ATU PRESS

ISSUES IN LANGUAGE TEACHING (ILT)
VOL. 12, NO. 2, 371-400, December 2023
https://doi.org/10.22054/ilt.2024.77275.821 Document Type: Research Paper

Cross-Linguistic and Intra-Linguistic Influence in the Use of L3 French Prepositions: A Stimulated Recall Content Analysis

Farhang Daneshfard
PhD in TEFL, Shiraz University, Shiraz, Iran

Mahboobeh Saadat*
Associate Professor of TEFL, Shiraz University, Shiraz, Iran

Received: November 16, 2023**; Accepted:** December 30, 2023

Abstract
Investigation of cross-linguistic influence (CLI) using stimulated recall can be revealing at the level of cognition. Cross-linguistic and intra-linguistic influence in the use of French prepositions for Iranian L1 Persian/L2 English/L3 French learners was thus explored in this study. Data were gathered from 12 students of English (Group E) and 12 students of French (Group F). A fill-in-the-blank test of French prepositions was administered; then, the participants were asked to recall how they answered the items. The results of analysis of the data gathered revealed traces of CLI and intra-linguistic influence. It turned out that the participants not only used their L3 knowledge but also thought of the sentence, part of the sentence, or the preposition in Persian or English or considered a similar sentence or phrase in one of the three languages. However, Persian influence manifested more deeply in the form of thinking of sentences whereas that of English was more in the form of thinking of prepositions. Furthermore, in both groups, after the CLI of Persian, French intra-linguistic influence was more frequent followed by CLI of English; therefore, linguistic proximity between French and English was not found crucial. Finally, Group F, with more L3 exposure, experienced less CLI with a higher percentage of facilitative influence.

Keywords: amount of L3 exposure, cross-linguistic influence, intra-linguistic influence, linguistic proximity, stimulated recall

* **Corresponding author's email:** msaadat@rose.shirazu.ac.ir

INTRODUCTION

According to one of the definitions of third language, if we take the first language(s) as the language(s) learnt in infancy and second language(s) as the language(s) acquired later in life, 'the term third language (L3) refers to a non-native language which is currently being used or acquired in a situation where the person already has knowledge of one or more L2s in addition to one or more L1s' (Hammarberg, 2010, p. 97). One of the important issues in third language acquisition (TLA) is the effect of the languages known by a person on each other, originally captured by the term transfer. Rooted in behaviouristic notions, transfer is defined by Odlin (1989, as cited in Ellis, 2008) as "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired" (p. 969). Two types of transfer are conceivable, according to Gass et al. (2013): positive transfer occurs when there is similarity between a linguistic element in a known language and in the target language; by contrast, negative transfer, or interference, happens when a learner mistakenly uses in the target language the same form as the one used in a known language. However, the notion of transfer is non-existent for advocates of the Non-Transfer Hypothesis (e.g., Clahsen & Muysken, 1989), who claim that learners do not draw on their knowledge of any language but use their general learning strategies.

Transfer is also referred to as cross-linguistic influence (CLI) nowadays. CLI was first proposed by Sharwood Smith and Kellerman (1986) to encompass "transfer, interference, avoidance, borrowing, and L2-related aspects of language loss" (p. 1) and is said to have an impact on the development of the language under its influence (Ghadaki, 2013), from vocabulary to pragmatics (Ecke, 2015; Farnia, 2022). The two terms are used interchangeably in this study.

Another type of effect of a language system on linguistic items is referred to as intra-linguistic effect. In contrast with CLI, intra-linguistic errors "result from faulty or partial learning of the target language… [and]

may be caused by the influence of one target language item upon another" (Richards & Schmidt, 2010, p. 294). Some studies have investigated cross-linguistic and intra-linguistic influences simultaneously (e.g., Włosowicz, 2012).

Furthermore, the study of CLI in TLA is rather different in terms of complexity from that in second language acquisition (SLA). In the realm of SLA, only two directions can be conceived—the influence of L1 on L2 and vice versa (L1↔L2)—whereas in TLA six possibilities arise (L1↔L2, L1↔L3, L2↔L3). Finally, since detecting CLI needs something to stand out in the learners' L3 system, it is at the early stages of L3 acquisition, when learners make most mistakes, that traces of CLI are said to be more recognisable (Puig-Mayenco et al., 2020). Therefore, as the literature review will indicate in more detail, there are different factors affecting CLI in TLA whose simultaneous effects still deserve attention from researchers, and this study will target some of them together with intra-linguistic effects by collecting data from learners of limited L3 proficiency. Moreover, another gap this study aims to address based on the following literature review is the extent of interference from different languages in terms of linguistic elements ranging from words to sentences.

LITERATURE REVIEW

Factors Affecting CLI

CLI is said to be affected by different variables. Ringbom (2001) points out that the source of transfer depends on whether the linguistic feature to be transferred is phonological, syntactic, lexical, discoursal, etc. For instance, phonological CLI usually manifests in terms of L1 accent, discourse transfer rarely happens from L2, and transfer in the area of lexis happens between similar languages. In addition, Jensen et al. (2021) note the contingency of the element to be transferred on its saliency and complexity. Moreover, according to the Linguistic Proximity Model (Westergaard, 2017), transfer into L3 occurs from similar languages. Concentrating on this factor, Perić and

Božinović (2015) investigated errors made in compositions in Spanish as L3 and found that formal similarity between languages went hand in hand with more transfer between the languages. However, linguistic proximity has not always been found to be a determining factor (Fallah & Jabbari, 2018; Lindqvist, 2010). In fact, the status of the previously known languages has been deemed to be important. One proposition contends that the dominant source of CLI is the native tongue of the learner since it tends to be more accessible (Puig-Mayenco et al., 2020). This hypothesis has been supported by scholars such as Ghadaki (2013) and Włosowicz (2012), who found that L1 exerted more influence on L3, even though L2 and L3 were more similar. Another proposition, L2 Status Factor Hypothesis, regards L2 as the source of CLI, because L2 has a non-native status like L3, and there is more cognitive similarity between them (Falk & Bardel, 2011). This hypothesis is backed by evidence obtained by Bardel and Falk (2007) and Gut (2010). In addition, the Cumulative Enhancement Model (CEM) proposes that both L1 and L2 play a facilitative role in learning and using L3 (Flynn et al., 2004), an idea supported by a number of studies (e.g., Berkes et al., 2012; Khezri et al., 2020).

Focusing on the context of using the language, Ellis (2015) contends that learners transfer more often while performing tasks in which they are required to use language spontaneously. The reason, Ellis proposes, may be that learners more readily draw on whatever they know, including previously known languages, in spontaneous production. Ellis believes that this can explain the different findings in two studies, namely, Abdullah and Jackson's (1998) done in a formal setting and Sridhar and Sridhar's (1986) done in a natural one. Ineed, learners in the first study did not tend to transfer idiomatic expressions, whereas the second study reported frequent transfer.

Transfer also depends on learners' characteristics. There is general agreement that low target language proficiency results in more transfer from previously known languages because learners have many gaps in their target language; hence, they resort to their previously known languages (Ellis 2015; Murphy, 2003; Sánchez, 2014). Furthermore, more L3 knowledge has been

found to help learners avoid disruptive influence from background languages (Sánchez, 2014). In this regard, Sánchez (2015) studied the "mixing of linguistic material from different language systems in word construction attempts" (p. 253) and found CLI diminishing with increasing L3 English instruction and proficiency. However, this role is not supported by all researchers (e.g., Ghadaki, 2013). Additionally, it is suggested that a minimum level of source language proficiency is required before transfer becomes significant (Hammarberg, 2001). Nonetheless, the results obtained by Orcasitas-Vicandi (2019) do not support this idea. Another learner factor closely associated with proficiency is target language exposure. It is operationally defined either as the length of residence in a foreign country or the amount of instruction (Jarvis, 2000; Murphy, 2003). Jarvis (2000) has noted the significance of the amount of target language instruction in language transfer. More specifically, Murphy (2003) believes that language transfer decreases with increased target language exposure. A likely explanation is that, similar to proficiency, more target language exposure is associated with less need to transfer. However, Hervé and Serratrice (2018) did not report a conclusive role for language exposure.

Empirical Studies on CLI

The review of the factors above shows the complexity of investigating CLI in TLA and the helpfulness of further studies to better comprehend how the different factors work. Researchers who have investigated CLI have often relied on the correct or incorrect answers of L3 learners to translation tasks (e.g., Mutta, 2014) or on their judgment about the grammaticality of L3 sentences (e.g., Westergaard, 2017). However, CLI can also be investigated by reference to the learners' thoughts while performing the task. A difference between doing so rather than examining the outcome of the tasks is that outcomes can be interpreted indirectly as influence from a single language, but the thinking behind the outcome may reveal CLI from different languages

or from a single language by different ways of having recourse to that language.

To have access to learners' thoughts, researchers have used verbal reports, which invoke asking participants to report their thoughts related to solving a problem or doing a task—a method called stimulated recall if the participants receive a prompt to recall their thoughts (Mackey & Gass, 2016). This method has been widely used in EFL and ESL contexts (e.g., Lam, 2008; Moradkhani & Goodarzi, 2020; Polio et al., 2006; Rasouli & Moradkhani, 2021), and CLI studies employing this method have engaged learners in various tasks such as writing (Jessner, 1999; Modir Khamene, 2012), translation (Gibson & Hufeisen, 2003; Mieszkowska & Otwinowska, 2015; Woll, 2018), or identifying cognates (Berthele, 2011). To trace the kind or amount of CLI, researchers have utilised verbal protocol data in various ways. A few pertinent studies will be reviewed below.

Jessner (1999) gathered data on metalinguistic awareness of L3 English learners who knew Italian and German by using verbal protocol data while they wrote in English. The data showed resort to all three typologically similar languages known by the learners as they compared words and cognates crosslinguistically. Furthermore, Cawalho and da Silva (2006) examined the relative importance of language status (L1 or L2) and linguistic proximity in terms of their influence on CLI. The participants were 16 students who knew both English and Spanish well but only either as their L1. In addition, Portuguese was their L3. The participants were required to produce given Portuguese structures, think aloud simultaneously, and do a stimulated recall task thereafter. It was found that most transfer happened from Spanish, regardless of whether it was L1 or L2. The researchers ascribed this finding to the stronger similarity between Spanish and Portuguese, supporting a greater role for linguistic proximity than order of acquisition. Berthele (2011) worked with 163 Swedish German speakers who knew English. The participants were engaged in recognising cognates in Danish and Swedish when faced with written and aural information. Verbal reports collected while the participants were involved with the task revealed that they

compared the sounds and spellings across the languages to recognise cognates and guess the meaning of unknown vocabulary. In addition, mastery of languages similar to the target language was found to contribute to facilitative CLI. Modir Khamene (2012) used verbal reports to investigate the language(s) in which 12 of a larger group of participants thought while writing in English as L2 or L3—with Persian (and Turkish) as their background language(s). To trace CLI in doing the task, the number of words verbalised in background languages was counted. She found that a high percentage of the thought processes involved originated in Persian as the first language. In addition, the trilinguals used their knowledge of L2 to contend with the target language. Finally, higher target language writing proficiency was associated with less dependence on background languages. Mieszkowska and Otwinowska (2015) tried to examine which languages were activated when multilingual learners were faced with an unknown language. To this aim, they gave 40 L1 Polish/L2 English speakers a text to be translated from Danish into English and asked them to verbalise their thoughts. Moreover, the participants were presented with an English translation of the text they had translated and asked to comment on their own translations. Researchers noted similarities between some words in different languages, and coded them as correct or wrong. In addition, the translation strategies learners used were identified. The results showed that both linguistic proximity and proficiency in any languages learnt after L2 contributed to facilitative CLI and strategy use. In addition, L2 English turned out to be most influential. Woll (2018) examined what verbal protocol data revealed about cognitive processes during a translation task. Sixty-six L1 French/L2 English learners of L3 German participated in the study. They were asked to translate words from German into French and verbalise their thoughts simultaneously. The verbal reports were analysed for how explicitly the similarities were noted and for positive transfer from English. The findings indicated that the more explicitly the similarities were noted, for instance, by noting linguistic rules, the higher were the chances of positive transfer.

The foregoing review of the literature indicates that studies using verbal reports have investigated language status, proficiency in non-native languages, linguistic proximity, and positive transfer. However, to the best of our knowledge, no verbal-report studies have looked at them all at the same time, and none have compared CLI with intralingual influence. Furthermore, no studies have examined exactly how much the activation of background languages happens at the level of words, phrases, and sentences. The present study was an attempt to fill the above gaps.

PURPOSE OF THE STUDY

The aim of this study was to find how L1 Persian/L2 English/L3 French speakers may apply their knowledge of L1, L2, and French in using French prepositions of time. Moreover, the study aimed to explore any differences in CLI for learners with different levels of exposure to L3 French. Additionally, one of the aims of the study was to examine the role of the noticeable linguistic proximity between English and French in the amount of CLI from English compared to Persian. Finally, the present study sought to ascertain whether more exposure to L3 French—which presumably may lead to more judicious transfer—actually increases the percentage of positive transfer. Accordingly, it pursued answers to the following questions:

1. What is the CLI of L1 (Persian) and L2 (English), and intra-linguistic influence of L3 French on the use of French as L3?
2. Does the amount of exposure to L3 French make any difference in the amount of CLI?
3. Does the linguistic proximity between French and English make any difference in the source language for CLI?
4. Does more L3 French exposure increase the percentage of positive transfer from background languages?

Context of the Study

The current study was carried out in Iran, where the official language is Persian and the majority use it as their first language. English and French are both foreign languages there, although they enjoy different statuses. In fact, according to Farhady et al. (2010), English is the most prevalent foreign language taught in Iranian schools. Nevertheless, some people in Iran learn French as an additional language (L3 or, much less frequently, L2) at institutes or study it as a major in universities. Accordingly, the participants in the present study were Iranian L2 English, L3 French learners whose L1 was Persian. Among the three languages in this study, only French and English share the same alphabet and numerous cognates.

To accomplish our study, we considered learners' use of prepositions in L3 French. In fact, Swan (2005) considers prepositions a difficult area for learners because one preposition may correspond to several in another language, and different prepositions may have similar uses. In particular, the use of French prepositions of time is an area that can be quite confusing for (L1 Persian) learners (R. F. Saadi, personal communication, Summer 2016). The difficulty of prepositions makes them a prolific choice for the study of CLI as the learners who have uncertainty about their usage may resort to their knowledge of background languages.

METHOD

This study used a mixed-methods content analysis of verbal protocol data to answer the research questions.

Participants

A convenient sample composed of two groups of L3 French learners, male and female, studying at a state university in Iran comprised the participants of the study. In fact, the participants were learners who volunteered to take part in the study. The first group included 12 students of English Language

and Literature (henceforth Group E) with a mean age of 25 years old. They had already learned English as their L2 at school and had passed seven university courses in English. At the time of the investigation, they were taking a three-credit French course named French II, having passed three credits as French I as well. The level of French proficiency attainable in these courses was very limited as the level of the textbook used (*Alter Ego A1, Berthet, 2006*) was beginner.

The second group of participants were 12 students of French Language and Literature (henceforth Group F) with a mean age of 20. These students were studying French as their major, had learnt English as their L2, and self-assessed themselves as at least intermediate English learners. Furthermore, Group F had passed an intensive (18-credit) French course in their first term and were taking more French courses (13 credits) in their second, when the study was done. Another important difference between the two groups was that whereas Group F spoke mainly in French in their classes, this was not the case with Group E. Consequently, Group F were more exposed to French than Group E.

Instrumentation

The instruments in this study were a test of L3 French prepositions (see the Appendix) and stimulated recall. The test items were all fill-in-the-blank and were devised by an experienced professor teaching French at the university. The items targeted five French prepositions of time: *il y a*, *depuis*, *dans*, *en,* and *pendant*, which had already been practised by both groups in class by the time of the test. The original version of the test consisted of 18 items, but piloting (explained below) reduced them to 15. The prepositions were provided at the top of the page, and no time limit was set for the test.

The final version of the test was scrutinised by another experienced professor teaching French to further ensure its content validity. In addition, the Cronbach alpha reliability of the test scores turned out to be 0.67, which

is close to the acceptable range (Nunally, 1978, as cited in Pallant, 2020). Furthermore, the index, though not so high, is satisfactory considering the fact that the test was quite short and that the length of a test can influence the reliability of test scores (Farhady et al., 2013). Finally, as the descriptive statistics for the test scores showed (*N*= 24; *K*=15; Mean=8.70; Standard Deviation=2.99; Skewness= -0.31; Kurtosis= -1.39), the test was not difficult for the participants, and most of the scores accumulated around the mean.

The second instrument, stimulated recall, was used to capture the participants' thoughts related to how they came up with the answers. The rationale for using it, according to Ericsson and Simon (1980), was that 'with the instruction to verbalize, a direct trace is obtained of the heeded information, and hence, an indirect one of the internal stages of the cognitive procedure' (p. 220). In this research, retrospective verbal report, or stimulated recall, in which the participants verbalise their thoughts *after* doing the task (Suh, 2023), was preferred over concurrent verbal report. This preference was due to a practical consideration: using concurrent verbalisation, meant that the participants had to be tested and their verbal reports recorded individually one after another, and this would have carried the risk of the participants' informing their friends of the content of the test and, hence, contamination of the results thus obtained. In addition, concurrent verbalisation would have carried the risk of affecting the performance of the participants (Suh, 2023).

To check whether the test items and stimulated recall could yield data useful for the study, a pilot study was conducted with two participants—one male and one female L1 Persian/L2 English/L3 French learner. After receiving the necessary instructions, the pilot participants verbalised their thoughts, and the test items yielded traces of CLI. Thus, the stimulated recall and the test appeared to work out satisfactorily in the pilot study. However, three items which did not provide as much information as the other items were deleted.

Data Collection Procedure

The test was administered to both groups of participants towards the end of the term. In order for us not to miss data from any items, if the participants were occasionally not sure about the meaning of any words (except the prepositions in question), they were orally supplied in Persian. Next, prompt appointments were set with each participant (within two days) to gather their stimulated recalls.

To ensure the participants' familiarity with the procedure, the first researcher instructed them on how to report their thoughts when answering foreign language items. In order to do that, since the first researcher recorded a sample verbalisation answering multiple-choice items on English prepositions, played it back to them, and asked them to practise doing similar items. The choice of the test, a language test, was intentionally made to familiarise the participants with how to verbalise their thoughts answering a foreign language test. At the same time, it was not exactly in the same format as the actual test, in the hope that the participants could think in their own way and more freely in their stimulated recalls.

In each stimulated recall meeting, the participant was handed their answer sheet and was asked to recall their thoughts which led to each answer. Furthermore, they were asked to think in their native tongue, Persian, which was assumed to be the best choice for obtaining as much unimpeded verbalisation as possible. Similar to the real test, in order not to lose potential data, if a participant did not know the meaning of any words except the prepositions, they had the chance to ask the first researcher. Moreover, they were assured that their identity would be kept confidential throughout the study and afterwards. Accordingly, this study refers to the participants by their group initials and a random number between 1 and 12.

Data Analysis

After the participants' voices were recorded in separate audio files, the data were transcribed into a computer. Following Włosowicz (2012) and to

achieve its goals, this study did not limit itself to cross-linguistic influences but considered intra-linguistic ones as well. For the qualitative part of the analysis, in line with the coding process for content analysis (Ary et al., 2019), words, phrases, and sentences which were presumed to be instances of influence from Persian, English, or French were identified. In fact, these instances constituted the themes imposed on the data. Additionally, since some parts could not be clearly attributed to any of the languages, a fourth theme named *ambiguous* was also added. Finally, the instances in each of the four themes were analysed further; similar instances resulted in the emergence of different categories out of the predetermined themes. It is worth mentioning that the qualitative analysis reached satisfactory saturation and examined data from all participants since the quantitative part (explained below) needed them as well.

As for the quantitative perspective on the data, first, the instances of influence in each theme and category were counted. Two months after coding the data for the first time, the first researcher randomly selected 25% of the data and repeated the coding. Next, Cohen's kappa coefficient was calculated between the first and the second coding, which turned out to be 0.72, indicating substantial agreement (Landis & Koch, 1977). Moreover, to explore any significant differences between the percentages of positive transfer in the two groups, their instances were counted. Indeed, if a coded thought contributed to the correct answer, it was counted as a token of positive transfer and vice versa. Next, in order to ascertain whether the number of CLI tokens differed across the source languages and across groups E and F, chi-square analyses were performed. Finally, in order to compare the percentage of positive transfer in the two groups, a z-test was run.

RESULTS

First, on average, Group E and Group F correctly responded to 46% and 73% of the items, respectively. This indicates that Group F had greater knowledge of French prepositions, most probably due to their field of study and greater

exposure to the language. In addition, the participants' answers showed that they had difficulty distinguishing between the uses of *en, pendant* and *dans* probably because they could be translated into the same Persian and English prepositions (*dar* and *in*, respectively).

Themes and Categories

The stimulated recalls contained four themes: traces of influence from one of the three languages—Persian, English, and French itself—as well as traces whose source was ambiguous. In what follows, a description of the themes are presented (the prepositions are bolded for emphasis).

L1 Persian influence

The most obvious and frequent use of Persian was observed when a student, answering an item, thought of the whole sentence or part of it in Persian:

> Participant F9, at item 1: Daare mige ke faraanse mikhoonam **az** do saal … yani do saal-e. [Translation: It says that I have been studying French **since** two years … it means it's been two years.]

Another instance of the use of Persian was observed when a student thought of a similar sentence in Persian:

> Participant E5, at item 6: Masalan man yek saa'at-e divaar-e in otaagh-o rang mikonam. [Translation: For example, I can paint the walls of this room **in** one hour.]

A further instance was translation of the suitable preposition or prepositional phrase:

> Participant F3, at item 4: **Too-ye** yek saa'at, **dar tool-e** yek saa'at, ya **dar** yek saa'at. [Translation: **Within** one hour, **in the duration of** one hour, **in** one hour.]

L2 English influence

Most frequently, the participant thought of the English preposition or prepositional phrase which was suitable in the French sentence:

> Participant F1, at item 1: Az do saal pish hamchenaan dars mikhoonam; ya'ni hokm-e **since**-e engelisi ro baraaye man daasht. [Translation: I have been studying since two years ago. It was equivalent to the English word **since** for me.]

Secondly, the learners thought of the whole sentence or part of it in English:

> Participant E2, at item 9: *Daghighan ein-e in ke 'the library is closed **on** vacations'.*[Translation: *Exactly like 'the library is closed **on** vacations'.*]

Finally, there were some instances of thinking about a similar sentence or word combination in English:

> Participant E2, at item 14: *Engar masalan tooye Engelisi maa migim 'I lost weight **in** 10 months or two months'.* [Translation: *Like, for example, in English we say 'I lost weight **in** 10 months or two months'.*]

L3 French influence

One type of intra-linguistic influence was realised as knowledge of French:

> Participant F3, at item 9: Choon be aayande eshaare daare **dans** miaarim. [Translation: Because it points to the future, we use **dans**.]

Another type of intra-linguistic influence evidenced in a few cases was when the learner reported having seen a similar usage before:

> Participant E9, at item 4: In o faghat choon be goosham kheili khorde bood … fekr konam **en** une heure. Ye hamchin tarkibi too zehnam oomad. [Translation: This was because I had heard it many times … I think **en** une heure. Some phrase like this occurred to me.]

Ambiguous influences

For a relatively small portion of the data, it was not possible to pin down the source language. In the following example, the learner does not reveal what language she is using:

> Participant F2, at item 9: **Dans** kheili behesh mikhore az lahaz-e ma'ni, kheili. [Translation: **Dans** suits here very well in terms of meaning, very well.]

Sometimes, the uncertainty reflected in the words used by the participant caused the ambiguity.

> Participant E2, at item 6: Nemidoonam. Ye hessi behem mige **en** mishe. [Translation: I don't know. Something tells me it's **en**.]

Categories and Descriptive Statistics of the Data

The tokens in each theme diverged due to their different characteristics. Table 1 summarises the categories found and shows the number of instances of each category found in the two groups.

Table 1: Categories and their distribution in the two groups.

Source language (theme)	Category	Tokens		
		Group E	Group F	Total
Persian	Thinking of the whole sentence or part of it in Persian	140	152	292
	Translating the preposition into Persian	37	27	64
	Thinking of a similar sentence or combination in Persian	3	2	5
English	Translating the preposition into English	70	9	79
	Thinking of the whole sentence or part of it in English	14	1	15
	Thinking of a similar sentence or combination in English	6	1	7
French	Using knowledge of French	159	179	338
	Recalling having seen a similar usage before	10	1	11
Ambiguous	No categories	15	10	25
Total		454	382	836[a]

[a]Since the stimulated recall for each item usually involved more than one token, the total number is greater than the number of test items (15) × the number of participants (24).

Additionally, the distribution of tokens across the four sources of influence and the two groups were tabulated, as can be seen in Table 2.

Table 2: Distribution of tokens across source languages and groups.

Group	Statistic	Persian Influence	English influence	French influence	Ambiguous influence	Total
Group E	**Count**	180	90	169	15	454
	% within group	39.6%	19.8%	37.2%	3.3%	
	% within source language	49.9%	89.1%	48.4%	60.0%	
	% of total	21.5%	10.8%	20.2%	1.8%	54.3%
Group F	**Count**	181	11	180	10	382
	% within group	42.8%	2.6%	42.6%	2.4%	
	% within source language	50.1%	10.9%	51.6%	40.0%	
	% of total	21.7%	1.3%	21.5%	1.2%	45.7%
Total	**Count**	361	101	349	25	836
	% of total	43.2%	12.1%	41.7%	3.0%	100%

The table indicates that L1 Persian influence (43.2%) and intra-linguistic influence (41.7%) were the dominant influences. In contrast, there was much less influence from L2 English (12.1%). This pattern can also be seen in each group individually. In addition, L2 English influence was noticeably different across Group E (89.1%) and F (10.9%). However, the table demonstrates that tokens of Persian influence (Group E: 49.9% and Group F: 50.1%) and those of French (Group E: 48.4% and Group F: 51.6%) were distributed almost similarly across the two groups. Furthermore, ambiguous influences constituted a small portion of all influences (3%). Figure 1 shows the percentages within each group at a glance.

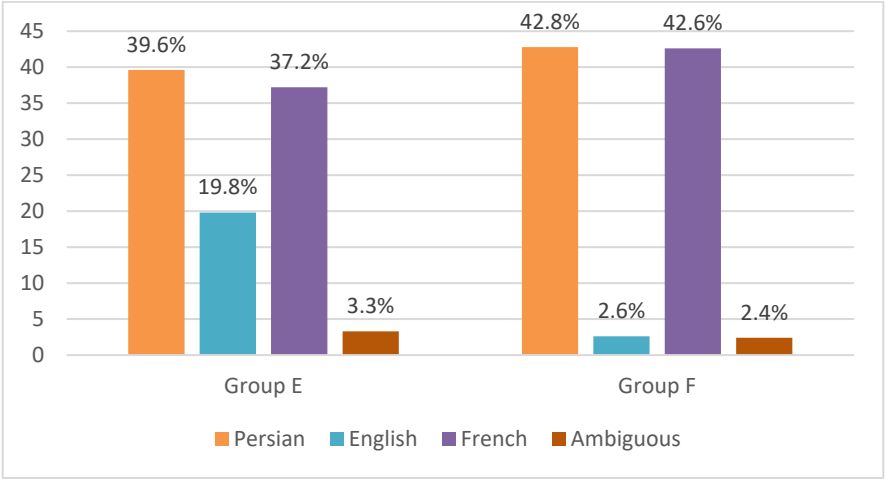

Figure 1: Percentages of influence from different languages in the two groups

Finally, the percentages of positive transfer in the two groups were calculated based on their counts (Group E: 250 out of 454; Group F: 281 out of 382), which can be seen in Figure 2.

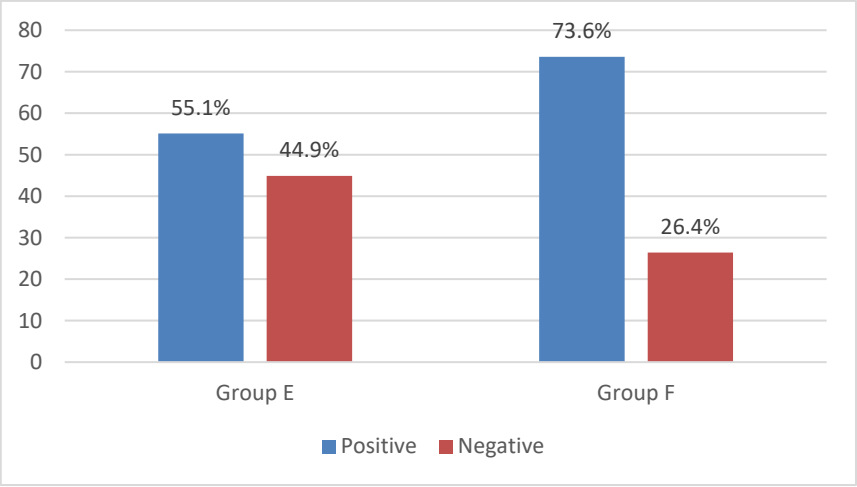

Figure 2: Positive and negative transfer in the two groups.

It can be seen that in Group E, the percentages of positive and negative tokens were not noticeably different, while in Group F, the percentage of positive tokens was almost three times that of negative ones.

Results of Statistical Tests

In order to determine whether the differences observed in the source of influence in groups E and F were significant, a chi-square test was run. The results indicated that the differences were significant (χ^2=422.124, df=3, sig=0.000). This suggests that the two groups' stimulated recall data significantly differed in terms of the source of influence in general.

Furthermore, to see exactly where the differences lay, more chi-square analyses were run; the results are depicted in Table 3.

Table 3: Results of chi-square tests for sources of CLI across the two groups.

Source Language	Tokens in Group E	Tokens in Group F	χ^2	df	Sig
L1 Persian	180	181	0.003	1	.958
L2 English	90	11	61.792	1	.000
L1 Persian+L2 English	270	192	13.169	1	.000
L3 French	169	180	0.347	1	.556
Ambiguous	15	10	1.000	1	.317

As can be understood from the table, only L2 English tokens were significantly different across the two groups; Persian, French, and ambiguous influences did not significantly vary. The results also suggest that the CLI from L1 and L2 added together was significantly more abundant in Group E.

Finally, a z-test was conducted to compare the percentage of positive transfer in group E (55.1%) and Group F (73.6%). The z value was 5.536, which was beyond the critical region for a .05 significance level, meaning that the proportion of positive transfer in Group F was significantly higher than that in Group E.

DISCUSSION

Regarding the first research question that concerned the role of CLI and intra-linguistic influence of L3 French, the analysis of the stimulated recalls indicated that 1) learners widely used L1 and L2 to answer the items, 2) L1 Persian was the dominant source of CLI for both groups and 3) intralingual influence was as important as CLI in the learners' answers. The findings revealed that the dominant source language for cross-linguistic influence was the native language of the participants, which is in line with the results obtained by Ghadaki (2013) and Modir Khamene (2012). Therefore, the results seem to support the privileged role of the L1 as the language most influential in subsequent acquisitions (Puig-Mayenco et al., 2020). This is understandable because the learners knew their native language much more deeply than English or French, prodding them into relying on that knowledge more frequently. In addition, the results confirm Fallah and Jabbari's (2018) conclusion that the language dominant in the lives of speakers is also dominant in terms of CLI. Nevertheless, our results may cast doubt on the validity of the L2 Status Factor Hypothesis (Falk & Bardel, 2011). Moreover, although CLI from both background languages was found, the results do not completely support the CEM (Flynn et al., 2004) since CEM only allows for positive transfer. A particular observation among the categories in the table merits further attention. The influence of L1 Persian was not only dominant

compared to L2 English, but also manifested more in the shape of thinking of Persian sentences rather than translating prepositions. This may indicate that reliance on L1 is at a deeper level of ideas rather than at the atomistic level of single words, which roughly corresponds to the pragmatic and semantic level of links in a multilingual's mind (Sánchez, 2015), respectively. Thus, it further highlights the different applications of background languages depending on how well the learner knows them. Another relevant point is also noteworthy. Group E's tokens of transfer from L2 English were almost eight times those of Group F (see Table 2). This finding is in agreement with Hammarberg's (2001) idea that beyond a minimum threshold of L2 proficiency, L2 transfer into L3 becomes substantial. In fact, Group E, as students of English, may have passed the threshold more widely than Group F, whose field of study was not English.

Research question 2 targeted the role of L3 exposure in the amount of CLI. Since Group F were more exposed to French due to receiving more instruction, it was expected that they would have less need to transfer and thus exhibit fewer tokens of influence from Persian and English added together than Group E (Murphy, 2003). This was indeed the case (see Table 2). However, if language exposure and proficiency are positively correlated, our finding seems to back Modir Khamene's (2012) and contrast Ghadaki's (2013), which indicated that higher proficiency in L3 correlated with more transfer from background languages.

As for the third research question, the total influence of English (12.1%) was less than that of Persian (43.2%) (see Table 2). Therefore, the results contradict the Linguistic Proximity Model's (Westergaard, 2017) assumption that due to the closeness between French and English, the influence of English on French should be greater than that of Persian. It seems that the status of Persian as the L1 was more influential than the linguistic similarity between English and French. As such, the results were in line with those suggesting that linguistic proximity is not crucial in multilingual transfer and that other factors may prevail (Fallah & Jabbari, 2018; Lindqvist,

2010), but in contrast with those lending credence to it (Cawalho & da Silva, 2006; Orcasitas-Vicandi, 2019; Perić and Božinović, 2015).

The final research question dealt with the role of L3 exposure in the amount of positive transfer. Since positive transfer was observed to prevail in both groups, it can be concluded that learning and using L3 French prepositions of time may be aided, rather than impeded, by knowledge of previous languages. As Gass et al. (2013) maintain, the prevalence of positive transfer may suggest that the similarities between French and the other two languages were more than their differences. In addition, as group F had a higher percentage of positive transfer, it can be concluded that more exposure to French aided the learners in using background languages to their advantage (see Figure 1), a finding in agreement with Mieszkowska and Otwinowska (2015) and Sánchez (2014).

CONCLUSION AND IMPLICATIONS

The conclusions drawn from the present study can have a few implications for L3 language teachers, material developers, and researchers, especially if one of the previous languages bears some similarity to L3. Based on the results, we may conclude that L1 played the greatest role in CLI, especially at the level of sentences, linguistic proximity did not play the dominant role in CLI, and exposure to L3 went hand in hand with less CLI and more positive transfer. Therefore, since positive transfer outweighed negative transfer, teachers and learners can be optimistic that knowledge of background languages is an asset to TLA. However, as L1 was found to be the main source of CLI, the most precise L1 equivalent(s) for the linguistic item must be learnt, as they will affect their subsequent use significantly. Furthermore, in line with the warning against absolute preference for reliance on the target language itself for learning a language (Liu, 2008), materials developers can devote special sections to exercises based on tricky aspects of linguistic similarity across languages. Finally, this study showed the superiority of verbalisation as a tool to investigate the details of CLI from source languages.

Accordingly, researchers may employ the tool to see how deeply a language is activated, whether at the level of ideas or lexical equivalents.

This study suffers from some limitations. The first issue is some unavoidable subjectivity inherent in the counting of the tokens in the stimulated recalls. The subjectivity has lowered the intra-rater reliability to 0.72. Future research could employ two individuals familiar with the subject to fully code the data and average out the results.

Another limitation concerns the stimulated recalls. Although they give access to the learners' thought processes and, by showing heeded information (Charters, 2003), reveal CLI, one possible drawback needs to be mentioned. Since using less known languages for verbalising thoughts might increase cognitive load and impede verbalisation (Ericsson & Simon, 1980), the default language for the learners to use was their native language, possibly increasing certain L1 tokens. In addition, not all uses of different languages in their heads may have been verbalised (Modir Khamene, 2012). However, this may only be a drawback if the language that the learners had used while thinking in their heads was different. Another issue is the veridicality of the reports (Bowles, 2010). This means that, at the time of the report, the learners may not have accurately remembered their thoughts as they were engaged with the task. Future studies using learners' verbalisation are advised not just to have the learners use the language they are more comfortable in but to emphasise they can switch tongues if needed. Moreover, to reduce veridicality, other researchers may choose the more difficult option of obtaining verbal reports concurrently from everyone.

The next problem was the modest number of participants (24 in total). Although, in our study, the last examined stimulated recalls turned out to add little to the categories emerging from the data, increasing the number of participants can still contribute to the validity of the findings. Furthermore, as this study focused on prepositions of time, and CLI may be feature-dependent (Ringbom, 2001), the results may not be entirely generalisable to other linguistic features such as phonology or discourse. Future research may add an interesting comparison to the findings of this study. Further, it might be

assumed that tokens of transfer would have changed if the learners had been asked to use L3 French prepositions spontaneously. Consequently, the results of this research cannot be safely generalised to the spontaneous use of French prepositions (Ellis, 2015). Finally, since there might be a divide between comprehension and production in terms of CLI (Puig-Mayenco et al., 2020), other studies may devise tasks that concentrate on L3 comprehension.

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

Farhang Daneshfard http://orcid.org/0000-0001-9971-6305
Mahboobeh Saadat http://orcid.org/0000-0002-4076-166X

References

Abdullah, K., & Jackson, H. (1998). Idioms and the language learner: Contrasting English and Syrian Arabic. *Languages in Contrast*, *1*(1), 83-107. https://doi.org/10.1075/lic.1.1.06abd

Ary, D., Jacobs, L. C., Irvine, C. K. S., & Walker, D. (2019). *Introduction to research in education (10th ed.)*. Cengage Learning.

Bardel, C., & Falk, Y. (2007). The role of the second language in third language acquisition: The case of Germanic syntax. *Second Language Research*, *23*(4), 459-484. https://doi.org/10.1177/0267658307080557

Berkes, É., Flynn, S., Cabrelli Amaro, J., Flynn, S., & Rothman, J. (2012). Further evidence in support of the Cumulative-Enhancement Model. *Third Language Acquisition in Adulthood*, 143-164. https://doi.org/10.1075/sibil.46.11ber

Berthele, R. (2011). On abduction in receptive multilingualism: Evidence from cognate guessing tasks. *Applied Linguistics Review 2*, 191-220. https://doi.org/10.1515/9783110239331.191

Bowles, M. A. (2010). *The think-aloud controversy in second language research*. Routledge.

Cawalho, A. M., & Da Silva, A. J. B. (2006). Cross-linguistic influence in third language acquisition: The case of Spanish-English bilinguals' acquisition of Portuguese. *Foreign Language Annals, 39*(2), 185-202. https://doi.org/10.1111/j.1944-9720.2006.tb02261.x

Charters, E. (2003). The use of think-aloud methods in qualitative research an introduction to think-aloud methods. *Brock Education Journal, 12*(2), 68-82. https://doi.org/10.26522/brocked.v12i2.38

Clahsen, H., & Muysken, P. (1989). The UG paradox in L2 acquisition. *Interlanguage Studies Bulletin (Utrecht), 5*(1), 1-29. https://doi.org/10.1177/026765838900500101

Ecke, P. (2015). Parasitic vocabulary acquisition, cross-linguistic influence, and lexical retrieval in multilinguals. *Bilingualism: Language and Cognition, 18*(2), 145-162. https://doi.org/10.1017/S1366728913000722

Ellis, R. (2008). *The study of second language acquisition (2nd ed.*). Oxford University Press.

Ellis, R. (2015). *Understanding second language acquisition.* Oxford University Press.

Ericsson, K. A., & Simon, H. A. (1980). Verbal reports as data. *Psychological Review, 87*(3), 215-251. https://doi.org/10.1037/0033-295x.87.3.215

Farnia, M. (2022). Cross-cultural CMC-based study of speech act of criticism in response to school reopening during COVID-19. *Issues in Language Teaching, 11*(2), 291-324. https://doi.org/10.22054/ilt.2022.65791.674

Falk, Y., & Bardel, C. (2011). Object pronouns in German L3 syntax: Evidence for the L2 status factor. *Second Language Research, 27*(1), 59-82. https://doi.org/10.1177/0267658310386647

Fallah, N., & Jabbari, A. A. (2018). L3 acquisition of English attributive adjectives: Dominant language of communication matters for syntactic cross-linguistic influence. *Linguistic Approaches to Bilingualism, 8*(2), 193-216. https://doi.org/10.1075/lab.16003.fal

Farhady, H., Hezaveh, F. S., & Hedayati, H. (2010). Reflections on foreign language education in Iran. *TESL-EJ, 13*(4), 1-18. http://tesl-ej.org/pdf/ej52/a1.pdf

Farhady, H., Jafarpur, A., & Birjandi, P. (2013). *Testing language skills: From theory to practice.* SAMT.

Flynn, S., Foley, C., & Vinnitskaya, I. (2004). The cumulative-enhancement model for language acquisition: Comparing adults' and children's patterns of

development in first, second and third language acquisition of relative clauses. *International Journal of Multilingualism, 1*(1), 3-16. https://doi.org/10.1080/14790710408668175

Gass, S. M., Behney, J., & Plonsky, L. (2013). *Second language acquisition: An introductory course*. Routledge.

Ghadaki, H. (2013). *Acquisition of French (L3) prepositions by Iranian learners of English.* [Unpublished Master's thesis]. Yazd University. http://library.yazd.ac.ir

Gibson, M., & Hufeisen, B. (2003). Investigating the role of prior foreign language knowledge: Translating from an unknown into a known foreign language. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.). *The multilingual lexicon* (pp. 87-102). Kluwer Academic Publishers.

Gut, U. (2010). Cross-linguistic influence in L3 phonological acquisition. *International Journal of Multilingualism*, *7*(1), 19-38. https://doi.org/10.1080/14790710902972248

Hammarberg, B. (2001). Roles of L1 and L2 in L3 production and acquisition. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.). *Cross-linguistic influence in third language acquisition: Psycholinguistic perspectives* (pp. 21-41). Multilingual Matters.

Hammarberg, B. (2010). The languages of the multilingual: Some conceptual and terminological issues. *IRAL-International Review of Applied Linguistics in Language Teaching*, *48*(2-3), 91-104. https://doi.org/10.1515/iral.2010.005

Hervé, C., & Serratrice, L. (2018). The development of determiners in the context of French–English bilingualism: A study of cross-linguistic influence. *Journal of Child Language*, *45*(3), 767-787. https://doi.org/10.1017/s0305000917000459

Hunt, A. & Beglar, D. (2005). A framework for developing EFL learning reading vocabulary. *Reading in a Foreign Language, 17* (1), 323-335. https://eric.ed.gov/?id=EJ689121

Jarvis, S. (2000). Methodological rigor in the study of transfer: Identifying L1 influence on the interlanguage lexicon. *Language Learning, 50*, 245-309. https://doi.org/10.1111/0023-8333.00118

Jensen, I. N., Mitrofanova, N., Anderssen, M., Rodina, Y., Slabakova, R., & Westergaard, M. (2021). Crosslinguistic influence in L3 acquisition across

linguistic modules. *International Journal of Multilingualism*, *20*(3) 717-734. https://doi.org/10.1080/14790718.2021.1985127

Jessner, U. (1999). Metalinguistic awareness in multilinguals: Cognitive aspects of third language learning. *Language Awareness*, *8*(3-4), 201-209. https://doi.org/10.1080/09658419908667129

Khezri, F., Razmi, M. H., Jabbari, A. A., & Ghadaki, H. (2020). The acquisition of French (L3) prepositions by Iranian learners of English. *Applied Linguistics Research Journal*, *4*(4), 41-56.

Lam, W. Y. (2008). Metacognitive strategy use: Accessing ESL learners' inner voices via stimulated recall. *International Journal of Innovation in Language Learning and Teaching*, *2*(3), 207-223. https://doi.org/10.2167/illt021.0

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 159-174. https://doi.org/10.14744/alrj.2019.32032

Landis, J. R., & Koch, G. G. (1977). An application of hierarchical kappa-type statistics in the assessment of majority agreement among multiple observers. *Biometrics*, 363-374. https://doi.org/10.2307/2529786

Lindqvist, C. (2010). Inter-and intralingual lexical influences in advanced learners' French L3 oral production. *International Review of Applied Linguistics in Language Teaching*, *48*(2-3), 131-157. https://doi.org/10.1515/iral.2010.007

Liu, J. (2008). L1 use in L2 vocabulary learning: Facilitator or barrier. *International Education Studies*, *1*(2), 65-69. https://doi.org/10.5539/ies.v1n2p65

Mackey, A., & Gass, S. M. (2016). *Second language research: Methodology and design (2nd ed.)*. Routledge.

Mieszkowska, K., & Otwinowska, A. (2015). Is A2 in German better than B2 in French when reading Danish? The role of prior language knowledge when faced with an unknown language. In G. De Angelis, U. Jessner, & M. Kresic (Eds.). *Crosslinguistic influence and crosslinguistic interaction in multilingual language learning* (pp. 199-230). Bloomsbury.

Modir Khamene, S. (2012). Cross-linguistic transfer or target language proficiency: Writing performance of trilinguals vs. bilinguals in relation to the interdependence hypothesis. *Journal of English Language Teaching and Learning*, *3*(7), 115-143. https://elt.tabrizu.ac.ir/?_action=articleInfo&article=622

Murphy, S. (2003). Second language transfer during third language acquisition. *Working Papers in TESOL & Applied Linguistics, 3*(1), 1-21. https://doi.org/10.1002/9781405198431.wbeal1286

Mutta, M. (2014). Cross-linguistic influence in an oral translation task by L3 French learners. *Language, Interaction and Acquisition*, *5*(2), 279-313. https://doi.org/10.1075/lia.5.2.05mut

Nosratzadegan, N., Seifoori, Z., & Maftoon, P. (2016). Persian speakers' recognition of English relative clauses: The effects of enhanced input vs. explicit feedback types. *Issues in Language Teaching*, *5*(2), 232-211. https://doi.org/10.22054/ilt.2017.8059

Odlin, T. (1989). *Language transfer: Cross-linguistic influence in language learning*. Cambridge University Press.

Orcasitas-Vicandi, M. (2019). Crosslinguistic influence and morphological awareness in English (third language) writing. *International Journal of Bilingualism*, 1367006919852164. https://doi.org/10.1177/1367006919852164

Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. Routledge.

Perić, B., & Božinović, N. (2015). Cross-linguistic influences in Spanish L3 acquisition by learners with Croatian L1 and English L2. *Примењена Лингвистика [Applied Linguistics], 16*, 175-189. https://doi.org/10.18485/primling.2015.16.15

Polio, C., Gass, S., & Chapin, L. (2006). Using stimulated recall to investigate native speaker perceptions in native-nonnative speaker interaction. *Studies in Second Language Acquisition*, *28*(2), 237-267. https://doi.org/10.1017/S0272263106060116

Puig-Mayenco, E., González Alonso, J., & Rothman, J. (2020). A systematic review of transfer studies in third language acquisition. *Second Language Research*, *36*(1), 31-64. https://doi.org/10.1177/0267658318809147

Rasouli, R., & Moradkhani, S. (2021). Iranian EFL teachers' self-reported and enacted culture teaching techniques: A case study. *System*, *98*, 102468. https://doi.org/10.1016/j.system.2021.102468

Richards, J. C., & Schmidt, R. (2010). *Longman dictionary of language teaching and applied linguistics* (4th ed.). Pearson Education Limited.

Ringbom, H. (2001). Lexical transfer in L3 production. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.). *Cross-linguistic influence in third language acquisition: Psycholinguistic perspectives* (pp. 59-68). Multilingual Matters.

Sánchez, L. (2014). An Inquiry into the role of L3 proficiency on crosslinguistic influence in third language acquisition. *Odisea*, *15*, 169-188. https://doi.org/10.25115/odisea.v0i15.282

Sánchez, L. (2015). L2 activation and blending in third language acquisition: Evidence of crosslinguistic influence from the L2 in a longitudinal study on the acquisition of L3 English. *Bilingualism: Language and Cognition*, *18*(2), 252-269. https://doi.org/10.1017/s1366728914000091

Sharwood Smith, M., & Kellerman, E. (1986). Crosslinguistic influence in second language acquisition: An introduction. In M. Sharwood Smith & E. Kellerman (Eds.), *Crosslinguistic influence in second language acquisition* (pp. 1-9). Pergamon Press.

Sridhar, K. K., & Sridhar, S. N. (1986). Bridging the paradigm gap: Second language acquisition theory and indigenized varieties of English. *World Englishes*, *5*(1), 3-14. https://doi.org/10.1111/j.1467-971x.1986.tb00636.x

Suh, B. R. (2023). Are think-alouds reactive? Evidence from an L2 written corrective feedback study. *Language Teaching Research*, *27*(5), 1099-1119. https://doi.org/10.1177/1362168820967166

Swan, M. (2005). *Practical English usage*. Oxford University Press.

Westergaard, M., Mitrofanova, N., Mykhaylyk, R., & Rodina, Y. (2017). Crosslinguistic influence in the acquisition of a third language: The Linguistic Proximity Model. *International Journal of Bilingualism*, *21*(6), 666-682. https://doi.org/10.1177/1367006916648859

Woll, N. (2018). Investigating dimensions of metalinguistic awareness: What think-aloud protocols revealed about the cognitive processes involved in positive transfer from L2 to L3. *Language Awareness*, *27*(1-2), 167-185. https://doi.org/10.1080/09658416.2018.1432057

Włosowicz, T. M. (2012). Cross-linguistic interaction at the grammatical level in L3 reception and production. In D. Gabryś -Barker (Ed.). *Cross-linguistic influences in multilingual language acquisition* (pp. 131-150). Springer.

APPENDIX: Test of French Prepositions of Time and Key

Utilisez le marqueur de temps qui convient (**il y a, depuis, dans, en, pendant**)

(1)J'étudie le français (depuis) deux ans.
(2)J'ai habité au Maroc (pendant) trois ans.
(3)Il a été champion d'Italie (pendant) 3 ans.
(4)Vraiment facile cet examen, je vais le faire (en) une heure.
(5)Je serai absent (pendant) deux semaine.
(6)Il a mangé trois croissant (en) deux minutes !
(7)Des coureurs cyclistes font le tour de France (en) trois semaines.
(8)Nous nous sommes rencontré (il y a) cinq ans.
(9)Je vous rejoins (dans) dix minutes.
(10)La bibliothèque ferme (pendant) les vacances.
(11)Jacques ? Je l'ai vu (il y a) deux jours.
(12)Dépêchez-vous, le film commence (dans) cinq minutes.
(13) Il n'a pas écrit (depuis) trois ans.
(14)(en) deux mois, j'ai grossi de dix kilos !
(15)Il travaille (pendant) la semaine.