the cases identified, punctuation of the direct speech used by translators resulted in creating a false image of the described situation and events, especially in terms of the character's inner world reproduction, for instance:

Хтось тулиться йому під плече, лізе під лікоть. **Баба**, здогадується Паша, **баба** із **золотом** під язиком. Сидить, боїться поворухнутись, хай тулиться, думає, хай гріється. Коли я востаннє ось так лежав із жінкою? – згадує (Zhadan, 2017).

Somebody's nestling against his shoulder, slipping under his arm. "**That lady**," Pasha figures. "**That lady** with **the gold** under her tongue." She sits there, afraid to move a muscle. "Let'er snuggle," he thinks. "Let'er warm up. When's the last time I lay to a woman like this?" (Zhadan, 2021).

The given extract is an example of a complex deformation with synonymic substitution and logisation (*Баба – That lady*), calque translation (*золотом під язиком – the gold under her tongue*) and changes in punctuation. Inverted commas for direct speech in the target text eliminate the impression of the main character's reflections and talking to himself, doubting, trying to persuade himself of something, looking for excuses, etc.

— Все добре там, — відповідає йому на це Паша, потроху нервуючи. Якщо спробує нас вигнати, думає, дивлячись на господаря, завалю. Його ж сокирою. — Все під контролем. Ситуація стабільна (Zhadan, 2017).

"Everything's fine," Pasha replies, growing a bit anxious. "If he tries to kick us out," he thinks, looking at the owner. "I'll knock him out. With his own ax." "Everything's under control. The situation is stable." (Zhadan, 2021).

In the given example the usage of direct speech punctuation inserted between the replies Pasha actually pronounced creates the illusion of fluent dialogue where he is speaking all the time and distorts the author's intent to contrast what is said and what is thought and implied, essential for understanding of the situation and tension between the characters in this scene.

Substitution – division of the sentences may be considered typical for the text under analysis, 132 examples found. On the contrary, the cases of substitution – combining sentences are relatively rare – 25 examples only. In the original, the number of sentences is 8099, the longest sentence contains 275 words, the average number of words per sentence is 22,67. The target text comprises 9046 sentences, the longest sentence comprises 99 words, the average number of words per sentence is 10,43. One of the prominent features of Serhiy Zhadan's idiostyle is an abundance of very long sentences, with peculiar punctuation, which plays a significant role in creating the imagery. In translation, such sentences are often divided into several

shorter sentences, altering not only syntactic patterns but mainly conceptual information of the source text, for example:

Його хтось кличе зі шкільного коридору, він виходить, учителі заганяють дітей назад до класів, ті відразу ж кидаються до вікон, **дивляться**, що там діється (Zhadan, 2017).
Somebody is calling him into the hallway. He steps out. Teachers are herding their students back into their classroom. The kids bolt toward the windows **to see** what’s going on (Zhadan, 2021).

One compound sentence in the original containing five clauses is divided into four sentences in the target text. Thus, the tempo of narration is slowed down, and the impression of events happening simultaneously and instantly is transformed into a succession of events. It is even strengthened by the usage of the infinite phrase *to see* instead of a homogeneous predicate *дивляться*.

Another example of substitution involving the division of sentences in combination with deletion and changes in punctuation illustrates distortion of the presentation of the main character’s feelings and fears:

Вони всі бачать, **думає він**, всі бачать, як мені страшно, який я переляканий, дивляться на мене, ніби я клоун, **думає Паша**, я і є клоун, **нагадує він собі**, що я сюди припхався, що я тут забув? (Zhadan, 2017).
“They can all see,” Pasha thinks. “They can all see how scared I am, how freaked out I am. They are looking at me like I’m some sort of clown. Well, I am a clown. Why the hell did I come all the way down here anyway?” (Zhadan, 2021).

Using full stops for commas and punctuation of direct speech reduces the tempo of speech, the chaotic stream of Pasha’s thoughts, the impression of his inner speech, nervousness and panicking are lost to a great extent. Deletion of repetition *думає Паша* and the whole sentence *нагадує він собі* results in a lower degree of anxiety, making the whole passage less emotional and tense.

Similar effects can be traced in another example of substitution involving the division of sentences:

І Паша біжить уперед, рваним асфальтом, чорним ламаним лісом, мокрим пообіднім повітрям, біжить, хапає малого за плече й тягне за собою, хоче подати руку жінці в хутряній шапці, але та відсахується від них, ніби від побаченої на порозі власної смерті, і Паша з малим кидають її, лишають на чорній дорозі, біжать, не озираячись, відбігають все далі й далі звивистою ліською дорогою, женуть уперед, думаючи лише одне: ось зараз, ось-ось, ось уже за мить, ось прямо тепер — рвоне, вибухне, рознесе все навколо, розламає зсередини цей мокрий зимовий простір, розламає небо над нами, зупинить час, ось-ось, ось прямо тепер, прямо тут (Zhadan, 2017).

And Pasha runs forward, down the ripped asphalt, through the black, broken forest and the wet afternoon air, running, grabbing the kid by the shoulder and dragging him along. He wants to give the woman in the fur hat a hand, but she lurches back, as if she's just seen her death at the front door, and Pasha and the kid abandon her, leaving her on the black road. They run, not looking back, racing farther and farther down the winding, wooded road, charging ahead, only thinking about one thing. Now, right now, any second now, at this very

moment - it's gonna blow, wipe everything out, implode this wet, wintry space, implode the sky above them, stop time, now, right now, right here (Zhadan, 2021).

One complex-compound sentence in the original is divided into four sentences in the target text, thus the feeling of inevitability of pending disaster, events unfolding at this exact moment with incredible speed, characters' instinctive rather than reasonable reactions is lost.

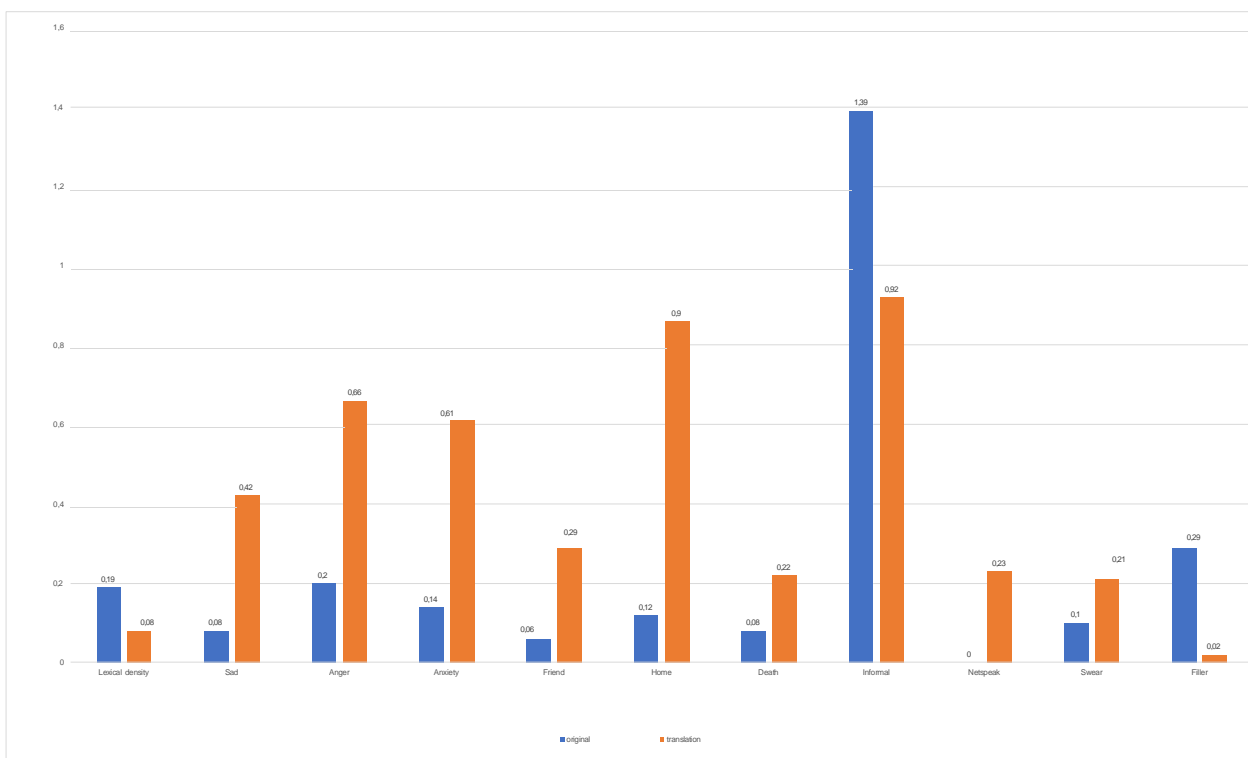
The results of the current research show that the image of war constructed by the author from the main character's perspective, his feelings, emotions, reflections, changes in his attitudes, etc., undergoes significant distortions when reproduced by the translators from the prism of their subjective vision.

Psycholinguistic Findings

As anticipated, the original war fiction text was rich in negative emotions, particularly *anger* and *sadness*. However, the most intriguing discovery was the increased presence of negative emotion words like *неспокоїно* ('worried'), *розпач* ('despair'), *лють* ('fury') in the target version, falling into the respective LIWC categories of 'Anx', 'Sad', 'Anger' (see Fig. 2).

Figure 2

Results of Comparing Psycholinguistic Categories of the Source and Target Texts Using Ukrainian and English LIWC2015 Versions, Per Cent



Surprisingly, there were no significant differences in the occurrence of *religious* words - .11 vs .09 and family words - .24 vs .28. For the other social relation words, while the original text contained fewer friend-words, such as *товариш* ('mate'), the translation version incorporated almost three times more words related to death and war (LIWC 'death' category), such as *bomb shelter, shelling, blood, wound, and corpse*.

Discussing other psycholinguistic LIWC categories, one of the most significant discrepancies was the imbalance of lingo-stylistic features in both versions – swear words, informal style, fillers, and netspeak (see Fig. 2). The original version had zero cases of netspeak, which is a style of writing often used in online communication, while the translation version had a few instances. The number of swear words in the source text did not match its higher informality. However, the translator tended to use a less informal style (.92 vs. 1.39) with more swear words (.21 vs .10) and ten times fewer use of fillers, or pragmatic markers (.02 vs .29). This imbalance in psycholinguistic features can provide insights into the text's style and tone, and how it might deviate the text perception by the English reader.

For the Textanz analysis, its results discovered that the Readability Index (RI), depending on text lexical density and syntactic complexity (see formula (1) below), was significantly lower in the target (4.68) than in the original version (7.17), making the text more accessible for English readers to comprehend. Lexical density can also be traced via the weight of long words (Sixltr) in the text – the fewer long words the text has, the lower its lexical density is. For the Ukrainian text, this index was 29.84; for its English counterpart, it was 15.90. The results of the previously held correlation analysis in the group of translators (cf. Zasiakin, 2020, p. 303) showed a positive and significant relationship between the lexical density quotient and the degree of text readability: the higher the lexical density (variety), the more difficult the text is to understand.

This translator's tendency to be less complex is viewed as *simplification*, which is also correlated with the RI. The higher the RI, the more complex the text is for the addressee to understand. The study uses the Automated RI created by Rudolf Flesch (see Smith & Senter, 1967) for a reason: its formula is not tied to a specific language, so it is also reliable for Ukrainian-language texts:

$$\left| \text{ARI} = 4.71 \frac{\text{characters}}{\text{words}} + 0.5 \frac{\text{words}}{\text{sentences}} \right| 21.43 \quad (1)$$

As for CDI, the Ukrainian original text had 24.62 whereas the English translated version had 19.54. The numbers indicate that although the source text author's style tended to be more analytical, the translator reproduced the text with more narrative style.

As the proportion of fillers in the translation version was lower, this shows a tendency towards *implicitation*, i.e. a shift towards less degree of markedness of cohesive ties between text chunks. More to the point, this implicitation, i.e. the absence of these explicit signals of textual coherence, can complicate understanding,

as it reduces the relevance (see Wilson & Sperber, 1995) of what is said for the target reader, who is left without connectors as “guidelines” for interpreting sentences in the text (Zasiiekin, 2019). *Levelling-out* occurred when the translator opted for conveying stylistically more formal text, while *normalisation* revealed itself in translation through introduced ‘netspeak’ words. In the different manner, the shift of psychological state markers indicates the imbalance of the emotions towards a more negative emotional tone of the target version. This text tonality deformation is viewed as *emotional amplification*.

Conclusions

This article, unlike other studies of such type, examines deformations in translating modern Ukrainian war fiction into English utilizing an integrated linguistic and psychological approach to quantitative and qualitative analysis of the source and target texts.

The deviations from the source text on different language levels are investigated for their necessity and practicality, as well as their contribution to the adequacy of translation without deforming conceptual information of the source text. The findings of the research prove that formal-objective changes applied by the translators due to their subjective decisions taken within the chosen translation strategy resulted in failure to adequately reproduce some features of the individual author’s style essential for understanding the source text, creating the proper image, achieving the pragmatic effect the author intended to.

As a result of linguistic analysis, the deformations detected were classified into three groups: lexical, grammatical and stylistic. Lexical deformations are not numerous and cannot be viewed as typical. Stylistic deformations include explication, synonymic substitution, compensation, logisation, expressivation, modernization and antonymic translation. They constitute 42 % percent of the total number traced. Therefore, we may claim that genre-stylistic features of the text under analysis underwent significant distortions in the translation process. The most numerous are synonymic substitution and logisation cases, concerned with adequate reproduction of names or descriptions of military or civil vehicles and tools, names of characters, descriptions of people, colloquial expressions and Surzhyk.

Grammatical deformations comprise substitutions and permutations of different types, deletion of words, phrases and sentences, addition of words, and changes in punctuation. They are the biggest group since grammatical features of the author’s individual style, especially syntactic ones, are of special difficulty to reproduce preserving implied meanings and nuances. Thus, deletions of repetitions, intensifiers, discourse markers and even whole sentences are the most frequent in the text under analysis; changes in punctuation are the second most frequent type; long sentences in the source text are divided into several smaller sentences (division of sentences as a type of substitution).

The results of the psycholinguistic analysis show the availability of normalisation, implication, emotional amplification, levelling-out, and simplification in the target version of the novel.

All the above mentioned linguistic and psychological shifts do not necessarily distort the semantic structure of the original text or Zhadan’s intentions. They can potentially co-build a similar semiotic reality on the other cultural ground as the translation is never a copy of the original, it is its cultural equivalent. This approach proves the idea that the translator of literary text is its co-author. The findings obtained prove the importance of deep analysis of translation deformations of war fiction and stipulate further research, which may be strengthened by conducting a survey among English-speaking audience to investigate the pragmatic effect of the target texts and focus on the most relevant aspects.

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A psycholinguistic study of the bouba-kiki phenomenon: Exploring associations between sounds and shapes

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Abstract. This study investigates the cognitive phenomenon known as the bouba-kiki effect among English Language Teaching (ELT) students at Van Yüzüncü Yıl University in Turkey. The research aims to contribute to understanding how individuals intuitively associate specific sounds with abstract shapes, shedding light on the underlying cognitive processes of language perception. Participants (N=164) were presented with two abstract shapes and asked to match them with the pseudowords ‘bouba’ and ‘kiki’. Results revealed a significant preference (87.2%) associating the rounded shape with ‘bouba’ and the spiky shape with ‘kiki’. Additionally, participants were tasked with creating brand designs for ‘Kiki’ and ‘Bouba’, with 87.2% aligning their designs with their initial shape associations. Data analysis included descriptive statistics and a chi-square test, confirming a strong association between shape preferences and pseudoword assignment ($\chi^2=132.05$, $p < .001$). These findings underscore the robustness of the bouba-kiki effect across different cultural and linguistic contexts. This research contributes to interdisciplinary studies linking linguistics, psychology, and neuroscience, offering implications for language teaching methodologies and cognitive processing theories. By elucidating these associations, educators can enhance language learning strategies based on intuitive perceptual mechanisms.

Keywords: psycholinguistics, bouba-kiki effect, crossmodal perception, language cognition.

Касап Сулейман, Унсал Фірат. Психолінгвістичне вивчення феномену «буба-кікі»: дослідження зв'язку між звуками та формами.

Анотація. Це дослідження присвячено вивченню когнітивного феномену, відомого як ефект «буба-кікі», серед студентів факультету викладання англійської мови (ELT) Університету Юзюнджу Йил у місті Ван, Туреччина. Дослідження має за мету з'ясувати: а) як індивіди інтуїтивно асоціюють конкретні звуки з абстрактними формами, б) пролити світло на когнітивні процеси, що лежать в основі сприйняття мови. Учасникам (N=164) представили дві абстрактні фігури і попросили співвіднести їх з псевдословами “bouba” і “kiki”. Результати засвідчили, що 87,2% респондентів із псевдословом “bouba” схильні асоціювати округлу форму, а з псевдословом “kiki” – гостру форму. Крім того, учасники отримали завдання розробити дизайн брендів для “Kiki” та “Bouba”. У 87,2% респондентів дизайн відповідав їхнім початковим асоціаціям цих слів із конкретною формою. Аналіз даних включав описову статистику та тест chi-square, які підтвердили значущий зв'язок між оцінками щодо форми та її присвоєнням псевдословам ($\chi^2=132.05$, $p < .001$). Ці результати підкреслюють стійкість ефекту «буба-кікі» в різних культурних і мовних контекстах. Висновки роблять внесок у міждисциплінарні дослідження, що об'єднують лінгвістику, психологію та нейронауки, пропонуючи перспективи

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застосування в методиці викладання мови та теоріях когнітивної обробки. З'ясувавши реальність цих асоціацій, викладачі здатні вдосконалити стратегії вивчення мови, засновані на інтуїтивних механізмах сприйняття.

Ключові слова: психолінгвістика, ефект «буба-кікі», крос-модальне сприйняття, мовне пізнання.

Introduction

The intricate world of language has long been a subject of fascination and rigorous study across various academic fields. Language is not only the domain of linguistics but also intersects with psychology, neurology, anthropology, and philosophy. These intersections have given rise to specialized disciplines such as psycholinguistics, neurolinguistics, linguistic anthropology, and the philosophy of language. Each field provides unique insights into the nature of language, thought, and reality. This convergence is evident in the study of the relationship between language and its linguistic materialization through different languages, thought processes, and the perception of reality. Historically, the origin and nature of language have intrigued thinkers and philosophers. In classical antiquity, this curiosity led to debates, epitomized in Plato's *Cratylus*, where two opposing views emerged: the naturalist thesis, which posits a natural connection between language and reality, and the conventionalist thesis, which argues that language is based on social conventions and agreements. This debate has persisted through the ages, culminating in Saussure's theory of the linguistic sign, which defends the relative arbitrariness of the association between a concept (signified) and an acoustic image (signifier) (Saussure, 1916). This theory helps explain why the same object, such as a tree, is denoted differently in various languages — 'tree' in English, 'árbol' in Spanish, and 'Baum' in German.

Parallel to the exploration of arbitrariness, there has been significant research into the phenomenon of motivation in language, which suggests a motivated link between objects and their names. This is evident in phonetic motivation, as seen in onomatopoeia like 'boom' and 'woof,' where linguistic forms imitate real-world sounds; morphological motivation, such as in the derived word 'butcher' from 'meat'; and semantic motivation, where metaphors and metonymies create new meanings, such as calling a messy eater a 'pig' (Lakoff & Johnson, 1980). Modern linguistic research continues to explore both arbitrary and motivated aspects of language. Psychological and neurological studies have provided compelling data, such as the bouba-kiki phenomenon, which challenges the notion of complete linguistic arbitrariness. The bouba-kiki effect was first documented by Wolfgang Köhler in 1929 (Köhler, 1929). In his experiments, participants were presented with two shapes: a jagged, spiky shape and a smooth, rounded shape. They were then asked to associate each shape with one of two nonsense words: 'takete' (later 'kiki') and 'maluma' (later 'bouba'). Most participants associated the jagged shape with 'takete' and the rounded shape with 'maluma', suggesting a consistent, crossmodal correspondence between sounds and visual shapes. Subsequent studies at the University of California confirmed these

findings with the words ‘kiki’ and ‘bouba’, suggesting a natural link between sounds and visual shapes (Ramachandran & Hubbard, 2001).

Bouba-Kiki Effect

The study of language, its origins, and its functions has been a focal point of academic inquiry for centuries. Linguistics, as a discipline, has evolved to include various subfields that intersect with other sciences, offering a comprehensive view of language as a complex system. Saussure's seminal work laid the foundation for understanding language as a system of signs, emphasizing the arbitrary nature of the signifier-signified relationship (Saussure, 1916). However, research has also delved into motivated aspects of language, challenging the idea of total arbitrariness.

The bouba-kiki effect is a prominent example of phonetic symbolism, where sounds are intuitively associated with specific shapes. Research has shown that these associations are not purely arbitrary but are influenced by the sensory and motor experiences of individuals. For instance, Jespersen's ding-dong hypothesis posited a natural connection between the sounds of words and the characteristics of their referents, suggesting that front vowels like /i/ are associated with small, high-pitched objects, while back vowels like /o/ and /u/ are linked to large, low-pitched objects (Jespersen, 1922). This hypothesis aligns with the bouba-kiki effect, where the shape and sound connection seems to be universally intuitive.

Neurological studies have provided insights into the brain's role in processing these associations. The auditory and visual cortices, along with the prefrontal cortex, are significantly involved in integrating multisensory signals. Studies have shown increased activity in the inferior frontal gyrus and bilateral prefrontal cortex when participants encounter incongruent audiovisual stimuli, indicating the brain's effort to reconcile these differences (Peiffer-Smadja & Cohen, 2019). Further research into the bouba-kiki effect has explored its implications for language development and learning. Maurer et al. (2006) found that even toddlers exhibit sound-shape correspondences, suggesting that these associations are innate and play a role in early language acquisition. This is supported by studies showing that children as young as 11 months can integrate audiovisual stimuli, which may facilitate language learning (Maurer, Pathman, & Mondloch, 2006).

The bouba-kiki effect also has implications for understanding crossmodal correspondences, where sensory experiences in one domain influence perceptions in another. Marks (1987) demonstrated that congruent or incongruent auditory tones affect visual stimuli intensity and reaction times further highlighting the interconnectedness of sensory modalities (Marks, 1987). Fort et al. (2015) emphasized that consonants play a more crucial role than vowels in the bouba-kiki effect, reinforcing the idea that specific phonetic elements carry inherent symbolic meanings (Fort, Martin, & Peperkamp, 2015).

The Bouba-Kiki Effect in Psycholinguistics

The bouba-kiki effect is a compelling phenomenon in psycholinguistics that demonstrates a non-arbitrary relationship between speech sounds and visual shapes. It is often used to illustrate the concept of sound symbolism, where certain sounds are inherently associated with particular meanings or perceptual qualities.

Studies have shown that the bouba-kiki effect is not limited to specific languages or cultures. For instance, *Ćwiek et al. (2022)* demonstrated the robustness of the effect across various cultures and writing systems, suggesting a universal cognitive mechanism underpinning this sound-symbolic association. Similarly, *Chen et al. (2016)* explored cultural commonalities and differences in sound-shape correspondences, finding that while the effect is generally robust, there can be cultural variations in its expression. *Blasi et al. (2016)* provided extensive evidence of sound-meaning associations across thousands of languages. Their research highlighted systematic biases in how certain sounds are used in words with specific meanings, reinforcing the idea that sound symbolism is a widespread and integral part of language structure.

Cuskley and colleagues (2017) investigated the influences of phonology and orthography on the Bouba-kiki effect. Their findings suggested that both spoken and written forms of words contribute to sound-symbolic associations, with certain phonetic and orthographic properties being more likely to evoke specific perceptual qualities. Research by *Ozturk et al. (2013)* indicated that even infants as young as four months exhibit sound-shape correspondences, suggesting that the cognitive basis for the Bouba-kiki effect emerges early in development. Furthermore, *Perry et al. (2018)* found that iconicity plays a significant role in both children's and adults' speech, supporting the idea that sound symbolism aids in language learning and communication across different age groups. *Dellert et al. (2021)* explored the evolutionary mechanisms behind vocal iconicity, proposing that certain sound groups preferred for vocal iconicity reflect evolutionary pressures related to sound stability and first language acquisition. This aligns with *Nielsen and Rendall's (2011)* work, which evaluated the sound-symbolic role of consonants in the classic takete-maluma phenomenon, contributing to our understanding of how specific phonetic features are naturally linked to perceptual experiences. While the bouba-kiki effect is widely observed, it is not infallible. *Styles and Gawne (2017)* identified situations where the effect fails, suggesting that phonological and phonotactic constraints can influence the strength and consistency of sound-symbolic associations. *Blust (2003)* also explored phonesthemes, such as the n-phonestheme in Austronesian languages, which further elucidate how specific sound-meaning relationships are realized in different linguistic contexts.

De Carolis et al. (2018) investigated sound symbolism using an implicit bouba-kiki experimental paradigm, revealing that phonetic forms, visual shapes, and even letter fonts contribute to these associations. *Parise and Spence (2012)* used the implicit association test to study audiovisual cross-modal correspondences, finding that certain sounds are more likely to be associated with specific visual properties. *Ćwiek et al.*

(2021) showed that novel vocalizations are understood across cultures, providing further evidence of the universal nature of sound symbolism. Perry et al. (2015) demonstrated that iconicity can ground the creation of vocal symbols, supporting the idea that sound symbolism is foundational in the development of language. Fort and colleagues (2018) and Fort and Schwartz (2022) explored how sound symbolism is rooted in the physical properties of objects, such as roundness or spikiness, providing a physical basis for the bouba-kiki effect. Urban (2011) examined conventional sound symbolism in terms for organs of speech across languages, further highlighting the cross-linguistic prevalence of sound-meaning associations. Novogrodsky and Meir (2020) investigated the role of age, frequency, and iconicity in early sign language acquisition, demonstrating that iconic signs are learned earlier and more easily by children. Kambara and Umemura (2021) examined the relationships between initial consonants in Japanese sound symbolic words and various perceptual qualities, adding to our understanding of how sound symbolism operates in different languages. Sidhu et al. (2021) explored how sound symbolism shapes the English language, particularly in the context of the maluma/takete effect in English nouns, providing evidence of the effect's impact on modern English vocabulary.

The Bouba-kiki effect serves as a compelling example of sound symbolism, demonstrating that certain sounds can evoke specific perceptual qualities across different languages and cultures. This phenomenon highlights the intricate relationship between language and perception, providing insights into the cognitive and evolutionary foundations of human communication.

Methodology

This study employs a quantitative research design to explore the bouba-kiki phenomenon among 164 English Language Teaching (ELT) students at a university in Turkey. The study aims to understand the participants' responses and the underlying factors influencing their associations between sounds and shapes. The quantitative data collected from the participants' responses will be analyzed to draw conclusions about the cognitive processes underlying language perception.

Materials

1. Shapes: Two abstract shapes similar to those used in previous studies on the bouba-kiki phenomenon. One shape was rounded, and the other was spiky.
2. Survey Instrument: An online survey administered via google forms, which included images of the two shapes and questions regarding their associations with the pseudowords "bouba" and "kiki."
3. Brand Creation Task: Instructions and materials for participants to create new brands named "Kiki" and "Bouba," with design elements corresponding to the shapes they associated with each name.

Procedure

The study was conducted in a structured session within the Linguistic Communication course of the ELT program. The procedure followed these steps:

1. **Introduction:** Participants were informed about the study's purpose and assured of the confidentiality and anonymity of their responses. Informed consent was obtained from all participants.
2. **Presentation of Shapes:** Participants were presented with two abstract shapes, one rounded and one spiky, on a digital platform. They were asked to identify which shape they would associate with the pseudoword "bouba" and which with "kiki."
3. **Brand Creation Task:** Following the shape identification task, participants were asked to create a new brand named "Kiki" and a brand named "Bouba." They were provided with drawing materials and asked to design logos, packaging, or other brand elements that corresponded to the names "Kiki" and "Bouba."
4. **Data Recording:** The researcher recorded the participants' shape associations and collected the brand designs. The responses were analyzed to determine the extent to which participants associated the rounded shape with "bouba" and the spiky shape with "kiki."

Data Analysis

1. **Descriptive Statistics:** The data collected from the survey were analyzed using descriptive statistics to summarize the frequency and percentage of participants who associated each shape with the pseudowords "bouba" and "kiki."
2. **Chi-Square Test:** A chi-square test was conducted to determine if there was a significant association between the participants' shape associations and the pseudowords "bouba" and "kiki."
3. **Brand Design Analysis:** The brand designs created by the participants were qualitatively analyzed to assess the consistency of their designs with the shapes they associated with "bouba" and "kiki." The designs were categorized based on their resemblance to rounded or spiky shapes.

Results and Discussion

This section presents the findings of the study on the bouba-kiki phenomenon among ELT students in Turkey. Using a chi-square test, the associations between the pseudowords "bouba" and "kiki" with their corresponding shapes were analyzed. The results demonstrate significant associations, offering insights into the cognitive processes underlying these intuitive connections.

Table 1

Chi-Square Test Result: Observed Frequencies of Shape Associations

Shape	Bouba (Round)	Kiki (Spiky)	Total
Observed	143	21	164
Expected Frequencies of Shape Associations			
Shape	Bouba (Round)	Kiki (Spiky)	Total
Expected	82	82	164

Chi-Square Test Calculation

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

where:

- (O) = observed frequency- (E) = expected frequency

Calculations for each cell:

1. For Bouba (Round):

$$\chi^2 = \frac{(143 - 82)^2}{82} = \frac{61^2}{82} = \frac{3721}{82} \approx 45.38$$

2. For Kiki (Spiky):

$$\chi^2 = \frac{(21 - 82)^2}{82} = \frac{61^2}{82} = \frac{3721}{82} \approx 45.38$$

Summing these values gives the total chi-square statistic:

$$\chi^2 = 45.38 + 45.38 = 90.76$$

Degrees of Freedom (df)

The degrees of freedom for a chi-square test are calculated as:

$$df = (r - 1) \times (c - 1)$$

where:

- (r) = number of rows- (c) = number of columns

In this case:

$$df = (2 - 1) \times (2 - 1) = 1$$

Critical Value and P-value

Using a chi-square distribution table, the critical value for χ^2 with 1 degree of freedom at a significance level of .05 is 3.841. Since the calculated χ^2 value (90.76) is much greater than 3.841, we reject the null hypothesis. The p-value associated with a χ^2 value of 90.76 and 1 degree of freedom is less than .001, indicating a statistically significant result.

The chi-square test result shows a significant association between the shapes and the pseudowords "bouba" and "kiki." The observed frequencies of participants associating the round shape with "bouba" and the spiky shape with "kiki" were 143 and 21, respectively. These frequencies differ significantly from the expected frequencies of 82 for both shapes under the null hypothesis, which assumes no association between shape and sound. The calculated chi-square statistic of 90.76 far exceeds the critical value of 3.841, leading to the rejection of the null hypothesis. This result suggests that there is a strong and statistically significant association between the round shape and the pseudoword "bouba" and between the spiky shape and the pseudoword "kiki."

This finding aligns with previous research on the bouba-kiki phenomenon, demonstrating that certain sounds are intuitively associated with specific shapes. The consistency of these associations among the ELT students in Turkey suggests that these cognitive associations are robust across different cultural and linguistic backgrounds. By understanding these intuitive associations, educators and researchers can gain deeper insights into the cognitive processes underlying language perception. This knowledge has potential applications in language teaching and learning, such as designing educational materials that align with these natural associations to enhance learning and retention.

Table 2
Brand Design Consistency with Bouba-Kiki Effect Associations

Product Name	Shape Association	Number of Participants (Creating Bouba-like Brands)	Number of Participants (Creating Kiki-like Brands)
BoubaSweets	Rounded (Circle, Oval, Heart)	20	8
KikiGadgets	Angular (Triangle, Square, Diamond)	16	30
BoubaBlend	Rounded (Circle,	18	11

	Oval, Heart)		
KikiTech	<u>Angular (Triangle, Square, Diamond)</u>	25	15

The table examines how participants' designs for hypothetical products align with the Bouba-Kiki effect, which explores how shapes are associated with certain sounds. This psychological phenomenon suggests that rounded shapes like circles and ovals are often linked to soft, gentle sounds (like "bouba"), while angular shapes such as triangles and squares are associated with sharp, abrupt sounds (like "kiki").

For example, imagine a product named BoubaSweets. Participants who created designs for this product tended to use rounded shapes such as circles or hearts. These designs might include logos for a whimsical candy brand featuring soft curves or packaging for ice cream with smooth, circular motifs. About 20 participants chose these rounded shapes, aligning with the expected softness of the "bouba" sound. However, 8 participants went against this trend by opting for angular shapes, perhaps creating a sleek digital watch with sharp edges or geometrically designed candies that contrast with the product's soft-sounding name.

On the other hand, consider KikiGadgets, a product name suggesting technology and featuring angular shapes like triangles or squares. Here, 16 participants designed gadgets with sharp, angular lines, such as smartphones with distinct edges or tech accessories with geometric patterns. This reflects the expected association with the sharp, abrupt sound of "kiki." Interestingly, 30 participants chose to use rounded shapes instead, which might include smartwatch designs with circular faces or gadgets with ergonomic curves, showcasing a diverse interpretation or intentional deviation from the product name's angular connotation. Similarly, BoubaBlend and KikiTech follow a comparable pattern. Participants tended to align BoubaBlend with rounded shapes, envisioning designs like coffee blends with round logos or packaging for gourmet items with smooth, curved edges. This aligns with the gentle connotations of "bouba." Conversely, some participants opted for angular shapes, such as bold, geometric patterns for coffee packaging or sharp-edged designs for tea blends, challenging the expected shape-sound association.

For KikiTech, the trend leaned towards angular shapes like sharp-edged smartphones or headphones with sleek, geometric designs, fitting the sharp sound of "kiki." Meanwhile, designs featuring rounded shapes might include ergonomic gadgets with smooth contours or circular displays, demonstrating a nuanced approach to the anticipated angular association.

In summary, this discussion illustrates how participants' interpretations of product names and the Bouba-Kiki effect influence their design choices. By using everyday examples such as candies, gadgets, and beverages, it becomes clear how shapes can evoke perceptions of softness or sharpness aligned with their phonetic counterparts, contributing to the psychological impact of sound symbolism in branding and product design

Conclusions

The findings of this study support the presence of a significant association between shapes and the pseudowords "bouba" and "kiki" among ELT students in Turkey. Utilizing a chi-square test, the observed frequencies of participants associating rounded shapes (Bouba) and angular shapes (Kiki) were found to differ significantly from expected frequencies under the null hypothesis of no association. The calculated chi-square statistic (90.76) exceeded the critical value (3.841), leading to the rejection of the null hypothesis and confirming a strong association between shape and sound.

This study aligns with previous research on the Bouba-Kiki effect, highlighting the consistency of these associations across various contexts. The implications of these findings extend to educational practices, where understanding such intuitive connections can enhance language teaching methods. By acknowledging and leveraging sound-symbolic associations, educators can optimize instructional materials to align with natural cognitive processes, thereby facilitating effective learning and retention strategies.

Additionally, the examination of brand design preferences further illustrates how the Bouba-Kiki effect influences participants' perceptions and creative decisions. Products named BoubaSweets and BoubaBlend elicited designs predominantly featuring rounded shapes, reflecting the expected softness associated with the sound "bouba." Conversely, KikiGadgets and KikiTech inspired designs characterized by angular shapes, aligning with the sharp, abrupt sound of "kiki." These observations underscore the practical applications of sound symbolism in branding and product design, offering insights for marketers and designers aiming to evoke specific emotional responses and brand perceptions.

In conclusion, this study contributes to the understanding of the Bouba-Kiki effect's psychological underpinnings and its implications for language perception and design aesthetics. Future research could explore variations in these associations across different demographics and cultures, further elucidating the universality and cultural specificity of sound-symbolic phenomena.

Disclosure Statement

The authors reported no potential conflicts of interest.

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Cognitive-epistemological, pragmatic, and psycholinguistic aspects of French interjections

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Abstract. Interjections as a lexical and grammatical category still belong to the interdisciplinary lacunae, as they require the concretization of interpretations in various aspects: terminological definitions, pragmatic functions, cognitive reception by a speaker, and an adequate reproduction by an addressee. The current study aims to analyze the determinative interpretations and lexical and grammatical structures of interjections as a universal category used for determining communicative and pragmatic functions. A part of the psychological epic *In Search of Lost Time* / “A la recherche du temps perdu” – *Albertine Disappears* / “Albertine Disparue”) by Marcel Proust (1925) serves as a research material. Interjections, as a universal category, hold a prominent place in the lexical and grammatical system of languages. As a result of conducted quantitative analysis of interjections, the most common interjections discovered in the studied literary French-language text were one-word interjections, ‘oh!’ ‘ah!’, and ‘hélas!’, which, depending on the author’s illocutionary intention, their pragmatic function, as well as their position in the remark - at the beginning, in the middle or at the end - can create a range of meanings according to their emotional effect, such as hope, disappointment, doubt, embarrassment, confirmation, denial, request or call to action. Conversely, the texts frequently comprise interjection phrases that convey the processes of reflection on the inner experiences of a particular character and their psychological state. This, in turn, reveals the process of their personality development.

Keywords: *interjection, French, emotion, national world image, cognitive properties, pragmatic functions, psycholinguistic reactions, Marcel Proust.*

Хайчевська Тетяна, Бондарук Людмила, Рогач Оксана. Когнітивно-епістемологічні, прагматичні та психолінгвістичні аспекти французьких вигуків.

Анотація. Вигуки як лексико-граматична категорія досі належать до міждисциплінарних лакун, оскільки потребують конкретизації інтерпретацій у різних аспектах: термінологічному визначенні, прагматичних функціях, когнітивній рецепції мовцем та адекватному відтворенні адресатом. Метою цього дослідження є аналіз базових інтерпретацій та лексико-граматичної структури вигуків як універсальної категорії, що використовується для визначення комунікативно-прагматичних функцій. Матеріалом дослідження слугує частина психологічної епопеї Марселя Пруста «У пошуках утраченого часу» («A la recherche du temps perdu» - «Альбертина зникає» / «Albertine Disparue») (1925). Вигуки як універсальна категорія посідають чільне місце в лексико-граматичній системі мов.

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У результаті проведеного кількісного аналізу найпоширенішими вигуками, виявленими в досліджуваному художньому франкомовному тексті, виявлено однослівні вигуки «oh!», «ah!» та «hélas!», які залежно від іллокутивної інтенції автора, їхньої прагматичної функції, а також позиції в репліці - на початку, в середині або в кінці – можуть створювати цілу низку значень відповідно до їхнього емоційного впливу, таких як надія, розчарування, сумнів, збентеження, підтвердження, заперечення, прохання чи заклик до дії. І навпаки, у текстах часто зустрічаються вигуківі фрази, які передають процеси рефлексії над внутрішніми переживаннями персонажа.

Ключові слова: вигук, французька мова, емоція, національна картина світу, когнітивні властивості, прагматичні функції, психолінгвістичні реакції, Марсель Пруст.

Introduction

Background

When studying an interjection, it is necessary to take into account its triune form: *injection* (interjection) – *exclamation* (exclamation) – *exclamative* (exclamative), i.e., an interjection (a form of expression), an exclamation (an emotion broadcast by the addressee), an exclamative (an exclamatory, imperative or rhetorical message/sentence). The commentary of the interjection, depending on its functional usage, is metalinguistic in nature since it reflects 1) feelings, 2) illocutionary intentions, or 3) the typological character of the character's mentality according to the psycholinguistic manner of his usage of the exclamation.

A phrase with an interjection belongs to dialogue replies, and its pragmatic intention depends on its place in the remark: at the beginning, in the middle, or at the end, thus reflecting additional meanings of the psycho-emotional effect. The order of usage of the interjection in the reply ensures the integrity of the micro text, adding rhythmic and intonation coloring and the accentuation and dominance of specific semantic meanings. Thus, interjections or exclamatory statements reflect heterogeneous properties in their functional, lexical-semantic, cognitive, pragmatic, and psycholinguistic applications.

A clear order of arrangement characterizes interjections. One-word interjections are used at the beginning of the remark, emphasizing the dominance of the corresponding emotional reaction. Interjection sentences or phrases are more part of the reply, demonstrating the cognitive processes of reflecting on internal experiences regarding the meaning of life and self-knowledge. Interjections are closely related to a speech act, the mental characteristics of its participants, verbal and non-verbal psycholinguistic communicative means, context, and objective reality. The structure of languages does not remain a monogeneous phenomenon. It is heterogeneous, open to the emergence and continuing development of new lexical and grammatical categories and enrichment of semantic meanings, which, in turn, diversifies the patterns of their use.

Literature Overview

The problem of identifying interjections and their functioning in speech is not new but rather acute. Bloomfield (1933) considered interjections to be special words that are primitive expressions of feelings. Wierzbicka (1992) considered interjections a special mental state of the speaker, taking into account their pragmatic aspect in relation to the speaker's communicative intentions and speech situation. These differing perspectives contribute to an ongoing debate about the nature of interjections, stimulating further research and discussion in the field. Wharton (2003) used a different approach to the study of interjections and placed interjections on a certain gradation scale “showing/saying,” according to which interjections are ranged in accordance with the transmission of the speaker's natural behavior and the transmission of varying degrees of emotional tension of the speaker. These were previously considered to be purely linguistic rather than paralinguistic units. Ameka (1992) proposed that three functional categories of interjections be distinguished: 1) the ones that convey the speaker's mental state, 2) those that are a reaction to the interlocutor's statements, and 3) those that perform a phatic function. O'Connell and Kowal (2005) investigated the function of interjections according to their position in the utterance: initial or in the middle of the utterance, as well as in the independent position. Norrick (2014), taking into account the previously conducted multifaceted studies of interjections, conducted his research in the context of corpus linguistics on the relationship between exclamatory sentences, interjections, and the expression of the speaker's state of affect. This approach enabled identifying phrasal interjections and combinations of interjections that researchers had previously ignored.

It is essential to note that interjections as a heterogeneous lexical and grammatical category are interpreted and studied differently in different languages. Thus, in the Ukrainian language, the status of interjections as a part of speech, independent or non-independent, is discussed. Traditionally, it is believed that an interjection is an invariable part of speech, which, however, is not considered to be either notional or functional and expresses emotions without naming them (Zvonska, 2017, p. 82). Kuprikova (2015) notes that “an interjection is one of the shortest ways to express a person's reaction to various phenomena or events of the real environment. In a conversation with an interlocutor, it serves for the direct expression of feelings, emotions and various expressions of human will, it retains its independence, and it has a relatively complete exclamatory intonation” (p.86-87). This scholar also distinguishes between primary (common to all Slavic languages) and secondary, derivative interjections. Such scholars as Vykhovanets (2004), Horodenska (2004), Matsko (1981, 2004), Sytenko (2021), and Plyushch (2005) studied the lexical, semantic, and functional criteria of interjections. Thus doing, Sytenko (2021) divides interjections into three large groups: 1) emotional [a) joy, pleasure, understanding; b) regret, sorrow, reproach; c) bewilderment, fright, distrust; d) irritation, dissatisfaction; e) disgust; f) contemplation]; 2) imperative [call,

exclamation]; and 3) etiquette [1) expression of greeting; 2) expression of farewell and wishes; 3) expression of request; 4) expression of gratitude; 5) expression of regret and/or apology] (p. 111–115).

In French dictionaries, the term “exclamation” (from Latin *exclamationem*, de *exclamare*) French dictionaries is determined to be: 1) un cri exprimant une émotion vive, un cri subit de joie, d’admiration, de surprise, d’indignation, etc.; 2) un terme de grammaire, une interjection ou une phrase réduite exprimant cette émotion; 3) un signe de ponctuation dont fait suivre l’exclamation; 4) une figure de rhétorique qui consiste à se livrer dans le discours aux élants impétueux de la passion (Définition de “exclamation”). As dictionaries prove, the very definition of the term “exclamation” is a bit “fuzzy” since it is designated to be a psycho-emotional shout, a punctuation mark, a grammatical term, or a rhetorical figure. In addition, there are a number of synonyms: *epiphonème*, f, – ; *interjection*, f – interjection; *cri*, m – screaming, sighing, shouting, calling; *clameur*, m – screaming, crying; *hurlement*, m – howling, wailing; *juron*, m – cursing; *gueulante*, f – a protest cry of agreement/disagreement, the associative rows of which contains positive/negative semantic meanings with the presence of a high level of emotionality.

As a punctuation mark, the interjection is considered a conjunction in exclamatory (imperative, interrogative, or rhetorical) sentences. This is where the need lies to distinguish between grammatical functions and interjection criteria in exclamatory sentences (les exclamatives) and the interjections proper (les interjections). For example, the interjection *Bravo!* is associated with an exclamatory sentence (l’exclamative) and an interjection of approval (l’interjection).

Olivier (1986) carried out a thorough study of interjections based on the material of the French language and covered the issue of the structure of interjections and their semanticization (Olivier, 1986). Wierzbicka (1992) and J. Barbéris (1995) also dealt with the semantics of interjections. In their study, Gladkova et al. (2016) made a successful attempt to evaluate natural semantic metalanguage explications of English interjections. Dubois (2000) believes that the concept of an interjection is often associated with punctuation. As soon as a phrase or word is accentuated by a tone or stress, it is immediately indicated by an exclamation mark (p. 13). However, it is essential to realize that an exclamation mark as punctuation (point d’exclamation) always follows an exclamation (une exclamation) or an exclamatory sentence (une phrase exclamative).

Thus, linguistic studies of interjections based on examples from the Ukrainian and English languages testify to their tangentiality and national peculiarities. Therefore, interjections as a universal category occupy a prominent place in the lexical and grammatical system of languages due to their functional capabilities to reflect and combine both what is emotional and that which is rational. They are also important means in the communication process between a speaker and an addressee: their interaction, the modeling of the communicative act, the deployment of

appropriate situations, the choice of communicative strategies, and psychological conditions for speech perception.

However, the ambiguity in the definition of the term "interjection" in view of its formal expression (i.e., a form) and its pragmatic properties (i.e., a functional purpose) requires clarification and systematic research, since interjections in one form and another reflect social and psychological changes in the society, acquire new semantic shades, are used in different styles and registers of speech, literary genres, types of texts, revealing conscious/unconscious codes of behavioral reactions.

The topicality of this study is due to the insufficiency of the analysis of lexical, semantic, and pragmatic properties of interjections from the point of view of their multifaceted use in speech and different possible interpretations in language systems. The study aims to analyze the determinative interpretations and lexical and grammatical structures of interjections as a universal category used for determining communicative and pragmatic functions. To achieve the aim, the study outlined the following tasks: 1) to specify the status of interjections while comparing the Ukrainian and French languages; 2) to investigate the formal expression of interjections depending on their contextual meaning; 3) to analyze the functional variations of interjections as national and international codes, as well as to analyze the strategies of the speaker, taking into account the psycholinguistic expression of the interjections.

Method

Material

In order to characterize interjections in the aspect of semantic, morphological, syntactic, and psycholinguistic modes of expression, considering pragmatic illocutionary intentions and individual authorial features of style, we have chosen one of the parts of Marcel Proust's psychological epic "A la recherche du temps perdu"/"Albertine disparue" ("In Search of Lost Time" /"Albertine Disappears" (1925). The author is a master of associative reception, which is reflected in the work by branched constructions, which include parentheses and subordinate clauses (Bondaruk, 2020, p. 61). Proust (1871–1922) considered his works to be a tool for studying human consciousness and constructing reality through emotional outbursts of memory. He was especially interested in the mental states that free human thinking from the "shackles" of reason. There are three major cycles in the "A la recherche du temps perdu" – Swann's cycle, the Hermantes' cycle, and Albertine's cycle (check the spelling of the names!). Albertine's cycle is dedicated to the theme of love.

However, by the word "love," Proust denotes the sufferings inflicted on him through the relations of his beloved woman with other people. Neither does it matter whether he knows it for sure or whether he only guesses that such relationships exist, suspecting or just anticipating them. For Proust, love is another path to self-awareness and self-perception in society. Choosing one or another motif of the novel,

Proust tries to reveal the psychological type of the character, his behavioral reaction, psychological prerequisites, and, ultimately, the result of his individual experience.

The inductive-deductive method, as a tool of theoretical analysis, made it possible to accumulate and sort interjections by form and function. The descriptive method was used to determine the pragmatic functions of the statements with interjections, and the quantitative method was used to determine the psycholinguistic type of the characters based on the emotional markings and gradation of the statement.

Results

The novel “*Albertine Disparue*” is an internal monologue of the main character, where the motif of love runs through all like a thread in the binary oppositions: “*love – disappointment*,” “*disappointment – cognition*,” and “*cognition – self-awareness*.” The narrative structure of the novel unfolds in such a way that, through the characters’ internal monologues, it reveals the possibility of change in their future lives, depending on an adequate psychological reaction. The analysis of the material shows that throughout the novel, the exclamations are implicit in the monologue of the protagonist Marcel, who suffers from the fact that Albertine unexpectedly abandoned him. He wonders whether their love is mutual and then wonders what will happen after Albertine returns.

Interjections convey, among other things, the main character’s psycho-emotional state, reflections on the meaning of life, relationships with women, and their role in his life. From the point of view of the linguistic structure, one-word interjections are the most frequent ones. However, despite their unambiguous phonetic design, in terms of epistemological, semantic, communicative, and pragmatic functions, they have become markers of various emotions, reflex manifestations, and expressions of will. Consider the following examples:

One-word interjection “Oh!”:

1) “*Oh ! Monsieur, Mademoiselle Albertine a oublié de prendre ses bagues, elles sont restées dans le tiroir*” (“Oh! Monsieur, Mademoiselle Albertine has forgotten to take her rings, she has left them in the drawer.”) (Proust, 1925, p. 42) – an insincere surprise;

2) “*Oh! Je sais bien que tu n’es pas content de moi, je l’ai bien senti dans tes dépêches. Mais tu n’es pas juste, j’ai fait ce que j’ai pu.*” (Proust, 1925, p. 50) (“Oh, I know very well that you aren’t pleased with me, I could tell that from your telegrams. But you are not being fair to me, I did all that I could.”) (Proust, 1930, p. 51)) – pity, longing;

3) “*Oh ! non, Monsieur, il ne faut pas pleurer comme cela, cela vous ferait mal!*” (Proust, 1925, p. 58) (“Oh, no. Monsieur, it doesn’t do to cry like that, it isn’t good for you.”) (Proust, 1930, p. 58)) – compassion, condolences;

4) *“Oh ! Non, tout plutôt que de vous faire de la peine, c’est entendu, je ne chercherai pas à vous revoir”* (Proust, 1925, p. 101) (“Oh, no, anything rather than make you unhappy, I promise that I will never try to see you again.” (Proust, 1930, p. 100)) – assurance;

5) *“Oh ! Non, jamais, nous aurions été dérangées. – Tiens, je croyais, il me semblait... – D’ailleurs, Albertine aimait surtout faire cela à la campagne. – Où ça ?”* (Proust, 1925, p. 170) (“Oh!, no, never, we should have been disturbed.” “Why, I thought... it seemed to me...” “Besides, Albertine loved doing it in the country.” “And where, pray?”) (Proust, 1930, p. 168)) – doubt.

One-word interjection “Ah!”:

6) *“Ah! Cruel, tu m’as trop entendue.”* (Proust, 1925, p. 39) (“Ah! Cruel, you have heard me too much.” (Proust, 1930, p. 40)) – embarrassment;

7) *“Ne sachant comment expliquer mon soupir à Françoise, je lui disais : “Ah ! J’ai soif.” Elle sortait, rentrait, mais je me détournais violemment, sous la décharge douloureuse d’un des mille souvenirs invisibles qui à tout moment éclataient autour de moi dans l’ombre: je venais de voir qu’elle avait apporté du cidre et des cerises...”* (Proust, 1925, p. 56) (“Not knowing how to account to Françoise for my groan, I said to her: “Oh, I am so thirsty.” She left the room, returned, but I turned sharply away, smarting under the painful discharge of the thousand invisible memories which at every moment burst into view in the surrounding darkness: I had noticed that she had brought in a jug of cider and a dish of cherries...” (Proust, 1930, p. 57)) – the ability to avoid an unwanted painful memory;

8) *“Ah ! Quand la nuit finirait-elle ?”* (Proust, 1925, p. 58) (“Ah! When would the night end?” (Proust, 1930, p. 59)) – an anticipation, hope;

9) *“Il me fut particulièrement pénible d’entendre Andrée me dire en parlant d’Albertine : “Ah ! Oui, elle aimait bien qu’on allât se promener dans la vallée de Chevreuse. ”* (Proust, 1925, p. 117) (“It was especially painful to me to hear Andrée say, speaking of Albertine: “Oh yes, she always loved going to the Chevreuse valley.” (Proust, 1930, p. 115)) – a memory, recollection.

One-word interjection “Hélas”:

10) *“Vous vous rappelez – c’est le poème qui commence par: Le vierge, le vivace et le bel aujourd’hui... Hélas, “aujourd’hui” n’est plus ni vierge, ni beau.”* (Proust, 1925, p. 36) (“You remember – it is the poem that begins: Le vierge, le vivace et le bel aujourd’hui... Alas, to-day is no longer either virginal or fair.” (Proust, 1930, p. 37)) – hopelessness;

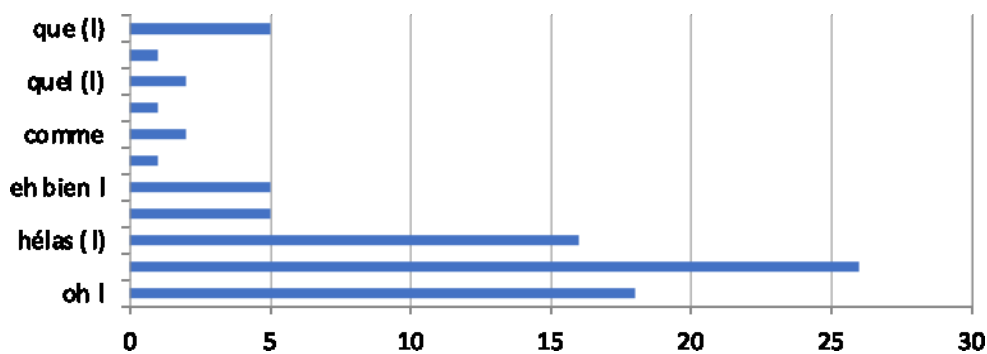
11) *“Hélas! Quand Saint-Loup me dit aussi que dans ce salon il avait entendu chanter à tue-tête d’une chambre voisine et que c’était Albertine qui chantait, je compris avec désespoir que, débarrassée enfin de moi, elle était heureuse!”* (Proust, 1925, p. 50) (“Alas! when Saint-Loup told me also that in this drawing-room he had heard someone singing at the top of her voice in an adjoining room and that it was Albertine who was singing, I realized with despair that, rid of me at last, she was happy!” (Proust, 1930, p. 51)) – disappointment;

12) “*Mes doutes! Hélas, j’avais cru qu’il me serait indifférent, même agréable de ne plus voir Albertine, jusqu’à ce que son départ m’eût révélé mon erreur.*” (Proust, 1925, p. 87) (“My doubts! Alas, I had supposed that it would be immaterial to me, even pleasant, not to see Albertine again, until her departure revealed to me my error.” (Proust, 1930, p. 87)) – doubt.

As evidenced by the quantitative analysis, one-word interjections are the most used in the novel to convey the psycho-emotional state of the characters due to their compression form of expression:

Figure 1

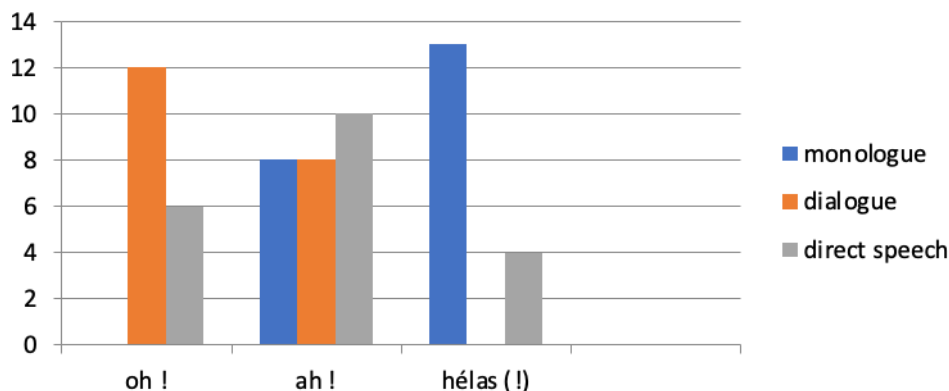
Quantitative Data on the Pragmatic Use of Interjections in the Text of M. Proust's Novel “Albertine disparue”



The characters use one-word interjections in the internal monologues, reflections, and dialogues.

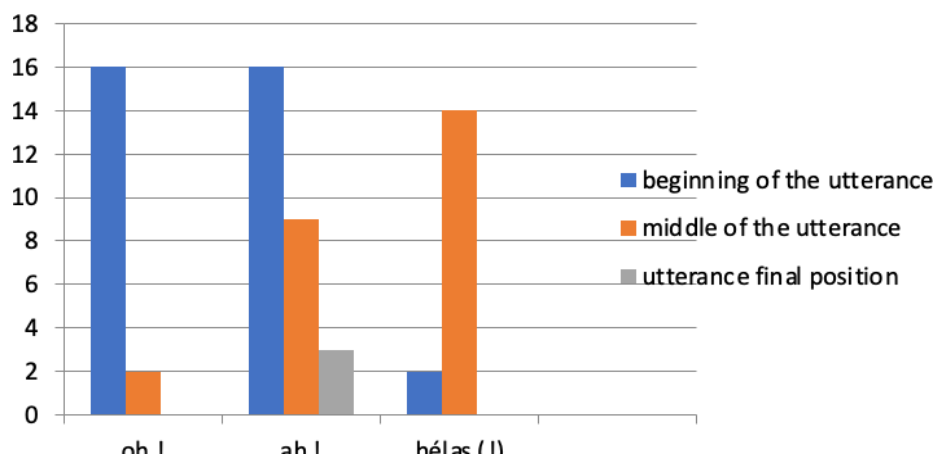
Figure 2

Quantitative Indicators of the Use of Interjections Oh!, Ah! And Hélas(!) in the Character's Monologue, Dialogue, and Direct Speech



Therefore, one-word interjections *oh!*, *ah!*, due to the ability to perform various pragmatic functions, are primarily used in the dialogues. The exclamation *hélas (!)*, mostly with a negative illocution, is often used in the monologue speech-reflection.

Figure 3
Quantitative Indicators Regarding the Position of Interjections Oh!, Ah! And Hélas (!) in The Utterance



According to the position of the interjections in the utterance (initial, middle, or final), the interjections *oh!*, *ah!* are used mainly in the initial position of the utterance, *hélas (!)* – in the middle position, which depends on the pragmatic intention: to attract attention, to establish a contact, to express sympathy.

No less important in the novel “*Albertine disparue*” are interjections-phrases and sentences that complement and expand the gradational spectrum of the psycho-emotional state of the characters. For example:

13) “*Comme on s’ignore ! Il fallait faire cesser immédiatement ma souffrance.*” (Proust, 1925, p. 3) (“How ignorant we are of ourselves. The first thing to be done was to make my anguish cease at once.” (Proust, 1930, p. 4)) – a conviction;

14) “*Que le désir de Venise était loin de moi maintenant!*” (Proust, 1925, p. 8) (“How far was any longing for Venice removed from me now!” (Proust, 1930, p. 9)) – a desire, wish;

15) “*En une seconde il revient à ce point; encore une fois, en dehors de toutes les raisons données, c’est si naturel!*” (Proust, 1925, p. 9) (“In an instant it returns to this point; once more, apart from all the reasons that have been given, it is so natural.” (Proust, 1930, p. 10)) – a possibility, expectation;

16) “*Que d’hypothèses possibles ! Possibles seulement.*” (Proust, 1925, p. 9) (“How many possible hypotheses! Possible only.” (Proust, 1930, p. 10)) – disappointment;

17) “*Comment! Vous ne savez pas faire renvoyer quelqu’un qui vous déplaît ? Ce n’est pas difficile. Vous n’avez, par exemple, qu’à cacher les choses qu’il faut qu’il apporte. Alors, au moment où ses patrons sont pressés, l’appellent, il ne trouve rien, il perd la tête. Ma tante vous dira, furieuse après lui: ‘Mais qu’est-ce qu’il fait ?’*” (Proust, 1925, p. 48–49) (“Do you mean to say you don’t know how to get a fellow sacked whom you don’t like? It’s not difficult. You need only hide the things that he has to take in. Then, when they’re in a hurry and ring for him, he can’t find anything, he loses his head. My aunt will be furious with him, and will say to you: ‘Why, what is the man doing?’” (Proust, 1930, p. 49)) – insincerity;

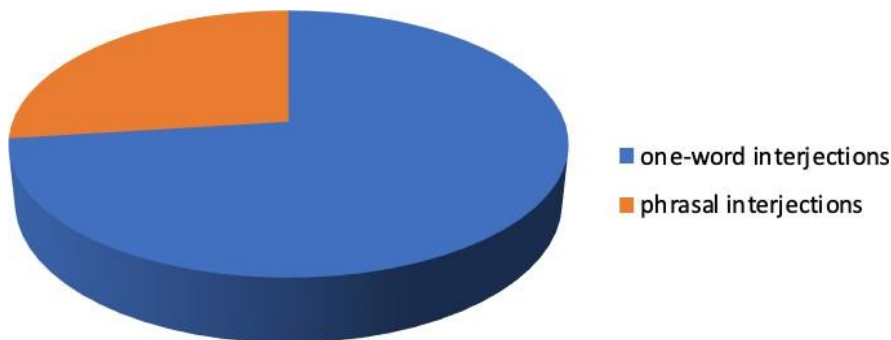
18) “*Cet avenir indissoluble d’elle je n’avais pas su l’apercevoir, mais maintenant qu’il venait d’être descellé, je sentais la place qu’il tenait dans mon cœur béant. Françoise qui ne savait encore rien entra dans ma chambre; d’un air furieux, je lui criai: ‘Qu’est-ce qu’il y a?’*” (Proust, 1925, p. 54) (“This indissoluble future of her I had not been able to perceive, but now that it had been unsealed I felt the place it held in my gaping heart. Françoise, who knew nothing as yet, entered my room; I shouted furiously at her, ‘What’s the matter?’”) (Proust, 1930, p. 54-55) – embarrassment;

19) “*Il fallait qu’après ma mort je la retrouvasse avec son corps, comme si l’éternité ressemblait à la vie. Que dis-je à la vie ! J’étais plus exigeant encore. J’aurais voulu ne pas être à tout jamais privé par la mort des plaisirs que pourtant elle n’est pas seule à nous ôter.*” (Proust, 1925, p. 85) (“I required that, after my own death, I should find her again in her body, as though eternity were like life. Life, did I say! I was more exacting still. I would have wished not to be deprived forever by death of the pleasures of which however it is not alone in robbing us.”) (Proust, 1930, p. 85)) – reflecting on the meaning of life.

Taking into account the quantitative data on the use of one-word interjections and interjections-phrases in the text of the novel, it can be argued that the author uses one-word interjections much more to convey the psycho-emotional state of the characters or to implement the phatic function, compared to interjections-phrases, 73%, and 27%, respectively.

Figure 4

Quantitative Indicators on Using One-Word Interjections and Phrasal Interjections in the Text of Proust's Novel "Albertine disparue"



The examples given show that throughout the novel the interjections are implicated to a greater extent in the monologue of the protagonist Marcel, who suffers from the fact that he was unexpectedly abandoned by Albertine, wondering whether their love was reciprocated and what might happen if Albertine returned. Interjections are less used in dialogical statements. However, it is also a transmission of one's psycho-emotional state to the interlocutor.

The pragmatic functions of the interjections reflect the whole range of Marcel's inner experiences, primarily negative, and reveal his psychological behavioral reactions.

Discussion and Conclusions

In modern French linguistics, the problem of interjection remains quite debatable and concerns several areas: 1) identification of terminological definition; 2) morphological and syntactic functions; 3) semantic meanings; 4) pragmatic role; 4) psycholinguistic characteristics of the speaker; 5) individual author's application. In addition to the above, the issue of transmitting an interjection from one language to another and adequately perceiving it as linguistic and psychological signs, giving it an adequate equivalent, i.e., syntagmatic and paradigmatic associations, needs to be revised. In a text, especially a fictional one, an interjection can express a complex rhetorical paradigm that requires lexical, lexicographic, semantic, grammatical, and pragmatic revisions and is metalinguistic.

As interjections are carriers of emotional and evaluative factors of the communicative act, it is impossible to study them in isolation from the mental and moral intentions of the speaker. Therefore, they depend on an author's world image and national and international perspectives. In this aspect, Fedurko and Fedurko (2021) propose to analyze interjective interjections (from the Latin *interjectio* 'exclamation') in the representation of the individual writer's world image and distinguish emotional (pain, anguish, despair, doubt), motivating (order, inducement, encouragement to action, desire to attract attention) and appellative (attracting the attention of the interlocutor, establishing contact, etiquette statements) types of interjective interjections.

We should consider socio-cultural (e.g., use of exclamations of politeness, etiquette, address) and national (use of exclamations from the spiritual sphere, national or family ties) aspects. An interjection conveys the transition from subjective reflection and unconscious or conscious perception to objective communication.

A phrase with an interjection belongs to a replica, and its illocutionary intention depends on its place in the remark: at the beginning, in the middle, or at the end, thus reflecting additional meanings of the psycho-emotional effect. The order of use of the interjection in the dialogue replies or remarks ensures the integrity of the micro text and adds rhythmic and intonation coloring, as well as an accentuation and dominance of specific semantic meanings. Thus, interjections or exclamatory statements reflect heterogeneous properties regarding functional, lexical-semantic, cognitive, and pragmatic purposes.

Disclosure Statement

The authors did not report any potential conflicts of interest.

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Short-term memory and knowledge of L1 and L2 by Roma children of Cyprus

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Abstract. The study of short-term memory and language learning conducted with primary school Roma children in Cyprus aimed to determine how children who grow up in economically disadvantaged families learn their mother tongue (L1) Turkish and their second language (L2) Cypriot Greek. Two groups of children (20 children aged 8 and 20 children aged 10), a total of 40, were tested with the Picture short-term memory test, the Peabody vocabulary test, the sentence repetition test and the number repetition test. The study seeks to answer the research question: "How does the short-term memory test help Roma children to perform the tests in their L1 and L2?" The research findings were statistically analysed with SPSS and ANOVA and showed correlations between the independent factors of age group, gender, and testing language. The result showed that the children performed the tests much better in their mother tongue (L1). They need help learning some of the grammatical categories from the Greek language. The Processability Theory of Piennemann (1998) is examined. According to this theory, the production of linguistic structures is possible without any conscious or non-conscious attention because the locus of the attentive process is short-term memory. For the children to attain the necessary academic level of Greek, the teachers working with Roma children should receive training to develop children's bilingualism when instructing children growing up in a multilingual environment such as Cypriot society.

Keywords: *short-term memory, bilingualism, Turkish, Roma, Gurbets, language learning, Processability theory, Cyprus.*

Ключуков Хрісто, Кіратджі Хелен, Пелекани Хрісо. Короткотривала пам'ять і знання Мови 1 та Мови 2 ромськими дітьми на Кіпрі.

Анотація. Дослідження короткотривалої пам'яті та вивчення мови, проведене серед ромських дітей молодшого шкільного віку на Кіпрі, мало на меті визначити, як діти, які ростуть в економічно неблагополучних сім'ях, вивчають свою рідну мову (M1) турецьку та другу мову (M2) кіпрську грецьку. Дві групи дітей (20 дітей у віці 8 років і 20 дітей у віці 10 років), загалом 40 осіб, були протестовані за допомогою тесту на короткотривалу пам'ять за картинками, тесту на словниковий запас Пібоді, тесту на повторення речень і тесту на повторення чисел. Дослідження має на меті відповісти на запитання: «Як тест на

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короткотривалу пам'ять допомагає ромським дітям виконувати тести на рівнях M1 та M2?» Результати дослідження було піддано статистичному аналізу за допомогою SPSS та ANOVA і виявили кореляції між незалежними факторами вікової групи, статі та мови, якою проводилося тестування. Результат засвідчив, що діти набагато краще виконували тести рідною мовою (M1). Вони потребують допомоги у вивченні деяких граматичних категорій з грецької мови. Проаналізовано теорію здатності до перероблення Пінеманна (Piñemann, 1998). Згідно з цією теорією, продукування мовних структур можливе без будь-якої свідомої чи несвідомої уваги, оскільки локусом уваги є короткочасна пам'ять. Аби діти досягли необхідного академічного рівня з грецької мови, вчителям, які працюють з ромськими дітьми, слід пройти підготовку задля розвитку двомовності у дітей, які зростають у багатомовному середовищі, такому, яким, наприклад, є кіпрська спільнота.

Ключові слова: *короткотривала пам'ять, двомовність, турецька мова, ромська мова, гурбети, вивчення мови, теорія здатності до перероблення, Кіпр.*

Introduction

Cyprus is a multicultural country (Zembylas, 2012) with three groups of “Gypsies”: European Roma who are economic migrants to Cyprus and are usually L1 speakers of Romani; the Christian Greek-speaking Roma; and a Turkish-speaking group called “Gurbets” – a Muslim group who have lived for centuries in Cyprus (Pelekani, 2018). In 1974 the Turkish invasion divided the country into two parts: Greek Cyprus and Turkish Cyprus. The Gurbets had moved to the north of Cyprus, occupied by the Turkish army. However, after 2004 many Gurbets relocated to the south of Cyprus (Greek-speaking area) when Cypriots were allowed to move to other places in the island. It is difficult to record and officially ascertain the exact number of the Roma population in Cyprus in the most recent period. The total number of Cyprus Roma is estimated at between 650 and 1250 (Roma Civil Monitor, 2023). The Roma groups in Greek Cyprus mainly reside in the districts of Limassol and Paphos.

The majority of Gurbets in Cyprus are Turkish-speaking and have been classified as belonging to the Turkish Cypriot community. However, there are Roma who are Christians and Greek-speaking, known as *Mantides*, and they were included in the Greek Cypriot community in 1960. They abandoned the nomadic lifestyle and today are largely assimilated; their descendants can be recognised, if at all, only by their surnames (Trimikliniotis & Demetriou, 2009).

The present study focuses on the Turkish-speaking Gurbeti Roma children who speak Turkish as L1 and Greek as L2. According to Cummins (2007) conceptual knowledge in L1 and L2 is interdependent, meaning that concepts, academic content and learning strategies transfer across languages. He argues that neither the “direct method” (instruction exclusively through the target language) nor the “two solitudes assumption” (strict separation of languages in an immersion program) have a solid research basis. This monolingual instructional orientation should be complemented by bilingual/multilingual instruction as they are more efficient and consistent with the interdependence that exists among languages. The “interdependence hypothesis” discussed by Cummins (2005) has been adapted to the present research context to the extent that the learning of Turkish as L1 is effective in promoting proficiency in

Greek as a L2. Transfer of this proficiency will occur if there is adequate exposure and motivation to learn L1 and L2.

In this case, L1 and L2 are typologically dissimilar languages where transfer is expected to occur mainly on the conceptual level. Whether it is an added language, like English, or any of the school languages, Turkish and Greek, the “interdependence hypothesis” implies that it is pedagogically “appropriate” to refer to transfer across languages and that a form of constructive analysis can help investigate similarities and differences in the two languages and develop linguistic awareness and motivation to learn L1 and L2.

The Gurbeti Roma children experience palpable ingrained stereotyping and prejudices from both communities (Turkish and Greek) due to their different culture and lifestyle. Despite state policies aimed at permanently settling the Roma Gurbets of Cyprus, the nomadic tradition continues in some Gurbets families. As a result, children miss school for extended periods of time. In addition to that, both Roma Gurbeti boys and girls register after elementary school at the secondary school, but most do not continue their studies; they drop out of school either because their parents do not allow them to attend the school, or because of early marriage.

The Roma children grow up in a traumatized environment. Some of the Roma parents are involved in illegal activities, and their families and children experience poverty and hunger. Living in these difficult conditions, the children must attend school and have to achieve a certain level of success. The educational system of Cyprus following the European multilingual direction developed classes of mother tongue education for Gurbeti children in order to develop their language capacities in their mother tongue and also to motivate them to attend school in order to complete their primary and secondary level of education. However, the educational problems of Cypriot Roma children are no different from the educational problems of Roma children in Europe.

Kandylaki and Kallinikaki (2018) report about an educational project with Muslim Roma children in Thrace in Greece and how they encourage the students who dropped out of school to improve regular attendance of school. Although education is a right and an obligation for children, it is not always the case for the Muslim Roma communities because of poverty, poor health and inter-generational illiteracy. New and Merry (2012) in a study with Greek Roma students note that their access to education are very limited. The authors address the question of learning through the psychosocial construct of stigmatization. “According to advocates for Romani rights and scholars, the most damaging kind of school segregation is that which results in a stigma on Romani students that cannot be eradicated, contributing greatly to the social isolation and dreadful living conditions experienced by most Rom” (p. 623).

The situation of Roma children is the same in Slovakia (New, 2011; Samko, 2020; Samko et al., 2021). The Slovak government promotes assimilatory educational policies towards Roma students, who live and study in stigmatization, which does not give them the possibility to succeed at school. In number of studies, Kyuchukov et al. (2024), Kyuchukov (2021; 2023; 2024) sheds light on the linguistic educational problems of Roma children from Bulgaria, when they acquire their mother tongue at

home or when they have to acquire literacy in their L2 at school and describes the difficulties the children encounter when seeking to gain better knowledge of their L1 or/and L2.

Siegel (2003) describes the sociolinguistic settings for second language acquisition (SLA) and describes the L2 as the dominant language and “the native language of the majority of the population and used in all domains in everyday life, including the home, education, government, the legal system, business, and the media” (p.179). The children who belong to minority groups are expected to acquire the dominant language at school or outside of the school system in order to be able to participate in the everyday life of society. Marinis and Cunnings (2018) say that in learning language, second language learners have to develop both comprehension and production skills, but the two modalities do not develop simultaneously. Comprehension usually develops earlier than production. The authors suggest that the assessing the learner’s knowledge comprehension should be separately tested from production.

In our study we focus on the production knowledge of the Gurbeti children in Cyprus in their L1 and L2; for the purpose of the study, we apply Processability theory (PT) as developed by Pienemann (1998). According to PT the “recourse needs to be made to key psychological aspect of human language processing” (p. 5). Pienemann states that “the real time production of language can only be accounted for in a system in which word retrieval is very fast and in which the production of linguistic structures is possible without any conscious or non-conscious attention, because the locus of attentive process is short-term (or immediate) memory.” (p. 5).

Language learning studies and short-term memory are mainly connected in research on learning the phonology. Very few studies deal with other linguistic levels. According to Juffs (2006, p. 105) “in SLA, researchers have focused on short-term rather than long- term memory differences because they think short-term memory is more responsible for differences in language development. The reason for this belief is that short-term memory is an on-line capacity for processing and analyzing new information (words, grammatical structures and so on); the basic idea is that the bigger the on-line capacity an individual has for new information, the more information will pass into off-line, long-term memory.” Baddeley (2017) connects the verbal short-term memory (STM) to a long-term memory (LTM). The author asks a simple but important question about the function which the STM serves and particularly if it improves the working memory. The author uses the term STM to refer “to the simple storage of limited amounts of material over brief delays, in contrast to working memory, a theoretical concept that assumes an integrated system involving both temporary storage and attentional control, a system that supports a wide range of cognitive processes and tasks.” (p. 105)

Jones and Macken (2018) report that “studies using tests such as digit span and nonword repetition have implicated short-term memory across a range of developmental domains. Such tests ostensibly assess specialized processes for the short-term manipulation and maintenance of information that are often argued to enable long-term learning.” (p. 216)

The research question we endeavor to answer with this study is:

How does the short-term memory test help Roma children to perform the tests in their L1 and L2?

Our working hypothesis is that the bilingual/multilingual Roma children are developing normally, but they grow up traumatized due to the poverty they grow surrounded by.

Method

The trauma of the children could give rise to various difficulties with education at school and learning the official language as L2. To investigate this phenomenon, two groups of primary school children are involved in the present study. All of them attend a primary school in the city of Limassol, Cyprus. They are organized in two age groups:

- 1st group 8 years old (20 children);
- 2nd group 10 years old (20 children).

In order to test our hypothesis and answer the research question, we designed a research scheme including the following tests:

Candem Memory Test: Pictural Recognition Memory Test (Warrington, 1996). The content of the test is as follows. In the first part the children are shown 30 pictures, and each picture is on a separate page. The second part of the test comprises the same 30 pictures in a mixture with 2 other pictures, in total 3 pictures on a page, as shown below. The task of the children is to remember which picture the children have seen in the first part of the test.

Figure 1

Candem Memory Test: Pictural Recognition Memory Test (Warrington, 1996)



- *Sentence Repetition Task* - 9 items. The child hears sentences, which he/she then repeats after the researchers have spoken. The researcher starts with simple sentences containing 2-3 words and in each subsequent sentence the number of the words increases. The researcher says: *Repeat after me!* and then says the following sentences:

The baby cries
The horse runs fast!
The boy goes to supermarket, etc.

- *Number Repetition Task* – 12 items. The children are given numbers and they must repeat them after the researcher.

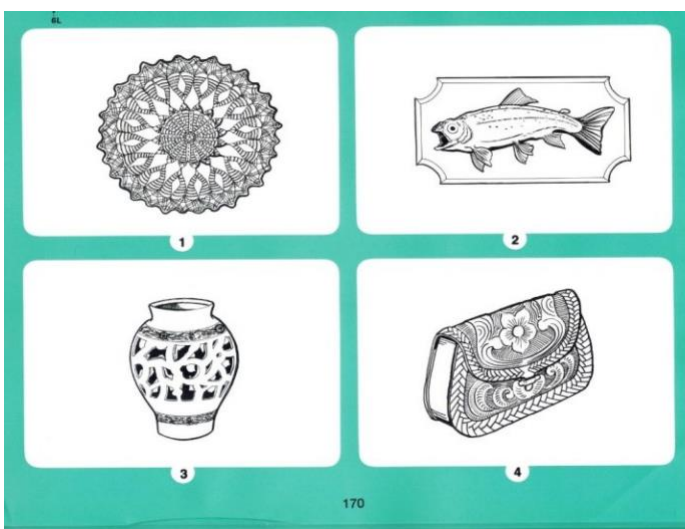
Repeat after me!

4, 2
3, 5
5, 6, 2
3, 1, 4
6, 1, 7, 2
3, 5, 8, 4, etc.

- *Peabody Picture Vocabulary Test* – 55 items. The children are shown pictures with the task to see which object out of the 4 objects on the page does not fit in with the other 3. The grammatical categories involved in the test are:

Nouns – 42 items
Verbs – 9 items
Adjectives – 4 items

Figure 2
Peabody Picture Vocabulary Test



The design of the study and the selection of the tests are guided by the concept that there is a connection between short-term memory and language learning. We assume that the digit span test, repetition of sentences, lexicon richness, are predicted by the performance of the short-term picture memory test

The testing of the children had the following procedure. During the first week the children were tested in their mother tongue – Turkish (by the first author) and in the second week they were tested using the same tests but in their second language – the Cypriot variety of Greek. The testing in Greek was done by a teacher who is a native speaker of Greek. All the children were tested in a school environment, in a separate room where the researcher and the child are present. All the answers of the children were written in special protocols and later analyzed with the SPSS and ANOVA statistical package.

To conduct the research, permission was obtained from the local office of the Ministry of Education of Cyprus and written permission from the parents of the children was received. The tests do not cause psychological and physical harm to the health of the children involved in the study.

Results

Analyzing the data, a three-factorial design with *gender*, *age group* and *language of testing* as independent variables were investigated.

Short-Term Memory Test

The results from the short-term memory test are shown in Fig. 3.

Figure 3

Total Score on Short-Term Memory Test as a Function of Age Group as an Independent Factor (Three-Way ANOVA)

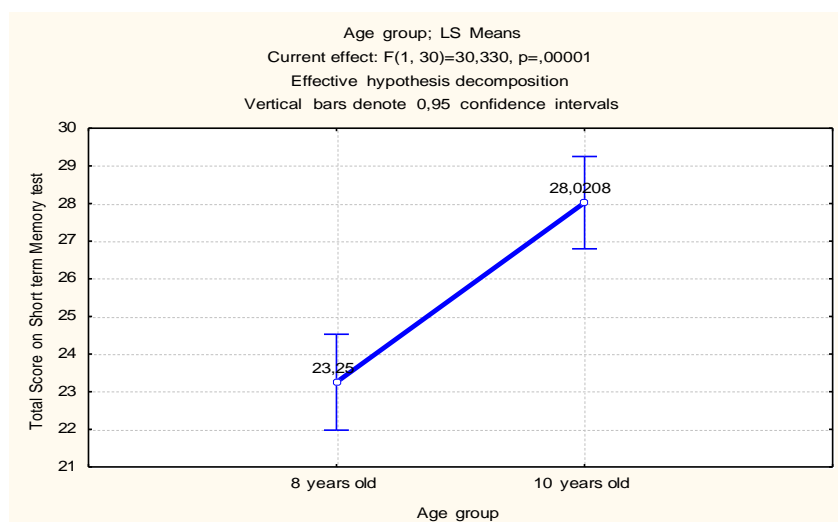
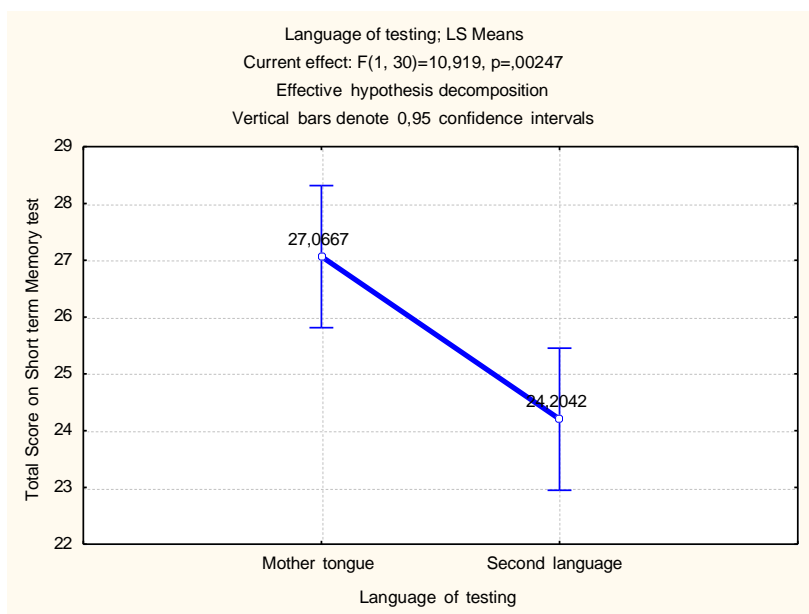


Fig. 3 shows statistical differences between the two age groups of children. The differences are significant $F(1, 30) = 30.330, p = .00001$. The 10-year-old children perform the test better than the 8-year-olds. This result shows that with increased age the children's short-term memory increases.

Let us examine what the total score on short-term memory test is as a function of the language of testing as an independent factor. The results are shown in Fig. 4.

Figure 4

Total Score on Short-Term Memory Test as a Function of Language of Testing as an Independent Factor (Three-Way ANOVA)



As can be seen from Fig. 4, the performance of the test is much better in the mother tongue of the children than in their second language. The differences between the performance of the test in both languages are statistically significant $F(1, 30) = 10.919, p = .00214$.

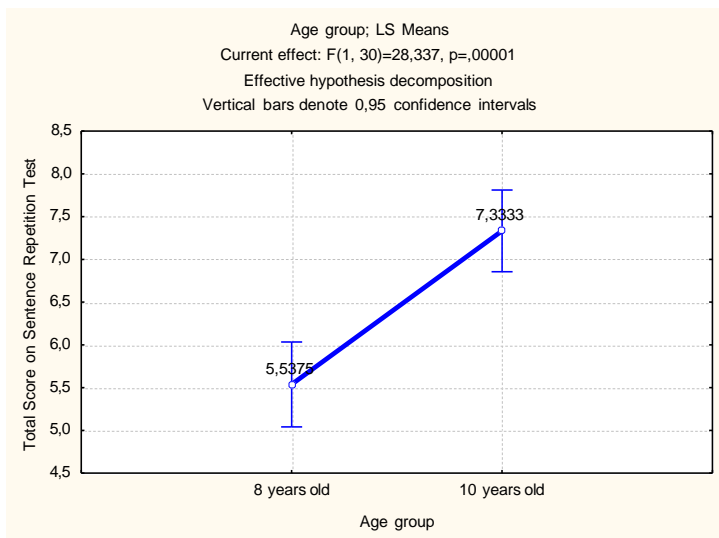
The results from this test show that two independent factors - age and language - play an important role in the performance of the test. The short-term memory of the children increases as they grow older, and the performance of the test is better in their mother tongue (Turkish) than in their second language (Cypriot Greek).

Sentence Repetition Test

One of the language tests given to the children was the sentence repetition test. Fig. 5 presents the results from the performance of the sub-test.

Figure 5

Total Score on Sentence Repetition Test as a Function of Age Group as an Independent Factor (Three-Way ANOVA)

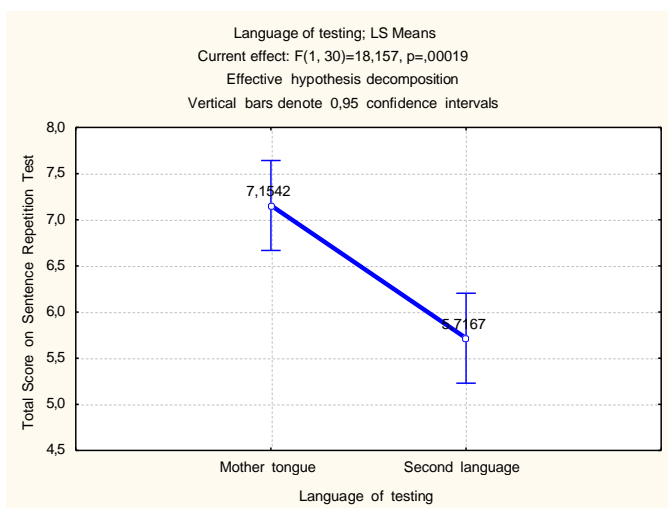


The results presented in Fig. 5 show that once again, the 10-year-olds are better in the performance of the sub-test and the differences between the two age groups are statistically significant $F(1,30) = 28.337, p = .00001$. In practice this means that the older children can repeat longer sentences more correctly than the younger children. The sentences included in the test comprised 2, 3, 4 and more words. The first 2-3 sentences were simple sentences, and they were easy for the 8-year-olds to repeat. The older children also repeated the sentences which had relative clauses.

Which language was easier for the children in order to perform this sub-test? The answer is shown in Fig. 6.

Figure 6

Total Score on Sentence Repetition Test as a Function of Language of Testing as an Independent Factor (Three-Way ANOVA)



As can be seen from Fig. 6, the children repeated the sentences much better in their mother tongue. The differences between the performance of the test in both languages are statistically significant $F(1,30) = 18.157, p = .00019$.

The sentence repetition test is better performed by older children in their mother tongue. They can repeat complex sentences which have relative clauses in their mother tongue more easily than in their second language.

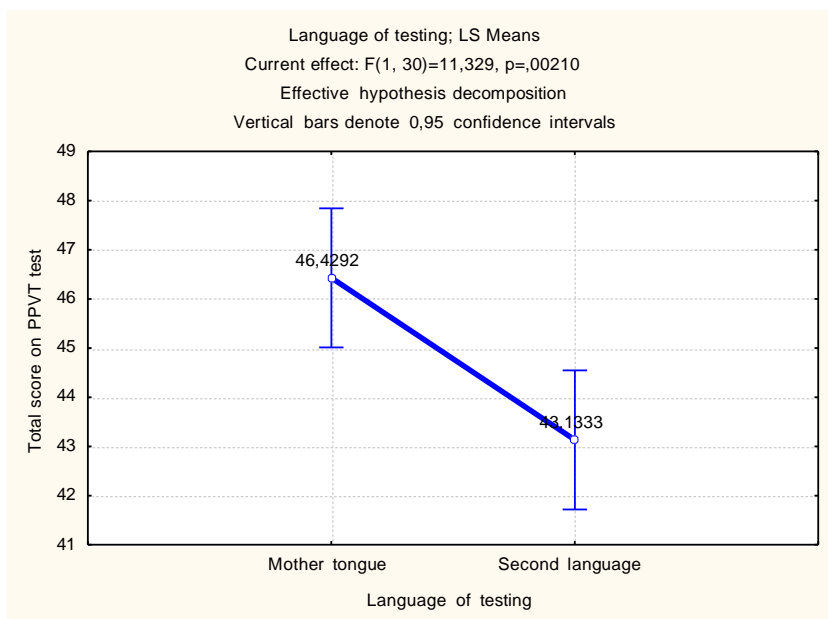
The second language test was the Peabody vocabulary test.

Peabody Vocabulary Test (PPVT)

The Peabody vocabulary test was also performed in both languages that the children speak. The results from the test as a function of the factor language are shown in Fig. 7.

Figure 7

Total Score on Peabody Vocabulary Test as a Function of Language of Testing as an Independent Factor (Three-Way ANOVA)



The test was performed very well in the mother tongue of the children, Turkish. The differences between performances in both languages are statistically significant $F(1,30) = 11.329, p = .00210$.

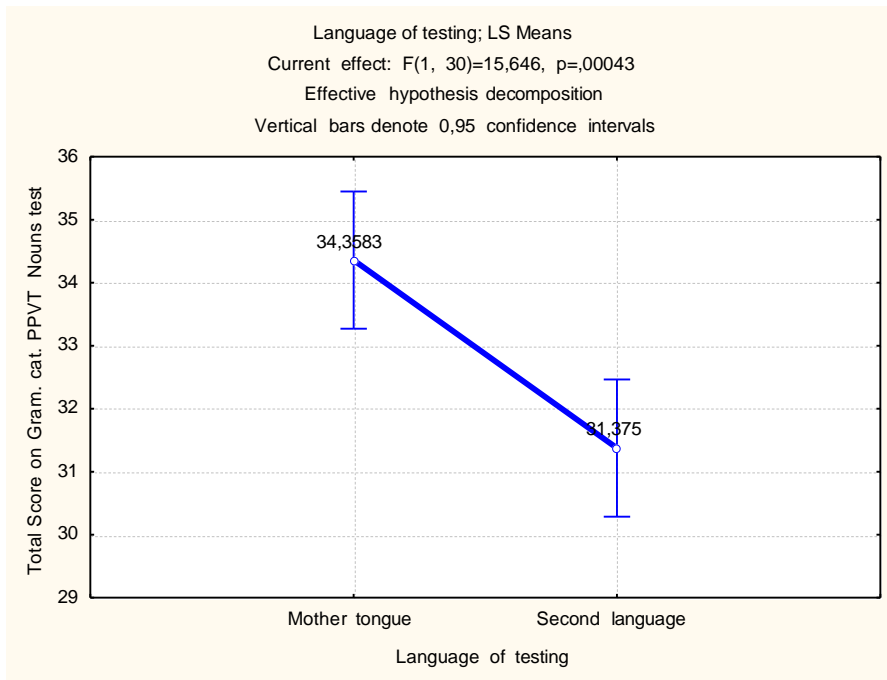
Three grammatical categories were included in the performance of this test: nouns, verbs and adjectives.

Nouns

The language production of the noun in the mother tongue is shown in Fig. 8.

Figure 8

Total Score on Peabody Vocabulary Test (PPVT)- The Nouns as a Function of Language of Testing as an Independent Factor (Three-Way ANOVA)



The nouns are produced much better in Turkish. The differences between the performance of the test in both languages are statistically significant $F(1,30) = 15,646$, $p = .00043$. Here the age of the children is not an important factor. Both groups are good at performing the test in their mother tongue.

Verbs

Looking at the verb production of the children, it seems that their results in both languages are equally good. The independent factors age, gender and language do not have any influence on the children's performance of the test.

Adjectives

What was the children's performance on adjectives as a grammatical category? The results are shown in Fig. 9.

Figure 9

Total Score on Peabody Vocabulary Test (PPVT) - Adjectives as a Function of Interaction Between Factors Gender and Age Group (Three-Way ANOVA)

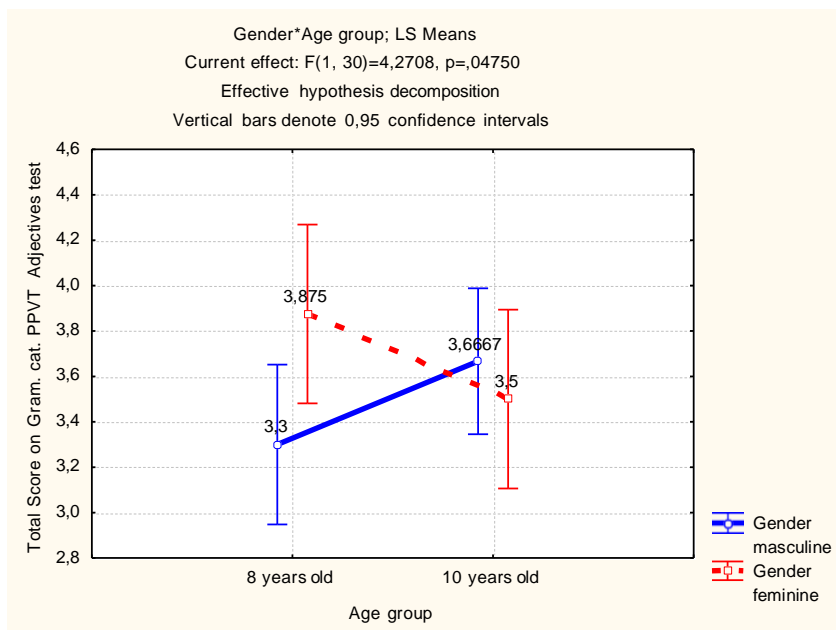


Fig. 9 shows that two factors – age group and gender – are interacting. The 8-year-old children show statistical difference between the performance of the boys and girls. The children 10 years old do not display these differences. The differences between the children aged 8 and 10 are also statistically significant $F(1,30) = 4.2708$, $p=.04750$.

The results from the Peabody vocabulary test show that the children perform the test better in Turkish. The nouns are recognized better in Turkish as L1. However, the verbs and the adjectives are recognized equally well in both languages. In the recognition of the adjectives, there are also gender differences between boys and girls along with the age differences.

Number Repetition Test

Both age groups of children, from both genders and in both languages, do not have any difficulties performing this sub-test. No independent factor has a statistically significant impact on this dependent variable. The children's knowledge and ability in number repetition is very good. All the children show good results.

In summarizing the results from the tests of the children, Table 1 shows the correlation between the sub-tests.

Table 1
Correlations Between All 6 Sub-Tests

	Total Score on Sentence Repetition Test	Total Score on Number Repetition Test	Total score on PPVT Test	Total Score on Gram. cat. PPVT Nouns Test	Total Score on Gram. cat. PPVT Verbs Test	Total Score on Gram. cat. PPVT Adjectives Test
Total Score on Sentence Repetition Test	1.000000	.253781	.528412	.558603	.165074	.127417
Total Score on Number Repetition Test	.253781	1.000000	.173570	.084268	.335611	.060497
Total score on PPVT Test	.528412	.173570	1.000000	.934899	.546657	.405132
Total Score on Gram. cat. PPVT Nouns Test	.558603	0.084268	.934899	1.000000	.372726	.253852
Total Score on Gram. cat. PPVT Verbs Test	.165074	.335611	.546657	.372726	1.000000	.051458
Total Score on Gram. cat. PPVT Adjectives Test	.127417	.060497	.405132	.253852	.051458	1.000000

Correlational differences are statistically significant. As can be seen from Table 1, the total score of sentence repetition test correlates with the total score of the Peabody test and with the total score of the nouns test. The total score of the number repetition test shows correlation with the total score of the verbs in the Peabody test. The total score of the Peabody test correlates with the total scores of the sentence repetition, nouns, verbs and adjective tests. The total score of the noun test correlates with the total score of the Peabody test. The total score of the verbs test correlates with the total score of the number repetition test and with the total score of the Peabody test and the nouns test. The total score of the adjectives test correlates only with the total score of the Peabody test.

The correlations between the sub-tests of the Peabody Test with number repetition and sentence repetition tests show that the children are able to learn new words in L1 and in L2 and it is connected with their short-term memory.

Discussion and Conclusion

How is our study related to the previous studies in this field? Thorn and Gathercole (1999) investigated the sensitivity of children's phonological short-term memory performance to language specific knowledge. They found that with English-French bilingual children, and English children who were learning French as a second language, their short-term memory performance in each language mirrored their familiarity with English and French, with greater vocabulary knowledge being associated with higher levels of recall of both words and non-words in that language. The findings indicate that phonological short-term memory is not a language-independent system but rather functions in a highly language-specific way.

In a study with monolingual and bilingual children, Marini, Eliseeva and Fabbro (2016) found that the bilingual group outperformed monolinguals on two simple and one complex span task assessing phonological short-term and working memory, respectively. They performed as monolinguals on measures assessing articulatory skills, phonological abilities, naming and grammatical processing in L1. However, bilingual participants performed less well than monolinguals on a test of lexical comprehension. Another study by Verhagen and Leseman (2016) dealing with verbal short-term memory (VSTM) found that it is related to vocabulary learning. The working memory is related to the learning process of children studying a second language (L2) in classroom. The study was conducted with Turkish children who learned Dutch as an L2 and Dutch monolingual children. The authors found that memory factors were significantly related to the acquisition of morphology and syntax.

In a study by Symeou et al. (2009) with semi-structured interviews with Roma pupils, their parents, and their teachers, from three schools attended by the largest numbers of Roma children in the Greek Cypriot educational system, the authors came to conclusion that the teachers working with Roma children need specific training for educating Roma students in multicultural school settings. The authors also reflect on the factors that need to be addressed if education is to become inclusive for all pupils in general, and Roma children in particular. Martinez-Gonzalez et al. (2008) conducted a comparative study with Roma children in Spain and Cyprus and inter alia also investigated the academic expectations for their children and parental concern regarding their children's education. Results showed that the Spanish families have a more protective parenting style than the Cypriot families and they are more interested in the academic achievements of their children than the Cypriot parents.

Returning to our research question, how the short-term memory helps Roma children to learn their L1 and L2, we can conclude that the bilingual Roma children

in Cyprus show normal cognitive and intellectual development. Although they are traumatized because of the economic conditions in which they grow up, their L1 is developing quite well. The L2 development of the children needs better support, and as Simeou et al. (2009) stress, the teachers working with bilingual Roma children need to have training in how to work with them in multilingual settings and how to develop their bilingualism to the level which will help them to achieve academic success at school. Short-term memory exercises help them to learn a second language better and quicker, because it relates to the Processability Theory.

Disclosure Statement

The authors reported no potential conflicts of interest.

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Cognitive, communicative, and cultural sensitivity competencies of future teachers in relation to textual mediation for adult immigrants

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Abstract. Due to the social circumstances leading to increased professional demand, it is necessary to provide more specialized training to initial teacher education students so they can address textual mediation for L2-learning adult immigrants. This research aims to understand how students in education perceive the impact of textual mediation on certain critical skills following a teaching intervention. There are few previous studies on textual mediation in the field of applied linguistics. A qualitative methodology evaluated an intervention involving 103 education students in focus groups. The results reveal that educational mediation with adult immigrants enhances oral and written communication skills, translation ability, note-taking, and creative text analysis. Linguistic adaptation and expanded cultural awareness are crucial in this process. As a practical application, the research underscores the importance of fostering cognitive, communicative, and cultural awareness competencies in initial teacher education students for effective language instruction to adult immigrants.

Keywords: adult immigrants, analysis, communication, critical skills, textual mediation, translation, synthesis.

Пенья-Акунья Беатрис. Когнітивні, комунікативні та культурно-чутливі компетенції майбутніх учителів щодо текстової медіації для дорослих іммігрантів.

Анотація. У зв'язку з соціальними обставинами, що призводять до зростання професійного попиту, необхідно забезпечити більш спеціалізовану підготовку студентів початкової педагогічної освіти, щоб вони могли працювати з дорослими іммігрантами, які вивчають англійську мову як другу іноземну, використовуючи засоби текстової медіації. Це дослідження має за мету з'ясувати, як студенти сприймають вплив використання текстів на розвиток певних критично важливих навичок після проведення педагогічного втручання. Існує небагато попередніх досліджень на тему текстової медіації в галузі прикладної лінгвістики. За допомогою якісного методу було оцінено втручання, в якому взяло участь 103 студенти-педагоги у фокус-групах. Результати свідчать, що освітня медіація у роботі з дорослими іммігрантами покращує навички усного та писемного спілкування, перекладу, конспектування та творчого аналізу текстів. Мовна адаптація та розширення культурної обізнаності мають вирішальне значення в цьому процесі. Практичне застосування дослідження полягає в тому, що воно підкреслює важливість розвитку когнітивних, комунікативних і культурних компетенцій у студентів початкової педагогічної освіти для ефективного викладання мови дорослим іммігрантам.

Ключові слова: дорослі іммігранти, аналіз, комунікація, критичні навички, текстова медіація, переклад, синтез.

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Introduction

In adult language learning, textual mediation competencies emerge as essential for effective integration into diverse social and professional contexts. These skills range from reading comprehension to textual production, including text synthesis, critical analysis, translation and paraphrasing, and interaction and negotiation of meanings (Heggernes, 2021; Council of Europe, 2020; García-Benito, 2019). This is why language teaching aimed at adults should prioritize the development of these competencies, promoting strategies and activities that reinforce effective language practice in a variety of communicative situations (Schrijvers et al., 2019; Gasca, 2018). This approach not only enhances fluency and accuracy in the target language but also empowers learners to successfully navigate different areas of life.

Therefore, it is necessary to analyse the perception of future educators regarding the importance of textual mediation in teaching Spanish to adult immigrants (García-Balsas & Planelles, 2023), highlighting how these pedagogical practices can enhance the communicative and cognitive competencies of teachers in training, emphasizing the need to integrate these skills into their preparation to facilitate the linguistic and cultural integration of immigrants.

Textual Synthesis

The ability to synthesise texts constitutes a fundamental cognitive process, involving the amalgamation of information from various sources to produce concise and coherent summaries. To carry out this process effectively, the simultaneous use of reading and writing skills is imperative to integrate information from source texts, connecting ideas and arguments among them (Nikbakht & Miller, 2023; Crossley et al., 2023).

In the context of using text synthesis as a tool in learning a new language, organising information logically and systematically is crucial, as it not only involves the ability to establish connections between different ideas and present them coherently (Vandermeulen et al., 2020) but also develops working memory by temporarily retaining relevant information during the synthesis process (Tarchi & Mason, 2023), enabling vocabulary (Authors, 2022) and grammar retention. It is necessary to note that text synthesis requires analytical skills to break down the text into its essential components and then effectively reconstruct it in the final summary (Santos et al., 2021). In certain cases, synthesis may require a creative approach to express information more concisely without sacrificing its meaning (Crossley et al., 2023).

Text Translation

Within the context of textual mediation, translation extends beyond mere word conversion from one language to another (Guerrero et al., 2022); it emerges as a

complex process that transcends mere linguistic transcription to become a reflective and adaptive activity, essential for understanding and cultural relevance of texts in diverse contexts (Mendizábal de la Cruz, 2022; Pintado, 2021; Michienzi, 2023). Used as a mediation tool, translation stands out for its ability to address comprehension issues by reworking and simplifying essential information, adapting texts to the needs of a diverse audience without specialized knowledge (Al-Sofi & Abouabdulqader, 2020).

In this practice, translation is not confined solely to changing words from one language to another (referred to as interlingual translation) but also encompasses adaptation between different forms or styles of the same language (known as intralingual translation) (Michienzi, 2023), highlighting the importance for educators to be flexible and capable of adjusting to different contexts when engaging in textual mediation (Serrano, 2023). The bidirectional capacity (Jiménez et al., 2023) or restructuring of texts while maintaining their cohesion and logic is crucial to ensure that adult immigrants learning other languages can comprehend and actively participate.

Note-taking Skills

The effectiveness of note-taking in the academic context, especially for students learning in a second language, is a complex area of study that underscores the importance of multifaceted skills, as it involves language comprehension, identification and organization of main ideas versus secondary ones, and the ability to synthesize and rephrase ideas rather than reproduce words verbatim (Sefer & Benzer, 2022).

This skill not only facilitates comprehension and retention of information but also supports the organization of thought, promotes student autonomy by enabling them to record and review information independently, as well as strengthening information organization skills, increasing student attention, and verifying listening comprehension in another language (León & Casar, 2022; Siegel, 2023), fostering more self-directed and meaningful learning. In this context, León and Casar (2022) underscore educators' duty in second language instruction to foster note-taking techniques, aiming to enhance students' simultaneous listening and writing skills, vital for tackling more complex tasks.

Analyzing and Critiquing Texts

The development of skills for analysing and critiquing texts in a second language is fundamental for learning and fluency in that language, as fully comprehending the content of the text, identifying key concepts, and understanding the argumentative structure, students enhance their overall language comprehension and ability to process information in that linguistic context (Jackson, 2020; Bobkina & Dominguez, 2019).

Analytical skills enable them to break down the text into its essential components, aiding students in becoming familiar with grammar, vocabulary, and language structure (Prado-Huarcaya & Escalante-López, 2020; Muhammad, 2020). Additionally, critically evaluating the quality of information, the logic of the argument, and the coherence of the text contributes to more reflective and profound thinking in the second language (Mohammed & Naeem, 2021). Synthesising information from diverse sources (Fernández & Fonseca, 2022) also strengthens the ability to integrate and apply linguistic knowledge effectively. Lastly, clear and effective written expression in the second language reflects a solid understanding of the language and the ability to communicate ideas coherently and persuasively.

The research questions we posed were as follows:

1. How does educational mediation activity with adult immigrants affect students' ability in education to summarise and explain texts orally or in sign language?
2. How does educational mediation activity with adult immigrants affect students' ability in education to translate orally or in sign language?
3. How does this educational mediation activity with adult immigrants affect students' ability in education to summarise and explain texts in writing?
4. How does this educational mediation activity with adult immigrants affect students' ability in education to take notes (lectures, seminars, meetings, etc.)?
5. How does this educational mediation activity with adult immigrants affect students' ability in education to analyse and critique creative texts (including literary ones)?

Methodology

A qualitative approach and focus group discussions were employed as they allow for an in-depth understanding of textual mediation and critical skills in education students, offering detailed and contextual perspectives to inform educational practice. Manual qualitative analysis was conducted, where an expert outlined responses to each question, cross-checked by another expert, followed by categorical text analysis.

The original version of the manuscript is in Spanish. ChatGPT has been used for proofreading purposes of the English version.

The study involves education students from a university located in southern Spain during the academic year 2022-2023. Specifically, the sample (n=130) comprises 2 groups of initial teacher education students: one referred to as I (Bachelor's in Early Childhood Education, second year) and the other as P (Bachelor's in Primary Education, third year). The sample is homogeneous in terms of study disciplines and age distribution.

Regarding gender distribution, out of the total sample (n=130), 102 individuals (78.46%) are female, while 28 (21.54%) are male. When categorised by groups, within the Early Childhood Education cohort, females constitute the majority with

64 participants (96.97%) compared to only two male participants (3.03%). In the Primary Education group, females still predominate, albeit to a lesser extent, with 38 participants (59.38%) compared to 26 males (40.62%). Regarding age, the average age of the student sample is 20.10, with a standard deviation of 3.45, indicating an age range between 19 and 27 years.

Procedure and Materials

An innovative intervention was conducted among initial teacher education students. An intervention in textual mediation was designed, requiring initial teacher education students to adapt the planning and execution of an activity aimed at an adult immigrant. Additionally, the perception of the intervention was evaluated after the sample experienced it through focus groups, a qualitative method tool.

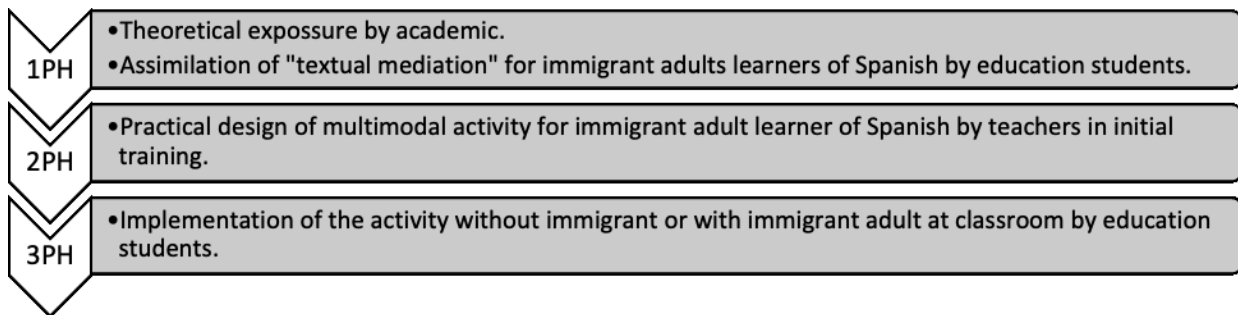
The source on which this study based its textual mediation discussion group questions is the Common European Framework of Reference for Languages (2020). Previously, there was a previous document from the Council of Europe (2018) also titled Common European Framework of Reference for Languages.

The university teaching intervention consisted of the following stages, as described in Figure 1. The intervention took place over 6 weeks. Firstly, students from both groups received and understood the theoretical part of textual mediation for immigrants. Secondly, the two groups of students, organized into teams, designed a multimodal activity aimed at learning Spanish as an additional language by an immigrant from a specific nationality. In this way, they explored historical and cultural aspects of immigrants. Thirdly, in the Early Childhood Education student group, this activity was theoretically scheduled, without being applied with a real immigrant. However, in the Primary Education student group, it was scheduled for them to invite an adult immigrant to carry out the activity practically.

This second scheduling differs in that it adds an experiential learning approach according to the paradigms of Dewey (1963) and Piaget (1977), both recognised in the pedagogical context. Both emphasise the importance of practical and active experience in the learning process. Dewey, in particular, emphasises learning as a dynamic and interactive process that occurs through action and reflection. Piaget, on the other hand, focuses on the individual's cognitive development and how it is constructed through interaction with the environment and problem-solving. Both theorists significantly influenced contemporary education by highlighting the importance of direct experience and experimentation in meaningful learning. Therefore, Primary Education university students faced the challenge of seeking and inviting an adult immigrant of the chosen nationality, interacting with them, and guiding them in learning Spanish through this activity in front of the teacher and their peers.

Fourthly, additionally, in the same week the intervention ended, the two groups of students, organised into discussion groups of 6 to 8 students, responded to the four qualitative questions.

Figure 1
Phases of Teaching Intervention



Results

In the realm of academic research, qualitative analysis plays a pivotal role in identifying and understanding the complex dynamics inherent in educational mediation with adult immigrants. Hence, the establishment of categories and subcategories becomes necessary to access a robust conceptual framework, enabling systematic organization of collected data and facilitating the identification of patterns, trends, and significant relationships.

In this context, categories and subcategories were determined to highlight how educational mediation activities affected participants in recognising the critical competencies involved in textual mediation aimed at adult immigrant students.

Thus, for the first question: *In what ways does this educational mediation activity with adult immigrants affect or not affect your ability to summarise and explain texts orally or in sign language?* the most noteworthy categories about impact on the ability to summarise and explain texts orally or in sign language from both groups are as follows:

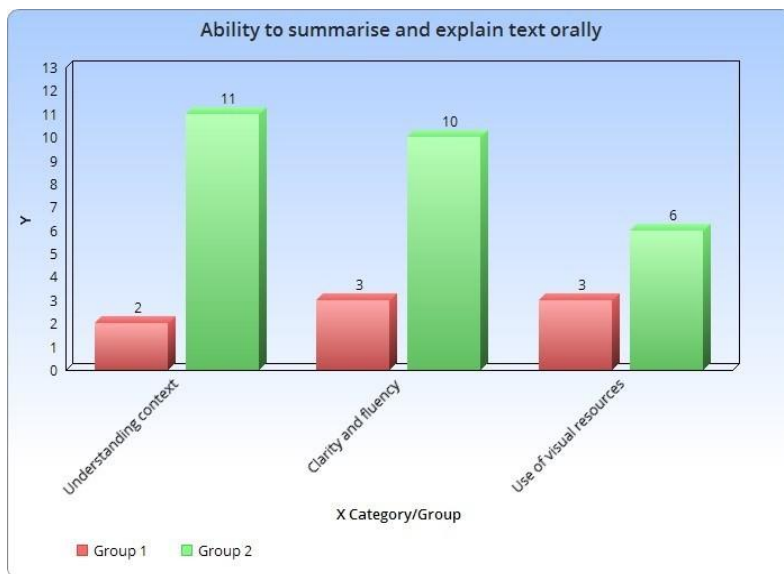
- Development of skills for selecting relevant information.
- Importance of oral and sign language communication.
- Learning summary and explanation techniques.
- Improvement in reading comprehension and speed.
- Need for language adaptation to the receiver.
- Use of visual aids and signs to facilitate understanding.
- Importance of vocabulary and grammar.
- Focus on empathy and active listening.
- Significance of communication in social integration.
- Use of summaries as a study technique.
- Patience and clarity in explanation for immigrant understanding.
- Enhancement in adaptability and educational communication skills.

Below are the highlighted categories along with their respective frequencies:

Table 1
Ability to Summarise and Explain Texts Orally

Category	Group P	Group I
Understanding context	2	11
Clarity and fluency	3	10
Use of visual resources	3	6

Figure 1
Ability to Summarise and Explain Text Orally



Participants from both groups indicated that the activity positively impacts their ability to summarise and explain; however, this sentiment was predominantly expressed in Group I. This suggests that the theoretical possibility of working with adult immigrants in an educational context enhances their communication skills, understanding, and adaptation according to the interlocutor's level.

Regarding the second question: *In what ways does this educational mediation activity with adult immigrants affect or not affect your ability to translate orally or in sign language?*

The following categories are considered relevant about positive impact on oral or in sign language translation ability:

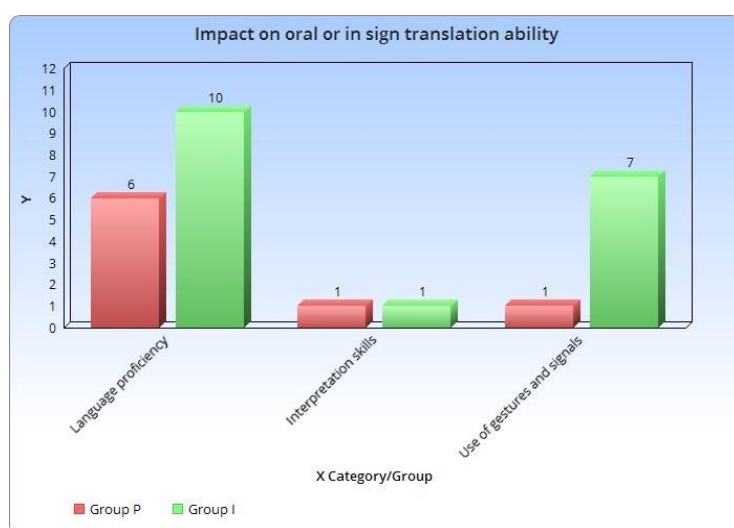
- Improvement in oral translation skills.
- Development of signed translation (gestures) capability.
- Increase in vocabulary and language skills.
- Adaptation of communication to linguistic and cultural needs.

Among these, the following categories stand out, accompanied by their respective frequencies:

Table 2
Impact on Oral or in Sign Translation Ability

Category	Group P	Group I
Language proficiency	6	10
Interpretation skills	1	11
Use of gestures and signals	1	7

Figure 2
Impact on oral or in sign translation ability



It is evident that educational mediation activity has a positive impact on the translation ability of the participants, both orally and in sign language. This is evidenced in the responses from both groups, with Group I placing greater emphasis on this. It is pertinent to note that participants from Group P highlight direct contact with the immigrant as a key factor in this process, as it compels them to adapt linguistically and culturally, resulting in significant development of their communication skills.

For the third question under analysis: *In what ways does this educational mediation activity with adult immigrants affect or not affect your ability to summarise and explain texts in writing?*

The categories related to impact of ability to summarise and explain text in writing are apparent:

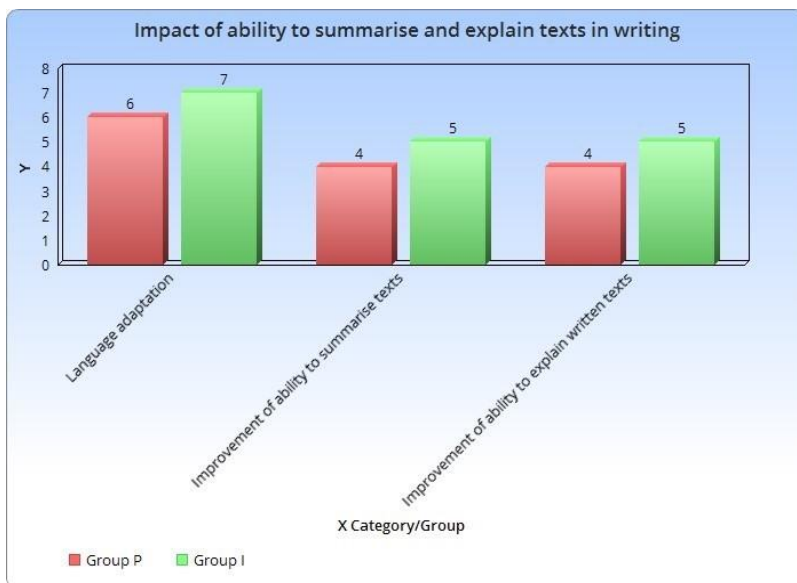
- Adaptation of texts according to the language level and comprehension of the immigrant.
- Use of clear and simple language when explaining texts in writing.
- Need to simplify vocabulary and sentence structures.

The following categories stand out, each with its corresponding frequency:

Table 3
Impact of Ability to Summarise and Explain Texts in Writing

Category	Group P	Group I
Language adaptation	6	7
Improvement of ability to summarise texts	4	5
Improvement of ability to explain written texts	4	5

Figure 3
Impact of Ability to Summarise and Explain Texts in Writing



Both groups recognise the importance of adapting language to the level of understanding of the adult immigrant. The ability to summarise texts and explain them in simple language suggests a shared awareness of the need to adjust communication to ensure adequate comprehension.

Regarding the fourth question: *In what ways does this educational mediation activity with adult immigrants affect or not affect your ability to take notes (lectures, seminars, meetings, etc.)?*

The categories pertaining to the ability to take notes become visible:

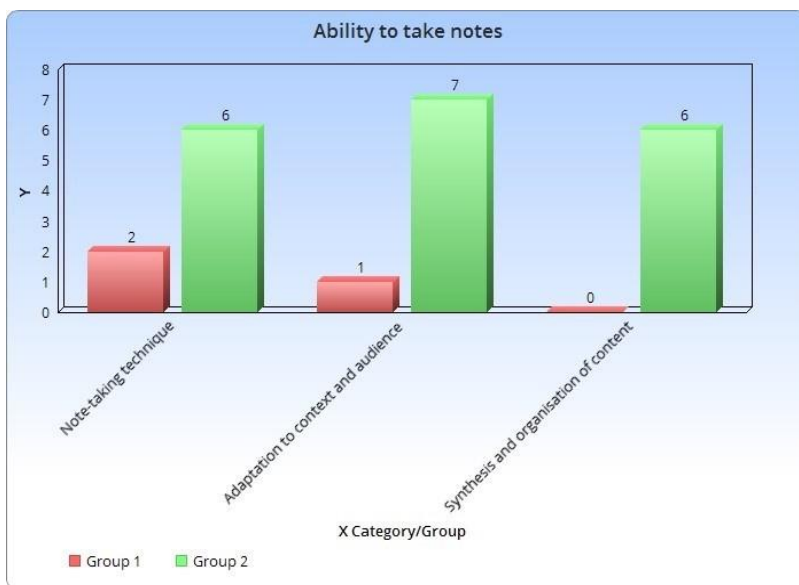
- Use of simple and structured language
- Use of visual tools (headings, examples, colours, mind maps)
- Adaptation to the immigrant's level of comprehension
- Improvement in attention and retention of information
- Importance of note-taking for comprehension and subsequent analysis

The following categories stand out among these, along with their respective frequencies:

Table 4
Ability to Take Notes

Category	Group P	Group I
Improvement in note-taking technique	2	6
Adaptation to context and audience	1	7
Synthesis and organisation of content	0	6

Figure 4
Ability to Take Notes



Through the activity conducted, Group I emphasises the importance of synthesis and organisation of content as part of the note-taking process during educational mediation, as well as the need to adapt to context and audience to facilitate note-taking by the immigrant. This suggests the development of intercultural skills through the strengthening of an empathetic approach towards the recipient.

Regarding the fifth question: *In what ways does this educational mediation activity with adult immigrants affect or not affect your ability to analyse and critique creative texts (including literary ones)?*

The following categories emerged around the ability to analyse and critique creative texts:

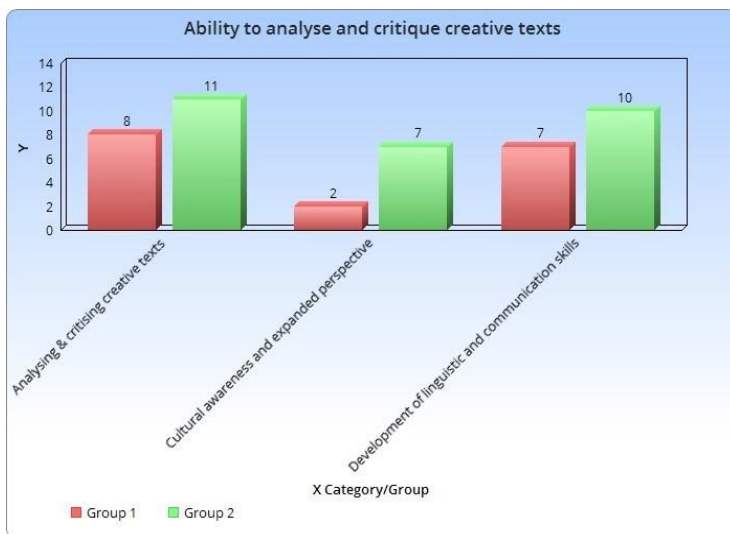
- Considerations regarding language and linguistic skills
- Focus on comprehension and interpretation
- Learning and understanding of social and cultural context
- Reflection on the process of analysis and critique
- Language and grammar learning

The following categories stand out from these, showing their respective frequencies:

Table 5
Ability to Analyse and Critique Creative Texts

Category	Group P	Group I
Improvement of Ability to analyse and critique creative texts	8	11
Cultural awareness and expanded perspective	2	7
Development of linguistic and communication skills	7	10

Figure 5
Ability to Analyse and Critique Creative Texts



Both groups highlight the improvement in these skills as a result of theoretical (Group I) and practical (Group P) interaction with this specific demographic group. Acquisition of new perspectives, broadening of cultural knowledge, and development of critical thinking emerge as key aspects in this enhancement process. Additionally, the importance of adapting creative texts to the needs and abilities of adult immigrants is emphasised, as well as the value of understanding the author's culture for a more comprehensive interpretation of texts. Furthermore, the positive impact on language mastery and promotion of creativity through these educational mediation activities is highlighted.

Discussion

The analysis of the results obtained in the study establishes a significant correlation between the theory presented by various authors and the perceptions of future educators regarding the relevance of educational mediation competencies in teaching a second language to adult immigrants.

Throughout the different activities and with the participation of various future educators, a crucial element in this process is highlighted: the cultural dimension.

Authors such as Sumonte and Fuentealba (2019), Alcaraz (2019), and Rubio and Rubio (2022) argue that the cultural dimension must be considered as an integral part of language teaching, asserting that culture cannot and should not be separated from language learning.

Regarding the relevance of the ability to summarise or synthesise texts to subsequently provide explanations to adult immigrants, study participants expressed that this skill has facilitated the integration of data from various sources, emphasising contributions from Nikbakht and Miller (2023), as well as Crossley et al. (2023).

Participants also recognised several aspects positively affected by this activity, including the development of relevant information selection skills, improvement in reading comprehension and speed (Authors, 2023), and language adaptation to the recipient, which, in the words of author Leal (2020), could be termed conscious linguistic learning. Furthermore, the importance of empathy and active listening, essential for effective communication (Benoit, 2023), was highlighted, along with improvement in adaptability.

Regarding text translation as a mediation tool in the educational context with adult immigrants, participants recognise the need to adapt texts, in line with Al-Sofi and Abouabdulqader (2020) to the particularities and capacities of these individuals. Thus, it is highlighted the role that teachers play in the complex process of teaching a new language (Iglesias & Ramos, 2020), being flexible in adjusting textual mediation to different contexts (Serrano, 2023), to different forms or styles (Michienzi, 2023), or restructuring texts (Jiménez et al., 2023).

Regarding the impact of this activity on translation ability, improvements in oral translation ability, development of signed translation capacity (gestures), increased vocabulary and linguistic skills, and adaptation of communication to linguistic and cultural needs are highlighted. This implies a deep understanding of the cultural relevance of materials in different contexts (García-Collado, 2019), with participants noting direct contact with immigrants as a key factor in this process, as it compels them to adapt linguistically and culturally (Krystallidou & Braun, 2022), resulting in significant development of their communication skills consistent with Darling and Daniels' perspective (2003).

The study highlights note-taking ability as an essential component in educational mediation with adult immigrants, as participants recognise the importance of this skill in facilitating information comprehension and retention, as well as fostering student autonomy (Sefer & Benzer, 2022).

Educators understand their responsibility in driving the development of note-taking techniques to enhance students' ability to listen and write simultaneously in another language, significantly contributing to self-directed and meaningful learning (León & Casar, 2022; Chumaña et al., 2019).

With participants from Group I predominantly emphasising the importance of content synthesis and organisation as part of the note-taking process during educational mediation, as well as the need to adapt to context and audience, it suggests the development of intercultural skills through theoretical strengthening of empathy towards the recipient. This is because, as expressed by García and

Domínguez (2022), note-taking is a highly complex situation, especially for students in the process of developing active listening and have not yet reached a solid level in verbal communication skills or mastery of both common and technical vocabulary.

Regarding text analysis and critique in a second language, findings demonstrate the importance of text analysis and critique in the context of second language learning. According to the conclusions drawn, participants consider these processes fundamental for improving both learning and language fluency. This viewpoint is supported by researchers such as Jackson (2020) and Bobkina and Domínguez (2019), who have argued about the relevance of these activities in developing language skills.

Furthermore, Colomo (2022) highlights that literary text not only contributes to reading comprehension but also involves written expression, grammatical, lexical, pragmatic aspects, and oral comprehension and expression. This perspective emphasises three general objectives in teaching a foreign language through literature: teaching in the foreign language, exploring literature, and immersion in the culture of the country where the second language is spoken. Such an approach not only promotes improved reading comprehension but also enriches vocabulary and cultural knowledge, as argued by Ahmed (2022).

The ability to analyse texts, as pointed out by Colomo (2022), involves breaking down content into essential elements, understanding grammatical structure, and critically evaluating information. As evidenced in the studies, this skill fosters reflective and deep thinking in the second language, facilitating effective communication, particularly with adult immigrants learning the language.

Additionally, González (2021) highlights the close relationship between literature and culture, emphasising the importance of understanding the author's culture for a comprehensive interpretation of texts. In this sense, educational mediation activity with adult immigrants has a positive impact on the ability to analyse and critique creative texts, as well as on the development of cultural awareness and linguistic and communication skills.

Conclusions

The present research has shed light on the critical importance of textual mediation competencies in the field of language teaching for adult immigrants. Through a qualitative analysis of various areas of textual mediation, the study has explored how these competencies impact educators' ability to facilitate effective second language learning in intercultural and diverse contexts, as well as the influences these competencies have had on them at both professional and personal levels.

The study has revealed that text synthesis constitutes a fundamental cognitive process, requiring not only analytical skills to break down and reconstruct information coherently but also logical and structured organisation involving the development of working memory. Furthermore, the importance of text translation has

been highlighted as a reflective and adaptive activity that transcends mere linguistic conversion, demanding educators to be flexible and capable of adapting to different linguistic and cultural contexts.

Note-taking ability has been identified as a multifaceted skill that not only facilitates comprehension and retention of information but also promotes student autonomy and self-directed learning. In this regard, educators play a crucial role in driving the development of note-taking techniques to enhance students' ability to process information in real-time and in a second language.

Moreover, text analysis and critique have emerged as essential skills for learning and fluency in a second language, enhancing overall language comprehension, familiarity with grammar and vocabulary, and fostering reflective and profound thinking. The importance of understanding the author's culture for a comprehensive interpretation of texts has been emphasised, underscoring the need for language teaching that integrates cultural aspects alongside linguistic ones.

The results obtained in this study have highlighted a positive impact on textual mediation competencies, especially in Group I participants, suggesting significant development of educators' communicative and intercultural skills. These findings underscore the importance of incorporating the cultural dimension into language teaching and the need for specific training for educators working with adult immigrants.

As a corollary, it is pertinent to note that the activities developed have been able to strengthen competencies, positively affecting educators' ability to facilitate effective second language learning in intercultural and diverse contexts. These findings have significant implications for educator training and the design of language teaching programs that are culturally sensitive and effective for adult immigrants. Ultimately, it is hoped that this study will contribute to the improvement of the quality of language education and the social integration of adult immigrants in various community and professional settings.

The future research will focus on integrating quantitative research and obtaining a larger sample size to enable both descriptive and inferential analyses. Another intervention could also be conducted and subsequently evaluated using a mixed-methods approach with students from the same university. Alternatively, a comparison could be made between students from different universities in different countries to study the impact of cultural parameters.

Acknowledgments

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Double strategies for reproducing multimodal puns in interlinguistic translation: An experimental research

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Abstract. This research is dedicated to exposing the specifics of translating multimodal puns based on the retrospective experiment. A *multimodal pun* is defined as a creolized/ polycoded formation substantiated by a specific type of ambiguity consisting of two inhomogeneous semiotic modes. Verbal-visual puns functioning as separate texts served as the research material. Each multimodal pun results from intersemiotic translation when the signs of one semiotic system are transformed into the signs of another. For the vast majority of multimodal puns, verbal signs are interpreted into pictures, but the opposite cannot be excluded either. The role of the visual component is twofold. It can be creative when the picture is part of the ambiguity mechanism, or it can be amplifying when the picture accentuates the verbal wordplay, not participating directly in the creation of ambiguity. Hence, our first hypothesis is that multimodal puns with an amplifying visual component are a lesser challenge for translators than those with a creative one due to the absence of the necessity to coordinate verbal and visual modes in the target text. The research aims to identify the strategies of interlinguistic translation of multimodal puns and the factors that determine them, particularly the impact of the visual mode on the translator's decision-making. Hence, our second hypothesis is that multimodal puns require double strategies that would allow to correlate the reproduction of the elements of two different semiotic systems. The analysis of the subjects' translations, as well as their reports received in the course of the delayed retrospective experiment, confirmed both hypotheses.

Keywords: *interlinguistic translation, intersemiotic translation, multimodal pun, retrospective experiment, translation strategy, verbal mode, visual mode.*

Ребрі́й Олександр, Фролова Ірина, Ребрі́й Інна. Подвійні стратегії відтворення мультимодальних каламбурів в інтерлінгвальному перекладі: експериментальне дослідження.

Анотація. Дослідження присвячено визначенню особливостей перекладу мультимодальних каламбурів на основі ретроспективного експерименту. Мультимодальний каламбур визначено як креолізовану/полікодову формацію, що визначається неоднозначністю сприйняття та складається з двох негомогенних семіотичних модусів. Матеріалом дослідження виступили вербально-візуальні каламбури, що функціонують як самостійні тексти. Кожний мультимодальний каламбур є результатом інтерсеміотичного перекладу, в перебігу якого знаки однієї семіотичної системи трансформовано в знаки іншої семіотичної системи. Для переважної

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більшості мультимодальних каламбурів вербальні знаки перетворюються у візуальні, хоча й рух у протилежному напрямку не можна виключати. Візуальний компонент може виконувати дві різні функції. Першою є креативна, за якої зображення безпосередньо залучено до створення ефекту неоднозначності; другою є підсилююча, за якої картинка є ілюстрацією, що підсилює ефект вербальної мовної гри. Звідси наша перша гіпотеза, згідно з якою мультимодальні каламбури з підсилюючим візуальним модусом становлять меншу складність для інтерлінгвального перекладу порівняно з каламбурами з креативним візуальним модусом через відсутність необхідності узгодження двох модусів в цільовому тексті. Метою дослідження є визначення стратегій інтерлінгвального перекладу, так само як і чинників, які їх визначають і, зокрема, впливу візуального модуля на прийняття перекладацьких рішень. Звідси наша друга гіпотеза стосовно того, що інтерлінгвальний переклад мультимодальних каламбурів вимагає подвійних стратегій, які б дозволили гармонізувати відтворення елементів, що належать двом різним семіотичним системам. Вивчення перекладів учасників експерименту та їхніх звітів, отриманих в перебігу відкладеного ретроспективного експерименту, підтвердили обидві гіпотези.

Ключові слова: вербальний модус, візуальний модус, інтерлінгвальний переклад, інтерсеміотичний переклад, мультимодальний каламбур, перекладацька стратегія, ретроспективний експеримент.

Introduction

The concept of multimodality defined as “the transmission (and reception) of meaning through the composite deployment of different semiotic resources, or modes” (Palumbo, 2009, p. 77) has been gaining much popularity in Translation Studies ever since Jakobson (1959) in his pivotal work “On linguistic aspects of translation” outlined three kinds of a verbal sign translation: “We distinguish three ways of interpreting a verbal sign: it may be translated into other signs of the same language, into another language, or into another, nonverbal system of symbols” (p. 233). He labeled the third variety as “intersemiotic” translation or “transmutation” that is “an interpretation of verbal signs by means of signs of nonverbal sign systems” (ibid.).

Initially, intersemiotic translation was limited to interactions between verbal and non-verbal signs, but later on it was admitted that the act of translation may involve signs of two (or more) non-verbal systems. Eco, who is probably one of the most distinguished proponents of such an approach, proceeded from the fact that “semiotics was dominated by a dangerous verbocentric dogmatism whereby the dignity of language was only conferred on systems ruled by a double articulation” (Eco, 1976, p. 228). However, if we accept the claim that “non-verbal signs have structure and they are carriers of meaning, just like language, then it seems that there is no reason for us not to acknowledge that they can be translated just like verbal signs” (Kourdis, 2020, p. 80). Semiotician Kristeva made her contribution through the notion of *transposition* that denotes “the signifying process’ ability to pass from one sign system to another, to exchange and permute them” (1984, p. 60). Transposition “implies the abandonment of a former sign system, the passage to a second via an instinctual intermediary common to the two systems, and the articulation of the new system with its new representability” (ibid.)

As a result, the notion of translation has broadened impressively to include “any process or product thereof, in which a text is replaced by another text, reflecting or inspired by, the original entity” (Gottlieb, 2018, p. 50). If we apply the postmodern interpretation of a text in the spirit of Derrida to this definition, it will easily cover Jakobsonian transmutation as well. Following this logic, we must also acknowledge that any multimodal formation coined of verbal and non-verbal components is in fact a result of intersemiotic translation of one into the other. Our attention in this article is drawn to the collaboration between verbal and visual modes in a stylistic device known as a multimodal pun, which serves as an *object* of our research. Consequently, we set the *aim* not to just identify the strategies of reproducing multimodal puns in interlinguistic translation per se but rather to single out and analyze the factors of impact on the translators’ decisions as to implementing particular strategies. In order to achieve this aim we designed and carried out the psycholinguistic retrospective experiment that was adapted to our own tasks and conditions.

Method

Materials and Methods

Multimodal Pun as a Result of Intersemiotic Translation

In the Anglophone philological tradition, pun has turned into an umbrella term incorporating all the imaginable cases of wordplay, which in its turn is associated with language games as conceived by Wittgenstein (1986) and Huizinga (1980). Take, for instance, the definition of a pun by Delabastita (1996) as “the general name for the various textual phenomena in which structural features of the language(s) used are exploited in order to bring about a communicatively significant confrontation of two (or more) linguistic structures with more or less similar forms and more or less different meanings” (p. 128). At the same time, it would be fair to say that some Anglophone researchers navigate towards a more classical and much narrower definition of a pun as a stylistic device. See, for instance, Leech (1969) who describes pun as “a foregrounding lexical ambiguity, which may have its origin in homonymy or polysemy” (p. 209) but at the same time emphasizes that pun also has some other “related forms of word-play” (ibid., p. 210).

In his thorough review, Catalan scholar Llado (2002) comes to the conclusion that “the *pun* is just one form [of wordplay – *O.R.*, *I.F.*, *I.R.*] among many that could be considered and belongs to a particular national tradition” (p. 47). His “underlying argument is clear, at any rate – there is more to wordplay than just the pun” (Marco, 2010, p. 266). Following this stance, we similarly conclude that Leech’s definition of a pun is closer to the Ukrainian linguistic tradition where it is characterized as a stylistic device that is built upon the use of polysemy, homonymy or paronymy and is employed on the different levels of a language system; it is implemented with the help of both existing and newly-coined (nonce) linguistic units (Literaturoznavchyi Slovnyk–

Dovidnyk, 2007, p. 322; Zahnitko, 2020, p. 277). It is this definition of a pun that was used for selecting linguistic material for our research.

Multimodal pun is the one that employs the signs of two different sign systems for creating its humorous effect, in our case – linguistic and visual (pictorial). Thus, multimodal pun, in terms of Kharkiv linguists Yeyger and Yukht is in fact a polycoded text, that is a “combination of a natural linguistic code with a code of some other semiotic system (image, music, etc.)” (Zavadzka, 2016, p. 164). The view of a multimodal pun not just as a stylistic device but as a text is principal for this research where we use as a *material* multimodal puns that are not incorporated into larger textual formations but function on their own as an online collection of jokes (Funny Science Jokes: laughs for Scientists). Such formations are also dubbed “creolized texts” because they are composed of (at least) two inhomogeneous parts whose correlation itself provides for attracting a potential recipient’s attention to both the speaker and information as well as making them interested in this information.

The role of an image in a creolized/polycoded text is seldom primary but always very important cognition-wise since delivering information simultaneously through two channels – verbal and visual – makes it easier for the reader to perceive it. Thus, a pictorial mode always brings in some additional information that can alter the perception of a verbal mode by the recipient. Similarly, Ketola (2018) describes word–image interaction as “the process by which words and images affect and/or change the way in which the other is perceived in the cognitive system of the reader (translator) of an illustrated text” (p. 32).

An important question is: which comes first – words or images? The answer to this question (that is not always to be found) determines albeit hypothetically the “source” and the “target” modes of a multimodal pun. It is believed that in the vast majority of formations the author proceeds from words to images and thus the visual mode is the result of intersemiotic translation. According to Pereira (2008), “the text can be regarded as the primary source because it is usually the first work to be created, the pictures being derived from it. It is true that in some cases the opposite can happen” (p. 105). She also points out that pictorial elements in a multimodal text “can especially be seen as translations because the methodologies employed by illustrators are in the majority of cases the same as those adopted by translators to translate a text; and as products, illustrations play a very significant part in the reception of the literary work, so that the visual creation of the drawings is very similar to the verbal creation of the text during translation” (ibid., p. 105–106).

Either way, the reciprocation between words and images within a text creates a synergy described by O’Halloren as “intersemiosis” that “takes place within and across Mini-Genres, Items and Components and on the expression stratum with regards to the materialization of the text” (2008, p. 455) and “gives rise to genuinely new meaning” (Lemke, 2002, p. 303) since “presented together, the two meanings of two modes may enhance and complement each other, offering specificity and precision beyond the capacity of either one alone” (ibid.).

Multimodal Pun Reproduction in Interlinguistic Translation

Speaking specifically about a multimodal pun, we determined that the function of its pictorial mode in regard to the verbal one is twofold. Firstly, it can be *creative*, i.e. when a visual component is directly involved in producing the pun's ambiguous effect by provoking in the reader's mind the second (clashing) meaning in addition to the first one provided by the verbal component. Secondly, it can be *amplifying*, i.e. when a visual component serves as a mere illustration to words by making their humorous effect more salient (Rebrii et al., 2022). Hence, our first hypothesis presupposes that interlinguistic translation of multimodal puns with a creative visual mode presents more difficulties due to the necessity to coordinate two sources of meaning in a target text as compared to the translation of puns with an amplifying visual mode.

The absence of ready-made equivalents for multimodal puns as ad hoc formations refers them to the category of translation difficulties in the sense found in the definition by Rebrii (2012): "Translation difficulties are linguistic/discourse formations of different levels that set up barriers on the way of interlinguistic communication as a result of objective differences in the structures and functioning of source and target languages (interlinguistic asymmetry) as well as of subjective perception of these differences by the translator who is expected to exert considerable creative effort for their elimination" (p. 106). Popular in Ukraine, the notion of "translation difficulties" correlates with that of translation problems "seen as items, features or aspects of a given ST [source text – *authors*] that pose some kind of difficulty for the translator or require the translator to provide TL [target language – *authors*] solutions that are not retrieved through automatic or routine processes" (Palumbo, 2009, p. 128–129).

As translation difficulties/problems, multimodal puns require specific strategies for their interlinguistic reproduction. Strategy that has been a popular term in Translation Studies since its inception is understood here as a potentially conscious mental plan of the translator's actions involving different types of coordinated operations. Strategies for translating puns as well as other varieties of wordplay have been described by a plethora of scholars most of whom follow (directly or indirectly) Delabastita's list including the following: "PUN → PUN; PUN → NON-PUN; PUN → RELATED RHETORICAL DEVICE; PUN → ZERO; PUN ST = PUN TT; NON-PUN → PUN; ZERO → PUN; EDITORIAL TECHNIQUES" (1996, p. 134).

On the one hand, this set of strategies may be considered to some extent universal as they can be applied (with some modifications) to basically all types of translation difficulties/problems. On the other hand, combining verbal elements with visual ones in a multimodal pun will inevitably require another set of strategies taking heed of the specifics of this sophisticated semiotic ensemble. Hence, our second hypothesis presupposes the existence of specific strategies for interlinguistic reproduction of multimodal puns as intersemiotic translations. For verifying these two hypotheses we designed and conducted a retrospective experiment.

Design of the Experiment

Translation Studies have “borrowed” two main experimental methods – introspection and retrospection – from Psychology and successfully adapted them for their own purposes mainly connected with researching translation as a process. For quite a long period of time, retrospection that means providing the translator’s comments after completing the act of translation was considered inferior to introspection since the subjects “easily forget what they have done, tend to distort their observations... and also infer previously acquired knowledge or explanations” (Hansen, 2005, p. 518). According to the pioneers in introspective and retrospective methodology, Ericsson and Simon (1980), the most efficient is immediate retrospection, when the report is given by the subject immediately after the task is completed because “in a matter of a few seconds, the contents of STM (short-term memory – *authors*) can be destroyed or made inaccessible by requiring subjects” (p. 238).

Nevertheless, due to technical specifications, the so called “delayed” retrospection is resorted to more and more often: “Delayed retrospection can take place at any time after the task, but the time interval between the completion of the task and the initiation of retrospection is important, because the risk of forgetting, distorting and incomplete data increases proportionally to the length of the interval between the task and the retrospective report” (Hansen, 2005, p. 518). According to Dimitrova and Tiselius (2014), “a disadvantage of retrospection is that it generally does not allow complete recall of the information” (p. 179), while Rambæk (2004), on the contrary, believes that through carefully selected questions and topics retrospection successfully channelizes information and “gives greater insight if one wishes to study the translator’s global strategies or the cross-cultural aspects of translation” (p. 17).

The experiment devised for verifying the hypotheses put forward in the theoretical section of this paper was held in two stages. The communication between the subjects and their supervisor was established via the electronic mail. At the first stage, the subjects were tasked to translate multimodal puns. Immediately on completing the task, they sent the results to the supervisor and received the task for the second stage in the letter, specifying their further actions. Namely they were asked to provide their comments on the following aspects of their work: mechanism(s) of pun interpretation and the role of a visual mode in it; factors of opting for particular reproduction strategies for both modes; encountered difficulties and ways of their resolving.

The subjects of the experiment were four graduate students undergoing Master’s program in interpreting and translation at the School of Foreign Languages at V. N. Karazin Kharkiv National University. Comparing different categories of translation experiments’ subjects, Kussmaul and Tirkkonen-Condit (1995) come to the conclusion that all of them (professionals, non-professionals and semi-professionals) have their advantages and disadvantages. Thus, the decision in favor of a particular category should depend on both the experiment’s conditions and tasks. Consequently, we opted for semi-professionals who are believed to take their decisions in a more conscious fashion proceeding from their mostly theoretical background. At the same time, their professional competence is not fully formed yet and many processes are not

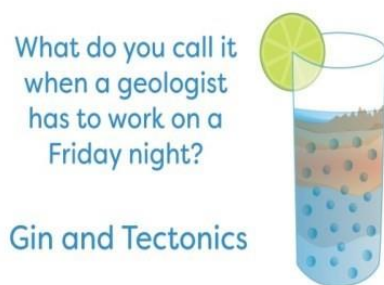
automatized, they lack standard ways of overcoming different types of translation difficulties/problems. And what is more important for the aim of our research, semi-professionals' approach is strategy-oriented, plus after making a plan they "appear to follow it systematically through the task" (Bernardini, 2001, p. 248). Due to the space restrictions, we will analyze in this article the translation of two multimodal puns out of five. The remaining three will be included in the upcoming and more comprehensive research publication.

Results

The first multimodal pun (see Fig. 1) offered for the subjects' translation includes an amplifying visual component.

Figure 1

Multimodal Pun with an Amplifying Visual Component



The humorous effect is produced due to the paronymic resemblance of the words "tonic" and "tectonics". Tectonics is defined as "a branch of geology concerned with the structure of the crust of a planet" (Merriam-Webster Online Dictionary and Thesaurus) and the contents of the glass are drawn to resemble simultaneously a bubbly cocktail (together with a slice of lime!) and folds of the Earth's crust. At the same time, the picture is not involved with producing ambiguity and can be easily removed without affecting the pun's interpretation and consequent interlinguistic translation.

Subject 1 pursued strategies when the verbal component is translated literally (direct translation) and the visual component remains intact (zero translation):

«Як це називається, коли геолог працює у п'ятницю вночі? – **Джин тектонік**».

The realization of this strategy becomes possible because of the amplifying character of the visual component and international character of both involved lexemes that have transliterated Ukrainian equivalents: *gin* – «джин» and *tectonics* – «тектонік» (short from «тектоніка»). In their report, Subject 1 gives a comprehensive account of both their motivations and techniques: "While translating this pun I had no difficulties because the wordplay is built upon the name of the drink called 'Gin and Tonic' and the name of a geological concept 'plate tectonics'. It is obvious that the recipients should

know that a geologist is a person who works with the Earth's interior and might have heard about the tectonic plates. We usually translate English 'Gin and Tonic' as 'джин-тонік' with omission of conjunction 'and' and I followed this trend by simply adding prefix 'тек-'."

Subject 2 pursued the same strategies:

«Як можна описати ситуацію, коли геологам потрібно працювати у п'ятницю ввечері?
Джин з тектоніком».

Their report is sparser but quite illuminating as well: "My task as a translator was made easier by the fact that the pair of words that lie at the foundation of the pun 'tonic – tectonic' are transliterated into Ukrainian 'тонік – тектонік'. The role of the illustration does not seem important or such that would help interpret the wordplay though it could be otherwise for those ignorant of the cocktail drinks."

Subject 3 pursued quite a different strategy for the verbal mode. Though leaving the visual component without any changes, they transformed the verbal component by partially changing the original situation and omitting both 'gin' and 'tectonics'. Instead, they made an attempt to create another pun by putting together the noun 'occasion' (to have a drink) and the verb 'to dig' (out) in an ad hoc combination 'to dig out an occasion to have a drink':

«Кожну п'ятницю геолог відкопує новий раніше нікому невідомий привід випити».

Unfortunately, their Report is very brief and does not provide for a full picture of the translator's decision-making: "Here, I decided to use a substitution in order to make my translation relevant and preserve the humorous effect of the source text."

We think that despite the changes there is no obvious clash between the new verbal component and the old pictorial one, which is an important factor to avoid during the translation of a multimodal pun.

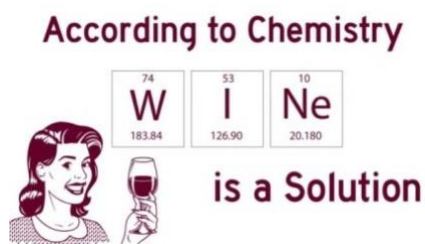
Finally, Subject 4's strategies are similar to those of Subject 1 and Subject 2:

«Як це називається, коли геолог змушений працювати у вечір п'ятниці? – **Джин з тектоніком».**

Their considerations are likewise: "During the interpretation of this pun, the image had no impact upon the meaning because I was familiar with the drink called 'gin-tonic' whose association was used in the pun. Besides, I was familiar with the word 'tectonics' that became part of my background knowledge for this interpretation. For translating this pun, I made a choice in favor of a calque in order to preserve a humorous effect because the target language has necessary equivalent units. I guess, in this case I successfully managed to overcome the interlinguistic difficulties and to render the pun."

The second multimodal pun (see Fig. 2) offered for the subjects' translation includes a creative visual component:

Figure 2
Multimodal Pun with a Creative Visual Component



In fact, here we deal with two cases of wordplay. The first involves the icons of three chemical elements ('W' for 'Tungsten', 'I' for 'Iodine' and 'Ne' for 'Neon'), that make the word 'wine' when put together. The second pun is based around the two meanings of the word 'solution': (1) an action or process of solving a problem; (2) an act or process by which a solid, liquid, or gaseous substance is homogeneously mixed with a liquid or sometimes a gas or solid; a homogeneous mixture formed by this process (Merriam-Webster Online Dictionary and Thesaurus). The picture of a woman with a glass of (presumably) wine is of an amplifying character.

Subject 1 opted for the strategies of "double translation" – of both visual and verbal components. For the chemical icons, the transformation of substitution was applied, which resulted in a combination of the Latin alphabet letters that make the transliterated acronym 'vyno' from the Ukrainian «ВИНО» ('wine'). The second pun is unfortunately lost. In their Report, Subject 1 once again gives a thorough account of their actions: "While translating this pun, I encountered several difficulties. Firstly, I could not understand how to translate the word 'wine' and to preserve the picture that is essential here because chemical elements are depicted in it. Then it occurred to me that if I wanted to preserve the picture I needed to find the chemical elements that would make up the Ukrainian 'vyno'. Secondly, it was important to render the wordplay with 'solution'. <...> While in English this word has two meanings, the same notions have different nominations in Ukrainian. If I translate 'solution' as 'liquid' it will be inconsistent with the picture of a joyful woman with a glass of wine. Thus, I decided the best decision will be to use the equivalent 'decision' and add the word 'liquid' but cross it out" (see Fig. 3):

Figure 3
Translation by Subject 1 of a Multimodal Pun with a Creative Visual Component



Subject 2 opted for a different set of strategies according to which the verbal component was substituted for a different wordplay (built on the Ukrainian paronyms «цикорій» – ‘chicory’ and «цирконій» – ‘zirconium’):

«Хіміки, звісно, на боці Цирконія, а разом із ним і цикорію, але це не вихід, тому ранок вони починають, як і нормальні люди, з кави» (“Chemists are obviously on the side of zirconium and together with it of chicory, that’s why they begin their morning like all normal people with coffee”).

In their Report, this decision is explained in the following way: “Zirconium is the 40th element of the Periodic Table. The pun is lost because «цирконій» (‘zirconium’) and «цикорій» (‘chicory’) only seem identical. I must admit that I was trying to find some way to unite chemical elements with drinks. Thus, chicory appeared as a coffee substitute.”

As a result of applying this strategy for the verbal component, the visual one was lost (the strategy of omission).

Subject 3 pursued yet another set of strategies in which the visual component remained intact (“zero translation”) while the verbal component was rendered with the help of the transformation of substitution: the original ‘solution’ was changed for the Ukrainian «істина», which led to the reproduction of a famous Latin expression ‘In vino veritas’ (see Fig. 4):

Figure 4

Translation by Subject 3 of a Multimodal Pun with a Creative Visual Component

ІСТИНА у W || I || Ne |

Subject 3’s considerations are expressed in the following way: “In this case, I resorted to the substitution of the original expression in order to preserve the multimodal pun. Immediately, I had an association with the Latin expression ‘In vino veritas’ and I decided to play with it. It was not especially difficult. And I think that the rest of the picture goes well with it because these words may come from the woman with a glass of wine.”

The strategies applied by Subject 4 are those of leaving the visual component of the multimodal pun intact (“zero translation”) and translating literally the verbal one. This combination leads to preserving the first wordplay (“wine”) but losing the second one (“solution”) (see Fig. 5):

Figure 5

Translation by Subject 4 of a Multimodal Pun with a Creative Visual component



According to their Report, this decision of Subject 4 is based on the assumption that “wine” will be understood by the Ukrainian recipients even in its original form: “During the interpretation of this pun, I faced big difficulties with translating the icons of the chemical elements making up the word ‘wine’. Maybe I lacked theoretical knowledge for fulfilling this task. As a result, I took a decision to leave the icons unchanged provided that the word ‘wine’ is familiar to most of the recipients even in English. But obviously this decision leads to the loss of the second instant of a wordplay. The picture of a smiling woman with a glass is also very important because it helps you understand the pun even if you don’t know the English ‘wine’. I believe that I managed to reproduce the multimodal pun but only partially.”

Discussion

In terms of psycholinguistics, the analysis of the subjects’ translations as well as their reports demonstrates some traits of behavior characteristic of semi-professionals’ decision-making in the situations of dealing with translation difficulties/problems. First of all, all the subjects explicitly expressed their willingness to find the best possible solutions for the multimodal puns offered for their consideration, which may be accounted for by their student-oriented approach: though the participation in the experiment was voluntary and anonymous, the “student–professor” factor cannot be absolutely ignored. The experiment did not involve a lot of participants and was not aimed at obtaining statistically-relevant information, but we share Gile’s (2004) opinion that for large-scale experiments it is hard to expect this kind of subjects’ response: “Some students do not know what to report in spite of instructions received, and some ignore the reporting requirement. Fortunately, there are always enough students who do understand and do comply, so that the third stage can take place, and other students can see examples of successful reporting which they then use for guidance” (2004).

Another important fact confirmed by our research is that channelizing the subjects’ recollections through a series of carefully selected and formulated prompts allows to receive some interesting feedback even in the conditions of delayed retrospection, which is of special value when the researcher is interested in some

particular aspects of the translator's behavior rather than in a total account of their actions.

The experiment also validated the tendency to appeal to the subjects' theoretical background at the different stages of problem-solving. We can find these theoretical traces in the names of translation strategies/methods/techniques (transliteration, omission, substitution, calque, etc.), in appreciating the role of background knowledge as a factor of interpretation, in mentioning the cognitive mechanisms involved for the sake of coining the necessary equivalents (association), finally, in understanding the linguistic essence of a pun and its function. We believe that by doing this the subjects try to substantiate their decisions even if they themselves are not always satisfied with them. One can easily find in the reports some elements of frustration typical for such complicated tasks whose solution would require more creativity than practical skills or theoretical knowledge ("I could not understand how to translate the word", "maybe I lacked theoretical knowledge for fulfilling this task", "I believe that I managed to reproduce the multimodal pun but only partially").

Summarizing, we would like to point out the positive role of translation experiments not just as a source of valuable information concerning different aspects of translation as a process and cognitive activity but also as a powerful mechanism of training professional translators and/or interpreters, who can get a better view of their own decision-making and problem-solving through reflective analysis of prior actions.

Conclusions

Setting off the current research project, we formulated two hypotheses for verifying which a psycholinguistic retrospective translation experiment was devised and conducted. The first hypothesis stipulating that multimodal puns with a creative visual component pose a more formidable challenge for interlinguistic translation is confirmed by the subjects all of whom successfully coped with the first multimodal pun and noted that while reproducing it they did not need to juxtapose information presented by visual and verbal modes separately. At the same time, the reproduction of the second multimodal pun was not so successful despite a greater variety of strategies pursued by the subjects.

The experiment also confirmed our second hypothesis about the necessity of mapping out separate strategies for interlinguistic translation of multimodal puns as compared to one-mode verbal ones. In accordance with the obtained results, these strategies are of a double nature: on the one hand, each mode requires its own sub-strategy, but on the other hand, these two sub-strategies must be coordinated for the sake of providing the best possible result for preserving the source formation's ambiguity and humorous effect.

Disclosure Statement

The authors reported no potential conflicts of interest.

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Cross-cultural adaptation and psychometric validation of *The Continuous Traumatic Stress Response Scale*: Ukrainian version

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Abstract. Adapting and validating diagnostic tools aimed to evaluate the post-traumatic effects of war in low-income countries is essential for assessing needs and planning support programs. This paper will describe the process of cross-cultural adaptation and psychometric validation of the Continuous Traumatic Stress Response (CTSR) Scale for war-affected Ukraine. The study includes Phase 1, Translation and cross-cultural adaptation of the Scale, and Phase 2, Psychometric validation of the Scale. Cross-cultural adaptation goes through four stages: forward translation, expert panel review and back translation (n=3), pretesting and cognitive interviewing mental health professionals (n=8), and final version. Psychometric validation includes exploratory (n=200) and confirmatory (n=419) factor analysis, internal consistency, construct validity and test-retest reliability. Findings from the current research indicate that the components identified through factor analyses differed from those in the original questionnaire. While all original items in the questionnaire were retained, they merged into two new factors: “Exhaustion and Rage” and “Fear and Betrayal”. The results show that the overall Cronbach’s Alpha is .858, indicating a high level of internal consistency. Significant correlations exist between the total CTSR Scale score, the subscale scores, PTSD (PCL-5), moral injury (MISS-C-SF), depression (PHQ-9), and anxiety (GAD-7) symptoms, indicating construct validity. The findings demonstrate the test-retest reliability of the CTSR Scale and have practical implications for how it could be implemented in trauma-informed care.

Keywords: continuous traumatic stress, moral injury, secondary traumatic stress, cross-cultural adaptation, translation, validation.

Засєкіна Лариса, Горал Авїва, Федотова Тетяна, Акімова Анастасїя, Мартинюк Анастасїя. Крос-культурна адаптація та валідизація шкали «Реакція на тривалий травматичний стрес»: українська версія.

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Анотація. Адаптація та валідизація діагностичних інструментів, призначених для діагностики посттравматичних наслідків війни в країнах із низьким рівнем доходу, має важливе значення для визначення потреб та планування програм підтримки. У статті викладено процес крос-культурної адаптації та валідизації української версії шкали «Реакція на тривалий травматичний стрес» (РТТС). Дослідження містить стадію 1 - переклад та крос-культурна адаптація шкали та стадію 2 - психометрична валідизація шкали. Крос-культурна адаптація охоплює чотири етапи: прямий переклад, експертна оцінка та зворотний переклад (n=3), претестування та когнітивне інтерв'ю з фахівцями у сфері психічного здоров'я (n=8), а також фінальна версія. Валідизація здійснюється з допомогою експлораторного (n=200) та конфірматорного (n=419) факторного аналізу. У дослідженні також представлені результати внутрішньої узгодженості, конструктної валідності та надійності при повторному тестуванні шкали. Результати дослідження вказують на те, що фактори, визначені за допомогою факторного аналізу, відрізняються від тих, що представлені в оригінальній шкалі. Незважаючи на те, що всі вихідні пункти шкали залишилися незмінними, вони об'єднані у два нові фактори: «Виснаження і лють» та «Страх і зрада». Результати дослідження свідчать про те, що загальний показник альфа Кронбаха становить 0,858, що показує високий рівень внутрішньої узгодженості шкали. Встановлено кореляційні зв'язки між загальним балом за шкалою РТТС та показниками її субшкал, симптомів ПТСР (PCL-5), моральної травми (MISS-C-SF), депресії (PHQ-9) та тривоги (GAD-7), що свідчить про валідність конструкту тривалого травматичного стресу. Отримані результати демонструють надійність шкали РТТС при повторному тестуванні та мають практичне значення для використання у діагностиці та лікуванні ПТСР.

Ключові слова: тривалий травматичний стрес, моральна травма, вторинний травматичний стрес, крос-культурна адаптація, переклад, валідизація.

Introduction

Adapting and validating diagnostic tools for assessing the posttraumatic effects of war on civilian and military populations in low-income countries is crucial for proper assessment and planning of psychological services and social support. The need for translation and cross-cultural adaptation, according to WHO guidelines (2020), arises for several reasons. Among them are cultural relevance (diagnostic tools developed in high-income countries may not accurately capture the same constructs in low-income countries), accuracy and validity (validating diagnostic tools in low-income countries ensures reliability and validity within that population and leads to more accurate data collection and interpretation); and cross-cultural differences (cross-cultural comparisons extend our understanding of universal versus culture-specific aspects of trauma-related mental health symptoms) (Schnyder et al., 2016; Starrs & Békés, 2024). These adaptations are essential for planning effective interventions and training mental health professionals to deal with trauma.

As Armour and colleagues (2016) point out, diagnostic tools for assessing posttraumatic effects must account for cultural expressions and linguistic idioms of psychotrauma that may differ across various cultural contexts. Additionally, the language in assessment tools affects the prevalence rates of PTSD observed across different studies (Blackmore et al., 2020). Blackmore and colleagues (2020) point out that studies using diagnostic assessment tools in the native language indicate a higher prevalence of PTSD in adolescents. Therefore, translating, adapting, and validating

psychological trauma-focused measures in the context of the full-scale invasion of Ukraine could provide accurate assessment and trauma-informed care within Ukrainian civilian communities.

The concept of continuous traumatic stress has been central to our understanding of the psychological consequences of multiple exposures to war trauma. In contrast to posttraumatic stress disorder (PTSD), which often arises from a specific traumatic incident or series of discrete events, continuous traumatic stress involves constant exposure to multiple and intense traumatic experiences, resulting in prolonged physiological arousal, physical and mental fatigue, and heightened morbidity (Goral et al., 2021). Evidence suggests that applying posttraumatic stress models to people facing ongoing traumatic situations in high-risk environments, including wars and armed conflicts, is often not efficient (Kaminer et al., 2018). Although multiple exposures to trauma are represented in diagnoses of complex PTSD (c-PTSD) in the ICD-11, there is still a gap in assessing ongoing threats in the DSM-5 (American Psychiatric Association, 2013). Furthermore, moral injury, including feelings of betrayal and rage, is often omitted from the diagnostic criteria for PTSD or c-PTSD. The original Continuous Traumatic Stress Response (CTSR) Scale, among exhaustion and detachment, fear and helplessness, includes a subscale for moral feelings of betrayal and rage, which enhances the assessment of posttraumatic effects involving moral feelings (Goral et al., 2021). Additionally, the authors of the CTSR Scale point out its sound psychometric properties; however, they underscore the necessity to confirm these findings in various countries and cultures exposed to war-related trauma (Goral et al., 2021).

The aim of this study was to describe the process of cross-cultural adaptation and psychometric validation of the Continuous Traumatic Stress Response Scale for war-affected Ukraine. The study was approved by the Ethical Committee of Lesya Ukrainka Volyn National University (№ 03-24/04/118) on January 19, 2023.

This study was initiated as part of the projects “Exposure to continuous traumatic stress and its consequences among young adults in Ukraine,” which was supported by the British Academy Researchers at Risk Fellowship (2022-2025), and “Living on the edge: continuous traumatic stress in adolescents during military conflict,” which was funded by the Leverhulme Research Support Grant (2023-2024).

Method

The study has two phases: translation and cross-cultural adaptation of the CTSR Scale (phase 1), and psychometric validation of the CTSR Scale (phase 2), represented by exploratory factor analysis followed by confirmatory factor analysis.

Translation and Cross-Cultural Adaptation of the CTSR Scale

The CTSR Scale is an 11-item self-report measure with three subscales assessing exhaustion/detachment, rage/betrayal, and fear/helplessness aspects of continuous exposure to stress (Goral et al., 2021). The CTSR Scale is related to, but

distinct from, PTSD. CTSR items are rated on a 4-point Likert scale ranging from 0 (Not at all) to 3 (Severe) representing the degree of each item's manifestation. The internal consistency is $\alpha = .90$ for the total scale, $\alpha = .86$ for exhaustion/detachment, $\alpha = .82$ for rage/betrayal, and $\alpha = .74$ for fear/helplessness.

In phase 1, the procedure followed the WHO guidelines for translation and cultural adaptation validity of mental health questionnaires (Lina et al., 2019). WHO guidelines provide precise instructions for completing four stages: forward translation, expert panel review and back translation, pretesting and cognitive interviewing, and final version. Table 1 illustrates the translation and cultural adaptation process, including the qualitative and quantitative stages. The Ukrainian version of the CTSR Scale was developed in collaboration with the authors of the original scale (Goral et al., 2021).

Table 1

Translation and Adaptation of the CTSR Scale into the Ukrainian Language

The Sequence of Stages and Steps	Tasks
Qualitative stage	
Forward translation	Applying the conceptual equivalent of a word or phrase vs word-for-word translation
Bilingual (English and Ukrainian) expert panel review	1) Identifying and resolving the inadequate expressions/concepts of the translation and discrepancies between the original text and target text; 2) Producing a complete translated version of the Scale
Back translation	Particularly problematic words or phrases that do not completely capture the concept addressed by the original item brought to the attention of mental health professionals
Pretesting and cognitive interviewing	Pretesting the instrument on the target population
Final version	Developing the final version of the instrument in the Ukrainian language
Quantitative stage	
Exploratory and confirmatory factor analyses	To validate the factor structure and psychometric properties of the Ukrainian version of the CTSR Scale

Qualitative Stage

Forward translation: we compared four versions of the translated text to reach consensus on the final questionnaire translation. We thoroughly discussed the

selection of words and grammatical structures in each instance. The primary objective of this stage was to identify conceptual equivalents for words or phrases rather than relying on literal translation. All translators were instructed to translate the original terms in a manner that best captured their content. A bilingual expert panel (n=3) consisting of one native speaker and two Ukrainian psychologists with English at an advanced level questioned some linguistic constructions and suggested alternatives. In particular, the sentence “I feel that I cannot protect those who depend on me” was initially translated as “Я відчуваю, що не можу захистити тих, хто залежить від мене” to avoid any lexical and grammatical transformations in the translated text. After discussing the alternatives, the final version close to the original text was accepted: “Я відчуваю, що не можу захистити тих, хто від мене залежить” to specify the Ukrainian word order and theme-rheme patterns in the Ukrainian language.

Back translation: two translators (one native in English with Ukrainian as a second language, and the other vice versa) conducted back translations. The translators worked independently and were not provided with the original version of the questionnaire. At this stage, the focus of the back translation was to ensure conceptual and cultural equivalence rather than linguistic correspondence.

Pretesting and cognitive interview aimed at assessing the equivalence and comprehension of the scale. A group of mental health professionals (n=8), each with at least five years of counselling experience, who were enrolled in the Continuing Professional Development Program in Clinical Psychology at Lesya Ukrainka Volyn National University, assessed the equivalence and comprehension of each item using the questionnaire suggested by Lima et al. (2016). Following each item from the CTSR Scale, the assessment was made regarding semantic (the meaning of words, vocabulary, and grammar), cultural (terminology and events relevant to the population), idiomatic (usage of idiomatic and colloquial expressions), and conceptual (the proposed construct in the original instrument) equivalence. To conduct this assessment, experts compared the items from both versions and assigned ratings using a 3-point Likert scale: 0 = no equivalence observed between the versions; 1 = uncertain; and 2 = equivalence identified between the versions. When equivalence was lacking or uncertain, mental health professionals were asked to revise them. Table 2 shows the changes in the Ukrainian version of the CTSR Scale.

Table 2

Linguistic Changes in the Translated Version of the CTSR Scale

Items	Translated version	Changes after pretesting and cognitive interview	Comments
# 4: I feel that my life has no meaning	Я відчуваю, що має життя не має сенсу	Я відчуваю, що моє життя беззмістовне	The word “беззмістовне” is more coherent with the word “life”.

# 7: I feel that no one understands me	Я відчуваю, що ніхто мене не розуміє	Мені здається, що ніхто не розуміє мене	The original item expresses experience rather than perception or feeling. The target item also highlights the change due to the Ukrainian word order and theme-rheme patterns in the Ukrainian language.
# 8: I have intense feelings of fear or horror	Я відчуваю сильний страх та жах	Я відчуваю сильний страх та тривогу	This semantics is more appropriate, as the word “сильний” intensified the nouns “fear and anxiety”.
# 9: I have episodes of rage	В мене трапляються напади злості	В мене трапляються епізоди люті	This semantics is more appropriate for individuals with lived experience in the Ukrainian context.
# 11: I feel that I cannot protect those who depend on me	Я відчуваю, що не можу захистити тих, хто залежить від мене	Я відчуваю, що не можу захистити тих, хто від мене залежить	The translation specifies the Ukrainian word order in the sentence and theme-rheme patterns in the Ukrainian language.

Psychometric Validation of the CTSR Scale

The psychometric validation of the CTSR Scale (phase 2), includes exploratory and confirmatory factor analyses, examining internal consistency, construct validity and test-retest reliability.

Sampling and Participants

The survey was conducted between March and May 2023 at Lesya Ukrainka Volyn National University and Volyn Medical Institute, where the Ukrainian Psychotrauma Centre organized psychosocial support for civilians affected by war trauma. As Volyn Oblast is situated on the border with Belarus, residents have been exposed to the ongoing life threats of multiple missiles and continuous sirens. Participants for psychosocial support programs were recruited through social media platforms, where information about the programs was shared.

Individuals who applied to participate in psychosocial support programs (Zasiiekina et al., 2023) were approached and asked to participate in the assessment. This study exclusively used pre-test data collected before the psychosocial support program. The inclusion criteria were as follows: aged 17 years or older; have stayed in Ukraine for at least one month before the assessment; have been experiencing ongoing threats; and have not been diagnosed with a neurological or mental illness not directly related to the experience of the invasion and its consequences.

In total, 639 participants were initially enrolled to the study. Of these, 11 withdrew at a later stage, and 9 were diagnosed with mental illness not related to trauma. Thus, the final sample includes 619 participants, aged 17-41 years (mean age = 18.87, SD = 2.206). The data obtained from 200 participants who applied for psychosocial support by the Ukrainian Psychotrauma Centre at Volyn Medical Institute between March-April 2023 was used for exploratory factor analysis, while the data obtained from 419 participants who applied for psychosocial support by the Ukrainian Psychotrauma Centre at Lesya Ukrainka Volyn National University between April-May 2023, was used for confirmatory factor analysis. Despite the differences in sample size, the two samples do not statistically differ in terms of age ($t(617)=5.54, p=.29, 95\% \text{ CI} = -.25, .45, d = .05$), sex ($\chi^2=1.46, df=1, p>.05$), family trauma ($\chi^2=2.99, df=3, p>.05$), displacement ($\chi^2=.41, df=1, p>.05$) and having trauma-related mental health symptoms ($\chi^2=.80, df=1, p>.05$).

Sample demographic characteristics are presented in Table 2. It can be seen that most participants (87.56%) were females. Nearly one third of the sample (38.13%) experienced past family trauma, including the Holodomor ($n=77$) and other family traumas ($n=159$). About 12% of participants had been forcibly displaced. To assess the test-retest reliability of the CTSR Scale, the study involved repeated assessments of additional randomly selected participants ($n=50$) from Volyn Medical Institute. These participants did not take part in a psychosocial support program and volunteered for the study. The repeated assessment was conducted over a one-month period (March-April 2023).

To assess the CTSR Scale construct validity and relevance to trauma-related mental health symptoms, we used the test battery consisting of measures that are known to correlate with war trauma in civilian populations (Fani et al., 2021; Vukčević et al., 2023; Zasiiekina et al., 2022). Together, these measures assessed moral injury, PTSD symptoms, depression and anxiety.

The Moral Injury Symptoms Scale (MISS-M-SF) assesses betrayal, guilt, shame, moral concerns, loss of trust, loss of meaning, difficulty forgiving, self-condemnation, religious struggle, and loss of religious/spiritual faith. Cronbach's alpha is .73 (95% CI .69–.76), and test-retest reliability is .87 (Koenig et al., 2018). The Ukrainian version of the MISS-M-SF scale for civilians (MISS-C-SF) was culturally adapted and validated by Zasiiekina and Kozihora (2022). Reliability was assessed through internal consistency using Cronbach's α = .70 (n=111), and the test-retest reliability after 8 days, r = .67, p ≤ .01 (n=32). Ten items were rated on a 10-point scale, ranging from 0 (Not at all) to 10 (Extremely). Items 5, 6, 7, 9, and 10 involve reverse scoring, and the cumulative score reflects the severity of moral injury, with a potential range of 10-100.

The PTSD Checklist for DSM-5 (PCL-5) is a 20-item self-report measure aimed to assess PTSD symptoms experienced during the last month in accordance with DSM-5 criteria (Weathers et al., 2013). The active-duty soldiers and civilians use the military and civilian forms of PCL-5 respectively. Participants were instructed to complete the PCL-5 considering the most stressful life event in their military/war experience. Items were rated on a 5-point scale, ranging from 0 = Not at all to 4 = Extremely, and summed for a total symptom severity score. Internal consistency of PCL-5 is α = .97.

The 9-item Patient Health Questionnaire (PHQ-9) and 7-item Generalized Anxiety Disorder (GAD-7) were used to measure depression and anxiety symptoms, respectively. These two instruments are short screening measures often utilized to assess comorbidities of MI. Each item on these measures is rated on 4-point Likert scale (from 0 to 3) indicating how often each symptom has occurred within the past 2 weeks. Total scores range from 0 to 54 for PHQ-9 and 0–42 for GAD-7, with higher scores indicating more severe symptoms. PHQ-9 demonstrates strong internal consistency using Cronbach's α = .70 and test-retest reliability is .83 (Kroenke et al., 2001). Internal consistency of the GAD is .92 (Spitzer et al., 2006).

The study uses SPSS 28.0 with Amos for data entry and statistical analysis.

Table 2
Demographic Characteristics of the Participants (n=619)

	Mean (SD)	Percentage
Age (mean/SD)	18.84 (2.07)	
Age range	17-41	
Sex		
Female	542	87.56
Male	75	12.12

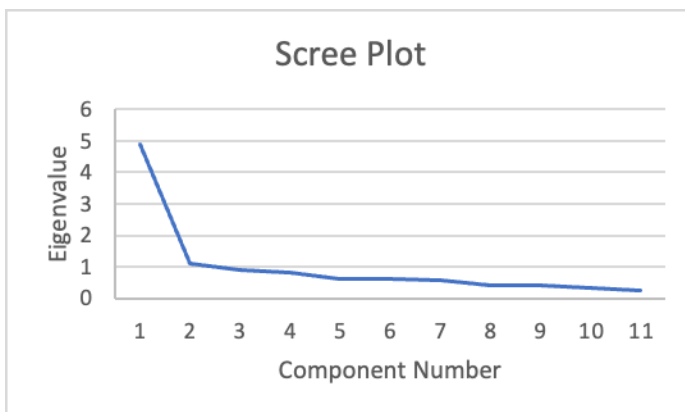
Unspecified	2	.32
Previous family trauma		
Yes	236	38.13
Holodomor	77	32.63
Other	159	66.97
No	383	61.87
Displaced		
Yes	75	12.12
No	544	87.88

Results

Exploratory Factor Analysis

The KMO test result was adequate at .869, and Bartlett’s test of sphericity was statistically significant ($p < .001$). Factors to be retained were evaluated based on the following criteria: eigenvalue greater than one supported by the scree plot and Horn’s parallel analysis (Hoyle & Duvall, 2004, pp. 301–315). Eigenvalues were 4.572 for factor 1 and 1.128 for factor 2. The scree plot indicated that two factors should be retained, explaining 51.82% of the variance (Fig. 1).

Figure 1
Scree Plot of Exploratory Factor Analysis



All items had loadings values of .50 or greater. Assuming two factors, we proceeded to estimate the exploratory structure of these factors among the items of the adapted CTSR Scale. Considering the conceptual commonalities between the variables, we named factors as “Exhaustion and Rage” and “Fear and Betrayal”. Loadings of all items on their respective factors are illustrated in Table 3. The highest loading was seen for item 2 “I feel mentally exhausted”, which referred to mental exhaustion (item loading .78), while the lowest loading was seen for item 6 “I find it hard to trust the people around me”, which referred to one’s distrust towards others (item loading .52).

Table 3
Results of Exploratory Factor Analysis (n=200)

	Factor 1 Exhaustion and Rage	Factor 2 Fear and Betrayal
#2 I feel mentally exhausted	.78	
#1 I feel unmotivated	.77	
#5 I have difficulty controlling my emotions	.72	
#4 I feel that my life has no meaning	.61	
#9 I have episodes of rage	.59	
#7 I feel that no one understands me	.59	
#11 I feel that I cannot protect those who depend on me		.72 .70
#3 I feel that my life is in danger		
#8 I have intense feelings of fear and horror		.68
#10 I feel betrayed		.56
#6 I find it hard to trust the people around me		.52
Eigenvalues		
% of variance	4.89	1.12
Cronbach's alpha	44.43	10.13
Factor mean (SD)	.84	.76
Range	.86 (.88) 0-3.00	.60 (.78) 0-3.00

Confirmatory Factor Analysis

Confirmatory factor analysis was performed to confirm the resulting 2-factor model (Figure 2). As indicated in Table 3, all eleven items were measured in two factors. The comparative fit index is in good parameters, including CMIN/DF \leq 5.000, CMIN=3.597, and the root mean square error of approximation is on acceptable level (RMSEA \leq .080, RMSEA = .079) (Bentler & Bonett, 1980; Chen et al., 2008). The full 90% confidence interval for the RMSEA is also in acceptable parameters (.066<RMSEA CL₉₀ < .092).

Overall, the model fit indices indicated an acceptable model fit based on CMIN/DF and RMSEA according to model specifications, degrees of freedom, and sample size (Chen et al., 2008).

The correlation between latent factors was significant, $r=.85$ at $p < .001$. The item loadings were all significant at $p < .001$ and ranged from .43 (item 11 “I feel that I cannot protect those who depend on me”) to .80 (item 5 “I have difficulty controlling my emotions”).

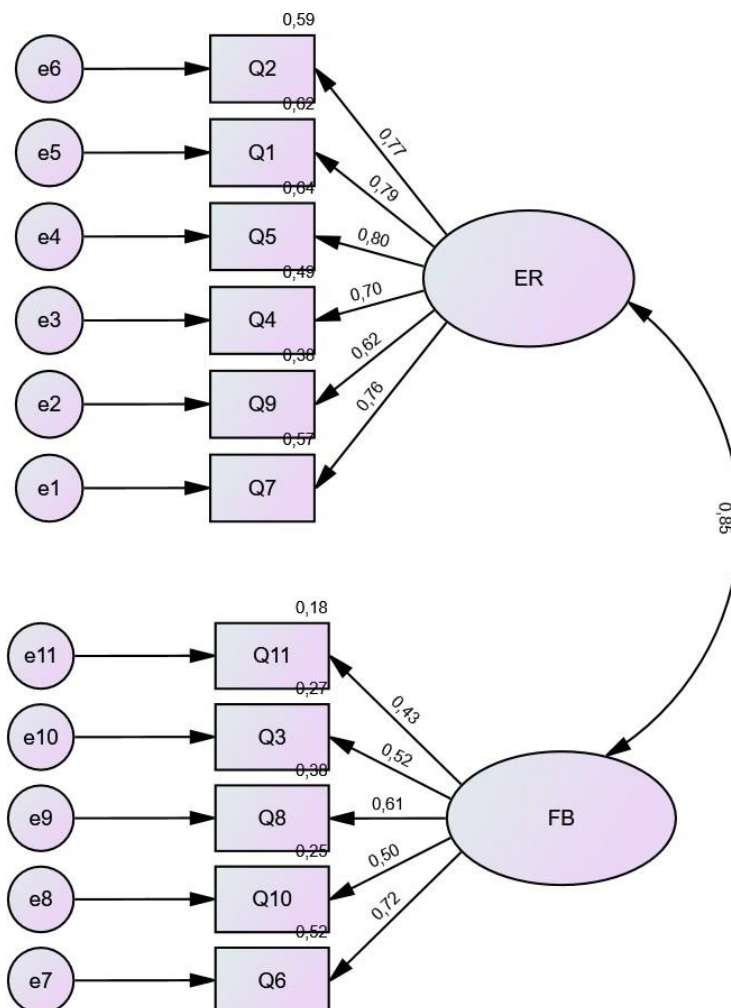
Internal Consistency

The overall Cronbach’s α of the Scale was .858, indicating reliable internal consistency (Hajjar, 2018).

Construct Validity

Construct validity was calculated by assessing correlations between CTSR Scale scores and measures of specific posttraumatic symptoms, including moral injury, PTSD symptoms, depression and anxiety (Table 4).

Figure 2
A 2-factor Model for the Ukrainian Version of the CTSR Scale



Significant correlations were identified between the total CTSR Scale and subscale scores, and all included measures of related posttraumatic effects. The results indicate

that most of these correlations are positive and fall in the moderate range. More than 50 % of the variance in stress symptoms is accounted for by any single correlation between the PCL-5 scale and each CTSR factors (55% to 52%), demonstrating a significant overlap in the symptoms captured by the two scales: CTSR and PCL-5 scales.

Table 4

Correlations Between CTSR Scale Scores, Moral Injury, Depression and Anxiety

	CTSR total score	Exhaustion and Rage	Fear and Betrayal
PCL-5	.797**	.739**	.722**
MISS-C-SF	.540**	.525**	.461**
PHQ-9	.785**	.776**	.640**
GAD-7	.670**	.623**	.578**

Note. $p \leq .01$; MISS-C-SF=Moral injury, PCL-5=PTSD symptoms, PHQ-9=Depression, GAD-7=Anxiety

Test-retest Reliability

The questionnaire's test-retest reliability was satisfactory, with no difference between participants' assessments over a one-month period (Table 5).

Table 5

Test-retest Reliability. Results of the t-test for Time 1 and Time 2 Scores in the Sample (n=50)

	T1	T2	t	p
CTSR Scale	4.26	4.33	.07	.47
Total Score	(3.48)	(4.10)		
Mean (SD)				
Exhaustion and	1.13	1.00	.36	.36
Rage	(1.22)	(1.44)		
Mean (SD)				
Fear and	1.34	1.38	.06	.48
Betrayal	(1.56)	(1.44)		
Mean (SD)				

T=Time

Discussion

This study focused on the cross-cultural adaptation and psychometric evaluation of the CTSR Scale. The adaptation process included examining cultural, political and

linguistic aspects to ensure the tool's potential for war-affected settings in Ukraine. Our findings are in line with recent studies and show that following four stages, including forward translation, expert panel review and back translation, pretesting and cognitive interviewing, and final version, are necessary steps in the cultural adaptation of diagnostic tools (Balqis-Ali et al., 2021; Kazlauskas et al., 2023). Considering these stages allows experts to discuss discrepancies between translated versions and select the most appropriate lexical and grammatical equivalent in the target language.

Findings from the current research indicate that the components identified through factor exploratory and confirmatory analyses differed from those in the original CTSR questionnaire. While all original items in the questionnaire were retained, they merged into two new factors: "Exhaustion and Rage" and "Fear and Betrayal". Therefore, new subscales emerged from existing constructs, which might be explained by the impact of the Ukrainian culture and ongoing war context. Despite changes in the number and content of factors, the overall conceptual ideas of continuous traumatic stress and its manifestation in war-affected population remained similar.

To evaluate the construct validity of the CTSR Scale, we calculated correlations between CTSR Scale scores and measures of specific posttraumatic effects, such as PTSD symptoms, moral injury, depression, and anxiety. The analysis revealed significant correlations between the total CTSR scores, the subscale scores and posttraumatic effects. These findings suggest that the CTSR Scale is effectively measuring constructs that are theoretically related to posttraumatic stress disorder (PTSD), thereby supporting the validity of the CTSR Scale as a tool for assessing posttraumatic effects during ongoing multiple exposures to trauma (Foley et al., 2022; Zasiiekina et al., 2022). However, the findings indicate high concurrent validity between the CTSR Scale and PCL-5. This is not consistent with the original CTSR Scale (Goral et al., 2021) and could be related to the cultural specifics of war-affected Ukraine. This overlap may also be explained by the fact that both constructs involve responses to traumatic stress and share common emotions such as feelings of detachment, fear, and helplessness. Key differences, however, lie in the context and duration of the stressors. PTSD is linked to specific past trauma, while continuous traumatic stress is related to ongoing threats. Additionally, the CTSR Scale includes feelings of betrayal and distrust, adding the dimension of moral injury to the assessment of PTSD. Therefore, despite high concurrent validity, findings consistently suggest that psychological distress under ongoing threat should be assessed by both PTSD and continuous traumatic stress measures, as these constructs are rooted in different theoretical frameworks, symptomatology, and contexts (Goral et al., 2021; Kaminer et al., 2018).

The significant correlations between CTSR Scale and trauma-related symptoms strengthen the CTSR Scale's capability to accurately reflect the posttraumatic effects under ongoing exposure to trauma, represented by moral injury, depression and anxiety.

A major strength of this study was the thorough exploration of how culture, context, and language influence the cross-cultural adaptation process. This approach provides both the translation's accuracy and the instrument's validity. The findings represented in this paper shed new light on our understanding of what experience constitutes

continuous traumatic stress. The results of the study have practical implications for assessment and treatment plans in trauma-informed care.

Limitations

The sample was heterogeneous in terms of sex, status of displacement, and previous family trauma. This heterogeneity complicates the generalizability of the findings, introduces potential confounding variables, and creates risks of biasing the results. Further studies should include relevant covariates in the model to account for this heterogeneity. The RMSEA is at a mediocre level; however, considering CMIN/DF, the model specifications, degrees of freedom, and sample size, the findings show an acceptable model fit.

Conclusion

The aim of the present research was to examine the process of cross-cultural adaptation and psychometric validation of the CTSR Scale for war-affected Ukrainians. The study identified a two-factor model, including “Exhaustion and Rage” and “Fear and Betrayal” subscales which differs from the original Scale. This implies that Ukrainian culture and war context affect the perception of ongoing threats and the verbal disclosure of war-related experience. The analysis of the items on the CTSR Scale undertaken in this study has extended our knowledge of posttraumatic effects arising from ongoing multiple exposures to war-related trauma. The findings of this study have several important implications for the assessment of PTSD and associated mental health symptoms, including moral injury, depression and anxiety under the circumstances of continuous traumatic stress.

Data Availability Statement

The data that support the findings of this study are openly available in Mendeley Data: Zasiékina, Larysa (2024), “Exploratory and confirmatory factor analyses of the Ukrainian version of CTSR Scale”, Mendeley Data, V1, <https://doi.org/10.17632/22xt2zj86t.1>.

Disclosure Statement

The authors reported no potential conflicts of interest.

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Appendix

Ukrainian Version of the Continuous Traumatic Stress Response (CTSR) Scale Українська версія шкали «Реакція на тривалий травматичний стрес» (PTTC)

Назва субшкали	Перелік пунктів
Виснаження та лють	# 1. Я почуваюся демотивованим/-ою. # 2. Я почуваюся розумово виснаженим/-ою. # 4. Я відчуваю, що моє життя беззмістовне. # 5. Мені важко контролювати свої емоції. # 7. Мені здається, що ніхто не розуміє мене. # 9. У мене трапляються епізоди люті.
Страх та зрада	# 3. Я відчуваю, що моє життя в небезпеці. # 6. Мені важко довіряти людям, які мене оточують. # 8. Я відчуваю сильний страх та тривогу. # 10. Я почуваюся зрадженим/-ою. # 11. Я відчуваю, що не можу захистити тих, хто від мене залежить.

0=Зовсім ні, 1=Деякою мірою, 2=Дуже сильно, 3=Нестерпно сильно

Adding synesthetic metaphors in English-Ukrainian translations of fiction

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Abstract. This article combines analytical tools of cognitive translation analysis and affordances of corpus linguistics to inquire into the translation procedure of addition of synesthetic metaphoric descriptions in English-Ukrainian translations of fiction. The research is based on 40 examples of addition, extracted manually from Ukrainian translations of *Little Fires Everywhere* by Celeste Ng, *The Hours* by Michael Cunningham, and *The Secret History* and *The Goldfinch* by Donna Tartt. All the 40 synesthetic metaphoric descriptions introduced into Ukrainian translations correspond to the source-text non-metaphoric descriptions, though in theory, added synesthetic metaphors could refer to a point in the original where there is no text at all. All of the added synesthetic metaphoric descriptions are based on the TOUCH source domain, which supports Ullmann's (1957) claim that TOUCH being the most accessible sensory mode, is a predominant source of cross-sensory transfer. The analysis of results suggests that the translators' choice to add synesthetic metaphoric descriptions to the target text is influenced by the higher conventionality degree of such descriptions compared to that of the direct non-metaphoric translation equivalents of the non-metaphoric source-text material.

Keywords: *addition; conventionality degree; cross-sensory transfer; synesthetic metaphor; translation, GRAC corpus.*

Жулавська Ольга, Куліш Владислава, Черник Марина. Привнесення синестезійних метафор в англо-українські переклади художніх текстів.

Анотація. У статті поєднано аналітичні інструменти когнітивного перекладацького аналізу та можливості методів корпусної лінгвістики задля детального дослідження когнітивної перекладацької процедури привнесення синестезійних метафор в англо-українські переклади художніх текстів. В основу дослідження лягли 40 прикладів привнесення синестезійних метафор, які було вилучено безпосередньо з текстів українських перекладів «Усюди жевріють пожежі» Селесте Нг, «Години» Майкла Каннінгема, та «Таємна Історія» та «Щиголь» Донни Тартт. Усі 40 синестезійних метафоричних дескрипцій, привнесені в українські переклади, відповідають оригінальним, не метафоричним дескрипціям, хоча теоретично вони взагалі можуть відноситися до такого місця, де оригінальний текст відсутній. Усі привнесені синестезійні метафоричні дескрипції ґрунтуються на домені дотикові відчуття, Усі привнесені синестезійні метафоричні дескрипції ґрунтуються на домені дотикові відчуття, що відповідає теорії Ульмана, за якою домен дотикові відчуття вважається найбільш сенсорно доступним та частіше за інші слугує джерельним доменом. Результати аналізу дозволяють припустити, що перекладач свідомо

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обирає когнітивну операцію привнесення синестезійної метафоричної дескрипції спираючись на той факт, що ступінь конвенційності таких метафоричних дескрипцій, у порівнянні з прямими не метафоричними еквівалентами, є вищим.

Ключові слова: привнесення, ступінь конвенційності, міжсенсорне перенесення, синестезійна метафора, переклад, корпус ГРАК.

Introduction

Cognitive metaphor translation studies have gained significant popularity in recent years since they aim to look at the mental structures and processes “behind” the observable linguistic facts by applying various empirical and experimental research designs (Risku, 2013). Process-oriented research employs advanced technologies, including eye-tracking, keystroke logging, EEG measurements of brain activity (Krings, 1986; Tirkonen-Condid, 2002; Risku, 2013) as well as think-aloud protocols (TAP) (Alves et al., 2010; Halverson, 2010). Product-oriented investigations use methodological tools of cognitive linguistics to discover conceptual structures that underpin the source- and target-text metaphoric descriptions and influence translators’ choices (Al-Harrasi, 2001; 2020; Kovalenko & Martynyuk, 2018; Papadoudi, 2010; Schaffner, 2004). Combined with the corpus data, such studies reveal cross-linguistic differences between conceptual metaphors and work out classifications of their linguistic variation (Deignan, Danuta & Solska, 1997, p. 352-360).

This research article aligns with the product-oriented conceptual metaphor translation studies as it is focused on translating a non-metaphoric source-text material using a synesthetic metaphor. Putting together analytical tools of cognitive metaphor translation theory and affordances of corpus linguistics, it aims to reveal correlations between the translators’ choice to introduce a synesthetic metaphoric description into the target text and the conventionality degree of this description compared to that of the non-metaphoric translation equivalent of the non-metaphoric source-text material. Besides, it touches upon psycholinguistics by exploring how translators cognitively process and convert non-metaphoric source-text material into synesthetic metaphoric descriptions. This process demonstrates how synesthetic metaphors, which involve atypical ‘cross-talk’ between brain areas and perceptual domains, can influence linguistic interpretation and translation (Simner, 2007)

Firstly, despite great interest in metaphor in contemporary translation studies, synesthetic metaphors have been given little attention so far (Day, 1996; Strick-Lievers, 2016, Zhao, 2015). However, synesthetic metaphors represent an attractive object of translation analysis since, unlike typical conceptual metaphors that map abstract concepts in terms of sensory-motor experience, they map one sensation in terms of another. Therefore, it is challenging to investigate how the conventionality degree of the non-metaphoric material and the metaphoric synesthetic description intertwine with the translator's choices.

Secondly, it has been stressed that the addition of a metaphor to the target text should be accounted for in metaphor translation studies (Toury, 1995, p. 83) since it

is mainly caused by differences between the source-language and target-language cultures (Newmark, 1988, p. 91), most translation scholars ignore this translation procedure. Therefore, it requires further exploration.

Theoretical background

Linguistic synesthesia has a neurological basis (Werning, Fleischhauer & Beşeoğlu 2006, p. 2365). It is defined as “the perception or description of the perception of one sense modality in terms of another” (Preminger, 1974, p. 839) or “a perceptual phenomenon upon which linguistic description is based” (Yu, 2003). Neurological is described as the abnormal interaction of neural processes involving different senses or modalities (Werning, Fleischhauer & Beşeoğlu, 2006, p. 2365). According to varying estimates, it occurs in about 1/20000 to 1/200 of the population (Cytowic, 1997; Baron-Cohen et al., 1996; Ramachandran & Hubbard 2001; Werning, Fleischhauer & Beşeoğlu, 2006, p. 2365).

In most linguistic studies, synesthetic descriptions are addressed as metaphors (Duan & Gao, 2014, p. 290-300; Werning, Fleischhauer & Beşeoğlu, 2006, p. 2365; Zhao & Huang, 2015). In cognitive linguistics, **metaphor** is defined as a set of mappings (conceptual correspondences) between two conceptual domains: the source domain/concept that is drawn upon to create a metaphoric construction and the target domain/concept that is described by the metaphor (Lakoff & Johnson, 1980; Kövecses, 2002; 2005). In this research, the domain is understood in Langacker’s interpretation (2008, p. 44-46) as “any conception or realm of experience”. In a synesthetic metaphoric mapping, both domains are perceptual (Strick-Lievers, 2016; Werning, Fleischhauer & Beşeoğlu, 2006, p. 2365). For example, vision is touch (*lights glowing softly in the living rooms*); smell is touch (*The air was thick with sweat and the sharp sour smell of beer*) / taste (*same smell – dusty and sweet*) / temperature (*warm spicy scent of her skin*); hearing is temperature (*in a voice icy enough*) / touch (*Mrs. Richardson opened her mouth for a sharp remark*) / taste (*savouring the words like a cherry Life Saver*), etc.

Metaphor translation requires not only the understanding of cross-sensory mappings but also the cognitive effort associated with re-mapping these metaphors into the target language. Recent studies have highlighted that translating novel metaphors is more cognitively demanding than translating literal language. Specifically, Jankowiak and Lehka-Paul (2021) found that novel nominal metaphors necessitate longer translation times due to the robust activation of comparison mechanisms, especially in the source language – target language translation direction. This suggests that the complexity of translating metaphors is modulated by the directionality of translation, thereby increasing the cognitive load on translators (Jankowiak & Lehka-Paul, 2021).

Empirical studies have shown that linguistic synesthesia is selective and mostly one-directional (Ullmann, 1957; Williams, 1976; Yu, 1992; Shen 1997). According to Ullman, cross-sensory transfers are characterized by three principles. The first one is that of “hierarchical distribution,” which states that synesthetic transfers tend to go

from the ‘lower/accessible/basic’ to the ‘higher/less accessible/less basic’ sensory modes, namely, touch → taste → smell → sound → sight (Ullmann, 1957). Such distribution “is more natural and is preferred over the opposite mapping” (Shen, 1997). The second principle claims that “touch, the lowest level of sensation, is the *predominant source* of transfers”. The third principle is that “sound rather than sight is the *predominant destination* for synesthetic transfers” (Ullmann, 1957). Ullmann’s theory was supported by Williams’ study of synesthetic descriptions in colloquial English (Williams, 1976) and Shen’s (1997) research of synesthetic poetic metaphors.

Following Strick-Lievers (2016), we divide synesthetic metaphors into conventional and original. In conventional synesthetic metaphors like *soft smell* or *said sharply*, the focal words (adjectives or adverbs) adapt their meaning to the tenor words (nouns or verbs). In the above examples, the focal words lose their literary meanings that are incompatible with the meanings of the tenor words and, consequently, their reference to the touch domain and acquire figurative synesthetic meanings prompted by the linguistic context. In original synesthetic metaphors like *the candyfloss twinkle of a Disney princess / the golden hush of her*, both the focal and tenor words keep their conflicting meanings.

Methodology

Our sample includes 40 synesthetic metaphoric descriptions added in Ukrainian translations to render non-metaphoric linguistic expressions. All metaphoric descriptions were extracted manually from Ukrainian translations of novels by American authors. They are Celeste Ng’s *Little Fires Everywhere* (2017) translated by Anastasiya Dudchenko (Ng, 2018), Michael Cunningham’s *The Hours* (1998), translated by Oksana Postranska (Cunningham, 2017), and Donna Tartt’s *The Secret History* (1992), translated by Bohdan Stasiuk (Tartt, 2017), and *The Goldfinch* (2013), translated by Volodymyr Shovkun (Tartt, 2016).

Little Fires Everywhere (Ng, 2017) is Celeste Ng’s second novel, which in April 2020 was number one on *The New York Times* fiction best-seller list. The story is about two families living in 1990s Shaker Heights who are brought together through their children. The novel touches upon the crucial topic of family and parent-children’s relationships in families with different social statuses. *The Hours* (Cunningham, 1998) won the 1999 *Pulitzer Prize for Fiction* and the 1999 *PEN/Faulkner Award for Fiction*. The book is about three generations of women affected by the classic novel *Mrs. Dalloway* by Virginia Woolf, published in 1925. Cunningham’s novel shows thoughts and sensations of the main characters, depicted as they would occur in real life, unfiltered, flitting from one thing to another, and often unpredictable. The narrator of *The Secret History* (Tartt, 1992), Richard Papen, one of the six students who murdered their friend Edmund “Bunny” Corcoran, reflects years later upon the situation that led to the murder. The novel explores the circumstances and lasting effects of Bunny’s death on the academically and socially

isolated group of Classics students he was a part of. *The Goldfinch* (Tartt, 2013) won the 2014 *Pulitzer Prize for Fiction*. The novel tells about 13-year-old Theodore Decker, who survived a terrorist bombing at the Metropolitan Museum of Art where his mother was killed. Abandoned by his father, Theo is taken in by the family of a wealthy friend. Bewildered by his strange new home on Park Avenue, disturbed by schoolmates who do not know how to talk to him, and tormented above all by his unbearable longing for his mother, he clings to one thing that reminds him of her: a miniature mysteriously captivating painting *The Goldfinch* that ultimately draws Theo into the underworld of art. These novels were chosen as they are authored by modern American fiction writers, depicting the lives of contemporary American society there. Besides, in these novels, sensations play a crucial role, revealed in the richness of the authors' language in linguistic synesthesia.

Procedure

To handle the bulk of our sample, we take the following steps.

1. To identify the cases of addition of synesthetic metaphoric descriptions in Ukrainian translations using Shuttleworth's (2017) definition of addition, according to which it occurs "when a metaphorical expression in the target text corresponds to a source text non-metaphor, or to a point in this source text where there is no text at all." To interpret the meanings of the source- and target-text descriptions, we refer to dictionary definitions of the corresponding textual material and consider the context. All the 40 examples of addition analysed in this research represent the cases in which synesthetic metaphors, added in Ukrainian translations, correspond to the source-text non-metaphoric descriptions. We have not registered any cases in which the target description occurs at the point where there is no text at all in the original.

Following one of Ullmann's theoretical principles, we hypothesise that the TOUCH cross-sensory mapping is the predominant source of the added synesthetic metaphors as, according to the "hierarchical distribution", it is the 'lowest/most accessible/basic' of sensory modes (Ullmann, 1945, 1957, 1966 [1963]).

2. To explain the translator's choice, we identify the direct equivalent of a non-metaphoric source-text expression, establish its conventionality degree, and compare it with the conventionality degree of the metaphoric synesthetic description chosen by a translator. We hypothesise that synesthetic metaphoric descriptions are preferable because their conventionality degree is higher.

To describe the conventionality degree, we exploit the affordances of the "General Regionally Annotated Corpus of Ukrainian" (Grac v.17), available at <http://uacorporus.org/>. Grac v.17 is an extensive representative collection of Ukrainian texts (more than 600 million tokens) with a built-in program to extract the necessary samples and process them with quantitative and statistical instruments.

The degree of conventionality is linked to the relative frequency of a description. To interpret the relative frequency, we turn to the probability theory assumptions, according to which the event is considered original/unique if the

probability of its occurrence is/ or tends to 0,00. The more often the event happens, the higher the probability of its occurrence (Kenney & Keeping, 1948). One can assume that metaphoric descriptions, which relative frequency in Grac v.17 is .00 or tends to .00, are unique or, in other words, original, their degree of conventionality is approaching 0. At the same time, metaphoric descriptions which relative frequency in Grac v.17 tends to 1.00 are conventional. The higher the relative frequency is, the higher is the conventionality degree.

Results and Discussion

This section presents the qualitative and quantitative analysis results of the 40 synesthetic metaphoric descriptions added in Ukrainian translations. The metaphors added in Ukrainian translations are all of a conventional nature. The results show that all descriptions are based on the touch source domain cross-sensory mapping.

In examples (1-4), the translator retains the tenor noun using its direct literal equivalent but substitutes the focal adjective with its contextual synonym, which results in a synesthetic metaphoric description:

(1) Across the table, Lexie and Trip exchanged **wary**, unsurprised **glances** (Ng, 2017). – На іншому кінці столу Лексі й Тріп обмінялися **напруженими поглядами** людей, які нічого іншого не чекали [Na inshomu kintsi stolu Leksi y Trip obminialysia **napruzhenymy pohliadamy** liudei, yaki nichoho inshoho ne chekaly] [**strained glances**] (Ng, 2018).

In example (1), Celeste Ng employs a non-metaphoric description *wary glances* to depict the tense atmosphere during the supper in the Richardson family. The adjective *wary* is used in its literal meaning, “feeling or showing caution about possible dangers or problems” (OUP, n.d.; MWD, n.d.).

Instead of using the direct equivalent of *wary*, the adjective *насторожений* (“attentively strained, concerned on waiting for something” (ADUL, n.d.) to modify the noun *погляди* [*looks*], the translator chooses to employ the adjective *напружений* [*strained*] creating a conventional synesthetic metaphor based on the vision is touch cross-sensory mapping. The literal meaning of the focal adjective “expressing/showing toughness and stiffness” (ADUL, n.d.) belongs to the domain of touch. Its figurative meaning concerning vision is “showing tension” (ADUL, n.d), making it quite suitable in the given context.

We hypothesise that at least partly, the translator’s choice can be explained by a higher conventionality degree of the synesthetic metaphoric description (0,54) in comparison with the direct translational equivalent (0,25) (Grac v.17, 2023).

(2) Mr. and Mrs. Wright exchanged **uneasy looks**, as she had known they would (Ng, 2017). – Містер і місіс Райт обмінялися **важкими поглядами** — вона розуміла, що так і буде [Mister i misis Rait obminialysia **vazhkymy pohliadamy** – vona rozumila, shcho tak i bude] [**heavy glances**] (Ng, 2018).

In example (2), the author uses the adjective *uneasy*, meaning “feeling anxiety; troubled or uncomfortable” (OUP, n.d.), to describe the Wrights’ reaction to a request from Mrs. Richardson to give their daughter’s phone number. They felt uneasy because they had broken up with their daughter Mia when it became known that she would have a baby, and this anxiety was reflected in their looks.

The translator prefers the contextual synonym of *uneasy*, the adjective *важкий [heavy]*, to its direct equivalent *зніяковілий [embarrassed]* (Multitran, n.d.). The direct equivalent of the source-text non-metaphoric description, *зніяковілий погляд* is non-metaphoric too, as the adjective means literally “feeling embarrassed and taken aback” (ADUL, n.d.). The literal meaning of the adjective *важкий [heavy]*, chosen by the translator, “the one that has a heavy weight” (ADUL, n.d.) belongs to the TOUCH domain. However, in the given context, regarding vision, this focal adjective realises its figurative meaning, “expressing the severeness and gloom” (ADUL, n.d.). Thus, in combination with the noun *погляд [look]*, it creates a conventional synesthetic metaphor that rests on the vision is touch cross-sensory mapping.

Its relative frequency in Grac v.17 is 0,60 (Grac v.17, 2023), and it is higher than the relative frequency of the corresponding literal description – 0,02 (Grac v.17, 2023). Consequently, it has a higher degree of conventionality, making it preferable for the translator.

(3) (...) **a distinct polyvinyl reek** that threw me straight back to childhood and my bedroom back in Vegas: chemicals and new carpet, falling asleep and waking up every morning with the painting taped behind my headboard and the same adhesive smell in my nostrils (Tartt, 2013) – (...) цей **гострий запах полівінілу** відкинув мене в дитинство та в мою спальню у Вегасі: хімікати і новий килим, коли я засинав і прокидався щоранку з картиною, приліпленою до ліжка, і з тим самим липучим запахом у ніздрях [tsei **hostryi zapakh polivinilu** vidkynuv mene v dytynstvo ta v moiu spalniu u Vegasi: khimikaty i novyi kylym, koly ya zasynav i prokydavsia shchoranku z kartynoiu, prylyplenoiu do lizhka, i z tym samym lypuchym zapakhom u nizdriakh] [**sharp polyvinyl smell**] (Tartt, 2015).

In example (3), Donna Tartt employs the non-metaphoric adjective *distinct* meaning “recognisably different in nature from something else of a similar type” (OUP n.d. Merriam-Webster n.d.) to modify the noun *reek*. The adjective describes the smell in the storage facility where Theo believed the picture taken from the Metropolitan Museum had been shut away for many years.

The direct translational equivalent of the adjective *distinct* is *чіткий* (Multitran, n.d.) that means literally “clear, legible, suitable for reading (about handwriting)” (ADUL, n.d.), and it is non-metaphoric. The translator uses its contextual synonym *гострий [sharp]* (Multitran, n.d.) that means literally “able to prick or cut” (ADUL, n.d.) and associates with touch. At the same time, in combination with the noun *запах [smell]*, which is the contextual synonym of the noun *reek* (Multitran, n.d.), it is associated with smell, as its figurative meaning is “strongly influencing the sense organs” (ADUL, n.d.). Thus, the translator creates and introduces into the target text a synesthetic metaphor based on the smell is touch (smelling something unpleasant is touching sharp surface) cross-sensory mapping.

The relative frequency of the metaphoric description *гострий запах* [*sharp smell*] is 0,42 (Grac v.17, 2023), which is higher than the relative frequency of the non-metaphoric translational equivalent (0,01) (Grac v.17, 2023), and that can influence the translator's choice.

(4) Here is her heavy tread; here are her **knowing**, suspicious **eyes** (Cunningham, 1998). – Ось її важка хода, ось її **пронизливий**, недовірливий **погляд** [Os yii vazhka khoda, os yii **pronyzlyvyi**, nedovirlyvyi **pohliad**] [**piercing glance**] (Cunningham, 2017).

In example (4), Michael Cunningham employs the non-metaphoric adjective *knowing*, meaning “showing or suggesting that one has knowledge or awareness that is secret or known to only a few people” (OUP, n.d.) to describe Mrs. Dalloways's vision of her daughter's friend, Mary. She was older and more experienced than Julia, making Mrs. Dalloway angry and uncontented, and she expected her daughter's betrayal.

The direct translational equivalent of the adjective *knowing* is *розуміючий* (Multitran, n.d.), meaning “understanding on something; showing the understanding” (ADUL, n.d.), so the description *розуміючі очі* [*knowing eyes*] is non-metaphoric. Its relative frequency in Grac v.17 is 0,04 (Grac v.17, 2023).

The translator resorts to a contextual synonym of the adjective *розуміючий* [*knowing*] – *пронизливий* [*piercing*] (Multitran, n.d.). In combination with the noun *погляд* (the translator substitutes the direct equivalent of the noun *eyes* [*очі*] with its metonym *погляд* [*look*]), it creates a synesthetic metaphoric description based on the vision is touch cross-sensory mapping. The literal meaning of the focal adjective *пронизливий* [*piercing*] “piercing through the clothes and arising unpleasant sensations” (ADUL, n.d.) belongs to the domain of touch. Used to describe a person's look, it means “attentive, coming through” (ADUL, n.d.).

According to Grac v.17 (2023), the relative frequency of the metaphoric description (.67) is higher than the relative frequency of the direct non-metaphoric equivalent (.04), making it preferable for the translator (Grac v.17, 2023).

In the next example, the translator creates a synesthetic metaphor substituting a predicatively used non-metaphoric adjective with its contextual synonym:

(5) ‘You're right,’ he murmured. ‘He doesn't **sound** well. Very **groggy** and confused, don't you think? (Tartt 1992). – Ваша правда, – підтвердив він, – з голосу можна сказати, що йому зле. **Нетвердий голос**, плутані слова Вам теж так здалося? [– Vasha pravda, – pidtverdyv vin, – z holosu mozhna skazaty, shcho yomu zle. **Netverdyi holos**, plutani slova Vam tezh tak zdalosia?] [**unsolid voice**] (Tartt, 2017).

Donna Tartt uses the adjective *groggy*, meaning “dazed, weak, or unsteady, especially from illness, intoxication, sleep, or a blow” (OUP, n.d.) in the situation when one of the students tried to explain to the tutor the absence of his fellow student Charles from the class. He described Charles's voice as *groggy*, implying that he was unwell.

The direct equivalent of *groggy* – *безсилий* (Multitran n.d.) that means “having no physical force, weak, exhausted” (ADUL, n.d.) is non-metaphoric.

The translator employs the synonymic Ukrainian description *нетвердий голос* [*unsolid voice*] (Multitran, n.d.). The adjective *нетвердий* [*unsolid*] means literally “which is easy to mould, dent or press; soft” (ADUL, n.d.). This meaning is associated with the touch domain. The same adjective is used to figuratively characterise hearing as “unstable, unclear, uncertain” (ADUL, n.d.). In the given context, this description instantiates a synesthetic metaphor based on the hearing is touch (hearing a weak sound/voice is touching unsolid surface) cross-sensory mapping.

According to Grac v.17 (2023), the relative frequency of the metaphoric description (.03) is higher than the relative frequency of the non-metaphoric one (.01) (Grac v.17, 2023), which influences the translator’s preference.

Examples (6) – (7) illustrate different translations of the same source-text non-metaphoric description expressed by a verb modified by an adverb:

(6) “I am hungry too,” **he said**, rather **formally**. (Tartt, 2013). – Я теж голодний, – **сказав він досить сухо** [Ya tezh holodnyi, – skazav vin dosyt sukho] [**he said dryly**] (Tartt, 2016).

In example (6), the non-metaphoric description instantiated by the verb *said* modified by the adverb *formally* that means literally “following convention or etiquette; officially” (OUP, n.d., MWOD, n.d.) is used in the situation when Theo and his friend Boris, just after arrival in Amsterdam, came to a café to discuss the picture rescue operation plan. As at that moment their relations were strained, Boris spoke to Theo in a formal tone.

The direct non-metaphoric translation equivalent of the adverb *formally* is *формально* (Multitran n.d.) meaning “officially; keeping to the settled rules and executing necessary formalities” (ADUL, n.d.). The relative frequency of the description *сказав формально* [*said formally*] in Grac v.17 (2023) is 0,05 (Grac v.17, 2023).

Employing the contextual synonym of the adverb *сухо* [*dryly*] (Multitran, n.d.), the translator adds to the target text a synesthetic metaphor, based on the hearing is touch (hearing an unpleasant sound is touching dry surface) cross-sensory mapping. The focal adverb *сухо* [*dryly*] means literally “being not soaked with water; not wet or damp” (ADUL, n.d.), and this meaning belongs to the domain of TOUCH. Its figurative meaning concerning hearing is “lacking brightness, softness; crispy” (ADUL, n.d.).

According to Grac v.17 (2023), the relative frequency of the metaphoric description (.09) is higher than that of the direct non-metaphoric one (.05) (Grac v.17, 2023). This supports the hypothesis that translators favour descriptions with a higher conventionality degree.

(7) “This should be easy,” **he said** to me **formally** as we pulled out of the garage and back out onto the Overtoom... (Tartt, 2013). – Усе має бути дуже легко, – **сказав він мені**

сухим формальним тоном, коли ми залишили гараж і знову виїхали на Овертом... [Use maie buty duzhe lehko, – **skazav** vin meni **sukhym formalnym tonom**, koly my zalyshyly harazh i znovu vyikhaly na Overtom...] [**he said** to me **in a dry formal tone**] (Tartt, 2015).

In example (7), the same source-text description is used to characterise a conversation between business partners. The translator substituted the adverb with the phrase *сухим формальним тоном* [*in a*] *dry formal tone*] adding the adjective *сухий* [*dry*] meaning “the one, which is not soaked with water, not wet or damp” (ADUL, n.d.) and associated with the TOUCH domain. Concerning hearing, it means “lacking brightness, softness; crispy” (ADUL, n.d.). In the given context, the translation instantiates a synesthetic metaphor based on the hearing is touch (hearing an unpleasant sound is touching dry surface) cross-sensory mapping.

According to Grac v.17 (2023), the relative frequency of the synesthetic metaphoric description (0,09) is higher than that of the direct non-metaphoric equivalent (.05) (Grac v.17, 2023).

In the following example, the translator substitutes a non-metaphoric description expressed by a verb modified by a prepositional phrase with a metaphoric one of a similar structure:

(8) “Good afternoon, Mrs. Bell,” she **says** with an **executioner’s studied calm** (Cunningham, 1998) – Добрий день, місіс Белл, – озивається вона підкреслено **холодним голосом** ката [Dobryi den, misis Bell, – ozyvaietsia vona **pidkresleno kholodnym holosom** kata] [**emphatically cold voice**] (Cunningham, 2017).

In the source text, the non-metaphoric adjective *studied*, meaning “achieved or maintained by careful and deliberate effort (about quality or result)” (OUP, n.d.), modifies the noun *calm* to convey the feelings of a frustrated cook (Nelly) who was sent on an errand a couple of hours before the guests’ arrival. To hide her anger, Nelly spoke to her mistress in a studied manner.

The direct equivalent of the target adjective *studied* is *завчений* (Multitran, n.d.) meaning “habitual, mastered” (Multitran, n.d.). The relative frequency of this description is .00 (Grac v.17, 2023).

The translator resorts to contextual substitution rendering *studied calm* as *холодний голос* [*cold voice*] and creating a synesthetic metaphoric description based on the hearing is touch/temperature (hearing an unpleasant sound is touching cold surface) cross-sensory mapping. The literal meaning of the adjective *холодний* [*cold*] is “having low or relatively low temperature” (ADUL, n.d.). Referring to voice, it means “expressing, anger, inhospitality, pointed self-resistance”. The relative frequency of metaphoric description in Grac v.17 is .43 (Grac v.17, 2023), which is higher than the relative frequency of the non-metaphoric one (.00) (Grac v.17, 2023), explains the translator’s choice.

The quantitative analysis results indicate that the synesthetic metaphors based on the cross-sensory mapping hearing is touch accounts for 55% of the total instances of

additions, smell is touch presents 25%, and seeing as touch constitutes 20% of the cases.

Conclusions

The 40 added synesthetic metaphoric descriptions were extracted manually from Ukrainian translations of American authors' novels. The meaning of the source- and target-text descriptions were interpreted considering the dictionary definitions and context. The translator's choice was explained through the comparative analysis of the conventionality degrees of the direct translational equivalents and the metaphoric synesthetic description chosen by the translator, it depends on the atypical 'cross-talk' between brain areas and perceptual domains that influence the choice of translation equivalent. The results of our research prompt us to the following conclusions.

Addition of synesthetic metaphors in translations of fiction texts is a challenging object of translation studies as it reveals that the conventionality degree of a linguistic expression can influence translators' decisions. Though theoretically, synesthetic metaphors can refer to a point in the source text where there is no text, all the analysed added synesthetic metaphors replaced non-metaphoric source-text descriptions. All the added synesthetic metaphors are based on the touch source domain cross-sensory mapping, which complies with Ullmann's "hierarchical distribution", according to which touch is the 'lowest/most accessible/basic domain'.

Addition of synesthetic metaphors results from the following translation techniques: 1) retaining the tenor noun using its direct literal equivalent and substituting the direct non-metaphoric equivalent of the focal adjective with its metaphoric contextual synonym; 2) retaining the tenor verb using its direct literal equivalent and substituting the direct non-metaphoric equivalent of the focal adverb with its metaphoric contextual synonym or transforming the focal adverb into a metaphoric synesthetic description of the adjective + noun structure; 3) replacing a non-metaphoric description expressed by a verb modified by a prepositional phrase with a metaphoric one of the same structure.

Combining analytical instruments of cognitive translation analysis with the affordances of corpus linguistics to investigate the addition of synesthetic metaphors in translations of fiction texts results in the conclusion that translators' choices can be influenced by the conventionality degree of the linguistic expressions linked to their relative frequency of use. Due to these choices, the target text conveys and preserves the senses underlying the source text and simultaneously acquires the features specific to the Ukrainian language, making it understandable and transparent for readers.

Disclosure Statement

The authors reported no potential conflicts of interest.

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BOOK REVIEWS

Göncz, L. (2021). *The Psychology of multilingualism: Concepts, theories and application*. Cambridge Scholars Publishing, 2021, Pp. 247. ISBN 1-5275-7062-2 (hardback); ISBN 1-5275-9698-2 (paperback)

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Abstract. This review critiques *The Psychology of Multilingualism: Concepts, Theories and Application* by Lajos Göncz whose research contributed extensively to the field of psychology of bilingualism and minority studies. In light of the quintessential body of research investigating bilingualism and multilingualism as intriguing complex phenomena, this book provides a comprehensive multidisciplinary approach to the research of bi- and multilingualism. Göncz approaches bi-/multilingualism as a cognitively challenging experience from a psychological, individual, and societal perspective. Basic concepts, theories, and definitions related to the psychological regularities of multilingualism are discussed in the book. Göncz also explores bi-/multilingualism from the perspective of developmental and personality psychology, elucidating the effect of speaking multiple languages on emotions, behavior, and cognitive development. Additionally, issues pertaining to the social psychology of multilingualism, including biculturalism, multiculturalism, and cultural diversity, are scrutinized, offering insights into the importance of preserving minority languages and cultures. The book also touches upon the educational aspects of the psychology of multilingualism, revisiting models of bi-/multilingual education that might be implemented to stimulate language development in the dominant as well as in the minority language.

Multilingualism, including bilingualism, has garnered international public interest, as most of the world's population lives in either bilingual or multilingual linguistic environments. The need for cross-cultural communication and the growing concern to preserve linguistic and cultural diversity have increased the number of people learning multiple languages. A substantial body of research has investigated the complex vibrant phenomenon of multilingualism from different disciplinary perspectives. *The Psychology of Multilingualism: Concepts, Theories and Application* provides an overarching multidisciplinary approach to multilingualism research. Although the book focuses on the psychological aspects of multilingualism, it offers insights from linguistics, pedagogy, cognitive neuroscience, sociolinguistics, and psycholinguistics.

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Lajos Göncz, the author of this book, was a psychology professor at the University of Novi Sad, Serbia, whose research interest focuses on the psychological consequences of multilingualism and multiculturalism in minority groups. Göncz immensely contributed to the field of psychology of bilingualism.

The book encompasses six chapters that aim to define the psychology of multilingualism as a distinct field of research investigating one's personality development, behavior, and experiences in multilingual settings. The first chapter introduces the psychology of multilingualism as a bivalent interdisciplinary field of research closely related to the sciences of multilingualism and psychology. It attempts to answer general questions about the topics, methods of research, tasks, development, and domains of the psychology of multilingualism. From accidental and systematic observation to natural and laboratory experiments, the psychological regularities of multilingualism are explored as the core topic of the psychology of multilingualism which strives to define psychological aspects of different multilingual situations and their effect on one's inner life, experience, and behavior (answering the question of *what*) and to answer the questions of *how* and *why* these phenomena occur and affect personality and psychological development.

Basic concepts and concept-related knowledge related to the psychology of multilingualism and derived from the psychology of language, the sciences of bilingualism and multilingualism, developmental and educational psychology, cognitive neurosciences, and sociolinguistics are discussed in Chapter 2. Since the psychology of multilingualism is concerned with the application of systems of signs and rules pertaining to different languages in various speech situations and its ensuing consequences, Göncz discusses the developmental stages of language acquisition and the pace of speech development in children, while touching upon the psychophysiological mechanisms of speech and the main theories of language development, namely behaviorism and generative grammar. The first part of the chapter also addresses the relationship between speech and thought from the different views of the Piagetian cognitive thesis, the Vygotskian theory of internal speech, and the Sapir-Whorf hypothesis of linguistic relativism and determinism. Drawing on the sciences of bilingualism and multilingualism which have enriched the psychology of multilingualism with the definitions of bi- and multilingual phenomena, key concepts and knowledge related to the mother tongue, bilingualism and multilingualism, and the significant types of bilingualism and multilingualism, including distinctions between additive and subtractive, elite and folk, balanced and dominant, and coordinate and compound bilingualism, are presented. Other distinctions between majority and minority languages, linguisticism and ethnicism, assimilation and integration are also highlighted. Definitions and related knowledge on notions related to developmental and educational psychology, sociolinguistics, and cognitive neurosciences are explained in the second half of the chapter.

Chapter 3 expands on the studies of bilingualism and multilingualism from the perspective of experimental psychology and experimental psycholinguistics. It focuses on the interaction between language systems in bi- and multilinguals. The chapter starts with an overview of the research results on associations and meaning in the field of experimental psychology and psycholinguistics, which gives a sound background for exploring the dichotomy between balanced-dominant and coordinate-compound

bilingualism. Empirical studies have shown that language systems in coordinated bilinguals are functionally more independent on the semantic level than in compound bilinguals, since the languages of coordinated bilinguals are learnt from separate sources as opposed to the languages of compound bilinguals which are derived from the same source. Göncz reports that by crossing the dimensions of coordination-complexity and balance-dominance, four types of bilingualism can be distinguished, with the coordinate balanced groups having a much more independent language system as compared to the compound and dominant groups. Investigating the phenomena of language independence and language interference, it has been revealed that the connotative and associative meanings of words are more different in coordinated bilinguals than in compound bilinguals. The process of cross-linguistic coactivation and the inhibition of irrelevant languages in bilinguals and multilinguals have also been discussed in this chapter with relation to executive functioning.

A substantial variety of problems in the field of developmental psychology and psychology of personality have been touched upon in Chapter 4. Monographs, written by linguists to describe simultaneous multilingual development in children, have been presented, with the conclusion that multilingualism has mostly desirable rather than detrimental effects. However, early cross-sectional and correlational studies showed that monolinguals outperformed bilinguals on intelligence tests, speech development, and academic achievement, which was debunked by the Peal and Lambert study of 1962 proving the effect of bi- and multilingualism on cognitive development. Results of later empirical research on the effect of bilingualism on different behavioral aspects have demonstrated that in additive bilingual situations, early bilingualism promotes cognitive, linguistic, and academic development. Furthermore, modern research on multilingualism has shown its impact on one's inhibition ability, monitoring, and attention control. Being a form of mental gymnastics, multilingualism is proven to prevent cognitive decline, reduce levels of psychopathy and ethnocentrism, enhance working memory which is related to personality, and develop metalinguistic awareness. It has also been evidenced that the first language of a multilingual is more emotional than the later acquired languages. Nonetheless, in subtractive multilingual situations, disadvantages, including smaller vocabulary, delay in vocabulary and grammatical structures, less rapid lexical retrieval, lower academic performance of bi- and multilingual minority children, and affective and socio-cultural difficulties, are reported.

Chapter 5 elaborates on three main aspects pertaining to the area of social psychology and sociolinguistics of multilingualism. Multiculturalism, as a social or individual phenomenon, and its consequences, mainly with regards to acculturation, have been first discussed. Depending on the degree of differences between the cultures in a heterogeneous community, acculturation can lead to internal conflicts where national identity becomes a burdensome heritage and forced assimilation can result in minority complexes. Nevertheless, this is not necessarily the case as four different acculturation strategies, namely integration, separation, assimilation, and marginalization, can be adopted. The chapter also discusses the contact variants of multilinguals' languages used in heterogeneous communities. In fact, multilinguals can experience digression from grammatical correctness and contact effects regarding their first language, which is described in the situation of Hungarian minorities living in different bi- and multilingual communities outside the borders of post-Trianon Hungary.

The last part of the chapter elaborates on the decrease of linguistic and cultural diversity and its psychological consequences. Revisiting key aspects including multiculturalism and interculturalism, Göncz discusses the pluralistic view, which advances the belief that dominant and minority languages and cultures are natural resources that should be preserved, and the antipluralistic belief that language replacement and assimilation are adaptive responses to the changes in the environment. It is also stated that the loss of linguistic and cultural diversity can be explained by a range of psychological issues, including cumulative frustration, personality disorders, behavioral abnormalities, and cultural shocks, that multilinguals might face in a heterogeneous community favoring the dominant group. Consequently, effective models of multilingual education are required to maintain diversity.

Educational aspects of the psychology of multilingualism are further explored in Chapter 6. Glottodidactics is introduced as a basis for different language-teaching methodologies, including the direct, audio-lingual, and audio-visual methods, which are influenced by the goals of education deduced from theories of transfer. Hence, changes in these educational goals result in changes in the methods of language teaching. The role of language learning abilities and integrative motivation are discussed as factors determining success in learning second/ foreign languages. Göncz also revisits models of bi-/multilingual education and concludes that autochthonous and minority children should be taught through the medium of their mother tongues while having the majority language taught as a subject. The last part of the chapter highlights what decision makers, primarily parents, need to consider when choosing or changing the language of instruction for indigenous minority students. It is stated that decision makers need to distinguish between additive and subtractive bilingualism and surface and cognitive linguistic competence. Parents need to promote their bilingual children's linguistic competence so cognitive development potentialities expand. It is also necessary to fathom that linguistic competence in the second language depends on the competence achieved in the first language. Decision makers need to understand that education in the dominant language leads to different results than education in the mother tongue in indigenous children. Maintenance programs stimulating language development in the first as well as the second language are proven to be effective. Based on the results of evaluative research, it is concluded that educational shifts from mother tongue to second languages need to be carefully considered as they can result in lower school achievement due to the lack of cognitive language competence in the new language of instruction.

To conclude, this book is an overarching introduction to research on multilingualism and a valuable source for researchers, professionals, policymakers, and parents interested in the psychological regularities of multilingualism. It highlights the stimulating effects of speaking multiple languages on cognitive and personality development as well as on executive functioning. Alongside exploring theoretical issues, Göncz calls for adopting effective educational models to maintain languages of children from minority groups and to promote additive multilingualism in general. A few typographical errors and inaccuracies were detected in the book. The extensive unnecessarily prolonged endnotes seem to detract readers from the main points discussed in each chapter. The book also includes repetitions of concepts and explanations, which makes some parts of the chapters redundant.

Pickering, M. J., & Garrod, S. (2021). *Understanding dialogue: Language use and social interaction*. Cambridge University Press. xviii+Pp. 283. Hardback. ISBN 978-1-108-47361-3



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Abstract. *Understanding Dialogue: Language Use and Social Interaction* is written by two prominent psychologists of language. It develops an elegant model to account for the cognitive mechanisms of dialogue. The Shared Workspace Framework for Dialogue is capable of explaining how individuals contribute and control their utterances and how they can manage each other's contributions and cooperate as one system. I believe this book is worth the attention of all linguists interested in language psychology. First, dialogue is the most fundamental form of language use; second, the theory of dialogue proposed in the book represents a major advancement in the psychology of conversation; third, the theory has a wide range of applications. I believe the current review of the book is the most comprehensive summary and assessment of the book to date.

Dialogue occupies a central place in linguistic research. It is “the basic and primordial environment for the use and development (both ontogenetic and phylogenetic) of natural language” (Schegloff, 1996, p. 54), and “provides us with the most direct and uncontaminated access to natural mental processes” (Chafe 1998, pp. 96-97). Despite a wealth of studies on dialogue, few attempts have been made towards developing a theory of cognitive underpinnings of dialogue. Coauthored by two eminent psycholinguists who have conducted decades of research on the psychology of dialogue, *Understanding Dialogue: Language Use and Social Interaction* proposes a theory of dialogue which is capable of accounting for not only dialogue, but also other forms of multi-party interactions, including interaction between humans, technological tools, and machines. It is a major contribution to understanding the psychology of communication in general.

Chapter One (‘The Challenge of Dialogue’) sets out the aim, the background, and the key approaches of the book. Contrary to the traditional approach of examining sentences in isolation of interactive context, this book adopts a systems perspective where individual roles of the participants, as well as their relationship with each other, are examined as a whole.

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Chapters Two to Eleven are grouped into four parts. Part I ('The Shared Workspace Framework') lays down the foundation for a theory of dialogue. It consists of four chapters. Chapter Two analyzes joint activities; Chapter Three develops a model of joint action control system; Chapter Four analyzes dialogue as a joint activity, and Chapter Five proposes a model of dialogue control system.

Chapter Two ('A Systems Analysis of Joint Activity') introduces the definition, dimensions and characteristics of cooperative joint activities, and proposes a shared workspace model to account for how individuals engage in such activities. A cooperative joint activity is defined by joint intention, joint commitment and joint goals between participants. In addition to implementing actions, participants must also exert control over the outcome. A distributed control mechanism is therefore essential because it allows participants to change a plan or modify their behaviour when necessary. Monitoring happens at all layers of individual action, and the results will inform individuals of whether she and her partner are both performing in accordance to the overall plan.

Central to a cooperative system is the shared workspace, which is a dynamic space in the real world under joint attention of the participants. It is the overlapping area between the workspaces of individual participants, and contains anything relevant to the cooperative joint activity at hand. The contents of the shared workspace are typically manifest, i.e., they are believed by each individual participant to be under the joint attention of all participants. Chapter Two concludes with four characteristics of a cooperative joint action system: alignment (i.e., similarity of representation between two or more individuals), simulation (i.e., mental performance of an action), prediction (i.e., a mechanism that enables monitoring), and synchrony (i.e., performance of an action at the same pace with one's partner).

Chapter Three ('Executing, Understanding and Controlling Joint Activity') deals with the mechanisms that enable an individual to perform, comprehend and control a joint activity. To do so, one must first perform, predict and control one's own action. When an individual plans to produce an action, an action command issues from her action planner. The command is processed on two routes: on the one hand, it is received by the action implementer which leads to the production of the intended behaviour; on the other hand, it is received by the forward action model which leads to a prediction of the upcoming behaviour. After an action is produced, the individual compares the percept of the actual behaviour with the percept of her predicted behaviour. In case of discrepancy, changes could be made in the next action. In addition to performing, predicting and controlling one's own action, an individual must predict, understand and control her partner's action. When she estimates that her partner is going to produce an action, she predicts his next action by simulation. After the partner's action is produced, she formulates its percept and compares it with her percept of the predicted action. If a discrepancy arises, she can use the next dialogue moves to address the issue.

Importantly, in a cooperative joint activity, an individual must predict and interpret the actions of both herself and her partner. She needs a joint plan that applies to the behaviour of both actors, and she must combine the percept of her own

action with that of her partner's action, and the percept of her own predicted action with that of the partner's predicted action; then she is able to make comparisons of the percept of the joint action with the percept of the predicted joint action, and to address discrepancies by updating her own action command for the next move, or the derived action command from her partner, or perhaps both. If, on the other hand, her predictions prove to be accurate, she and her partner then achieve full alignment.

Chapter Four ('Dialogue as a Joint Activity') applies the shared workspace model of cooperative joint activities to dialogue. Dialogue is a cooperative joint activity because it requires interlocutors' commitment to a joint goal. A model of dialogue must explain not only the processes undergone by each interlocutor, but also the relationships between interlocutors' cognitive representations, as well as the effects of these relationships on interlocutors and the dialogue as a whole.

Distributed control is an essential feature of dialogue. The shared workspace model developed for cooperative joint activities can be used to analyze the system of dialogue and to account for distributed control. In this model, each interlocutor makes use of two interrelated modules: the dialogue planner for planning the content of an utterance, and the dialogue implementer for generating its linguistic representation. With the two modules, an interlocutor can predict, contribute, comprehend utterances in the shared workspace, and use her predictions to direct future contributions; she can even manipulate aspects of the external context in the shared workspace.

Chapter Five ('Producing, Controlling and Understanding Dialogue') applies the model for producing, predicting and controlling cooperative joint activities to dialogue. First of all, an interlocutor must perform, predict and control her own utterance. This process is nearly identical to how one performs, predicts and controls her action in a cooperative joint activity (see Chapter Three). The only difference is that dialogue involves verbal, rather than physical, actions. The dialogue planner issues a production command, which is processed on two separate routes: the implementation route and the prediction route. On the implementation route, the production implementer constructs a representation of an utterance based on the production command, and the articulator converts the representation into actual sound waves in the shared workspace. Then, the speaker uses the comprehension implementer to comprehend and develop a percept of her utterance. On the prediction route, the forward production model enables the speaker to formulate a prediction of the utterance representation based on the production command. Then, the forward comprehension model is used to comprehend and develop a percept of the predicted utterance. During the processes described above, the speaker makes two kinds of comparison: one between the predicted utterance representation and the actual utterance representation, and the other between the percept of the actual utterance and the percept of the predicted utterance. The former is called internal comparison and the latter is external comparison. Both are part of the monitoring process.

In addition to controlling her own utterance, an interlocutor must comprehend her partner's utterance. The process begins with one interlocutor perceiving that the other is going to talk. The hearer derives a production command from the speaker based on her knowledge about the progress of the current dialogue. Then, enabled by

an mechanism called prediction-by-simulation, she predicts the content of the utterance in terms of semantics, syntax and phonology using her forward production model. Next, she develops a percept of the predicted utterance, which she compares with the percept of the actual utterance. The outcome of the comparison is then used to interpret the utterance, and to determine her next move in dialogue.

Finally, an interlocutor must predict and interpret her own utterance and that of her interlocutor's. The key point here is that she simulates, predicts and monitors the utterance production of both herself and her interlocutor as one entity. In other words, she is engaged in joint simulation, prediction and monitoring in relation to the joint goal of dialogue. In consequence, the interlocutors are able to interweave their contributions with one another and work as a system.

Part II ('Alignment during Dialogue') focuses on alignment, a key concept in the theory of dialogue. Chapter Six deals with kinds of representations in dialogue and alignment of linguistic representations, and Chapter Seven discusses alignment of cognitive representations.

Since alignment concerns the relationship between interlocutors' representations, the authors begin Chapter Six ('Interactive Alignment and Linguistic Representation') with a typology of various representations involved in dialogue. First, a distinction is drawn between cognitive representations and linguistic representations. The former, also called dialogue models, are constructed by the dialogue planner at the planning stage, whereas the latter are constructed by the dialogue implementer at the implementation stage. Second, focal representations are distinguished from global representations. The former concerns a particular move in dialogue whereas the latter concerns a dialogue as a whole. The two parameters - stage of generation and timescale - yield altogether four sub-types of representations: focal linguistic representation, global linguistic representation, focal dialogue model and global dialogue model, and interlocutors can align over each of them.

Next, dialogue models are further divided into two sub-types: the situation model and the game model. The situation model is an individual's representation of the key elements of the situation under discussion. It resides in one's long-term working memory and can persist in a dialogue. The game model, on the other hand, is concerned with the relationship between the interlocutors with respect to the dialogue goal, and the acts performed by each interlocutor with respect to the goal. Seeking action, information or giving instructions are all types of game models.

While dialogue models are generated by the dialogue planner at the production stage, linguistic representations are generated by the dialogue implementer at the implementation stage. The implementer is responsible for linguistic processing, which transforms dialogue models into behavioural manifestation of utterances such as speech sounds, turn-taking, and timing. Whenever possible, the implementer retrieves and activates lexicon from the working memory. Activation levels are affected by frequency and recency of use, and can be raised by priming, i.e., persistent activation of an expression. If, however, at the time of speaking, the implementer cannot find ready-made lexicon for the current communicative purpose, it assembles a new expression by producing separate representations of meaning,

grammar and sound in accordance to phonological, syntactic and semantic rules, before binding them together into one unit.

The remainder of Chapter Six focuses on the alignment of linguistic expressions. Linguistic representations may be aligned globally or focally. Focal linguistic alignment refers to the similarity of linguistic representation at a particular move in dialogue. It is a result of co-activation of representation between interlocutors at a particular point in dialogue, and can happen at the phonological, semantic or syntactic level. Global linguistic alignment, by contrast, refers to the similarity of linguistic representation of a dialogue as a whole. If interlocutors are fully aligned at the global level, they tend to activate the same representations under the same circumstances, at least for the span of the dialogue. This is a result of overall activation of representation throughout dialogue. The two kinds of linguistic alignment are intertwined. Global linguistic alignment can be enhanced by focal alignment, because once a linguistic item is activated, its activation level will remain for a period of time above the resting level, thus contributing to global alignment. Focal linguistic alignment can also be affected by global alignment, because interlocutors who already align globally tend to align focally as well. Since the activation of linguistic representations is largely subconscious, linguistic alignment is achieved through a largely automatic process, called priming. Two kinds of priming are involved: repetition priming and associative priming. Repetition priming is the straightforward repetition of linguistic units between interlocutors, whereas associative priming is a process where the priming of a word leads to the priming of a network of linguistic and non-linguistic knowledge associated with that word. Since a word is associated with a more or less stable of structure of knowledge across interlocutors in the same culture at a given period of time, associative priming results in ‘broad’ alignment, as it concerns not only the word in question, but also background knowledge. Ultimately, linguistic alignment contributes to communicative success.

Chapter Seven (‘Alignment of Dialogue models’) deals with alignment of dialogue models. As mentioned previously, dialogue models can be divided into situation models and game models, and each can be further divided into focal models and global models. The relationship between focal and global situation models is one of integration, i.e., global situation model emerges from integrating successive focal situation models. Therefore, the alignment of focal situation models occurs when the interlocutors share the same representation of the situation at hand at a particular moment in dialogue, and the alignment of global situation models “occurs when they have the same understanding of a situation as a whole” (pp.134-135). Alignment of situation models can be enhanced by sharing background knowledge. This is because situation models may contain aspects that are derived by inference from background knowledge, so that similarity in background knowledge may lead speakers to make similar inferences, and this may in turn contribute to the alignment of situation models.

Furthermore, the alignment of situation models goes hand in hand with the alignment of linguistic representations in the establishment of a dialogue routine for a

reference. When interlocutors use the same expression for the same referent, the linguistic expression with its corresponding token in the situation model gets stored in the short-term memory for the particular dialogue. At this point, a dialogue routine starts to emerge, and with repetitions of use, it may be transferred to the long-term working memory, and undergo reduction.

Having discussed the alignment of the situation model, the authors turn their attention briefly to the alignment of the game model. A game model, also called dialogue game, may be complex in structure, because a global game may contain one or more focal games, and interlocutors need not align over every focal game in a dialogue. Alignment over the game model does not entail cooperation in dialogue, because interlocutors may take part in the same game without converging on their dialogue plans. Game models are used by interlocutors to manage their partner's contributions, such as providing extra information, or preventing their partners from going off track.

Next, the authors propose an important conceptual distinction between alignment of dialogue models and meta-representation of alignment. The former concerns the relationship of cognitive representations used by interlocutors in dialogue, whereas the latter concerns the representation of alignment as perceived by interlocutors. While alignment is the hallmark of a successful dialogue, meta-representation of alignment is a driving force for communication. In a cooperative joint activity, speakers generally want their hearers to achieve the same representations as themselves, that is, to meta-represent alignment. If interlocutors meta-represent misalignment over their dialogue models, they generally work to address the misalignment. It should be noted that meta-representation of alignment is a perception of the interlocutor, which may not necessarily reflect the actual alignment relationship; in other words, interlocutors' perception of their interactive relationship may not be the same as their actual relationship in dialogue.

How do alignment and meta-representation of alignment relate to the shared workspace framework? First, the shared workspace contains signs and non-signs that are aligned between interlocutors in their situation models. If interlocutors do not align on certain entities, they have them in their individual workspaces. Furthermore, interlocutors meta-represent alignment over the entities in the shared workspace. If something is in the shared workspace, then it is in the interlocutors' joint attention, that is, each interlocutor assumes that the other person can perceive it like herself. In such cases, both interlocutors meta-represent alignment over the item, and tag it as such in the shared workspace. If, however, one of them notices that they do not align over the item, she meta-represents mis-alignment and tags it in her individual workspace. This process is called m-tagging, where 'm' is an abbreviation of meta-representation of alignment. M-tagging reflects interlocutors' degree of confidence in alignment. The item m-tagged by both interlocutors with high confidence is manifest in the shared workspace. Dialogue games are often used to make an item manifest, and therefore manipulatable by both interlocutors.

Part III ('Using the shared workspace efficiently') contains two chapters. Together, they explain how interlocutors make efficient use of the shared workspace.

Chapters Eight deals with interlocutors' management of the content of contribution, and Chapter Nine focuses on the management of timing.

Chapter Eight ('Saying Just Enough') discusses commentaries, which are essential strategies for managing interlocutors' contributions. In dialogue, if an individual meta-represents misalignment with her interlocutor, she generally manages her interlocutor's contributions in order to re-establish alignment. Commentaries are essential strategies for re-establishing alignment. They can be positive or negative. Positive commentaries are acknowledgments such as confirmative interjections, nodding, and verbal repetitions. They indicate addressee's high confidence in alignment, and signal her meta-representation of alignment with the speaker. In addition, they can express positive evaluation, or serve the function of continuers. Negative commentaries, by contrast, are interjections or gestures that indicate interlocutors' low confidence in alignment. They prompt the previous speaker to review her immediately previous utterance in an attempt to identify the source of misalignment, and they often result in clarifications. In addition, they can be used to indicate specific aspect of misalignment. This is particularly helpful in identifying the cause of initial misalignment and eventually resolving it.

Both positive and negative commentaries promote succinctness, but they do so in different ways. In a dialogue that contains constant positive commentaries, an expression may become more concise and routinized each time it is repeated, until it retains only the most discriminatory aspects of the original referent. Negative commentaries, on the other hand, lead to verbal expansion, which enables interlocutors to solve the problem that causes misalignment. Once alignment is re-established, negative commentaries are replaced by positive ones and interlocutors' contributions become more succinct afterwards. Commentaries may not be limited to dedicated expressions; utterances that contribute new information may also serve as commentaries. For example, utterances that complete the second part of an adjacency pair or the previous speaker's unfinished contribution may serve as positive commentaries, and correction may serve as negative commentaries. To summarize, commentaries help to strengthen alignment, support optimal use of the shared workspace, and promote interlocutors to 'say just enough'.

Chapter Nine ('Speaking in Good Time') discusses how interlocutors interweave their contributions into a single dialogue. To do this, they must attend to two crucial aspects of contribution: sequentiality and timing. Sequentiality refers to the order of contributions. In the shared workspace model, the order is constructed by the dialogue planner, and mapped onto interlocutors' representation of utterances by the dialogue implementer. Interlocutors can monitor their sequentiality of contribution: first, they predict the turn taking of both interlocutors' utterances, and then, they compare the predicted percept with the actual percept. Results are then sent back to the dialogue planner. In the case of mismatch, revisions will be made in planning, and will appear at the production stage. The above process crucially facilitates flow of dialogue. Timing concerns the speech rate at which each contribution is added to the shared workspace. Like sequentiality, timing is predicted and monitored during dialogue. Good timing is reflected in synchrony of speech rate,

which requires synchronizing the whole process of dialogue, including generating production command and derived production command, predicting one's own contribution and that of their partners, making contributions, and monitoring contributions. Synchrony of speech rate reduces the time needed for producing an utterance, as well as the temporal gap between utterances; thus, it contributes to the efficient use of the workspace. However, to achieve such efficiency, an interlocutor has to manage several kinds of pressure: to produce and comprehend utterances, to prepare feedback, and to match her speech rate with her partner's. At the neurological level, interlocutors synchronize speech rates through three stages: "speech to auditory cortex, auditory to pre-motor cortex, pre-motor cortex to speech" (p. 206). To be more specific, when interlocutors A and B are engaged in a dialogue, A's speech rate drives her speech oscillations, which in turn drives the neural oscillations in auditory cortex and pre-motor cortex of B; then, the neural oscillations in the pre-motor cortex of B drives the speech rate of B. Finally, B's speech rate affects A's speech rate in the same way as described above.

Eventually, speakers must combine content with timing to predict the beginning and end of turns. This is because speech rate affects the rate that interlocutors obtain information from the shared workspace, contribute utterances, perform predictions, and monitor timing and content. Predictions may not be well matched with reality initially, and as a result, the predictions of timing and content take place as two separate processes. However, as prediction gets better, the two processes merge into one. When both interlocutors are perfect at combining the predictions of content and timing, conversation flows.

Part IV ('Extending the Shared Workspace Framework') applies the shared workspace framework to the analysis of non-dyadic communication; it also considers the role of culture in the theory of dialogue. The previous chapters have developed a theory of dialogue to account for 'the minimal dyadic conversation' (p. 211), which is informal, cooperative, conducted face to face and with relatively equal contributions. In real life, however, dialogue may deviate from the idealized model in many ways. Chapter Ten ('Communication beyond the minimal dyad') discusses three types of deviations: straightforward three-way conversations, multi-party dialogue, and monologue. The straightforward three-way conversation, or the triadic dialogue, is a simple extension of the minimal dyadic conversation in the sense that each of the three participants conducts a minimal dyadic conversation with the other two. All interlocutors can contribute to the shared workspace; they can also comprehend, predict and monitor its contents equally. Compared with the straightforward three-way conversation, the multi-party conversation is more complex because its participants take up different roles. These include players, active audience members, passive audience members, and overhearers. Participants with different roles do not engage in a dialogue equally. For example, players and active audience can contribute to the dialogue, whereas passive audience and overhearers can neither contribute nor comment on contributions; players and audience members are relevant to the design of the shared workspace, whereas overhearers are not. All participants can meta-represent alignment over the content of dialogue and their conversational

roles to some extent, but, they cannot do so equally; nor can they act on their representations equally. For example, contributors typically do not meta-represent alignment with overhearers, since the shared workspace is not designed for the latter; active audience, passive audience and overhearers can meta-represent alignment with contributors but only active audience can act on their representation.

The third kind of deviation from the ideal dyadic dialogue is monologue, which can be regarded as an non-alternating one-way dialogue. It consists of two fixed roles: the designer and the audience. The designer is solely responsible for managing the shared workspace. She can produce, comprehend, predict and monitor the contents in the workspace. The audience, by contrast, has no control over the shared workspace at all. Given the one-way non-alternating nature of monologue, control is not distributed, unlike that of dialogue. To optimize communicative efficiency, the designer in particular has to cope with the limitation of monologue. Since the designer cannot use audience commentaries to track their meta-representation of alignment, she has to have a good knowledge of the audience and the social conventions concerning the content and format of the presentation before hand, and she has to prepare, revise and rehearse her contributions in order to improve the chance of alignment with her audience. As for the audience, they can only engage in external monitoring, i.e., comparing the predicted utterance of the designer and her actual utterance; in case of misalignment, they cannot modify their planners to make new contributions to the shared workspace. To summarize, Chapter Ten has shown that monologue and various forms of dialogue exists in a continuum, all of which can be explained by the theory of dialogue.

Chapter Eleven ('Culture and Language Use') discusses the relationship between dialogue and culture, with special focus on the role of communicative activity types and the use of cultural artefacts. A cooperative joint activity normally contains both linguistic and non-linguistic components, including actions, utterances and props, all of which, go into the shared workspace and are interpreted, predicted, monitored and updated in relation to the joint goal. Communicative activity types, and more broadly social norms, serve to constrain the form and content of individual communicative events, by forming part of the dialogue plan, constraining production and facilitating predictions. Because they facilitate predications, they can help to enhance the efficiency of communication. Interlocutors' alignment on the dialogue game of a particular cooperative joint activity suggests their broader alignment on communicative activity type, as well as social norms.

Among the non-linguistic components of dialogue, props are cultural artefacts that play a part in the joint plan. They fall into three kinds. The first are illustrations such as paintings, drawings, photos or maps. They enrich the workspace by adding information that may not be easily added by language; they also help to organize the linguistic aspects of the dialogue, so that interlocutors can align and m-tag their representations more easily. Joint attention on aspects of illustrations is often achieved by pointing. The second kind of props are recordings, which may be auditory, visual or textual. They are temporarily or spatially portable, making the workspace represented by them also portable. They are often monological (such as a

podcast or a novel), but can also be used in alternating one-way dialogue (such as letter correspondence). The third kind of props are communication technologies, which are designed to suit the communicative goals of the users. They have a variety of functions, such as making certain aspects of communication salient, creating limits to the amount of information that enters the shared workspace, enabling speakers to add audio-visual aids, managing conversational roles, and selecting audience members.

Chapter Twelve ('Conclusion') concludes the whole book by reiterating its key points, including the shared workspace framework, alignment and meta-representation of alignment, management of the content and timing of contributions, the extension of the theory of dialogue to other types of communication and finally, the role of culture in dialogue.

Understanding Dialogue: Language Use and Social Interaction deals with a topic that is fundamental to linguistics in general. Notably, it can explain the cognitive mechanism responsible for the emergence of linguistic structures from usage. Within the theory of dialogue is fundamental concept called dialogue routine, which is a fixed and stable mapping between entities in the situation model and linguistic expressions. It is established when interlocutors come to use the same linguistic expression to refer to the same concept, and the process of establishing routines is called routinization. Routinization begins with interlocutors focusing on and focally aligning over the linguistic expression for a particular entity at a particular point in dialogue. At this point, the expression is stored in the short-term working memory. With repetitions of use, the expression becomes fixed throughout a particular dialogue, and comes to reside in the long-term working memory. This results in global alignment between interlocutors over the item. Before an expression is routinized, the phonology, syntax and semantics of its components are first activated separately before being combined for comprehension or production. Once it is established as a routine, its components are activated and stored as a whole in the mental lexicon (see also Pickering & Garrod, 2005). Furthermore, when a number of people globally align over the routine, it becomes conventionalized in the community. Once conventionalized, community members will be able to activate it from the long term-working memory on receiving a retrieval cue. In this way, a new linguistic unit emerges in the language of the community. Thus, the notions of routines and routinization lend valuable insights into the cognitive processes involved in the emergence of conventionalized linguistic units from a single dialogue.

To conclude, *Understanding Dialogue: Language Use and Social Interaction* introduces a psycholinguistic theory of dialogue which is more comprehensive and systematic than any existing models. Hence, it is worth careful reading by all who are interested in the psychology of language.

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Tribute

The Road Pavers of Bulgarian Psycholinguistics

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In my student years at the beginning of 1990s at Sofia University, Bulgaria, fate led me to study with two extraordinary scholars – Prof. Dr. Miroslav Yanakiev and Prof. Dr. Encho Gerganov. Prof. Yanakiev laid the foundations of the Bulgarian psycholinguistics, introducing the statistical methods in linguistics, and as his student, Prof. Gerganov continued and further developed his ideas. I had the great good fortune to learn from them and consider myself a student of them both. Actually, my scientific academic activities were launched when I met Prof. Yanakiev and we sought as a shared task to develop the first ABC textbook in Romani for Roma children in Bulgaria in 1993. Our extensive strong cooperation continued until the end of Prof. Yanakiev’s life, and after his death, I went on working more intensively with Prof. Gerganov, seeking to develop psycholinguistic studies, research and publications with him. And if today I am known for my psycholinguist work, I owe that in significant measure to my 33 years of collaboration with Prof. Gerganov.

This tribute is dedicated to the anniversaries of the two scholars – in 2023 was the 100th anniversary of Miroslav Yanakiev and in 2024 we celebrate the 85th birthday of Encho Gerganov.

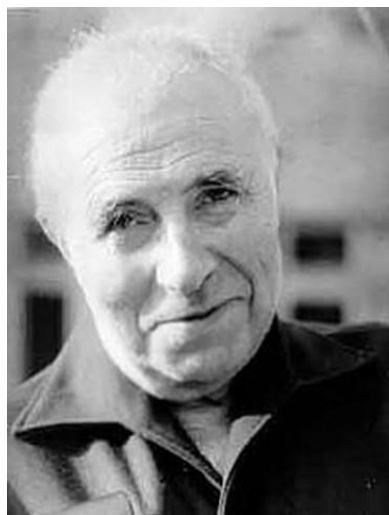
Miroslav Yanakiev (19.08.1923 – 09.11.1998), born in Sofia, was deservedly famous across the world with his works on two Slavic languages: Bulgarian and Russian. In 1943 he graduated from the First Men’s High School in Sofia and the same year he was enrolled in the Slavic philology program at Sofia University. He graduated in 1947 and immediately after his graduation he began work at the Faculty of History and Philology of the same university. He worked there until the end of his life in 1998, first as Assistant Prof., then Associate Prof. And then as Full Professor.

In 1963 he earned the title Associate Professor with a habilitation monograph *Българско стихознание* “Bulgarian Poetics”. In 1979 he was promoted to Full Professor after completing his monograph *Стилистиката и езиковото обучение* “Stylistics and Language Teaching”.

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Prof. Miroslav Yanakiev

<https://bnr.bg/hristobotev/post/101909557>

After his retirement in 1988 and due to our cooperation, he began to work on child bilingualism, mainly with Roma and Turkish children, and started publishing articles about the importance of the minority mother tongues for the language and cognitive development of the children. He was central in supporting my research in the field of Romani language and publishing schoolbooks for Turkish and Roma children.



Prof. Encho Gerganov NBU

Prof. Encho Gerganov was born on March 18, 1939 in the town of Stara Zagora in Bulgaria. He graduated in the field of Bulgarian Philology (specializing in linguistics and mathematical linguistics) at St. Kliment Ohridski University in Sofia. In the period 1968-1972, he was a doctoral student at the Institute of Linguistics of the ASSR in Moscow, where in 1972 he defended a dissertation entitled *Некоторые закономерности зрительного распознавания элементов текста* (Some Regularities of the Visual Recognition of Text Elements). Prof. Gerganov began his academic career at the Institute for Foreign Students in Sofia (1967-1989), where in 1977 he was granted the title Associate Professor earned with a habilitation

monograph *Психометрични методи за проверка и оценка на знанията по български език* (Psychometric Methods for Testing and Assessment of Knowledge in Bulgarian Language). In 1988 he was promoted to Full Prof. in recognition of his monograph *Памет и смисъл* (Memory and Meaning). From 1984 to 1988, Prof. Gerganov was the Institute's Deputy Rector. In the period 1989-2000, he worked at the Institute of Psychology of the Bulgarian Academy of Sciences, where from 1991 to 2000 he headed the section on cognitive psychology and research methods, and from 1991 to 1995 he was the Director of the Institute. Prof. Gerganov was Deputy Minister of Public Education (1991-1992) and Director of the National Test Center (1994-1995). Professor Encho Gerganov was one of the first professors at the New Bulgarian University (NBU) and the first head of the Cognitive Science and Psychology Department (1992–2002) there. In 2009 he was awarded the title “*Doctor Honoris Causa*” by the Constantine the Philosopher University, Nitra, Slovakia.

Together with Prof. Gerganov we carried out many studies and co-authored numerous articles focused on Romani-Bulgarian and Turkish-Bulgarian bilingualism in Bulgaria. In 1999 we co-authored a monographic study: Герганов, Е. и Кючуков, Хр. (1999) *Образователни нагласи на ромите в България*. София: Тилия. (Gerganov, E. & Kyuchukov, Hr. (1999) *Educational Attitudes of Roma in Bulgaria*. Sofia: Tilia).

I am certain that with his outstanding and pioneering work and research, Prof. Gerganov brought the educational issues of minority children in Bulgaria to a higher scientific level.

Both Professors Miroslav Yanakiev and Encho Gerganov deeply dedicated their academic lives to linguistics and psycholinguistics, and with their studies, research and publications they helped to change the lives of many in Bulgaria and Europe.

CALENDAR

PSYCHOLINGUISTIC RESEARCH EVENTS

***Adverse Listening Conditions in Language Acquisition and Language Processing:
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Contact: Marcel Schlechtweg

E-mail: marcel.schlechtweg@uol.de

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Start Date: 13th September, 2024

Contact: Else Eising

URL: <https://www.mpi.nl/events/speech-and-language-disorders-lessons-genetics>

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Contact: Matthias Schlesewsky

E-mail: matthias.schlesewsky@unisa.edu.au

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Contact: Katarzyna Przybycien

E-mail: bms@bilingualism-matters.org

URL: <https://www.bilingualism-matters.org/events/bilingualism-matters-symposium-2025>

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