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Learning Spanish (L3) and Forgetting English (L2)? Intervention of Cognates Teaching in Lexical Production in China: A Longitudinal Comparative Study

¿Aprender español (L3) y olvidar el inglés (L2)? Intervención de la enseñanza de cognados en producción léxica en China: un estudio comparativo y longitudinal

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Abstract
This article was based on a 14-week longitudinal study to analyze the role of bilingual (English-Spanish) cognates in learning Spanish as a third language (L3) in China. Using lexical production tasks, it examined learners' cognate awareness, strategies, and recognition under cross-linguistic influence. The results show that explicit instruction of L2-L3 cognates significantly enhanced cognate awareness, reinforcing metalinguistic skills at morphological and semantic levels. The findings also reveal a motivational dimension, as learners intentionally applied cognate strategies in multilingual lexical production.

Keywords: CLI, Bilingual Cognates, Vocabulary Intervention, Cognate Awareness, Cognate Strategy.

Resumen
Este artículo se basó en un estudio longitudinal de 14 semanas para analizar el papel de cognados bilingües (inglés-español) en el aprendizaje de español como tercera lengua (L3) en China. A través de tareas de producción léxica, se investigó la conciencia, el uso de estrategias y el reconocimiento de cognados bajo la influencia interlingüística. Los resultados muestran que la enseñanza explícita de cognados L2-L3 incrementa significativamente la conciencia de cognados, refuerza la conciencia metalingüística en los niveles morfológico y semántico, y evidencia una tendencia hacia la motivación e intencionalidad en el uso de estrategias de cognados durante la producción léxica multilingüe.

Palabras clave: IIL, cognados bilingües, intervención del vocabulario, conciencia de cognados, estrategia de cognados.

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Introduction

The study of the cross-linguistic influence (CLI) of the second language on the teaching-learning process of a third language (L3) remains a highly debatable and widely addressed topic in the field of second and third language acquisition. Many studies have indicated that CLI occurred due to typological proximity between L1, L2 and L3, regardless of which language is the L2 (Ringbom, 1987, 2001; De Angelis, 2007; Dietrich, 2015). It is noteworthy that the study of the cross-linguistic relationship of lexicon between L2 and L3 has not been comparable to that of L1 and L2, especially in the initial stage of L3 learning (Bardel & Falk, 2007, 2012; Bardel & Lindqvist, 2007; Ringbom, 1987, 2001, 2006; Sánchez, 2015). As a result, specific research has been required on the influence of L2 status on L3 learning, on one hand due to the complexity of the interlinguistic situation involving three or more languages, and on the other hand, for a long time, research on L3 has been labeled as Second Language Acquisition (SLA) and has not been turned into an independent discipline, but rather seen as an extension of it (Cenoz et al., 2001).

Theoretical framework

Vocabulary intervention in multilingualism

The pedagogical implication of the monolingual perspective for target language (TL) instruction has traditionally been implemented in SLA classrooms (Cenoz & Gorter, 2015; Fuster, 2022). The same strategy is followed even in classrooms of Spanish (SP) as an L3 in many language centers and universities in China, with the exception of oral competence training in their majority, extent to which the qualified teachers are often required by the syllabus to be SP native speakers. Studies on pedagogical translanguaging (Cenoz & Gorter, 2014, 2017, 2022) have proposed a multilingual perspective in TLA classrooms, learners' linguistic backgrounds can serve as valuable resources for TLA, as empirically corroborated by studies on aspects such as language use awareness and analysis (Haukås et al., 2018; Sanz, 2012; Woll, 2018); learning strategy (Dmitrenko, 2019; Kemp, 2007; LaBontee, 2019); linguistic transfer inventory (Jessner, 2006); language use frequency as a transfer factor (Ecke, 2015; Falk & Bardel, 2010; Jarvis, 2017; Neuser, 2017), and so forth. Nevertheless, to address CLI issues in classroom, most approaches focus on instructional intervention studies from a pedagogical view, as students can

improve their multilingual literacy by training metalinguistic skills on the basis of their linguistic repertoire (Ringbom, 2006; Cenoz et al., 2022). To be more specific, pedagogical translanguaging with intervention approaches reveals that the raising of metalinguistic awareness and the development of language learner's strategies can attribute to teacher's emphasis on relationship between languages (Cenoz & Gorter, 2011), as was confirmed by the following studies: Colombo (2019) conducted a cognate intervention study on adult native SP speakers learning L2 English (EN), indicating that raising cognate awareness led to a significant improvement in the *X_Lex* Vocabulary Test scores for the intervention group (IG) compared to the control group (CG). This suggests that explicit teaching of cognates during vocabulary learning significantly enhances adult bilingual cognate awareness, which enabled students to integrate it into metalinguistic awareness and use it as a vocabulary learning strategy; Horváth and Jessner (2023) realized a study on initial L3 (German) learners using instructional intervention (mainly focusing on vocabulary, communication, and grammar) and multilingual awareness invention (consists of five stages). Through monthly writing performance assessments, they found that the IG outperformed the CG in terms of vocabulary volume and production, in coordination with grammatical complexity. Their studies pointed out that multilingual awareness raising was primarily manifested by cognates at the lexical level; Cenoz et al. (2022) found that after a four-month vocabulary intervention involving cognates and other pedagogical translanguaging activities with fifth-grade trilingual students, cognate intervention contributed to improve students' metalinguistic awareness.

To sum up, vocabulary intervention in classroom primarily adopt a pedagogical translanguaging approach. Through teachers' instruction of second, third or more language (Ln) and multilingual vocabulary, along with the implementation of pedagogical activities, these studies revealed the development of students' performance in language production and improvements in language literacy after the intervention. The main research material for vocabulary intervention is cognate, given their characteristics to connect multiple languages. In line with this approach, other researchers have assured that students generally find it difficult to notice them (Kellerman, 1983; Lightbown & Libben, 1984; Nagy et al., 1993). Therefore, students need to be aware of and trained in the identification and use of cognates if they are to benefit from them (Dressler et al., 2011; Haastrup, 1991; Helms-Park & Dronjic, 2016; Ringbom, 2006; Tréville, 1996).

Cognate transfer in multilingual context

In SLA studies, it has been amply accepted that cognates were recognized and translated faster than non-cognates (Dijkstra et al., 1999; Kroll & Sunderman, 2003; Lotto & de Groot, 1998; Peeters et al., 2013). In Chinese (CH) learners of English, the phenomenon of morphological awareness transfer is not as pronounced as in cases where both L1 and L2 are alphabetical languages (Ramirez et al., 2011; Zhang & Koda, 2012), mainly reflected in Chinese-English compound words (Pasquarella et al., 2011; Ramírez et al., 2011; Wang et al., 2006; Wang et al., 2009). In line with Ringbom (1987), during the cognate awareness raising process in multilingual context, interlinguistic transfer of cognate status occurred more easily if there was typological proximity between L2 and Ln. In multilingual context where there is a lack of cognates between L1 and L2 (e.g. Chinese as L1 and English as L2), this condition is paramount: L3 learners keen to rely more on cognate transfer from L2, hence highlighting the cognate status of L2 (Hall et al., 2009; Szubko-Sitarek, 2011). Many cross-linguistic studies have been carried out on cognates between languages, with the aim of examining whether transfer occurs between L2 and L3 and to what extent the occurrence (Sánchez & Bardel, 2017; Chen & Liang, 2023). Since cognate transfer in multilingual context can also be influenced by the proficiency level of learner´s L2. From the perspective of language proficiency, the impact of L2 on TLA is only significant when L2 proficiency reaches a certain level. Researches have shown that a low proficiency level in L2 can obscure the interference within languages, hence catalyzing a weak CLI (Cenoz, 2000), and several investigations indicated that, due to different languages occupying the status as L2 and L3, the results have been varied, among which proficiency may or may not produce the CLI from L2 to L3 (Adelson, 2022). Szabo (2016) compared the vocabulary test results of multilinguals with Hungarian as L1, Romanian as L2, and EN as L3. The study found that participants with a large vocabulary in their L2 had a large vocabulary in their L3 as well. Based on the relationship between vocabulary size and language proficiency, researchers also found that participants with intermediate or higher proficiency levels in their L2 and L3 did not show a cognate advantage on L3. They were able to internally recognize cognates without the need for explicit instruction. However, they also observed a facilitative effect of cognates in the vocabulary tests of L1 and L2 and concluded that the connection between both languages with L3 was very close.

Whether the conclusions of the aforementioned studies are applicable to CH learners when learning an L3 (with EN as L2 in most cases) remains under discussion. Additionally, compared to European and American language learners, CH learners themselves have a similar linguistic learning background, but it differs in typological distance between L1 and L2 with parallel acquisition (if any) between *Putonghua* (Chinese Mandarin) and dialects. Therefore, the vast majority of CH adolescents do not receive formal training in an L3 in the strict sense, but L2 is compulsory in the pre-tertiary educational context. In the scarce academic context on TLA in China, Zhu (2000) conducted research at the lexical level and concluded that the higher the level of French (L3), the larger the L3 vocabulary and the greater the likelihood of negative transfer to L2 (EN). However, this was limited to calculating the year of learning of L3, which did not focus on L2 vocabulary based on lexical intervention.

Cognate awareness and learning strategy of cognates

In SLA research, it has been established that low proficiency L2 beginners can benefit the most from explicit teaching of cognates, and using cognates as a vocabulary learning strategy can boost their foreign language proficiency (Jarvis & Pavlenko, 2007; Kroll et al., 2002; Ringbom, 2006; Lotto & de Groot, 1998). Previous studies demonstrated that the CLI of the mental lexicon was more evident in the initial stage of language learning, and likewise, such evidence was more obvious in cognate studies (Adelson, 2022; Arteagoitia & Howard, 2015; Cummins & Swain, 2014), as cognates were considered as "stakeholder" of the multilingual learning strategy (Colombo, 2019), and raising cognate awareness increased learners' metalinguistic awareness and scaffolded learned associations (Jarvis, 2009). Otwinowska (2015) indicated that cognate awareness in multilingual context is age-related, and pointed out that cognate awareness raising is more suitable for younger learners than adult learners in the recognition of cognates and vocabulary learning strategy. D'Angelo and his colleagues (2017) conducted a developmental approach and considered cognate awareness can broaden vocabulary repertoire of students with a limited language proficiency at the initial stage of language learning. Other studies indicated that cognate identification during L3 learning is less influenced by the typological differences between L1 and the target language, but rather by the inherent characteristics of cognates (Cenoz et al., 2022). Of note, the development of cognate awareness typically requires a

longitudinal perspective, whilst its manifestation entailed consideration of various aspects, which mainly involves cognate recognition, reading ability, vocabulary development, language competency, and so forth.

In the scope of cognate awareness studies, despite the typological proximity between the languages of multilingual learners, as well as L2 or L3 proficiency, or other indicators in CLI studies, variable controls were relevant when examining participants from relatively more similar backgrounds. To reduce this type of bias and ground awareness studies on a more refined basis (Arteagoitia & Howard, 2015; Dressler et al., 2011; García et al., 2017; Lyster et al., 2013), the present study conducted a longitudinal vocabulary instruction of cognates in the Spanish as a Foreign Language (SFL) classroom to investigate how the intervention of cognates learning affects the lexical acquisition of L3 among CH learners, how cognate awareness is developed during L3 learning, and to explore, from the perspective of CLI, how the vocabulary instructional intervention implicates cognate transfer between L2 and L3 during cognate learning. Additionally, it examines how L2 (EN) and L3 (SP) interact at the lexical level during the initial stage of TLA for CH learners. A writing task and a translation task have been conducted to examine whether the outcome of the explicit cognate learning process has been affected by cognate awareness, cognate recognition and cognate strategy (lexical selection), and to determine in which translation direction the learners perform better. In short, our study aimed to discuss the following research questions:

RQ 1: How does cognate status (lexical knowledge) affect the lexical acquisition of L3?

RQ 2: Is cognate awareness auto-generated during explicit cognate instruction in TLA?

RQ 3: From the CLI perspective, is there a directional and performance difference in translation between L2 and L3?

RQ 4: What are the outcomes of vocabulary intervention of cognates in the lexical production of L3?

Method

Participants

The participants for the present research were 42 students recruited from the Faculty of Foreign Languages and Literature at Fudan University in Shanghai, China. 24 students came from the same first-year group of Spanish Department, whilst the rest of 18 students were from the second-year group of EN Department. All of them are native CH speakers with CH as their L1 and their ages range from 18 to 20 years old (M = 19.74, SD = 0.87). Before participating in the present research, all participants stated that they had no background in learning SP and were all beginners. However, as they were recruited at the beginning of the new semester for the research, they have SP classes throughout the semester. As expected, 24 SP major students would have more class hours (10 hours per week) than 18 EN major students (6 hours per week).

For all participants, SP was their L3, and the common L2 they all shared was EN, as learning this language was mandatory in the Chinese educational system which was taught in most parts of the country from primary education onwards. At the beginning of the semester, in order to control lexical knowledge of L2 (EN) of both IG and CG, each participant underwent the Vocabulary Size Test (VST) (Nation & Beglar, 2007) before the cognate instructional intervention began. According to the test results, all the participants were divided into 4 groups (see Table 1), 20 from SP major and 12 from EN major, and were further subdivided into students of IG and CG, excluding those who did not attend the VST (10 out of 42 students, finally remaining 32 students for the upcoming sessions). An independent sample t-tests using R software was conducted to ensure that the EN vocabulary size within SP students and EN students showed no difference between groups. For EN students (ENs), the comparison between IG and CG is as follows: t = -0.488, p = 0.631; for SP students (SPs), the comparison between IG and CG is as follows: t = -0.762, p = 0.465.

Table 1
Division of groups (SP: Spanish; EN: English)

	SP students	*EN students*
IG	10	6
CG	10	6

Source: developed by the authors.

Vocabulary intervention of explicit cognate teaching

According to a previous analysis of all cognates from the basic vocabulary in the lexical manual (Chen & Yang, 2024). Its lexical coverage includes all the localized Spanish textbooks used before the second year of college in China. In the meantime, the cognates for the present study have been meticulously selected from the textbooks that will be used during the SP learning for the four groups throughout the semester: *Español moderno volumen 1* (Dong & Liu, 2017) for SPs, and *Español ABC* (Liu et al., 2008) for EPs. In coordination with the curriculum plan, the courses for both SPs and ENs progress quasi-parallelly throughout the semester: students cover one unit per week, including its vocabulary. The intervention was carried out as supplementary sessions, students of IG were required to learn bilingual cognates (Figure 1) found in the vocabulary of each unit for both the *Español moderno volumen 1* and *Español ABC* through videos materials recorded by one of the researchers. The duration of each video varied from 2 to 25 minutes, depending on the number of cognates in each unit. Therefore, the students of IG needed to complete the learning of bilingual cognates with several videos in the final session of the week (14 videos in total, considering the approach of the exam season) as well as following up the weekly vocabulary learning. This instructional intervention was beneficial as it helped them memorize new SP words including cognates. Their participation in video watching and video task completion is auto-recorded in the statistical reports provided by the Chinese SPOC platform (Chaoxing) where the videos were uploaded. The vocabulary intervention of cognates teaching in each unit included presentation, terminological explanation, usage, and discernment of "false friends" (in contrast to "true friends", false friends are cognates that share the similar o identical lexical form but vary in meanings: e.g. *embarazada* and embarrassed.). In addition to cognate learning, in the last 3 weeks, three extra videos (one per week) were presented explaining the application of cognates shared by both textbooks between SP major and EN major in bilingual translation (see Figure 2) (a total of 50 cognate pairs), so they were required to understand the use of cognates and learn once again the target cognate selected for the first translation test (the translation pairs were obtained from Reverso Context, an online parallel corpus).

Figure 1
Cognate learning in each unit

Source: developed by the authors.

Figure 2
Translation pairs of cognates

Source: developed by the authors.

Two tasks of lexical production

Two tasks of lexical production were conducted sequentially with all participants from IG and CG, aiming to examine the raising of cognate awareness, metalinguistic awareness and cognate transfer after explicit teaching of cognates. The first was a writing (transcription) task after watching a silent Charlie Chaplin short movie titled *The Kid* by Charles Chaplin, inspired by the CEDEL2 corpus. After watching the 3 minutes and 58 seconds short movie, all the students were required to write down a description in SP of the short movie within twenty minutes. The task mainly aimed to assess whether the cognate awareness is auto-generated and even raised after the intervention of cognate teaching. If students of IG exhibited a higher density of cognates in their descriptions compared to the control group, then we can conclude that students' cognate awareness is auto-generated or raised.

The second task was bilingual translation, with 10 simple sentences from SP to EN and 6 from EN to SP. The data of target cognates are shown in Table

2. All target cognates were selected from the cognates used during the intervention process. The difference of sentence number and cognates number between the two groups was due to the considerable proficiency gap between L3 and L2 during the initial stages of L3 learning, since students exhibited weaker literacy in L3. The translations of the sentences in both groups were confirmed by two SP native speakers. Moreover, in order to assure the target cognate familiarity among the participants, 17 students of homogeneity (CH L3 SP learners) with an average age of 18.18 were recruited to assess the familiarity of the target cognates on a Likert-scale of 1-5 via an anonymous inquiry filled out through scanning QR codes, with the mean value of 3.79. All the participants of the present study also rated their multilingual proficiency of Listening, Speak, Comprehension and Writing (on a scale of 1-10) in CH (L1), EN (L2) and SP (L3): all of them (17) considered that their EN proficiency is higher than their SP proficiency in four terms mentioned above with their means: L1 (CH): 8.16; L2 (EN): 6.62; L3 (SP): 2.56.

Table 2
Cognates data in translation task

	S to E				*E to S*				*Total*			
	SC		*EC*		*SC*		*EC*		*SC*		*ec*	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
L	6	1.8	5.4	2.1	7.5	2.01	7	2.37	6.6	2	6.1	2.3
Frq	118	86.37	85.32	107.76	127.86	222.88	36.18	47.94	122.11	158.34	64.85	91.21
Zipf	4.89	0.47	4.49	0.82	4.4	0.79	4.28	0.48	4.69	0.67	4.4	0.71
LD	2.2	1.5	-	-	2.4	1.3	-	-	2.3	1.4	-	-
Fam	4.53	0.59	-	-	2.1	1.01	-	-	3.49	1.42	-	-

Source: developed by the authors.

Notes: S to E: Spanish to English; E to S: English to Spanish; SC: Spanish cognates; EC: English cognates; Zipf: Zipf value of cognates; LD: Levensthein distance of cognates; Fam: familiarity of cognates.

Findings

The data of two tasks were collected from answer sheets for all four groups in the 15th week of the semester after completing the written tasks of bilingual

translation and description after watching the short movie. All participants were informed that their performance on these two tests would not affect the final evaluation of their SP courses, but the participation and positive attitude counts in their regular credit, and during the two tests, the use of teaching resources such as dictionaries or reference manuals was not allowed, and participants could not ask questions or communicate with each other. Participants were allowed a maximum of 20 minutes to complete individually the first task and another 20 minutes to individually complete the second task. According to the attendance on the day of the two tests, a total of 30 answer sheets were collected: of SP major, 9 from the students of IG and 10 from students of CG; of EN major, 5 from IG and 6 from CG.

Writing task

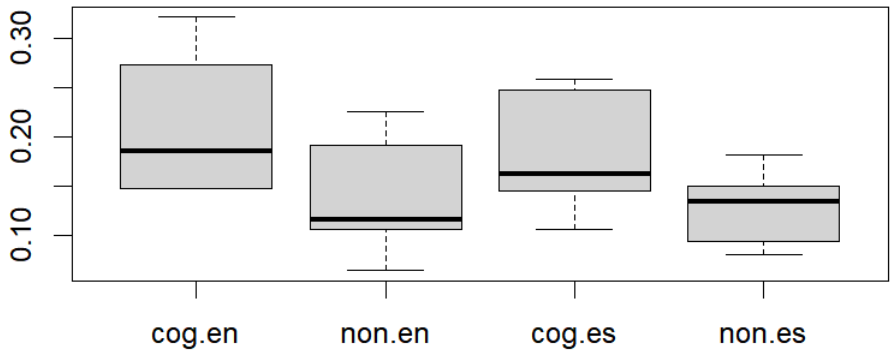
The transcription writing task of the short movie aims to shed light on the auto-generation of cognate awareness among L3 learners. Every participant presented the transcription task in front of the answer sheet and the bilingual translation on its back. All the writings were transcribed and coded for further analysis. For 30 samples, student performance was evaluated by calculating the text length, whilst the lexical density as well as the individual cognate density were also compared. The norm of the abovementioned indices was based on the study of Horváth and Jessner (2023). Under this premise, the use of cognates in the written texts has been analyzed to detect cognate awareness when writing. Different from the algorithm for lexical density calculation, we considered the ratio of cognates to all words of individual texts as individual cognate density.

The intergroup analysis of cognate selection indicated that there was significant difference between SP IG and SP CG ($p = 0.020$) (see Figure 3), whereas there was no significant difference between SP group and EN group. Additionally, we also conducted a data analysis with the texts collected in CEDEL2 in the same task. Since it is a corpus of L2 (SP) students, we selected two groups of subjects who had no more than half year of SP learning (average learning time: 0.493 years), analogical to our participants' groups, but with L1 of EN (n = 6) and Japanese (JP) (n = 6), respectively. Table 3 reflects the statistical data of the written texts of the same short movie from CEDEL2 (EN-SP; JP-EN-SP) and trilingual participants (CG-EN-SP) of this study, of which the analysis indicated that there was no significant difference in student performance among the

groups (F = 0.498, p = 0.614); there was significant difference in both lexical diversity (F = 16.34, p < 0.001) and in cognate ratio. A post hoc analysis revealed that the cognate ratio differed significantly between the JP (M = 0.146) and EN (M = 0.336) Groups (p < 0.001), as well as between the CG (M = 0.133) and EN Groups (p < 0.001). There was no significant difference of the student diversity between the JP (M = 4.948) and EN (M = 6.359) Groups (p = 0.150), whilst there was significant difference of the diversity between the CG (M = 3.078) and EN Groups (p < 0.005) and between the JP and CG Groups (p = 0.011).

Figure 3

Box plot of cognate ratio (the y-axis) in writing task of four groups (cog.en represents EN IG; non.en, EN CG; cog.es, ES IG; non.es, ES CG)



Source: developed by the authors.

Table 3

Comparison of writing tasks among groups

	lexical_diversity.Mean	*student_performance.Mean*	*cognate_ratio.Mean*
CG	3.077889	8.685926	0.13297574
EN	6.359215	6.972222	0.33582925
JP	4.948383	8.055556	0.14629995

Source: developed by the authors.

Translation task

The coding norms for translation task was as follows: for each sentence in the bilingual translation, one point was obtained if a cognate was correctly translated (the evaluation was referenced by the Reverso Context and the researchers of the present study), Table 4 shows the summary of the cognate performance in translation task. By correctly translated we mean that the participants successfully translated the target cognates at the lexical level during the translation process, irrelevant with the correctness or completeness at the sentence level.

Table 4
Cognate performance in translation task

Summary						
major	group	mean_score	sd_score	median_score	min_score	max_score
EN	CG	8.67	3.27	9.5	3	12
EN	IG	12.4	3.58	11	8	17
SP	CG	8.6	3.13	9	2	12
SP	IG	11	2.45	10	8	16

Source: developed by the authors.

The logistic regression analysis revealed a noteworthy impact of the "group" variable on the outcome ($p = 0.039$), suggesting that the IG outperformed CG. Additionally, the variable "direction" demonstrated a significant effect ($p = 0.006$), indicating better performance in translations from SP (L3) to EN (L2) compared to those from EN (L2) to SP (L3). Of note, the interaction effect between major and direction ($p = 0.036$) also exhibited a significant effect.

The lexical selection seemed to affect the translation task to the extent to which when translating certain word pair such as "perdón-forgiveness", participants opted for "pardon" rather than "forgiveness" or "apology". This indicates that, regardless of the translation output, metalinguistic awareness of cognates influenced the translation process, possibly by the raising of cognate awareness. Therefore, we further analyzed cognate selection in translation based on both orthographical and semantic dimensions. Taking "perdón" as an example, if translated as "pardon", the case was coded as (1, 0), of which the 1 stands for 1 point for orthography and 0 stands 0 point for semantics.

An ANOVA test with four factors (orthography, semantics, major, group) showed a significant difference of both orthography and semantics on correctness ($p < 0.000$), indicating that all participants adopted both cognate orthographical and semantic strategies during multilingual translation. In order to further discuss the influence of interactive factors on correctness, a hierarchical regression test with abovementioned factors was conducted. The results indicated a positive correlation between semantics and correctness ($\beta = 0.67$, $p = 0.015$) (as shown in Table 5). This suggests that in L2 to L3 translation, even if participants have limited understanding of the entire sentence, their translation strategy for the target cognates was based on semantic considerations rather than directly using the orthographic overlap. The interaction between major and group also showed a significant positive effect on the dependent variable ($\beta = 20.55$, $p = 0.014$), indicating that different majors had different effects on different groups, post hoc analysis based on the summary in Table 4 revealed that the IG outperforms the CG in terms of major and group; the significant difference in interaction between major and group was mainly due to the significant differences between groups.

Table 5
Hierarchical regression of four factors

Hierarchical regression results					
	Variables	β	*p*	R^2	ΔR^2
step 1	orthography	-0.31	0.304	0.8504	
	semantics	0.67	0.015		
step 2	major	-0.32	0.868	0.8561	0.57**
	Group	-15.74	0.06		
step 3	orthography × semantics	0.02	0.362	0.934	0.79*
	orthography × major	0.1	0.729		
	semantics × major	-0.12	0.665		
	major × group	20.55	0.014		
	orthography × group	0.44	0.264		
	semantics × group	0.4	0.231		
	Observations	29			
	R^2 / R^2 adjusted	0.934 / 0.885			

Source: developed by the authors.

The t-test between orthography and semantics similarly also indicated that lexical selection in translation task relied more on semantics (t = -2.042, df = 55.227, p = 0.046); the t-test for orthography between the SP and EN groups indicated that there was no significant difference of the morphological awareness between the SP group and the EN group, similarly, no significant difference in semantics scores between the two groups was found.

Discussion

To firstly address the RQ1, we believe that, due to the recency of L3 learning and all participants started from scratch, the different performance between groups was highly convincing, which was reflected in the higher correctness of the cognates in translation task and their larger proportion in writing task. In line with the typological distance between CH students' L1 and Ln, the CLI between CH students' L2 and L3 is comparable with that of L1 and L2 of bilingual students from alphabetic writing systems (Chen & Liang, 2023). In the initial stage of SLA, EN beginners tend to use cognates when expressing themselves in a foreign language typologically close to their L1; similarly, in the initial stage of TLA of present study, students of IG tend to use more cognates than CG when writing in L3, which indicates that the cognate awareness has been auto-generated or raised in the group of IG throughout the entire semester and the RQ2 is positively confirmed. Regarding the direction of translation (RQ3), in the task of bilingual translation from L3 to L2, students of IG performed better than those of CG, demonstrating that in the initial stage, cognate learning enhanced the lexical translation from L3 to L2, and the raising of cognate awareness have had a positive influence on multilingual translation, which also evidenced positive pedagogical intervention of cognates in lexical acquisition of L3 in lexical knowledge from a multilingual perspective. Moreover, this finding demonstrates the cognate facilitation from L3 to L2, in coordination with the results obtained in psycholinguistic experiments on lexical processing, which generally suggest that students with higher L2 proficiency are more susceptible to the cognate effects when learning L3, resulting in a cognate facilitation effect of L3 on L2 (Zhu & Mok, 2020). Of note, the present result at L3 level also correlates highly with the conclusion at L2 level: without the interference of false friends, the facilitation effect of cognates can be observed in the initial stage of L2 acquisition (Brenders et al., 2011). As for RQ4, it has been proved that that European

learners are more influenced by L1 than L2 in acquiring additional languages (Ringbom, 1987), which is obviously not the case for CH learners. Regarding L3 comprehension, according to Ringbom (2001), lexical transfer has been observed, especially from L2 to L3, involving both the morphological and semantic levels of words. This transfer is related to L2 proficiency, being more evident in those who have a higher proficiency in L2 (Zhu & Mok, 2020). Although this point has not been analyzed in depth, in present study we also found that participants with a larger vocabulary performed better. Therefore, in the TLA classroom, teachers often take advantage of the comprehension ease of L2 to explain grammatical and lexical phenomena of L3, especially in the initial stage of TLA. The positive intervention of explicit cognates teaching occurs in an environment of cognates that is definitely exploitable, whilst in a dubious or complex cognate environment, this intervention can be negative in consideration of finality of certain task, as proven by the example of "perdón" translated as "pardon".

The explicit teaching of cognates contributes to the development of cognate awareness among L3 speakers, primarily manifested in the auto-generation or raising of cognate awareness. The results of this research are in line with the views of Cenoz and Gorter (2022), who suggested that incorporating pedagogical translanguaging in L3 instruction aided in fostering cognate awareness or morphological awareness. L3 learners will use the cognate strategy in specific vocabulary production tasks (such as writing and translation) to enhance their performance. Hence, explicit teaching of cognates can improve multilingual literacy at the lexical level. Meanwhile, the recognition and differentiation of cognates by L3 learners are also crucial. The present study suggests that using cognates as lexical material in translanguaging activities can enrich the lexical knowledge of L3 learners and benefit them. In the analysis of both orthographical and semantic dimensions in translation tasks, we found no significant differences in orthography between the major and group classifications, suggesting that no differences were observed in manifested morphological awareness between the IG and CG after learning cognates. Based on the auto-generation of cognate awareness, we believe that this may be due to the emphasis placed during cognate teaching and cognate translation teaching processes on the fact that translation equivalents may not necessarily involve the use of cognates.

Unlike CLI in CH bilinguals, which exists at the morphological level, CLI in a multilingual context exists not only at the morphological level but also

at the lexical level, specially between L2 and Ln cognates. The conclusion of the present study differs from the conclusion that L3 lexical production relies on the cognate status of L2 or L1 (Hall et al., 2009; Szubko-Sitarek, 2011). Although the present study did not categorize participants based on their multilingual proficiency, their L2 proficiency was significantly higher than their L3 proficiency. The absence of L2 influence on L3 in the translation task suggests that with higher L2 proficiency, there is less transfer to L3, which is consistent with the findings of Sánchez and Bardel (2017) and Szabo (2016). L3 proficiency also influences cognate transfer in CLI, as indicated by Adelson (2022): Participants with higher L3 proficiency leads to more significant transfer to L3, and participants also tend to avoid the influence of L1 on L3, which suggests that proficiency is a key factor in multilingual CLI. However, Adelson (2022) mainly focuses on oral production, which may differ from students' engagement and instantaneity at the lexical production level. The discussion on L3 proficiency of the present study was based solely on language background surveys, which revealed that students were not very confident in their L3 level. Additionally, the magnitude of the cognate facilitation effect may also be related to the proficiency levels of both languages. By far, researches on the acquisition of cognates suggests that in a multilingual context, cognates have an impact on languages with higher proficiency levels. As for the participants in this experiment, at the initial stage of L3 learning, learning L3 actually enhanced the lexical knowledge of L2. It is not that L2 is interfered with by L3, and the idea of learning L3 and forgetting L2 does not seem to be applicable here, whilst the interaction between the improvement of L3 proficiency and the proficiency of L2 will be discussed in future research.

The overview and the comparison with CEDEL2 corpus of the writing task demonstrated that students of IG had a greater cognate awareness compared to those of CG. The fact that the performances of CG, EN and JP in L3 writing indicated no significant difference attributes to the short learning time of L3. The comparison of cognate ratios indicated that cognate awareness was more evident in bilinguals than in trilinguals, specially with L1 denoting significant typological distance from L2 and L3. The smaller data of diversity in CG compared to JP and EN suggested that CH students had lower flexibility in vocabulary application, which may be related to the limited vocabulary taught in the textbooks of L3 learning in its initial stage and the vocabulary requirements set by teachers.

As one of the pedagogical translanguaging activities in a multilingual context, the explicit teaching of cognates has enhanced the cognate awareness of the participants in the present research to the extent to which the participants have developed their multilingual literacy through the employment of cognate strategy during the lexical production process, whilst the lack of differences in the orthography may not directly reflect the impact of cognate awareness in the translation task, it does not necessarily mean that cognate awareness did not play a role. This is because cognate awareness in this study was viewed as permeable metalinguistic skills throughout the lexical acquisition process. It was not only involved in the perception and recognition of cognates (Choi, 2019; Horváth & Jessner, 2023) but also in their discernment and application (Otwinowska, 2015; D'Angelo et al., 2017). Future studies on cognate awareness could explore further at the lexical level, considering the three elements of cognates (phonetics, morphology and semantics). Furthermore, the raising and development of cognate awareness during the lexical acquisition process could be analyzed in depth as well. The present study suggests that cognate awareness can be demonstrated not only in cognate facilitation effects but also in contexts involving false friends or complex environments of cognates (such as those with translation equivalents that fit the context).

Conclusion

This study investigated the influence of explicit teaching of cognates among CH L3 learners, and grouped the participants in a balanced approach based on their L2 vocabulary proficiency to conduct L3 writing tasks and bilingual translation tasks between L2 and L3. We examined the use of cognates by CH L3 learners, exploring their cognate awareness raising or auto-generation, cognate transfer, and the application of cognates in translation tasks from both orthographic and semantic dimensions. Our findings indicated that cognate intervention contributes to vocabulary learning and lexical knowledge enhancement among multilingual learners (in particular for typologically close language pairs). The study also discussed the findings interwound with existing researches on cognate-related aspects in L2 and L3 contexts.

The main limitations of this study lie in the sample size and the limited number of sentences in the translation task (in particular the low frequency cognates in the translation from L2 to L3). However, through the analysis conducted in this study, we have arrived at conclusions that align with the

basic findings in the field of research on cognates among L3 learners. Therefore, we believe that the study possesses a certain degree of scientific rigor, and we anticipate that the aforementioned variables will be better controlled in future research. The issues explored in this study will serve as fundamental questions for future research endeavours, such as investigating whether the variability of cognate awareness among CH L3 learners across different age groups aligns with findings observed in other contexts. Further exploration in line with the present research is required to shed light on how multilingual learners apply cognate strategies in multilingual lexical production, such as in translation or interpretation processes, in addition to cautiously controlling counterbalance in the directionality of translation.

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