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*Corresponding author: Ali Akbar Jabbari, English department, Yazd University, Iran (Republic of Islamic) E-mail: jabbari@yazd.ac.ir

Reviewing editor:
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INTERNATIONAL & COMPARATIVE EDUCATION | RESEARCH ARTICLE

Acquisition of L3 French wh-question structure by Persian-English bilinguals

Ali Akbar Jabbari^{1*}, Guy Achard-Bayle² and Driss Ablali²

Abstract: This study attempts to tease apart the effect of dominant languages of communication on the acquisition of syntactic properties of L3 French in order to test the current L3 generative theories. Three groups of bilinguals took part in this study: L1 Persian/L2 English, with French as the dominant language of communication, L1 Persian/L2 English, with Persian as the dominant language of communication and L1 English/L2 Persian, with Persian as the dominant language of communication. English and French pattern similarly in the wh-question structures. That is to say, wh-question word moves pre-subject position while in Persian it remains *in situ*. The results rejected the effect of the four proposals (e.g. the L1 factor; the L2 Status Factor; the Cumulative Enhancement Model [CEM]; the Typological Proximity Model [TPM]), but the role of dominant language in the acquisition of the third language was confirmed by grammaticality judgment and element rearrangement task. The implication of this study suggests that the initial path of L3 acquisition is not determined by wholesale transfer or mixed transfer theories but rather by the learners' dominant language of communication.

ABOUT THE AUTHORS

Ali Akbar Jabbari He is an associate professor in the Department of Foreign Languages at Yazd University, Yazd, Iran. He is currently the head of the Faculty of Foreign Languages. He received his PhD in second language acquisition from Durham University, UK. His research interest is Second and Third Language Acquisition.

Guy Achard-Bayle He is a professor of linguistics (textual) at the University of Metz (University of Lorraine) since September 2004, member of Center for Linguistic Studies of Texts and Speeches (CELTeD) and Center for Research on Mediations (CREM). He was previously (1989–2004) associated with various universities such as MC, PRAG and PRCE: Paris VI, X, Toulouse II. His areas of research are: cognitive linguistics, textual linguistics, hypertext, semantics, and natural logic.

Driss Ablali He is a professor at the University of Lorraine. As a member of the research laboratory Center for Research on Mediations (CREM), he teaches semiotics of texts and speeches within the department of language sciences. His field of activity is the analysis of discourse on corpus and the history of semiotic and linguistic theories.

PUBLIC INTEREST STATEMENT

Third language acquisition is common in the contexts where two or more languages are used. Learning more than two languages is also found among the migrants and speakers of minority languages who may need to communicate in a third or fourth language. Are there differences between learning a second or a third language? Most studies on language acquisition just focus on the target language and do not pay any attention to the other languages already acquired by the learners. However, in the last few years, research on third language acquisition has expanded, and research studies have reported differences between acquiring a second or a third language. The investigation of transfer in third language (L3) has gained a lot of momentum within the last decade. A question largely unaddressed relates to whether these transfer proposals would predict the source of cross-linguistic interference in the case of non-native context as a foreign language versus native context in a native-speaking country for third language acquisition.

Subjects: Language & Linguistics; Language Teaching & Learning; Literature

Keywords: Multilingualism; dominant language; wh-question; cross-linguistic influence; third language acquisition

1. Introduction

The investigation of transfer in third language (L3) has gained momentum within the last decade (Cabrelli Amaro, Amaro, & Rothman, 2015). A plethora of research carried out in the field has probed the mechanisms that propel transfer of preexisting linguistic systems into new ones at the initial states of acquiring an additional or a third language (García Mayo & Rothman, 2012). Furthermore, research in L3 acquisition is distinct from second language (L2) acquisition (Fallah & Jabbari, 2018; Fallah, Jabbari, & Fazilatfar, 2016), and new theoretical paradigms and models are needed to describe the phenomenon. Additionally, while L3 is a distinct realm in language acquisition, it tends to build upon and grow on the previous findings within different branches of language acquisition tree. A great body of research has been conducted to investigate whether previous language knowledge determines to be the source of cross-linguistic influence (CLI) in L3 acquisition. Some studies show a privileged role for the first language L1 (e.g. the L1 Factor, Hermas, 2010). Some would draw upon the role of L2 (e.g. the L2 Status Factor, Bardel & Falk, 2007, 2012; Falk & Bardel, 2011), while other studies show that both the L1 and L2 play roles in L3 acquisition, for example, the CEM (Flynn, Foley, & Vinnitskaya, 2004); the TPM (Cabrelli Amaro et al., 2015; Rothman, 2010, 2011); and Scalpel Model (Slabakova, 2016). A question largely unaddressed relates to whether these transfer proposals would predict the source of CLI in the case of non-native context as a foreign language versus native context in a native-speaking country for third language acquisition. The second aim of this study is to investigate the role of language of communication or the dominant language in syntactic CLI at L3 acquisition stages. In this study, the term dominant language is defined as the spoken language used more frequently by the participants at home, that is, Persian native speakers who are learners of French as a third language in Iran speak more frequently in Persian with their friends, families, and school classmates, while the second group spent most of their time largely in the third language French in France.

This article is organized as follows: In the next section, we summarize the four L3 transfer models, followed by an overview of contrastive analysis of *wh*-question in the three languages. Then we discuss the predictions the above-mentioned models make. Finally, we present the study beginning with the methodology, followed by the results, discussion, and conclusions.

1.1. Models and hypotheses in third language acquisition

1.1.1. L3 acquisition models

Over the past few decades, there has been a marked increase in the field of multilingualism, and consequently, several scholars have attempted to investigate the multilingual behavior. The works conducted on sociolinguistic and educational aspects of multilingualism (Bhatia, 2004; Bild & Swain, 1989; Cenoz, 2001) provide support for such an interest. However, research on the cognitive and psycholinguistic aspects of multilingualism began to be investigated somehow later in the 1980s, leading scholars to believe that multilingual speakers should not be compared to L2 learners without enough care and caution.

Central to the discipline of Third Language Acquisition (TLA) is the impact of previously acquired linguistic knowledge on the process of L3 acquisition. Is L1 the only possible source of transfer in L3 transfer (Leung, 2005), or is the chronologically last system acquired (the L2) the main source (Bardel & Falk, 2007), or can transfer come from either system (Flynn et al., 2004). These are among the questions that have recently grown in importance.

1.1.2. *The L1 factor*

L1 Factor Hypothesis is one of the most considerable L3 acquisitions hypotheses in the studies of CLI introduced by Hakansson, Pienemann, and Sayheli (2002). This hypothesis claims that native language is the primary source of transfer at the initial state of L3 acquisition. Some recent studies on L3 acquisition suggest that transfer occurs from L1 (Leung, 2005).

Among the studies in line with the predictions of the L1 Factor, Na Ranong and Leung (2009) examined two different groups: L1 Thai/L2 English/L3 Mandarin and L1 English/L2 Mandarin, focusing on the acquisition of null objects. Their data revealed that the L1 Thai group outperformed the L1 English group, supporting the L1 as a privileged source of transfer in L2 and L3 acquisition since Thai and Mandarin allow both overt and null objects but English rules out null objects. However, this study could not tease apart typology from an L1 effect.

1.1.3. *L2 status factor*

Williams and Hammerberg (1998) referred to the process of L2 activation in L3 use as “the L2 status factor.” According to L2 status factor, learners have a tendency to activate a previously acquired second language when producing in an L3. In support of the L2 status factor, Bardel and Falk (2007) examined the placement of negation (preverbally or postverbally) in the acquisition of Swedish and Dutch by two groups of learners, one group had a non-V2 L1 and a V2 L2, and the other group had a V2 L1 and a non-V2 L2. The results of the study showed that there was a privileged role for the L2 as a source of transfer. Bardel and Falk (2007, p. 480) claim that “the L2 acts like a filter, making the L1 inaccessible in L3 acquisition.”

1.1.4. *The CEM*

The Cumulative Enhancement model (CEM) was later proposed by Flynn et al. (2004) and yielded inconsistent results with Falk and Bardel (2011) data. Flynn et al. (2004) argued that any previously acquired language either has a scaffolding effect in the sense that any prior language can either enhance subsequent language acquisition or remains neutral. According to the CEM, both L1 and L2 may be sources of transfer; however, the L2 takes precedence over L1 only in cases when the TL form is not present in the L1. In other words, all the previously learned languages can be beneficial in the acquisition of the L3.

Flynn et al. (2004) also examined the positive impact of L2 in the initial state of L3 acquisition. In this regard, they studied the role of English restrictive relative clauses (RCs) on three different groups of native speakers; the first group contained Kazakh native speakers of Russian as L2 and English as L3; the second group composed of Spanish native speakers of Russian as L2 and English as L3; and the last group had Japanese learners of English as the L2. Kazakh has a subject-object-verb (SOV) order and has a characteristic of head-final position and a left-branch RC; Japanese has the similar structure to Kazakh with respect to these properties. Contrary to Kazakh and Japanese, Russian and English are similar in that both have subject-verb-object (SVO) order, are head-initial, and also have right-branching structure of RCs. The results revealed that each prior language is “perhaps equally available for playing some role in subsequent language learning” (Flynn et al., 2004, p. 5). However, the effect of previously learned languages was either facilitative or neutral.

1.1.5. *The TPM*

Similar to the CEM, the Typological Primacy Model (TPM), which originates from Rothman and Amaro (2010) work, anticipates that either the L1 or the L2 morphosyntactic features can be transferred in L3 acquisition and the transfer may come from either of the previously acquired languages. In other words, neither of the prior languages has an added chance of being transferred when it comes to L3 functional categories.

Most recently, Cabrelli Amaro et al. (2015) examined the status of Subject-to-Subject raising over an intervening dative experiencer at the initial stages of L3 Brazilian Portuguese. They employed a mirror image methodology that tested L1 English/L2 Spanish and L1 Spanish/L2 English. The

results of a grammaticality acceptability task showed that Spanish, regardless of whether it was an L1 or L2, was the main source of transfer. The researchers took this to be supportive of the TPM.

1.1.6. Studies of the effect of language dominant of communication

Fallah and Jabbari (2018) and Fallah et al. (2016) conducted two studies (1) on English's and possessive determiners and (2) on L3 acquisition of English attributive adjectives by two groups of L1 Mazandarani/L2 Persian bilinguals and one group of L1 Persian/L2 Mazandarani. The participants were sharing the same L1 Mazandarani and L2 Persian acquiring L3 English. Mazandarani and English structures pattern similarly in the target structures. The results of the tasks showed that transfer originates from the dominant language of communication, regardless of whether it is an L1 or L2. In line with this research, the present study aims to employ a mirror image methodology to check the L3 transfer proposals discussed above as well as to examine the effect of the dominant language of communication by focusing on the acquisition of wh-question.

1.2. The factors conditioning L3 acquisition

The level of proficiency is commonly referred to as one of the determining factor conditioning transfer and includes level of proficiency in the target language as well as in the background languages (Dewaele, 1999). Regarding the interrelationship between proficiency level and transfer of linguistic items, several studies have demonstrated that transfer at the level of lexical items mostly happens when the learner has a low level of proficiency. On the contrary, for syntactic categories to be transferred, learners must have reached a certain level of development in the L2 (Bardel & Falk, 2007; Rothman & Amaro, 2010). The positive correlation between the level of proficiency in the L2 on the one hand and the degree of achievement in the L3 acquisition and the rate of transfer of language structures from the L2 into L3 on the other hand have been suggested by De Angelis (2007). According to Williams and Hammerberg (1998), if learners have a higher level of proficiency in another language, it may contribute differently to the subsequent acquisition of a new language compared to the native language. In another study by Falk and Bardel (2010), it was discussed that the L2 and the L3 proficiency level can affect the activation of previously acquired languages. Bardel and Falk (2007) also suggested that the learners have to be proficient in the L2 so that they can transfer structures from L2 into L3.

Two additional factors that are under investigation in L3 research are typology and psychotypology: Croft (1990) mentioned the term typology to denote the similarity between linguistic features, for example, the verb-final property that applies to the non-related languages German and Turkish. Psychotypology, on the other hand, was coined by Kellerman (1983) to refer to the learner's perception of the linguistic similarities among languages.

The idea of recency is another issue that might be at work and refer to "how recently a language was last used" (De Angelis, 2007, p. 35) and "to the degree of recent contact with a certain background language" (Falk & Bardel, 2010). Based on the notion of recency, it is believed that the most recently used language will have priority over others and will be activated at a greater pace. Williams and Hammerberg (1998) regarded the notion of "recency as one of the four elements which would play a significant role in the production process of the target language.

Another important factor may affect the CLI transfer deals with the participants' age range. The TLA studies reported above with the exception of Flynn et al.'s (2004) learned an L2 after adolescence. Below we present some studies that tested the L3 transfer models by recruiting child bilinguals.

- (1) Giancaspro, Halloran, and Iverson (2015). Giancaspro et al. (2015) studied the acquisition of differential object marking (DOM) in the context of Brazilian Portuguese. They employed a

mirror image methodology type of study: L1 Spanish/L2 English, L1 English/L2 Spanish and heritage Spanish/English bilinguals. They used a grammaticality judgment task to elicit data from all three groups transferred from Spanish, regardless of whether it is an L1, L2, or bilingual first language (2L1). The results provide evidence to support the TPM, not only for the successive bilinguals but also for the heritage group.

- (2) Fallah et al. (2016) investigated the role of the language of dominance in L3 acquisition of English possessives and attributive adjectives by three groups of bilinguals who took part in their studies: L1 Mazandarani/L2 Persian, with Mazandarani (Mazandarani A) as the dominant language of communication, L1 Mazandarani/L2 Persian, with Persian as the dominant language of communication (Mazandarani B) and L1 Persian/L2 Mazandarani, with Persian as the dominant language of communication.

The results of the tasks such as grammaticality judgment task and an element rearrangement task showed that transfer originates from the dominant language of communication, regardless of whether it is an L1 or L2. However, there is one point that may negatively affect the results of Fallah et al.'s (2016) studies; that is, both Mazandarani A with Mazandarani as the dominant language of communication in Mazandaran villages and Mazandarani B with Persian as the dominant language of communication in big cities of Mazandaran had received both Mazandarani and Persian languages in one country, Iran, with Persian dominant language. Although one may suggest that even if in Mazandarani A group, Mazandarani was the dominant language of communication, the Persian language is the official language of the whole country and even people in villages have access to standard Persian via mass media. The present study however aims to elicit the data from two separate environments; that is, for Group A participants in France, French was the only dominant language of communication, while for Groups B and C in Iran, the participants had access to the Persian language as the dominant language of communication.

Acquisition of *wh* question in French offers a promising testing ground to check the role of dominant language of communication and the transfer of background languages, that is, English and Persian, in third language aforementioned models.

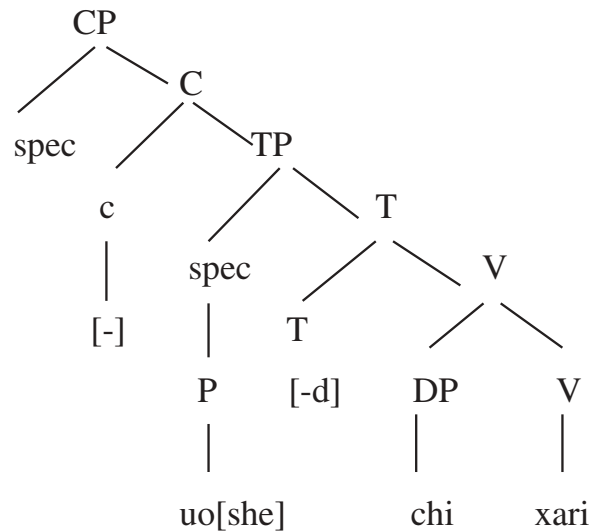
1.2.1. Persian *Wh*-question structure

According to the various proposals pertaining to the issue of *wh* Movement in Persian, it is proposed that Persian is a *wh in situ* language in the way that the *wh*-words stay in their original positions. Concerning the basic word order, Persian is an SOV language, with fairly free word order, which does not exhibit obligatory single *wh* Movement comparable to English (Karimi, 2003). Because of the presence of *wh*-particle in Persian, the Q feature is checked via the *wh*-particle, and there would be no requirements for the *wh*-words to rise into the Spec of CP for the checking purposes. The other form of Persian *wh*-question is *wh*-fronting. However, this movement differs from English syntactic *wh* Movement which is the movement of a *wh*-phrase to Spec-CP and types a clause as a *wh*-question. However, the fronting of *wh*-phrases in Persian is analyzed as focus movement (Kahnemuyipour, 2001). In Persian [*wh*] feature is always weak, so Persian must be triggered by an optionally realized strong [+ focus] feature. Thus, it is suggested that the strong [+ focus] feature is realized in Foc position in Persian, and that Foc position is generated below CP and above TP (Kahnemuyipour, 2001). If the strong [+ focus] feature is not selected, we get *wh in situ*. The following examples show the structure of Persian *wh*-questions:

(1) *uo chi xarid*

she what buy

what did she buy

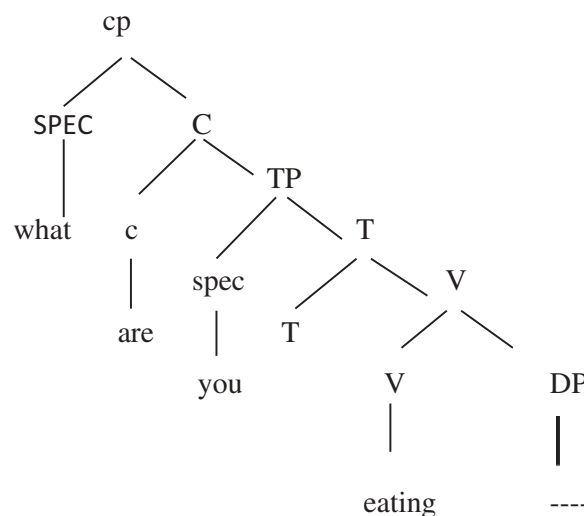


1.2.2. English Wh-question structure

Chomsky (1995) argues that question formation results from the syntactic presence in C-position of a strong question affix, [Q]. For Chomsky, Q is a “strong affix”, strong features must be checked by PF (Phonetic Form), and thus Q requires an overt head, realized by Subject-Auxiliary Inversion (SAI) (Radford, 1997, p. 247). Furthermore, Q has a strong [+wh] specifier feature that must be checked via specifier-head agreement through the movement of a wh-operator to Spec-CP (Radford, 1997, pp.271–4)

Following Chomsky (1995) and Radford (1997), in English, interrogative clauses are CPs headed by a strong C that contains the strong question affix [Q]. The strong Q affix needs an overt head to attach to it. The shortest movement principle requires that this head must be the auxiliary in I. That is, auxiliary moves from the head I position in IP into the Head C position in CP. Since Q also carries a [wh] specifier-feature, the wh-operators move to Spec-CP in order to check the interrogative specifier-feature carried by Q. Thus, the two properties of [Q] in English demand two types of movements: head movement to C position and operator movement to Spec-CP position.

(2) What are you eating



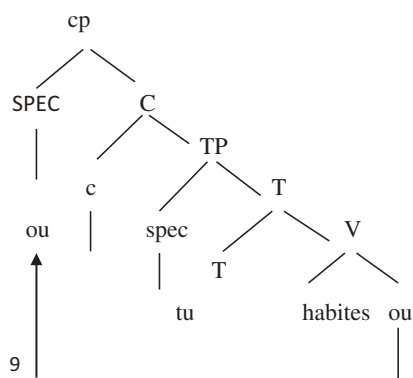
1.2.3. French Wh-question structure

Bošković's (2000) assumes, like Rowlett (2000), that French has a strong wh feature, and that movement is thus obligatory for the wh element, if it lacks auxiliary (example 3).

(3) Ou tu habites?

Where you live

Where do you live?

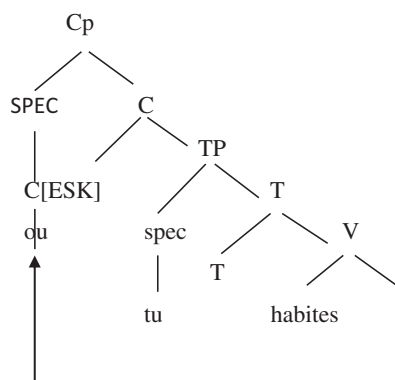


However, if it contains auxiliary both wh word and auxiliary move to CP (example 4). He assumes that if a complementizer with a strong wh feature is not present in the syntax to make the wh word move, it is inserted at LF. Since it is phonologically null, it will not cause the derivation to crash, and it is faithful to Chomsky's (1995) view of strong features (Bošković, 2000: 57). Therefore, he analyzes French wh *in situ* as covert wh movement, that is, movement that happens at LF, after syntax and spell-out.

(4) Ou est-ce-que tu habites?

Where [est-ce-que] you live?

Where do you live?



1.2.4. Hypotheses and predictions

This study examined the acquisition of L3 French wh-question structure. Three bilingual groups were recruited in this study: L1 Persian/L2 English/L3 French (group A) acquiring French in France as the dominant language of communication, L1 Persian/L2 English/L3 French (Group B),

and L1 English/L2 Persian/L3 French (Group C) acquiring French with the Persian dominant language of communication in Iran (For further information about the groups, see participants section below).

Information about the participants' current mean age, mean age of L2 acquisition, L1 and L2 English proficiency, and manner of the French language acquisition are presented in Table 1.

2. Research questions

- (1) What is the role of the L1 Transfer Hypothesis in the acquisition of French simple wh-questions for groups A, B, and C?
- (2) What is the role of the L2 Status Factor in the acquisition of French simple wh-questions for groups A, B, and C?
- (3) What is the role of the Cumulative Enhancement Model in the acquisition of French simple wh-questions for groups A, B, and C?
- (4) What is the role of the Typological Proximity Model in the acquisition of French simple wh-questions for groups A, B, and C?
- (5) What is the role of the dominant language in the acquisition of French simple wh-questions for groups A, B, and C?

To test the L3 hypotheses in Table 2, one may use these language pairings systematically.

- (1) If L1 is the deterministic source of CLI at the initial stages of L3 acquisition, both Groups A and B would have some difficulty in placing wh-element presubject in L3 French since L1 Persian wh-question and L3 French canonically and formally have different word order as far as the target structure is concerned. On the contrary, Group C would not have any difficulty in placing wh-element presubject in French in comparison to both Groups A and B. So, Group C should outperform Groups A and B.
- (2) If L2 (L2 status factor) supersedes the L1 as a source of CLI in L3 acquisition, wh-question movement is predicted to transfer L2 wh-question English, resulting in facilitative effect. So, both Groups A and B should outperform Group C in all the tasks.

Table 1. Participants' characteristics

Group	Group A	Group B	Group C	Control Group
L1	Persian	Persian	English	French
L2	English	English	Persian	English
L3	French	French	French	—
Language of communication	French	Persian	Persian	French
Number	16	24	11	17
Current mean age	14.4	14.37	14.88	52
Mean age of L2	12.4	12.35	12.21	54.2
Mean L1, L2 Proficiency	(L2) 51.47	(L2) 52.48	(L1) 59	
Manner of French Acquisition	N & F	F	F	N
Manner of English instruction	F	F	N	N/F

Note. N = naturalistic; F = formal instruction.

- (3) The CEM predicts that any prior language can either support the subsequent language acquisition or remain neutral. If this is the case, the participants in both groups A and B transfer wh-question from L2 English and the ones in Group C transfer the wh-element movement from L1 English as facilitative effect. So, this model predicts no difference across the three groups' performance on the tasks.
- (4) Rothman (2011) advanced the Typology Proximity Model, according to which transfer can in principle come from the L1 or the L2, depending on which language is typologically closer to the target language. Then English is typologically closer to French. If this is the case, the TPM anticipates that English would be the deterministic source of CLI at the initial stages of L3 English acquisition, resulting in facilitative effects for all three groups. Thus, its prediction is the same as the CEM's, indicating that the predictions of these two models are confounded in this study.
- (5) If the dominant language determines the source of CLI at the initial stages of L3 acquisition, Group A would outperform both Groups B and C in wh movement, while Groups B and C should supersede Group A in wh *in situ*.

Having described the syntactic structure of wh question in French, Persian, and English as well as the dominant language of communication of the groups A, B, and C in third language acquisition of French, the researchers show the facilitative and detrimental effect of the background languages in the groups based on the aforementioned predictions in Table 2.

3. Method

3.1. Participants

English Oxford Quick Placement Test (OQPT) was administrated to 103 participants both male and female. The English proficiency of the groups was checked with a 60-item version of the English OQPT, and the participants were required to complete it in 30 minutes. The scores provided by the test developers were used to place them into the intended proficiency group, that is, the advanced level. Therefore, 51 participants comprising Groups A (16 participants), B (24 participants), and C (11 participants) whose score range was 48–59 (advanced level) out of 60 were chosen to carry out further tasks. All participants in this study were consent with the tasks carried out.

Group A participants were living with their parents in France. They were continuing their Iranian curriculum studies in an Iranian school (Saadi school) in Paris five days a week. They also had some French friends and watched French T.V. programs. Moreover, they attended a

Table 2. Predictions for language transfer at the initial stages of L3 English derived from five scenarios

	Group A	Group B	Group C
L1 Factor	F wh <i>in situ</i> D wh M	F wh <i>in situ</i> D wh M	F wh M D wh <i>in situ</i>
L2 Status	F wh M	F wh M	D wh <i>in situ</i>
Factor	D wh <i>in situ</i>	D wh <i>in situ</i>	F wh M
CEM	F: L2 wh M D: L1 wh- <i>in situ</i>	F: L2 wh M D: L1 wh- <i>in situ</i>	D: L2 wh <i>in situ</i> F: L1 wh M
TPM	F: L2 wh M D: L1 wh- <i>in situ</i>	F: L2 wh M D: L1 wh- <i>in situ</i>	D: L2 wh <i>in situ</i> F: L1 wh M
Dominant Language	F: L2 wh M D: L1 wh- <i>in situ</i>	F: L1 wh- <i>in situ</i> D: L2 wh M	F: L1 wh- <i>in situ</i> D: L2 wh M

Note. F = facilitative transfer; D = detrimental transfer; L2 = English (Groups A & B); L2 = Persian (Group C), L1 = Persian (Groups A & B), L1 = English (Group C). wh M = wh movement

French school 4 hours daily schooling programs at weekends. They had approximately 18–20 hours of formal instruction at the time of testing and had not received any instruction about French wh questions. They began acquiring L3 French at a mean age of 12.4 ($SD = 0.47$, range 12.5). They were living in Paris at the time of conducting research, and they mostly used French at French schools and in social contexts.

Twenty-four students (Group B) were studying in junior high school in Yazd, Iran. Iranian students need to study English as a foreign language in grade 7, at age 13. However, these students had started acquiring English in language institutes before junior high school, at age 7. As they got to junior high school, they were highly competent in English, and they commenced their third language acquisition French in language institutes two sessions a week with mean age of 12.35 years (range 12.40). The textbook, “Learn French,” is usually used in language institutes, and at the time of data collections, the participants had not studied French wh question yet. The data were collected when the participants were at initial French language acquisition.

The third group (Group C) included 11 participants who had acquired their L1 English in England or America. They were mostly the children whose parents were doing their graduate academic studies there. They had been studying in English schools for about four years including their nursing school. When they were back home, Iran, they started acquiring Persian at school and communicating with their friends and classmates in Persian. Having acquired the Persian language for four years, they commenced acquiring French in a language institute. The 11 participants generally had French classes twice a week, and at that time, their age range was 12.25 (mean = 12.21).

Furthermore, the control group consisted of seven native speakers of French. They were living in the France, with the mean age of 52. Table 3 shows the groups’ percentage of French exposure at home, in social contexts, and at schools.

A Kruskal–Wallis Test comparing the three groups on age of L2 acquisition (χ^2 of 0.74, $df = 2$, $p = .65$), their current age (χ^2 of 0.64, $df = 2$, $p = .71$), hours of formal instruction in French (χ^2 of 0.85, $df = 2$, $p = .58$), and years of formal instruction in English (χ^2 of 0.61, $df = 2$, $p = .71$) revealed no statistically significant difference, indicating that the three groups were comparable on these variables.

3.2. The tasks

One comprehension written task, that is, Grammaticality Judgment Test (GJT), and one production written tasks, that is, Element Rearrangement Test (ERT), were used to elicit the wh-question in initial French third language acquisition.

3.3. The GJT

The Grammaticality Judgment Test (GJT) is commonly used to gather information about learners’ competency and underlying system. The role of GJT, according to Tremblay (2005), is to distinguish learners’ subconscious knowledge of the linguistic rules from the actual use of the language. In this study, the GJT was used to test the comprehension ability and the competence of the learners in French wh question.

Table 3. Participants’ dominant language of communication

Group	Group A			Group B			Group C		
	French	Persian	English	French	Persian	English	French	Persian	English
Home	19.0%	65.7%	5.3%	2.0%	96%	2.0%	3.2%	76.3%	21.5%
French Institute	85.7%	1.3%	13%	48.0%	48.5%	3.5%	56.0%	38.3%	5.7%
Social Context	81.4%	4.6%	16.0%	1.0%	97.5%	2.5%	1.5%	95.5%	3.0%

The task consisted 27 items, 18 of which contained wh questions (9 items wh question word movement and 9 items wh question word *in situ*) and the remaining nine were distracters that tested various structures to divert the participants' attention from the structures in focus. Since English and French pattern similarly with respect to the structures in focus, the nine items represent the English order and the nine items represent the Persian wh question word order.

The following tokens illustrate the test items:

(5) Pourquoi aimez-vous ce film? (wh movement)

Why do you like this movie?

(6) Ta fille où habite? (wh *in situ*)

Your daughter where lives?

The participants considering the example 5 grammatical would be categorized L2 status factor transfer, while those considering example 6 grammatical would be classified as L1 factor transfer (See appendix 1).

For the task scoring, the participants' answers were classified into two categories: correct judgment and incorrect judgment. A correct judgment was given if the participant judged a grammatical sentence as grammatical or an ungrammatical as ungrammatical. An incorrect judgment was given if the participants judged a grammatical sentence as ungrammatical or an ungrammatical sentence as grammatical. Each correct judgment received a score of one, and each incorrect judgment yielded a score of zero, with a maximum score of 18. In addition, the researchers had asked the participants to write the grammatical form of an incorrect sentence if they had judged them incorrect. There were nine items that were ungrammatical. Then if a participant judged an incorrect sentence as ungrammatical and provided the grammatical form of the sentence, she/he would gain two points. Then, the maximum score for this task was all together 27. The scoring was done by two raters, and no disagreements were found between them (See Table 4).

3.4. Element rearrangement task (ERT)

This task consisted of 27 scrambled sentences, of which 18 sentences contained the target structure and nine sentences as distracters containing other structures. The participants were required to rearrange the words and make correct sentences. For scoring the task, the raters focused on the target structure. The position of wh question word was the only criterion for rating the task, regardless of any other kinds of errors (see Appendix 2), as seen in examples (7) and (8).

(7) Voitures, de, y-a t-il, Combien?

Cars, how many, are there?

Table 4. Participants' accuracy on the GJT and ERT in French third language

Group:	GJT			ERT		
	n	Mean	Percentage	n	Mean	Percentage
Group A:	16	24.7	89.70%	16	14.9	%93.12
Group B:	24	3.9	14.4%	24	3.2	%13.34
Group C:	11	3.4	12.6%	11	2.1	% 19.1
Control Group	7	26.4	97.8%	7	18.00	%100

(8) Est, qui, cette, voiture, à?

Who is this car at?

The tasks were also given to seven French native speakers, in order to make sure that the validity of the tasks and the acceptability of the test sentences were appropriate. As expected, they obtained 98% accuracy on the target structures in all tasks used in this study, thus attesting to the validity of the tasks (See Table 4).

4. Results

Before the results of this study are reported, there is one point that is necessary to clarify. The type of research method in this study is quasi-experimental research. In a quasi-experimental design, the researcher lacks control over the assignment to conditions and/or does not manipulate the causal variable of interest. A quasi-independent variable is not manipulated by the researcher but rather is an event that occurred for other reasons (Campbell & Stanley, 2015). In addition, in quasi-experimental research, internal validity is the extent to which a causal conclusion based on a study is guaranteed, which is determined by the degree to which a study minimizes systematic errors (Creswell, 2013). English Oxford Quick Placement Test (OQPT) was given to the participants staying in France and Iran just to select advanced L2 English learners forming Groups A and B, and also the participants in group C had acquired Persian as a second language in Iran for four years. Then the level of second language proficiency guarantees the internal validity or the causal variable of the study. The control group was included to do the two tasks to see the degree of accuracy percentage of French native speakers in wh questions.

The results of three groups' performance on the two tasks, namely the GJT and the ERT, are presented in Table 4. Since this study focused on third language acquisition of French and it was elaborated that in French wh question word is moved, then the results reported in Table 3 just take wh question word movement into consideration. The means of the three groups show that Group A, with French dominant language in communication, had the highest means in all the tasks. This group, on average, judged the comprehension tasks, that is, GJT and the production task, that is, ERT about 90% formally with wh question word movement, an English-like manner, while the participants of both groups B and C, with Persian dominant language in communication, either comprehended or generated a small percentage (about 14% to 19%) of the wh question with wh word movement correctly. Most of the time, they comprehended and produced the target structures based on wh-question word *in situ* allowed in Persian (about 83% of cases). An inspection of the means of the control group showed that in the case of the GJT of the control group (French native speakers) judged about 98% wh-questions with wh word movement sentences as grammatical (mean of 26.4) and most wh-question words *in situ* sentences as ungrammatical (mean about 27), as expected. This group likewise got the highest mean in the ERT (mean of 18), thus attesting to the validity of the tasks.

A Kruskal-Wallis test revealed a statistically significant difference among the four groups' scores on the GJT, $\chi^2(3, N = 58) = 69.8, p < .001$, and the ERT $\chi^2(3, N = 58) = 69.6, p < .001$. To know which of the groups are significantly different from one another, we did some follow-up Mann-Whitney U tests between pairs of groups. To avoid possible Type 1 errors, we applied a Bonferroni adjustment to the alpha values, and a stricter alpha level of $.05/6 = .008$ was set. The results of a series of Mann-Whitney U tests revealed a significant difference between Group A and Group B on the GJT ($z = -4.69, p < .001$), the ERT ($z = -4.11, p < .001$), with a large effect size of $r = .69$. In the same line, there was a significant difference between Group A and Group C on the GJT ($z = -4.65, p < .001$), the ERT ($z = -4.02, p < .001$), with a large effect size of $r = .62$. However, there was no statistically significant difference between Group B and Group C on the GJT ($z = -4.34, p = .25, r = .12$), and the ERT ($z = -4.44, p = .18, r = .1$). In the case of control group (native French speakers), there was no statistically significant difference between Group A as French dominant language of communication and control group on the GJT ($z = -1.17, p = .24, r = .12$) and the ERT ($z = -1.50, p = .13, r = .16$) with a very small effect size ($r = .007$). However, there were significant differences between the control group and Group B with Persian as a

dominant language of communication on the GJT ($z = -4.79, p < .001$), and ERT ($z = -4.41, p < .001$) with a large effect size of $r = .66$ and the control group and Group C on the GJT ($z = -4.81, p < .001$) and ERT ($z = -4.48, p < .001$) with a large effect size of $r = .61$.

5. Discussion

The researchers of the present study tried their best to keep the learners age range, the proficiency level of the learners' L2, and the L1 and L2 pedagogy constant in order to see which factor (s) may play a significant role in third language. In other words, the learners' prior language variables for L3 were kept constant. However, one factor was varied, that is, the context of the dominant third language acquisition.

The statistical analysis of the results showed that group A's performance on simple French wh question differed significantly from groups B' and C' performance on GJT, and ERT tasks while there was no significant difference between groups B and C. While group A allowed the initial wh question word movement, groups B and C allowed wh *in situ* more significantly. The results revealed that French dominant contact language was the deterministic source of CLI in the initial stages of L3 French in group A, bringing about facilitative effects. In contrast, both groups B and C tended to favor Persian wh *in situ* as the dominant language or a prominent source of CLI at the initial stages of L3 acquisition, resulting in non-facilitative effects.

The L1 Factor (Hermas, 2010, 2014a, 2014b) anticipates that the L1 properties are the main source of CLI at the initial stages of L3 acquisition, predicting that both Groups A and B, with L1 Persian, will place wh-question word *in situ* following Persian canonical wh-question word order; however, the statistical results showed that the native Persian speakers of groups A and B sharing Persian L1 were significantly different on wh-question word order in all tasks. If the difference between these two groups on wh-question structure was not different, then one could claim Persian L1 wh-question word order played a role in L3 French wh-question.

The second hypothesis, the L2 Status Factor, claims that the L2 takes precedence over the L1 in L3 acquisition. The results of the studies conducted by Bardel and Falk (2007) and Falk and Bardel (2011) revealed that the L2 served as the deterministic factor in L3 acquisition. One possible explanation for this inconsistency can be attributed to the status of the L2 and L3. According to L2 status factor, learners have a tendency to activate a previously acquired second language when producing in an L3. They further highlighted additional factors that might be at play in cross-linguistic influences at a lexical level that are recency and proficiency (Dewaele, 2001; Bardel & Lindqvist, 2007; De Angelis, 2007). If this is the case, both groups A and B with English as a second language should outperform group C with Persian as a second language. The results of this study provide evidence against the prediction of the above-mentioned studies and, accordingly, the L2 Status Factor.

The CEM predicts that both the L1 and L2 play roles in L3 acquisition; however, their effect should never be non-facilitative. Hence, the CEM anticipates that none of the two groups should transfer from Persian wh-question word order, since such transfer brings about detrimental effects. Since group A shows facilitative transfer from English wh movement while both groups B and C show non-facilitative transfer from Persian, the predictions of the CEM are not realized.

TPM predicts that the psychotypology determines whether the L1 or L2 will be transferred in L3 acquisition (Rothman, 2010). In other words, the learners' perception concerning the proximity of the two languages is the most crucial factor on the acquisition of the third language. Therefore, either the L1 or the L2 properties can be transferred based on their psychotypological closeness with the possibility that it might lead to the non-facilitative transfer. Since English and French language systems are closer than Persian to each other and specially in this study the target structure supports the match between English and French, one expects Group C with L1 English supersedes both Groups A' and B' performance on French wh question. The results of the tasks did not support TPM.

If there is exclusive transfer from the dominant language of communication, we expect group A, with French as the dominant language of communication, to accept and produce *wh*-question word to be placed at the initial position of the sentences. We also expect both Groups B and C, with Persian as the dominant language of communication, to accept and produce *wh*-question word *in situ* position. The results show that while group A mostly accepted and generated French *wh*-question word in pre-subject position, both groups B and C significantly preferred *wh* word *in situ*. It seems reasonable to conclude that the dominant language of communication is the most deterministic factor of syntactic CLI in initial stages of L3 French acquisition.

Although the result of this study is consistent with the result of the study conducted by Fallah et al. (2016) in that both studies provide evidence to support that the dominant language of communication is the main source of syntactic CLI at the initial stages of L3 acquisition by two bilingual groups, that is, Mazandarani A with dominant L1 Mazandarani and Mazandarani B with dominant L1 Persian acquired their third language in balanced formal setting, the results of the present study suggest that the effect of the dominant language of communication in L3 acquisition could also determine the main source of syntactic CLI from L3 context, that is, one acquired in dominant language of French L3 (Group A) and both groups B and C learned their third language French in the Persian language dominant of communication. In other words, it is the dominant language of communication irrespective of its source, that is, the L1, the L2, or even the L3 that provides the ideal condition to determine the main source of transfer. One possible explanation could be attributed to Paradis' (2004, 2007) Activation Threshold Hypothesis, predicting that any memory trace, such as a word, a morpheme, or a structure, has a certain activation threshold associated with it. The higher this threshold, the more effort it takes to recall the item from memory. Language items or rules used more frequently will be more easily activated as compared to less frequently used language items or rules. In other words, the use of a language will lower its activation threshold, and accordingly that language is more accessible for transfer. In addition, every time a multilingual speaker selects a language, its competitors (i.e. other languages at the speaker's disposal) have to be inhibited (Bialystok, 2005). The more a language is inhibited, the higher its activation threshold is, and this makes the inhibited language harder to access subsequently (Green, 1998). Similarly, Kellerman (1983) claims that while the linguistic items used more frequently are more likely to be more transferable, infrequent linguistic items will be "psychologically marked" and therefore less transferable. The results of this study are in line with his prediction.

6. Conclusion

The acquisition of *wh*-question constructions in French was examined and explored to investigate the role of L1 Persian/L1 English and L2 English/L2 Persian in the acquisition of French as a third language. Three groups of the participants were L1 Persian/L2 English/L3 French, with French as the dominant third language (Group A), and L1 Persian/L2 English/L3 French, with Persian as the dominant third language (Group B), and L1 English/L2 Persian, with Persian as the dominant third language (Group C). The students' acquisition of the structure under study was evaluated through two tests, namely the GJT and the ERT. The data were analyzed in order to test four competing L3 proposals: the L1 Factor, the L2 Status Factor, the CEM, and the TPM. Our data show that the predictions stemming from the above-mentioned models were not supported. The results show that while French was the main source of CLI for Group A, Persian was the most influential source of CLI for the other two groups. It seems that in the initial stages of L3 acquisition, CLI originates from the dominant language of communication, irrespective of whether it is the L1, L2, or L3. However, we are not claiming that the language of communication is the only variable that plays a role in L3 acquisition. Therefore, it would be premature to conclude that typological/structural similarity or the L2 Status factor does not play any role. However, we are not claiming that structural/typological similarity does not play any role in L3 acquisition. What we highlight here is that structural/typological proximity could not account for the results obtained herein, since the nature of the participants and the languages at play are different from the studies in line with the prediction of the TPM.

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Author details

Ali Akbar Jabbari¹
E-mail: jabbari@yazd.ac.ir
Guy Achard-Bayle²
E-mail: guy.achardbayle@wanadoo.fr
Driss Ablali
E-mail: driss.ablali@univ-lorraine.fr

¹ English Department, Yazd University, Yazd, Iran (Republic Of Islamic).

² Department of Humanities & Social Science, Lorraine University, Metz, France.

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Appendix 1. Grammatical Judgment Test

Wh-movement	Wh-in situ
1. <u>Quand</u> Vous voulez aller?	10. Est-ce que tu vas <u>où</u> ?
2. <u>Que</u> préfères-tu le thé ou le café?	11. ça coûte <u>combien</u> ?
3. <u>Pourquoi</u> aimez-vous ce film?	12. avez-vous <u>Combien de</u> valises?
4. <u>Qu'avez-vous</u> vu hier soir lors de la cérémonie?	13. Ta fille <u>où</u> habite?
5. <u>Qu'est-ce</u> qu'il fait dans cette classe?	14. Tu veux aller au parc <u>avec qui</u> ?
6. <u>Qui</u> est venu chez toi?	15. Tu penses <u>à quoi</u> ?
7. <u>Quel heure</u> tu manges le petit déjeuner?	16. Il a <u>quel âge</u> ?
8. <u>Jusqu' à quels</u> heure tu travailles?	17. Ton père travaille <u>chez qui</u> ?
9. <u>quel</u> sport aimes-tu?	18. Tu vas à <u>l'école comment</u> ?

Distracters

- (1) nous aimons participer à cette conversation.
- (2) je vais au bureau en bus.
- (3) Elle est rentrée tard.
- (4) Ils vont bientôt vous voir.
- (5) J'ai plusieurs livre.
- (6) Il déjà est venu.

(7) Je ne me souviens pas de ton nom.

(8) Je ne le pas connais.

(9) Je viendrai quand tu viendras.

Appendix 2. Element Rearrangement Task

Mets les phrases dans l'ordre

1. avez, qui, vous, vue?
2. Cela, dites, vous, Pourquoi?
3. Vous, quel, âge, avez,?
4. Vous, Que, faites,?
5. Va, Comment, elle?
6. Voulez, vous, quand, aller?
7. Voitures, de, y-a t-il, Combien?
8. à, tu, qui, parlais?
9. Est, qui, cette, voiture, à?
10. Coûte, ca, combien,?
11. Que, ce, est, que, c'est?
12. Le, vous, préférez, que, ou, thé, le, café?
13. Habites, Où, tu?
14. Heure, quelle, vous, à, lèvez, chaque, vous, matin?
15. est, quel, Nice, endroit, ton, préféré, à,?
16. prochaines, où, tu, vas, les, passer, vacances?
17. Tu, vas, au, avec qui, cinéma?
18. Vous, Combien, de, allez, rester, r, temps?

Distracters

- 1.veux, parler, francais, en, anglais, et
2. préfères, tu, mange, fromage, le.
3. Je, suis, rentré, tard.

4. Avez-vous, ce, film, regardé?
5. Est-ce, qu'ils, maintenant, partent?
6. Elle, me, parler, voulait.
7. Je, le, connai,s, bien.
8. Elle, a gagné, le, match, hier.
9. Je, pas, rentrer, à la, maison, ne, peux, ce, soir.



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