

## CROSS-LINGUISTIC INFLUENCE ON LEARNER STRATEGIES OF THIRD LANGUAGE VOCABULARY ACQUISITION: CASE OF BURUNDIAN SPEAKERS OF PERSIAN

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### Résumé

*La présente étude avait pour objet d'enquêter sur comment les étudiants Burundais en Iran font usage de leur compétence multilingue dans leurs stratégies d'apprentissage du lexique de la langue persane comme troisième langue. La fréquence des stratégies inter-linguistiques, la distribution des types de transfert lexical à travers les différentes stratégies, ainsi que l'influence des connaissances linguistiques précédemment acquises sur les stratégies faisaient l'objet d'enquête. Un questionnaire d'informations de base, la version modifiée de l'Inventaire des Stratégies d'Apprentissage de la Langue (SILL, en sigle) proposé par Oxford (1990), et un questionnaire étaient les outils de collecte des données de la part de quatorze participants. Les résultats d'une analyse quantitative et qualitative montrent que, même si toutes les stratégies étaient utilisées, les stratégies inter-linguistiques les plus observées chez les sujets étaient les stratégies métacognitives, celles de mémoire, et les stratégies sociales. Les résultats montrent également la prédominance du transfert inter-linguistique de la forme dans les stratégies sociales, celle du transfert sémantique dans les stratégies métacognitives tandis que les stratégies affectives étaient dominées à la fois par le transfert inter-linguistique de la forme et celui du sens. L'étude montre finalement que toutes les langues précédemment acquises par les sujets exerçaient une influence sur leur acquisition du vocabulaire persan, avec l'anglais exerçant la plus grande influence alors que le rôle du kirundi, langue natale des sujets, était le moins observé.*

**Mots clés:** *Burundais, influence inter-linguistique, stratégies de l'apprenant, transfert lexical, le persan, acquisition d'une troisième langue*

### Abstract

*The present study aimed to inquire how Burundian students in Iran use multilingual competence in their strategies of acquiring the vocabulary of Persian as an L3. We investigated the frequency of cross-linguistic learner strategies, the distribution of lexical transfer types across strategy types, and the influence of prior linguistic knowledge on learner strategies. A background information questionnaire, a modified version of the Oxford's (1990) Strategy Inventory for Language Learning (SILL), and a questionnaire were used to collect data from fourteen subjects. Findings from the quantitative and qualitative data analyses suggested that, while all strategies were used, the cross-linguistic strategies that were most frequently used by participants were metacognitive, memory, and social strategies. Findings also showed that form transfer was most used by the participants in social strategies, meaning transfer in metacognitive strategies while affective strategies most made use of form and meaning transfer. The findings finally revealed that all languages previously known to participants were influential with English (penultimate acquired language) exerting*

*the greatest role while Kirundi, the participants' native language appeared to be the least influential.*

**Keywords:** *Burundian, cross-linguistic influence, learner strategies, lexical transfer, Persian, third language acquisition*

## 1. Introduction

The question of cross-linguistic influence in third language acquisition has led researchers to rethink of the definitions of the terms *bilingualism* and *multilingualism* that are seen to be used interchangeably in most research (Cenoz, 2013). The motivation for rethinking of the traditional interchangeable use of the two terms stemmed from the observation that research in language acquisition has been treating cases that actually belong to the third language (L3) acquisition domain than belonging to the second language (L2) acquisition domain. Thus, from the language acquisition perspective, bilingualism came to be redefined as different from multilingualism in that the former denotes a two-language cohabitation phenomenon while the latter involves more than two languages being handled by the learner (Bhatia & William, 2013). It is from that view that a clear distinction became established between L2 acquisition and L3 acquisition. The former now refers to the acquisition of a language right after one's L1 while the latter denotes the acquisition of any language subsequent to the second language (De Angelis, 2007; Garcia Mayo & Rothman, 2012). Unlike L2 acquisition process which is influenced by only the L1 through its parameter (re-)setting (Hawkins & Chan, 1997; Lardiere, 2008), the L3 acquisition comprises a non-native language knowledge variable which needs to be taken into account (Garcia Mayo & Rothman, 2012).

Most researches in language acquisition and in lexical acquisition in particular tend to put the focus on the investigation of the learners' competence using quantitative research models (Cenoz, 2013; Yamamoto, 2014). However, the investigation of the conscious decisions made by learners in the acquisition process can also be of significance. The acquisition of vocabulary in non-native language is a task that requires much of that conscious decision making on the part of the learner. He/she has to design strategies aimed at increasing his/her vocabulary given that the latter is not/cannot be given due instruction time in the language classroom (Yamamoto, 2014). Those strategies are seen to draw from the learner's prior linguistic knowledge as is supported by Ringbom (2001) who states that the starting point of third language acquisition is the learners' understanding of formal similarities among his already known languages. The question of how learners put their cross-linguistic knowledge to use in their strategies of acquiring third language vocabulary is not given due attention in the existing literature, nor are their conceptualizations on the matter. Investigating the question is crucial since, as would be supported by Yamamoto (2014), learners are cognizant of their strategies and take structured approach in their vocabulary acquisition. The present study comes to carry out that investigation by considering the case of Burundian learners of Persian as an L3. Unlike most studies in the existing L3 acquisition literature which, as is put by Cenoz (2013), tend to consider multilinguals as a sum total of monolinguals whose individual competences can be determined/measured using quantitative tools, the present

study adopts the Cenoz's focus on multilingualism approach which suggests that multilinguals are equipped with a complex multilingual competence which cannot be reduced to the only psycholinguistic aspects of individual languages. Using a quantitative and qualitative approach, it seeks to shed light on how the participants' whole linguistic repertoire as an integrated multilingual competence from their previously acquired languages influence their strategies of acquiring Persian vocabulary.

## 2. Literature review

The language acquisition literature has for a time neglected the distinction between second language acquisition and third language acquisition on the one hand, and bilingualism and multilingualism on the other hand (Cenoz, 2013). This neglect is noticeable in Myers-Scotton (2002) and Grosjean (2010) who conceive of a bilingual as a person who speaks two or more languages. A distinction between bilingualism and multilingualism has however been established in the recent research work. Thus, bilingualism became known as referring to the knowledge and use of two languages, while multilingualism came to refer to the knowledge and use of three or more languages (Bhatia & William, 2013). In view of that distinction, third language acquisition was viewed as a specific aspect of the study of multilingualism (Cenoz, 2013). Specifically, L3 acquisition refers to all languages learnt after the L2 without giving preference to any language (De Angelis, 2007; Garcia Mayo & Rothman, 2012). It is this same conceptualization of L3 acquisition that will be considered all along the present study. One of the areas of L3 acquisition that has been receiving most attention in research is the cross-linguistic influence on L3 acquisition (Cenoz, 2013). Cross-linguistic influence on L3 manifests at all levels of linguistic analysis (Leung, 2009). The focus of the present research study will be on the cross-linguistic influence on the acquisition of L3 vocabulary.

Researchers in L3 acquisition agree that lexical acquisition is a domain where transfer is most observed (Golonka, 2010). That agreement point may also find support in Singleton (2012) who mentions that cross-lexical effects are unavoidable among multilinguals. Lexical transfer can occur in terms of form or in terms of meaning or in terms of both form and meaning (Ringbom, 2007; Ringbom and Jarvis, 2009). The three types of lexical transfer will be discussed in details and the following section is about transfer of form.

### 2.1. Transfer of form in L3 lexical acquisition

Knowing a word's form is one of the required components of word knowledge (Bartolotti & Marian, 2017). Therefore, linguistic form is viewed as one of the components of lexical competence and can be spoken form, written form or represented in terms of word parts (Nation, 1990; Yamamoto, 2014). Transfer of lexical form in L3 can manifest in the form of complete switches or in the aspect of deceptive cognates (Ringbom, 2001). Transfer in those two manifestations is, as is also put by Ringbom (Ibid.), deceptive or partially so in that it results in the learner producing items that do not belong to the L3 despite the fact that those items are in the L3 foreground. Lexical transfer of form can also be helpful for L3 learners through their use of 'parasitic learning strategy', which allows the learning of new items from the recognition and use of the similarity between new and already represented information

(Ecke, 2001). Thus, a learner of Persian with a background knowledge in French will find easier to learn the Persian conjunction *ke* (که) which is similar in pronunciation to its French counterpart *que*. The phonetic forms of the two differ only slightly in their final vowels, with the former pronounced /ke/ while the latter is pronounced /kə/. With those details on linguistic form transfer in mind, one is also to remember that vocabulary learning is concerned with not only form, but also the association of form to meaning (Kim, 2017), thus the importance of meaning transfer as well.

## 2.2. Transfer of meaning in L3 lexical acquisition

In addition to transfer of linguistic forms and structures, third language acquisition involves also conceptual transfer (Boratynska-Sumara, 2014). Conceptual transfer refers to the transfer of meaning, or of the concepts which underlie the linguistic forms (Jarvis & Pavlenko, 2008). Though linguistic form is always associated with meaning (Kim, 2017), vocabulary acquisition can take place by focusing on just meaning, and this is the case of incidental learning where learners focus their attention on meaning without having an explicit goal of learning new words (Wesche & Paribakht, 1999b). The case of mere meaning transfer can be illustrated with the words *ukwezi* and *mah* (ماه) belonging respectively to Kirundi and Persian languages. Both words in both languages are used to represent the meanings of the English words *month* and *moon*. It is thus obvious that a Burundian learner of Persian will take advantage of that conceptual similarity by transferring the meaning of *ukwezi* into the acquisition of the concept of *mah*. The role of meaning transfer in third language vocabulary acquisition is also pointed out by Gass and Selinker (2008) who state that learners' prior linguistic knowledge determines their success or lack of success in interpreting third language input. In the following section, we explore the transfer of both form and meaning in third language vocabulary acquisition.

## 2.3. Transfer of both form and meaning in L3 vocabulary acquisition

Vocabulary learning involves storing linguistic forms and mapping them onto meaning (Kim, 2017). This form-meaning mapping involves two aspects of vocabulary knowledge, namely receptive vocabulary and productive vocabulary (Yamamoto, 2014). Nation (1990: 5), cited in Yamamoto (2014:233) defines receptive vocabulary knowledge as the ability to 'recognize a word and recall its meaning when it is met'. Productive vocabulary knowledge refers to the capacity to make use of linguistic means in order to produce the intended meaning in the spoken or written form (Laufer & Goldstein, 2004). The question then becomes, how does vocabulary knowledge in its two above-mentioned aspects develop in a third language learner from a cross-linguistic perspective? Part of the answer to this question may be found in Jessner (1999) who mentions that, in L3 classroom, multilingual students look for equivalent expressions in their L1, L2, and L3. Furthermore, emphasizing the role of cognates in foreign language acquisition, Bartolotti and Mariam (2017:113) state that 'learners and instructors have long known the benefit of cognates, which overlap in both form and meaning across languages'. In the context of L3 acquisition, the above Bartolotti and Mariam's words translate accurately the learners' awareness of the possibility of simultaneous transfer of form

and meaning into L3 from their previously acquired languages. The form and meaning transfer can be instantiated in the case of the many existing cognates between French and Persian. For example, the French word *système* and the Persian *sistem* (سیستم) share both the form/pronunciation /*sis.tɛm*/ and the meaning (a whole composed of relationships among its members). Therefore, a learner of Persian with a French knowledge background, or vice-versa, will easily make use of that form and meaning transfer in their language acquisition process.

In the above sections, the three aspects of transfer in L3 vocabulary acquisition have been presented. However, it is also of relevance to look into what the literature says about the share of individual languages previously known to the learner in the transfer of items into their L3. For that purpose, we review the models of transfer in L3 acquisition.

## 2.4. Models of transfer in L3 acquisition

The question of the effect of previously acquired languages on L3 acquisition has been the focus of research since the time when L3 acquisition started to be studied independently of L2 acquisition (Fallah & Jabbari, 2016). The question as to what language is a source of transfer in L3 acquisition is a complex one given that at least four possibilities are to be considered: (1) there is no transfer at all, (2) L1 is the only source of transfer, (3) L2 is the only source of transfer, and (4) transfer may come from either language or from both at the same time (Puig-Mayenco et al., 2018, Tavakol & Jabbari, 2014). In line with these possibilities, various transfer hypotheses have been developed in the literature. However, the possibilities (1) and (2) have not yet received any formalized model in the literature though some recent studies have been in support of possibility (2), i.e. the default L1 transfer into L3 (Puig-Mayenco et al., 2018). In that same vein, Slabakova (2017) mentions that, though not a formally proposed model of transfer, the L1 factor (Hermas, 2010; Leung, 2005) is a default hypothesis proposing that the L1 holds a privileged role in L3 acquisition over all other previously acquired languages. Proposal (3) corresponds to the L2 Status Factor hypothesis (L2SF, Bardel & Falk, 2007; Bardel & Sanchez, 2017, Falk & Bardel, 2011), while proposal (4) has been developed in four models, namely the Cumulative Enhancement Model (CEM, Berkes & Flynn, 2012; Flynn, Foley et al., 2004), the Typological Primacy Model (TPM, Rothman, 2010, 2011, 2015), the Scalpel Model (SM, Slabakova, 2017) and the Linguistic Proximity Model (LPM, Westergaard et al., 2017).

According to the L2SF hypothesis, the L2 has a privileged role not only at the initial stages but also throughout all the L3 development (Puig-Mayenco et al. 2018). Proponents of this hypothesis base their point on the Declarative-Procedural Model developed by Paradis (2009) which posits that native language grammars are stored in the procedural memory while non-native languages are in the declarative memory. Therefore, L2 and L3 are cognitively similar than are L1 and L3, thus the exclusive L2 influence in L3 acquisition in the view of the L2SF supporters (Puig-Mayenco et al., 2018; Slabakova, 2017). Researchers may however agree that the strict divide among the two memory systems does not hold at the later stages of L3 acquisition, thus the loss of strength of the exclusive L2 influence (Slabakova, 2017).

The CEM (Berkes & Flynn, 2012; Flynn et al., 2004) argues that all previously acquired languages can have an influence in the whole L3 acquisition process. Concerning the selection of transfer sources among the languages already acquired by the learner, the CEM contends that any language can be source of transfer provided that it facilitates the acquisition of L3 property (Fallah & Jabbari, 2018, Puig-Mayenco et al., 2018). The CEM fails however to realize the existence of non-facilitative transfer (Fallah & Jabbari, 2016; Slabakova, 2017) while it is known that ‘transfer in L3/Ln acquisition is not done holistically, but rather on a property-by-property basis’. (Rothman & Holloran, 2013: 57; cited in Fallah & Jabbari, 2016: 4)

The Typological Proximity Model (TPM, Rothman 2010, 2011, 2015) is similar to the CEM in that both models support that all languages previously known by the learner are possible sources of transfer in L3 acquisition (Fallah & Jabbari 2018). However, the difference between them is that the TPM model recognizes the possibility of negative transfer (Fallah & Jabbari, 2018, Slabakova, 2017). The TPM argues that the language which is highly structurally similar to the L3 will be selected by the internal parser and will influence the initial L3 development (Puig-Mayenco et al., 2018; Slabakova, 2017). According to Slabakova (2017) and Puig-Mayenco et al. (2018), the parser’s comparison among languages for establishing similarity follows a hierarchical model since it includes in their order all the lexical, phonetic/phonological, morphological and syntactic levels. The TPM hypothesis can be said to be in line with the Full Transfer/Full Access hypothesis proposed by Schwartz and Sprouse (1994, 1996) on second language acquisition given that it posits that ‘the full grammar of the language perceived to be similar transfers and constitutes to be the initial stages of L3A’ (Slabakova, 2017: 5).

Unlike the TPM according to which the selected language will be wholly transferred in the L3 acquisition, the two most recent models, namely the SM (Slabakova, 2017) and the LPM (Westergaard et al., 2017) are against the wholesale transfer at the initial stages of L3 acquisition. They argue that in the case of structural similarities, transfer can occur from either of the previously acquired languages or from all of them, ‘property by property, and [is] subject to diverse factors’ (Türker, 2017). Those factors include processing complexity, misleading input, and construction frequency (Slabakova, 2017). Unlike the CEM which allows for only facilitative transfer from one of the previously acquired languages, the TPM, SM, and LPM share a point in common: they believe that both facilitative and detrimental transfer are possible.

It is observable that all the models that are reviewed above put their focus on the psycholinguistic aspects of third language acquisition, an observation which would also find support in Cenoz (2013). Ideas developed in those models are based on teachers’ observations or expert opinions (Golonka, 2010) with little, if any, attention turned to the investigation of learners’ conceptualizations. Studies aimed to test those models have been carried out in the forms of experiments, some of them ‘in laboratories and even with artificial languages’ (Cenoz, 2013:78). However, the acquisition of vocabulary as a foreign language is known to

be a task that involves a lot of conscious and independent decisions from the learners themselves, given that it is not given due amount of time in foreign language instruction classrooms (Yamamoto, 2013). Therefore, investigating learner strategies from a cross-linguistic standpoint could be a contributing addition in L3 acquisition research in general and in L3 vocabulary acquisition research in particular. Before getting to that investigation, it is of importance to explore the concept of learner strategies in language learning.

## 2.5. Language learner strategies

Since its appearance in the formal literature in 1975 (Sadeghi et al., 2014), the concept of language learner strategies (LLS) has received various definitions from researchers. Oxford (1990), cited in Sadeghi et al. (2014:256) defines learning strategies as ‘specific actions, behaviours, steps or techniques that students use in order to improve their progress in developing skills of the new language. Those strategies can facilitate the internalization, storage, retrieval, or the use of new language’. Oxford classified strategies into six groups, namely memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, and social strategies. The role of memory strategies is that they help learners in storing and retrieving new information (Oxford, 2003; Shi, 2017). Cognitive strategies help learners to manipulate the target language items in direct ways ‘through, for example, reasoning, note-taking, summarizing, outlining, reorganizing information to develop stronger schemas...practicing in naturalistic settings, and practicing structures and sounds formally’ (Oxford, 2003:12). As the name indicates, compensation strategies are used to compensate for missing knowledge. They include guessing from the context when listening or reading, using gestures or pause words, using synonyms (Ibid.). As far as metacognitive strategies are concerned, ‘they help learners to regulate their learning, such as paying attention, planning, self-evaluating and monitoring one’s errors or the learning process’ (Shi, 2017: 28). Affective strategies are useful in that they help learners to manage their emotions in the learning process (Ibid.). Finally, social strategies help learners to work with people around them to understand the target language and culture (Oxford, 2003). They can include among other things ‘asking questions to get verification, asking for clarification of a confusing part, asking for help in doing a language task’ (Ibid.: 14).

Oxford’s (1990) conceptualization of LLS has been echoed by other researchers such as Grainger (2005) who defines the concept as conscious techniques used by learners with the purpose of assisting the language learning process, while Griffiths (2013) defines LLS as activities consciously undertaken by learners in order to regulate their own language learning. Despite the adherence by many to the traditional view of LLS as defined by Oxford (1990) and other proponents, the LLS research has recently faced criticisms aimed to replace the concept of strategy by that of self-regulation (Rose et al., 2018). One of the strong critics of the LLS and who believes that it should be replaced by self-regulation is Dörnyei (2014). For him, self-regulation which ‘refers to the degree to which individuals are active participants in their own learning’ (Rose et al., 2018: 152) is more dynamic than LLS. Though the concept of self-regulation has also received support from a number of researchers such as Mizumuto (2012) and Ranalli (2012), others adopt a reconciliatory position that self-regulation is rather

a continuation of LLS. Weinstein et al. (2011: 47) are for that reconciliatory position, and define self-regulation as ‘both the glue and the engine that helps students manage their strategic learning’. In their view, self-regulation is a complement of LLS rather than its replacement.

In L3 acquisition, LLS will draw from ‘the interplay between the previous language learning experience, multiple linguistic and non-linguistic resources and the apparently enhanced levels of metalinguistic awareness observed in multilingual learners’ (Wach, 2016: 65). In other words, the LLS concept as applied in L3 acquisition presupposes that learners take advantage of their multilingual competence to improve their L3. Bayona (2009) argues that L3 research deals with the extent of cross-linguistic influences at the morphological, lexical, semantic and cognitive levels. While acknowledging that those levels are not mutually exclusive (Slabakova, 2017), the present research will focus on L3 lexical transfer. More specifically, it will investigate the cross-linguistic influence on learners’ strategies of acquiring L3 vocabulary while also inquiring learners’ conceptualizations of the perceived role of individual languages previously acquired.

### 3. The present study

Previous studies on cross-linguistic influence on L3 acquisition tend to take a multilingual speaker as a sum total of monolinguals (Cenoz, 2013). However, as is put by Cenoz (2013: 80) in her Focus on Multilingualism approach, ‘a multilingual speaker cannot be compared to several monolingual speakers of different languages because multilingual competence is a different type of competence’. The Focus on Multilingualism approach, adds Cenoz (Ibid.: 81), ‘considers the complexity of multilingualism and how the different subsystems are connected across the languages in their development, and in the way they support each other’. The complexity of multilingual competence pointed out in the above quote suggests that no two multilingual speakers can have exactly the same linguistic competence of the same languages. It also suggests that each multilingual can make use of their multilingual competence to acquire a new language skill. Therefore, a focus on the learner’s whole and complex linguistic repertoire can help capture the picture missed out in previous L3 acquisition studies. The present study, in its investigation of cross-linguistic influence on learners’ strategies of L3 vocabulary acquisition, intends to fill the gap. With Burundian learners of Persian as participants and drawing from the Cenoz’ Focus on Multilingualism approach, it assumes that the learners’ complex linguistic repertoires, which cannot be simply homogenized using traditionally designed quantitative tests aimed to measure psychological aspects of language, exert an influence on their strategies of acquiring Persian vocabulary. Using a mixed-research approach, this study aims to investigate that influence with the following guiding research questions:

1. What is the frequency of use of the cross-linguistic learner strategies used by Burundian learners in the acquisition of the vocabulary of Persian as their L3?



2. How frequently are the different types of lexical transfer (form transfer, meaning transfer, and form and meaning transfer) distributed across the various learner strategy types during the Burundians' acquisition of Persian vocabulary?

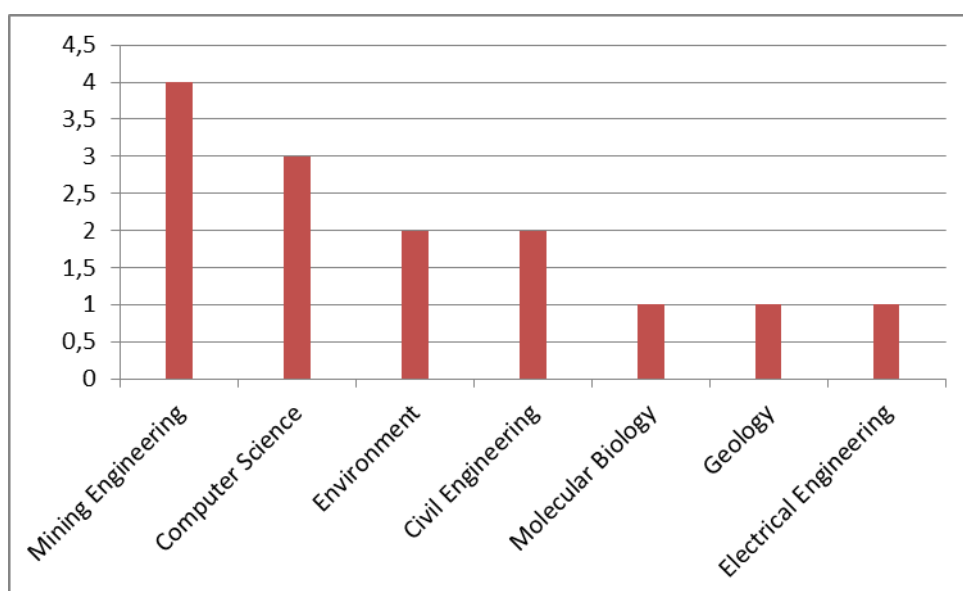
3. How and to what extent do the previously acquired languages influence Burundians' strategies of acquiring Persian vocabulary?

#### 4. Methodology

##### 4.1. Participants

Participants in this study are Burundian students in Iran (n=14, male=11, female=3, mean age=23.42). They are all native speakers of Kirundi. They were registered in bachelor degree programmes in various fields of study (see *Figure 1*) in Iranian universities of Tehran, Malayer, and Tabriz. Their length of stay in Iran so far varies between one and four years. They have all undergone a two-semester Persian language instruction after which they received a proficiency certificate in the language before joining their respective university study programmes. They are following their courses in Persian while their language of instruction before entering university was French. In addition to French and their native language, Kirundi, they have also been learning English as a subject matter from grade two of secondary school up to present. It is also worth mentioning that, in addition to Kirundi, French, English, and Persian which are languages known to all informants, Swahili is a fifth language known to most of them (85.7 %).

**Fig. 1: Participants' fields of university studies**



## 4.2. Instrumentation and data collection

The research instruments used in this study are a background information questionnaire, a modified form of the Oxford's (1990) Strategy Inventory for Language Learning (SILL), and a questionnaire comprising open and close-ended questions.

In the background information questionnaire, informants were to provide information related to their biographical and linguistic background, i.e., information on their age, field of study, period spent in Iran, languages known, self-reported proficiency level in those languages, etc. In the other questionnaire, 18 items adapted on the SILL (Oxford, 1990) were designed in a self-reported questionnaire whose statements are evaluated on a five-point Likert scale ranging from 1 to 5 with 1 standing for 'never or almost never true of me' and 5 representing 'always or almost always true of me'. Items in this questionnaire were intended to assess the extent to which language-learning strategies are used in Persian vocabulary acquisition and the influence of participants' prior linguistic knowledge on those strategies. Concerning this instrument, a reliability analysis using SPSS was carried out on a perceived task values scale comprising 18 items. Cronbach's alpha proved the reliability of the questionnaire,  $\alpha=.80$ .

**Table 1**

*Report on the reliability analysis of the SILL questionnaire*

| Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|-------|----------------------------------------------|------------|
| .803  | .813 Cronbach's                              | 18         |

In the questionnaire with open and close-ended questions, informants were asked to report on whether and how languages they knew previously are influencing their strategies of acquiring Persian vocabulary. On the 'whether' sub-question, they were presented with the four languages (Kirundi, French, English, and Swahili) and asked to respond if each of them is influencing their strategies of acquiring Persian vocabulary. The answer options were 'Yes' (Y), 'No' (N), and 'I am not sure' (NS). On the 'how' sub-question, those who would give a yes-answer were asked to explain how the concerned language was influencing their acquisition of Persian vocabulary. Answers from informants on this research question are reported in Table 4.

All the instruments, originally designed in English, were translated into Kirundi, the participants' native language. The translated version of the instruments was first submitted to a translator whose native language is Kirundi for review. The translator-reviewed version of the instruments was redesigned in the Google Forms platform and was sent to informants via their electronic mail addresses. The informants provided and returned the answers to one of the researchers via the same Google Forms platform.

### 4.3. Data analysis

A mixed-methods approach integrating both quantitative and qualitative data analysis was used in this study. As far as the quantitative analysis is concerned, the data collected from the SILL Likert-type items were grouped into six categories, namely **MEM**, **COG**, **COMP**, **MET**, **AF**, and **SOC** standing respectively for the memory, cognitive, compensation, affective, and social learner strategy types as categorized by Oxford (1990). The eighteen items in the questionnaire, taken with some modification from the Oxford' SILL, were designed in such a way that they would assess the influence of the learners' prior linguistic knowledge on how the above six strategy types are employed to acquire Persian vocabulary. Therefore, items 1, 2, and 3 belonged to the MEM, items 3, 4 and 5 assess the COG, and so on (see Table 2).

Also, to check how the different lexical transfer types were distributed across the different language learning strategy types, items were also categorized according to the lexical transfer type they assess. Therefore, items 1, 4, 7, 10, 13, and 16 were to assess transfer of form (**F**), items 2, 5, 8, 11, 14, and 17 were to assess transfer of meaning (**M**), while items 3, 6, 9, 12, 15, and 18 were intended to assess transfer of both form and meaning (**F&M**). Table 2 summarizes the distribution of the 18 items across both lexical transfer types (**LTT**) and language learner strategy types (**LLST**).

**Table 2**

*Distribution of items across LTT and LLST*

|                | <b>MEM</b> | <b>COG</b> | <b>COMP</b> | <b>MET</b> | <b>AF</b> | <b>SOC</b> |
|----------------|------------|------------|-------------|------------|-----------|------------|
| <b>F</b>       | 1          | 4          | 7           | 10         | 13        | 16         |
| <b>M</b>       | 2          | 5          | 8           | 11         | 14        | 17         |
| <b>F&amp;M</b> | 3          | 6          | 9           | 12         | 15        | 18         |

The remaining data from the questionnaire comprising close and open-ended questions, together with data from the background information questionnaire were analysed qualitatively while comparing them to the data obtained from the SILL instrument. For more details on the eighteen items in the SILL instrument, see Appendix.

## 5. Results and discussion

### 5.1. Results from the SILL questionnaire

Table 3 presents the score means for the 14 respondents' feedback on the eighteen items (statements) with each item evaluated on a five-point Likert scale ranging from 1 to 5. As can be seen from Table 3, the highest mean score is 4.71 while the lowest is 2.57.

**Table 3***Summary of informants' mean scores on the SILL questionnaire*

|            | Mean  | Minimum | Maximum | Range | Maximum/<br>Minimum | Variance | N of Items |
|------------|-------|---------|---------|-------|---------------------|----------|------------|
| Item Means | 3.425 | 2.571   | 4.714   | 2.143 | 1.833               | .356     | 18         |

In the Oxford's (1990) conceptualization of the frequency of language learner strategy use, the scores 3.5 to 5 suggest the high frequency of strategy use, the scores 2.5 to 3.4 suggest the medium frequency of strategy use, while the scores 1 to 2.4 imply the low frequency of learner strategy use.

In the view of the above interpretation, the informants' score means (see Appendix for more details) suggest the following information concerning their cross-linguistic strategies of Persian vocabulary acquisition:

- The overall mean 3.42 in Table 3 suggests the medium frequency of participants' use of cross-linguistic strategies in their acquisition of Persian vocabulary;
- the mean scores for 8 items (44.4%) manifest high frequency of cross-linguistic strategy use; and
- the mean scores for 10 items (55.5%) manifest medium frequency of cross-linguistic strategy use in their Persian vocabulary acquisition.

It is worth noting that among the data from informants, there are no mean scores in the Oxford low frequency range, which suggests the significance of cross-linguistic strategy use in participants' acquisition of Persian vocabulary.

Figure 2 illustrates the frequency of use of cross-linguistic language learner strategy types in the participants' acquisition of Persian vocabulary.

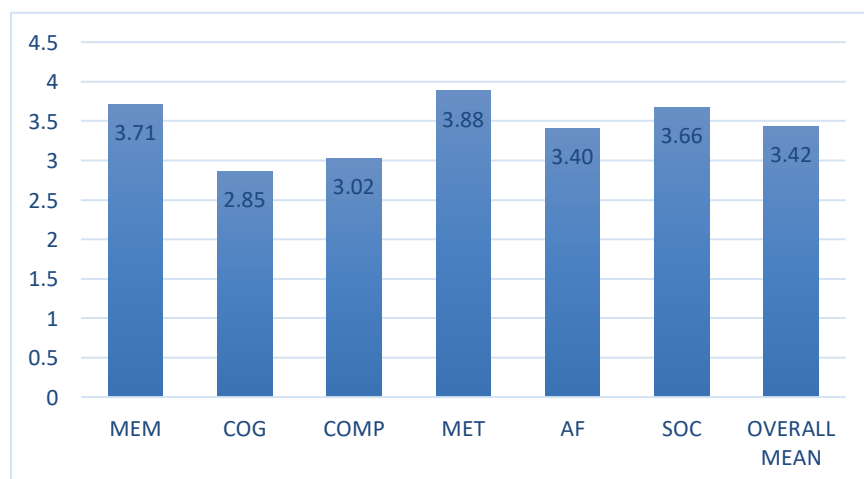
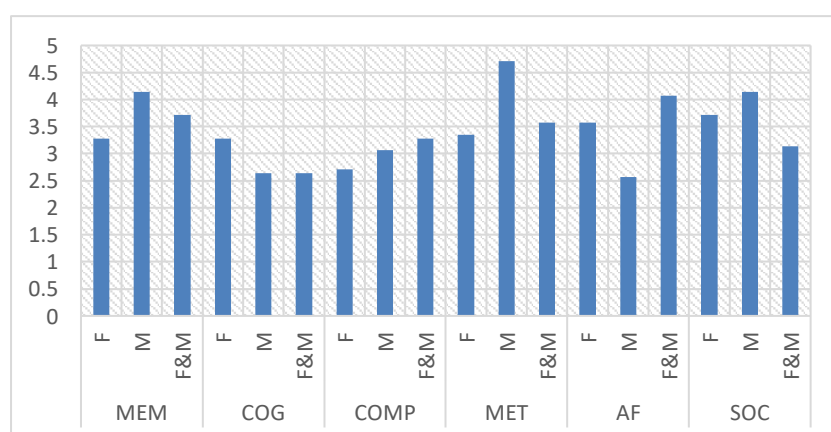
**Fig. 2: Frequency of use of cross-linguistic language learner strategies in the acquisition of Persian vocabulary**

Figure 2 represents how frequently the six language learner strategy types are used by Burundians in their strategies of acquiring Persian vocabulary. The analysis here is based on the Cenoz' (2013) Focus on Multilingualism approach which considers the multilingual competence as different from the sum total of individual linguistic competences, thus the taking into account of the learner's whole linguistic repertoire rather than seeking to measure their individual linguistic competences. Here, we analyse how the participants' prior linguistic repertoires influence their Persian vocabulary acquisition strategies. In the view of the collected data as represented in Figure 2, the metacognitive (MET), memory (MEM) and social (SOC) strategies appear to be the most used while the cognitive (COG) and the compensation (COMP) strategies are the least used. The MET strategies which refer to the learners' organization and evaluation of their language learning (Oxford, 1990) appear to be the most frequently used by informants in their acquisition of Persian vocabulary. That predominance of MET strategies is not surprising since the functions of organizing and evaluating the language learning that are carried in the MET strategies appear to be the defining criterion of the concept of learner strategies as is it appears in Cohen (2011: 7), cited in Rose et al. (2018: 152): language learner strategies are 'thoughts and actions, consciously chosen and operationalized by language learners, to assist them in carrying out the multiplicity of tasks from the very outset of learning to the most advanced levels of target language performance'. The role of learner strategies as expressed in the above quote likens language learner strategies to language learning management alluded to by Zimmerman and Risemberg (1997), and it is exactly that language management function that the MET strategies seem to play in the participants' Persian vocabulary acquisition.

Given that the lexical transfer in L3 acquisition manifests through three types, namely transfer of form, transfer of meaning, and transfer of form and meaning (Ringbom, 2007; Ringbom & Jarvis, 2009), the need was felt for the present research to show how those three types of lexical transfer (TLT) are distributed across the 6 language learner strategy types (LLST) in the context of Burundian learners of Persian as an L3. In Figure 3, F stands for 'form', M stands for 'meaning', and F&M represents 'form and meaning'.

**Fig. 3:** Distribution of LTT across LLST

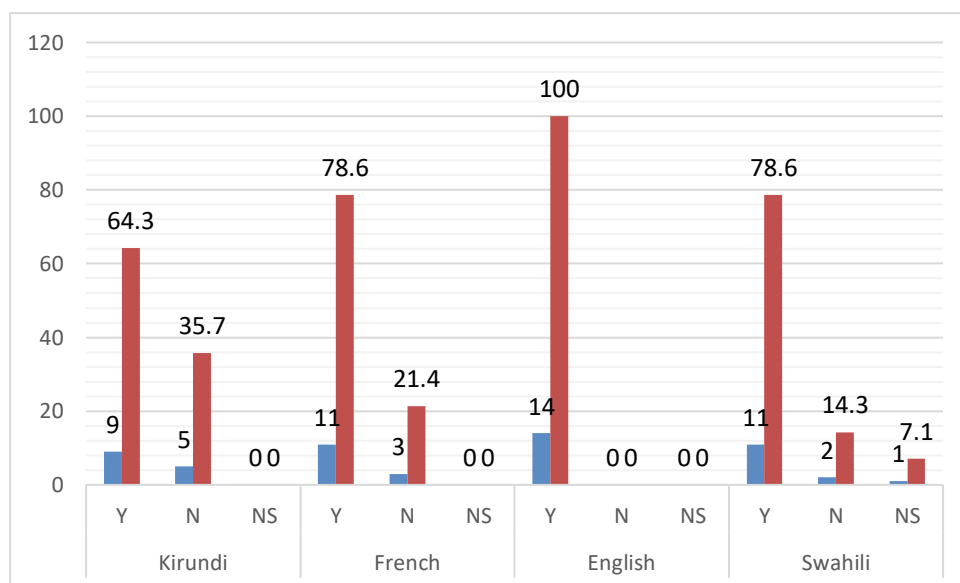


The data in *Figure 3* are related to the second research question which is about how the different types of lexical transfer (form transfer, meaning transfer, form and meaning transfer) are distributed across the six learner strategy types in the context of Burundian learners of Persian as an L3

The data represented in *Figure 3* show that the strategy type where form transfer is most used is the SOC strategies (mean=3.71). The predominance of form transfer in social strategies might have to do with the learners' willingness to know how similar the new vocabulary items in Persian are to those in other languages in order to then learn them better. It is apparently that "parasitic learning strategy" (Ecke, 2001) of form transfer which they use by asking people around them about, among other things, the correct pronunciation or spelling of new Persian vocabulary items and how those items might relate to those in other languages. *Figure 3* shows also that the strategy in which form transfer is less used is the COMP strategies (mean=2.71). That low frequency of form transfer in compensation strategies can be explained by the fact that compensation strategies, also known as communication strategies (Oxford, 2003), are more utilized in language use in writing and speaking where linguistic form plays a little role. The strategy type where meaning transfer is most used is the MET strategies (mean=4.71), while the one in which participants make least use of meaning transfer is the AF strategies (mean=2.57). The form and meaning transfer is most used in the AFF strategies (mean=4.07) while it is least used in the COG strategies (mean=2.64). Across all strategy types, the meaning transfer in the MET strategies appears to be the most used. Two points can contribute to explaining this situation. First, metacognitive strategies can be said to be the pillar of any foreign language process since they 'help learners to regulate their learning, such as paying attention, planning, self-evaluating and monitoring one's errors or the learning process' (Shi, 2017: 28). Second, learners at a higher level of language proficiency tend to learn vocabulary through incidental learning (Wesche & Paribakht, 1999b), i.e. by focusing on just meaning without any specific goal of learning new words. Therefore, the predominance of meaning transfer in the metacognitive strategies among participants in the present study translates the very strategic nature of their Persian vocabulary acquisition process.

## 5.2. Results from the questionnaire with close and open-ended questions

The questions contained in this questionnaire invited informants to give their reactions on whether each of the languages they previously acquired (Kirundi, French, English and Swahili) was influencing their strategies of acquiring Persian vocabulary. The answer options on the four questions were 'yes' (Y), 'no' (N), and 'I am not sure (NS)'. The answers from the informants (n=14) are illustrated in *Figure 4* whereby the blue bar represents the number of participants who provided the indicated answer option (Y or N or NS), while the orange bar illustrates the answer option percentage.

**Fig. 4: Informants' appraisal of the roles of the different languages as sources of transfer in their strategies of acquiring Persian vocabulary**

The data represented in *Figure 4* are part of the answers for the third research question ‘How and to what extent do the previously acquired languages influence Burundians’ strategies of acquiring Persian vocabulary?’. While the figure shows that all languages previously known to the learners influence their strategies of acquiring Persian vocabulary, it also demonstrates that English has the greatest influence while Kirundi plays the smallest role. Although the role of Kirundi was not as important as that of other languages, it is worth noting that its role is non-negligible since far more than a half of participants (64.3%) recognize its influence.

In order to seek an answer to the ‘how’ part in the afore-mentioned third research question, informants who provided a ‘yes’ answer (64.3% for Kirundi, 78.6% for French, 100% for English, and 78.6% for Swahili) were asked to explain how exactly the language influences their strategies of Persian vocabulary acquisition. Their responses are reproduced in Table 4, with the views conveying the same idea summarized in a semantically common statement.

**Table 4:**

*Informants’ conceptualizations on how their previously acquired languages influence their strategies of acquiring Persian vocabulary*

| Language | Participants’ views on the language’s influence on their strategies of acquiring Persian vocabulary                                                                                                                                                                                                                                |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kirundi  | <p>-When I do not understand a new Persian word, I ask about its meaning in Kirundi from my compatriots I live with.</p> <p>-My Kirundi speaking style can be transferred into my pronunciation of new Persian words.</p> <p>-I use the writing system of Kirundi to transcribe a new Persian word for ease of word retention.</p> |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <p>-In order to better memorize a new Persian word, I translate its meaning into Kirundi.</p> <p>-The word structure of Kirundi, which is different from that of Persian, happens to mislead me in pronouncing new Persian words.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>French</b>  | <p>-I use a Persian-French bilingual dictionary to check the different meanings of a new Persian word.</p> <p>-A good number of words in Persian are taken from French almost without any changes in both pronunciation and meaning.</p> <p>-When I encounter a new Persian word, a Persian-French dictionary becomes helpful.</p>                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>English</b> | <p>-Many Persian words are similar in both meaning and pronunciation to those in English.</p> <p>-I use a Persian-English dictionary to understand new Persian words.</p> <p>-When talking with someone who knows both Persian and English, they can explain new Persian words in English in case I face comprehension difficulties.</p> <p>-I can easily infer the meaning of a new Persian word when the latter is borrowed from English.</p> <p>-At the beginning of our Persian course, English was the main tool used by teachers to make us understand the contents of lessons as our Persian was still little.</p> <p>-In case French does not help me to understand a new Persian word, I have recourse to English.</p> |
| <b>Swahili</b> | <p>-A good number of words in Persian do not change in Swahili in both pronunciation and meaning.</p> <p>-There are students in my university who speak both Persian and Swahili; when a Persian word is difficult for me to understand, I can ask them to explain it in Swahili for a better understanding.</p> <p>-Most of the Persian words which are borrowed from Arabic also happen to be attested in Swahili with similarities at both meaning and pronunciation levels.</p> <p>-Swahili is the language that I mostly think in.</p>                                                                                                                                                                                     |

The answers in Table 4 show that Burundian learners of Persian as an L3 are aware of the word similarities in both form and meaning between French and Persian, English and Persian, and Swahili and Persian. They are therefore using that cross-linguistic knowledge to better their Persian vocabulary acquisition. This corresponds exactly to the Bartolotti and Mariam's (2017: 113) observation that 'learners...have long known the benefit of cognates which overlap in both form and meaning across languages'. In view of participants' reported answers illustrated in *Figure 4*, Kirundi is however the least transferred language in their strategies of Persian vocabulary acquisition. Why is Kirundi the least transferred? The answer to that question can be found in the point by Paradis (2009) that native languages are stored in the procedural memory while non-native languages are stored in the declarative memory. As a consequence to that point and in regard with the case under study, Persian which is more similar in nature to French, English, and Swahili (they are all non-native languages to participants) than it is to Kirundi



(participants' mother tongue) will obviously benefit more from the three other languages than from Kirundi. The least expressed influence of Kirundi can also be explained by the historical language contact contexts that can be traced back to centuries which have established more ties between Persian and French, English, and Swahili than the ties linking Persian to Kirundi. For instance, historically, Swahili borrowed much from Arabic and Persian (both languages have ties to Islam); therefore, it may not be surprising to find more similarities between Persian and Swahili than Persian and Kirundi.

Though the participants' accounts show mostly the positive influence of the previously acquired languages in their acquisition of Persian vocabulary, it is worth mentioning the existence of negative transfer which is also pointed out. For example, though the reported least influence of Kirundi appears to be mostly positive, one participant reported that his Kirundi speaking style could happen to mislead his pronunciation of Persian words. This case is a clear instance of the negative transfer of form.

Figure 4 shows also that English is the most transferred into the participants strategies of Persian vocabulary acquisition. Part of the explanation for the highest influence of English is that, as is witnessed by participants in their answers (Table 4), 'at the beginning of our Persian course, English was the main tool used by teachers to make us understand the contents of lessons as our Persian was still little'. The participants' answers show that English has been holding a privileged role all along their Persian language acquisition, since it was used as what could be referred to as a medium of instruction when their Persian was still little. The dominance of English over other previously acquired languages in the participants' strategies of Persian vocabulary acquisition can also find explanation in the fact that English is the second language encountered in Iran, especially in the academic domain. Needless to state, it becomes the second language that participants use together with Persian in their academic endeavours.

Though all the language transfer models developed in the literature review section have their characteristics reflected in the informants' views at least to some extent, their explanations show that the transfer into Persian vocabulary acquisition from their previously acquired languages observe much more the Scalpel Model (Slabakova, 2017) and the Linguistic Proximity Model (LPM, Westergaard et al., 2017): all previously acquired languages exert some level of influence that, though often positive, can also happen to be negative; and the selected language is transferred, not in the wholesale manner, but rather in the property-by-property model.

## 6. Conclusion

The present study aimed at investigating how previously acquired languages influence Burundian learners' strategies of acquiring the vocabulary of Persian as an L3. The questions that the research aimed to find answers to were (1) What is the frequency of use of the cross-linguistic learner strategies used by Burundians in their acquisition of Persian vocabulary? (2) How are the different types of lexical transfer distributed across the different learner strategy types? (3) How and to what extend do the previously acquired languages influence the Burundians' strategies of acquiring Persian vocabulary?

The findings from the investigation among Burundian students in Iran showed that the metacognitive, memory, and social strategies are the most frequently used; while the cognitive and compensation strategies were found to be less frequently used. Metacognitive strategies, which refer to the learners' organization and evaluation of their own learning, was found to be the most frequently used among all strategy types. This revealed the high level of responsibility and awareness in learners' planning and execution of their Persian vocabulary acquisition.

As for the distribution of lexical transfer types across learner strategy types, it was found that form transfer is most attested in social strategies while it is less present in compensation strategies. Meaning transfer was most observed in metacognitive strategies and less observed in affective strategies. Concerning form and meaning transfer, it was found to be most present in affective strategies and less used in cognitive strategies.

Finally, all languages previously acquired by participants were found to exert an influence on their strategies of acquiring Persian vocabulary. That state of affairs was found to be in line with the Scalpel Model (SM) and the Linguistic Proximity Model (LPM) which argue for the influence, both negative and positive, of all the learners' previously acquired languages into the L3 acquisition, recognizing however that the transfer takes place on the property-by-property basis, rather than on a wholesale basis. Though all languages previously known to the participants were found to be influential, English was found to be the most influential and Kirundi the least transferred. The low frequency of transfer from Kirundi might have to do with the fact that Persian and the other languages (French, English, Swahili) with which it shares the non-native language status are stored in and retrieved from the declarative memory, while Kirundi, the participants' mother tongue is in principle said to be stored in the procedural memory.

## **7. Limitations of the study**

The data in this article mainly evidences the facilitative influence of previously acquired languages on third language acquisition. An increased focus on the exploration of their negative influence would provide more understanding concerning the impact of prior linguistic knowledge on participants' strategies of Persian vocabulary acquisition. Furthermore, the number of participants in the present study was relatively low, and an increased number of participants would provide more details on the topic under study. The above-stated limitations should be considered in future research.

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## References

- Bardel, Camilla, and Ylva Falk. "The role of the second language in third language acquisition: The case of Germanic syntax." *Second Language Research* 23, no. 4 (2007): 459-484. DOI:10.1177/0267658307077080557.
- Bardel, Camilla, and Laura Sánchez. "The L2 status factor hypothesis revisited: The role of metalinguistic knowledge, working memory, attention and noticing in third language learning". Angelovska, T. and Hahn, A. (eds.) *L3 Syntactic Transfer: Models, new developments and implications*. Amsterdam/Philadelphia (2017): 85-101.
- Bartolotti, James, and Viorica Marian. "Bilinguals' existing languages benefit vocabulary learning in a third language." *Language learning* 67, no. 1 (2017): 110-140. DOI: 10.1111/lang.12200.
- Bayona, Patricia. "The acquisition of Spanish middle and impersonal passive constructions from SLA and TLA perspectives." *Leung, Y.I. Third language acquisition and universal grammar*. Bristol (UK): Multilingual Matters (2009): 1-29.
- Berkes, Éva, and Suzanne Flynn. "Multilingualism: New perspectives on syntactic development." *Handbook of Bilingualism and multilingualism* (2012): 137-167.
- Bhatia, Tej K., William C. Ritchie, and John Wiley, eds. *The handbook of bilingualism and multilingualism*. Chichester: Wiley-Blackwell, 2013.
- Boratyńska-Sumara, Joanna. "Lexical transfer research in third language acquisition (TLA)—an overview." *Studia Linguistica Universitatis Iagellonicae Cracoviensis* 131, no. 2 (2014): 137-148.
- Cenoz, Jasone. "The influence of bilingualism on third language acquisition: Focus on multilingualism." *Language Teaching* 46, no. 1 (2013): 71-86.
- De Angelis, Gessica. *Third or additional language acquisition*. Vol. 24. Multilingual Matters, 2007.
- Dörnyei, Zoltán. *The psychology of the language learner: Individual differences in second language acquisition*. Routledge, 2014.
- Ecke, Peter. "Lexical retrieval in a third language: Evidence from errors and tip-of-the-tongue states." *Bilingual Education and Bilingualism* (2001): 90-114.
- Fallah, Nader, and Ali Akbar Jabbari. "L3 acquisition of English attributive adjectives." *Linguistic Approaches to Bilingualism* 8, no. 2 (2018): 193-216.
- Falk, Ylva, and Camilla Bardel. "Object pronouns in German L3 syntax: Evidence for the L2 status factor." *Second Language Research* 27, no. 1 (2011): 59-82.
- Flynn, Suzanne, Claire Foley, and Inna Vinnitskaya. "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, no. 1 (2004): 3-16.
- Garcia, Mayo and Jason Rothman. "L3 morphosyntax in the generative tradition: The initial stages and beyond." *Third language acquisition in adulthood* 46 (2012): 9.
- Gass, Susan M. and Selinker, Larry. *Second language acquisition*. Taylor & Francis (2008).
- Golonka, Ewa. "The Influence of Prior Language Learning Experiences on Learning of Unrelated or Distantly Related Languages." *Russian Language Journal* 60 (2010): 95-121.

- Grainger, Peter. "Second language learning strategies and Japanese: Does orthography make a difference?." *System* 33, no. 2 (2005): 327-339.
- Griffiths, Carol. *The strategy factor in successful language learning*. Vol. 67. Multilingual Matters, 2013.
- Grosjean, François. *Bilingual: Life and Reality* (M.A Thesis). Harvard University Press, 2010. 276 pp.
- Hawkins, Roger, and Cecilia Yuet-hung Chan. "The partial availability of Universal Grammar in second language acquisition: The 'failed functional features hypothesis'." *Second Language Research* 13, no. 3 (1997): 187-226.
- Hermas, Abdelkader. "Language acquisition as computational resetting: Verb movement in L3 initial state." *International Journal of Multilingualism* 7, no. 4 (2010): 343-362.
- Jarvis, Scott, and Aneta Pavlenko. *Crosslinguistic influence in language and cognition*. Routledge, 2008.
- Jessner, Ulrike. "Metalinguistic awareness in multilinguals: Cognitive aspects of third language learning." *Language awareness* 8, no. 3-4 (1999): 201-209.
- Kim, Young-Suk Grace. "Multicomponent view of vocabulary acquisition: An investigation with primary grade children." *Journal of experimental child psychology* 162 (2017): 120-133.
- Lardiere, Donna. "Feature assembly in second language acquisition." *The role of formal features in second language acquisition* (2008): 106-140.
- Laufer, Batia, and Zahava Goldstein. "Testing vocabulary knowledge: Size, strength, and computer adaptiveness." *Language learning* 54, no. 3 (2004): 399-436.
- Leung, Yan-kit Ingrid. "L2 vs. L3 initial state: A comparative study of the acquisition of French DPs by Vietnamese monolinguals and Cantonese-English bilinguals." *Bilingualism: Language and Cognition* 8, no. 1 (2005): 39-61.
- Leung, Yan-kit Ingrid, ed. *Third language acquisition and universal grammar*. Vol. 37. Multilingual Matters, 2009.
- Mizumoto, Atsushi. "Exploring the effects of self-efficacy on vocabulary learning strategies." *Studies in Self-Access Learning Journal* 3, no. 4 (2012): 423-437.
- Myers-Scotton, Carol. *Contact linguistics: Bilingual encounters and grammatical outcomes*. Oxford University Press on Demand, 2002.
- Nation, Paul. *Teaching and learning vocabulary* (M.A Thesis). Boston: Heinle & Heinle, 1990.
- Oxford, Rebecca. *Language learning strategies: What every teacher should know*. New York : Newbury House Publisher 3 (1990).
- Oxford, Rebecca L., ed. *Language learning styles and strategies*. Mouton de Gruyter, 2003.
- Paradis, Michel. *Declarative and procedural determinants of second languages*. Vol. 40. John Benjamins Publishing, 2009.
- Puig-Mayenco, Eloi, Jorge González Alonso, and Jason Rothman. "A systematic review of transfer studies in third language acquisition." *Second Language Research* (2018): 0267658318809147.
- Ranalli, Jim. "Alternative models of self-regulation and implications for L2 strategy research." *Studies in Self-Access Learning Journal* 3, no. 4 (2012): 357-376.
- Ringbom, Håkan. "Lexical transfer in L3 production." Cenoz, J. ; Hufeisen, B., and Jessner, U. (eds.) *Cross-Linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives*. Clevedon: Multilingual Matters (2001): 59-68

- Ringbom, Håkan, and Scott Jarvis. "The importance of cross-linguistic similarity in foreign language learning." *The handbook of language teaching* (2009): 106-118.
- Rose, Heath, Jessica G. Briggs, Jill A. Boggs, Lia Sergio, and Natalia Ivanova-Slavianskaia. "A systematic review of language learner strategy research in the face of self-regulation." *System* 72 (2018): 151-163.
- Rothman, Jason. "On the typological economy of syntactic transfer: Word order and relative clause high/low attachment preference in L3 Brazilian Portuguese." *IRAL-International Review of Applied Linguistics in Language Teaching* 48, no. 2-3 (2010): 245-273.
- Rothman, Jason. "L3 syntactic transfer selectivity and typological determinacy: The typological primacy model." *Second Language Research* 27, no. 1 (2011): 107-127. DOI: 10.1177/0267658310386439.
- Rothman, Jason. "Linguistic and cognitive motivations for the Typological Primacy Model (TPM) of third language (L3) transfer: Timing of acquisition and proficiency considered." *Bilingualism: language and cognition* 18, no. 2 (2015): 179-190. DOI: 10.1017/S136672891300059X.
- Sadeghi, Bahador, Mohammad Taghi Hassani, and Ahmad Dashtaki Hessari. "On the relationship between learners' needs and their use of language learning strategies." *Procedia-Social and Behavioral Sciences* 136 (2014): 255-259.
- Schwartz, Bonnie D., and Rex Sprouse. "Word order and nominative case in nonnative language acquisition: a longitudinal study of (L1 Turkish) German interlanguage." *Language acquisition studies in generative grammar* 31, no. 4 (1994): 71-89.
- Schwartz, Bonnie D., and Rex A. Sprouse. "L2 cognitive states and the full transfer/full access model." *Second language research* 12, no. 1 (1996): 40-72.
- Shi, Hong. "Learning strategies and classification in education." *Institute for Learning Styles Journal* 1, (2017): 24-36.
- Singleton, David. "Multilingual lexical operations: keeping it all together... and apart." *Third language acquisition in adulthood* 46 (2012): 95.
- Slabakova, Roumyana. "The scalpel model of third language acquisition." *International Journal of Bilingualism* 21, no. 6 (2017): 651-665. DOI: 10.1177/1367006916655413.
- Tavakol, Mahbube, and Aliakbar Jabbari. "Cross-linguistic influence in third Language (L3) and fourth Language (L4) acquisition of the syntactic licensing of subject pronouns and object verb property: A case study." *International Journal of Research Studies in Language Learning* 3, no. 7 (2014): 29-42.
- Türker, Ebru. "Language transfer in third language acquisition: A study of Japanese influence on the acquisition of Korean for L1 English speakers". *Research Gate* (2017). DOI: 10.17290/jlsk.2017..79.193.
- Wach, Aleksandra. "L1-based strategies in learning the grammar of L2 English and L3 Russian by Polish learners." *System* 61 (2016): 65-74.
- Weinstein, Claire Ellen, Taylor W. Acee, and JaeHak Jung. "Self-regulation and learning strategies." *New directions for teaching and learning* 2011, no. 126 (2011): 45-53.
- Wesche, Marjorie, and Paribakht, T. Sima. "Introduction." *Studies in second language acquisition* 21, (1999b): 175-180
- Westergaard, Marit, Natalia Mitrofanova, Roksolana Mykhaulyk, and Yulia Rodina. "Crosslinguistic influence in the acquisition of a third language: The Linguistic Proximity

Model." *International Journal of Bilingualism* 21, no. 6 (2017): 666-682. DOI: 10.1177/1367006916648859.

Yamamoto, Yuka. "Multidimensional vocabulary acquisition through deliberate vocabulary list learning." *System* 42 (2014): 232-243.

Zimmerman, Barry J., and Rafael Risemberg. "Becoming a self-regulated writer: A social cognitive perspective." *Contemporary educational psychology* 22, (1997): 73-101.

## Appendix

### *Informants' score means and standard deviation for the items in the SILL questionnaire*

| Items                                                                                                                                               | Std. |           |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|----|
|                                                                                                                                                     | Mean | Deviation | N  |
| 1. I use word structures learnt in other languages that I know to remember new words in Persian.                                                    | 3.29 | .825      | 14 |
| 2. In order to remember new words learnt in Persian, I recall their meanings in the other languages that I know.                                    | 4.14 | .663      | 14 |
| 3. I easily remember new Persian words whose pronunciation and meaning are similar to those of the words that I know in other languages.            | 3.71 | 1.069     | 14 |
| 4. I look for words in other languages that are similar to new words in Persian.                                                                    | 3.29 | 1.069     | 14 |
| 5. I summarize in Persian the information that I hear/read in other languages.                                                                      | 2.64 | 1.008     | 14 |
| 6. I watch Persian films and movies subtitled in other languages.                                                                                   | 2.64 | 1.082     | 14 |
| 7. When I do not know how to write a new Persian word using the Persian alphabet, I use the alphabet of another language I know to write the word.  | 2.71 | 1.139     | 14 |
| 8. When I cannot find the appropriate word in a Persian conversation, I insert the word from the other language I know with the equivalent meaning. | 3.07 | .997      | 14 |
| 9. I try to guess the word form-meaning relationship in Persian by guessing what its equivalent in other languages would be.                        | 3.29 | .914      | 14 |
| 10. When I encounter a new word in Persian, I analyse its subunits in order to infer their equivalents in other languages.                          | 3.36 | .929      | 14 |
| 11. I use bilingual dictionaries to know the meaning of newly encountered Persian words.                                                            | 4.71 | .611      | 14 |
| 12. I notice the mistakes I made when learning other languages and I use that information to help me do better in improving my Persian vocabulary.  | 3.57 | .938      | 14 |
| 13. I try to relax whenever I pronounce a new Persian word using the accent of the other language.                                                  | 3.57 | .852      | 14 |
| 14. When I am sad, I can express my sad feeling in another language while the conversation takes place in Persian.                                  | 2.57 | .852      | 14 |

|                                                                                                                                                                                         |      |      |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|----|
| 15. When I do not know the adequate word in Persian to express a specific feeling or emotion, I can use an expression from another language when I know my interlocutor can understand. | 4.07 | .917 | 14 |
| 16. When I make mistakes in pronouncing a Persian word because of the influence of other languages, I ask those around me to correct my mispronunciation.                               | 3.71 | .994 | 14 |
| 17. When I do not know the meaning of a new Persian word, I ask other people to give me its equivalent in the other languages.                                                          | 4.14 | .770 | 14 |
| 18. I learn the differences and similarities between cultural aspects of Persian expressions and those found in the expressions of the other languages that I know.                     | 3.14 | .864 | 14 |