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# Lexical Cross-linguistic Influence on Learning English as L3: The Role of Typology

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**Abstract**: Although the phenomenon of cross-linguistic influence has been widely explored in the literature of SLA and TLA, it remains a burning issue due to its intricate nature. Studies on lexical CLI have traditionally focused on two types of CLI (lexemic and lemmatic CLI). However, a few studies shed light on the effect of cognates on students' production. Henceforth, this study sets out to look at the positive and negative effects of false cognates on students' English written production. More particularly, it seeks to determine the main source language (SL) of lexical CLI in the written production of 1st year EFL Tunisian students with L1 Arabic and L2 French. It also aims to test the role of typology in determining the SL of CLI. 14 participants took part of this study. They were tested on a synonym provision task which required them to provide a synonym for each underlined word. The results showed that Arabic is the dominant SL of CLI and that typology did not play a decisive role in predicting the main SL of lexical CLI.

**Keywords**: lexical cross-linguistic influence – typology – true cognates – false cognates Transfer of form – synonym provision task



## I. Introduction

### 1.1. Background to the Study

The investigation of cross-linguistic influence (CLI), which refers to the influence of one language on another due to the co-habitation of different languages in the learners' mind, has stolen the attention of Second Language Acquisition (SLA) and Third Language Acquisition (TLA) scholars and researchers since the resurgence of the field. In the multilingual and TLA context, the study of CLI is of peculiar interest as more than one language can be a potential source for transfer. However, in spite of the tremendous growth of research on CLI in the context of TLA, research on CLI in the latter field remains a nascent and a promising area of research due to its intricate nature.

Henceforth, this study is conducted within the context of TLA and embraces a psycholinguistic perspective on lexical CLI in L3 written production of Tunisian EFL students. The phenomenon of CLI in TLA is rather intricate. The current study adds to the body of knowledge on CLI at lexical level, particularly CLI at form level.

### 1.2. Statement of the Problem

This study sets out to determine the main source language (SL) of lexical CLI in the written production of 1st year EFL Tunisian students with L1 Arabic and L2 French as background languages (BLs). The study seeks also to test the role of typology in determining the SL of CLI. More particularly, the study is interested to see which BL would be the dominant source of formal CLI in a context where a closer BL (French) caters for more formal similarity than a distant BL (Arabic) with the L3 at the level of lexis.

### 1.3. Research Questions

The present study aims to answer the following questions:

1. Which of the participants' BLs is the dominant source of lexical CLI in L3 production?
2. Does typology (formal similarity between the BL and the target language) play a decisive role in determining the main SL of CLI?

## II. Literature Review

### 2.1. Lexical CLI in TLA

CLI is the recent term for transfer which dates back to the 1950s. One of the broad definitions of the term 'transfer' is offered by Odlin (1989). The latter defined transfer as "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired" (p. 27). CLI can take place at different linguistic levels (syntax, phonology, lexis). This study is interested in CLI at the level of lexis. Lexical CLI has been defined by Jarvis (2009, p. 99) as "the influence that a person's knowledge of one language has on that person's recognition, interpretation, processing, storage, and production of words in another language". CLI is so common in the area of lexis (Ringbom, 1987, p. 113).

This might be because L2 learners have already built conceptual and semantic systems in the previously learned languages.

The investigation of CLI in the context of multilingualism and TLA is more complex than its investigation in SLA as it encompasses all the processes underlying SLA as well as the potential more intricate relationships that can come into play between the languages known or being acquired by the learner (Cenoz, 2001, p. 8). Moreover, the third language learner can draw on more than one language (L1, L2s), while the second language learner can only rely on one BL (L1). The studies showed that not all BLs have equal chances to exert influence or to be activated in L3 production. De Angelis (2007) argued that CLI in TLA can emanate from more than one language and cannot be exclusively based on L1 influence since humans are capable of learning more than two languages. Equally, CLI cannot be based on L2 alone (p. 17). This implies that in TLA and multilingualism the native language (NL) does not play a privileged status and must be considered together with other possible sources of transfer. Indeed, many studies provided evidence of CLI from both L1 and L2 in L3 production (e.g. Cenoz et al., 2001; Dewaele, 1998; Gibson et al., 2001; Lindqvist, 2009; Letica, 2013; Neuser, 2017).

### 2.2. Manifestations of Formal CLI in L3 Production

Formal CLI occurs when the learner activates or is influenced by a similar word in the L1 or another known language instead of the one in the TL (Ringbom, 2001, p. 66). Different terminologies pertaining to formal CLI have been suggested by researchers. But most of them shed light on two categories: when an L1 or L2 form is used instead of the TL form without any phonological or morphological adaptations, namely the use of borrowing and cognates (e.g. Cenoz, 2001; Ecke, 2001) and cases in which the target form is altered under the influence of the learner's other languages, namely the use of foreignizings (e.g. De Angelis & Selinker, 2001; Dewaele, 1998). The current study focuses only on the use of cognates.

From a synchronic perspective, cognates are defined as words with noticeable similarities, irrespective of their etymology; they are defined as words that are similar in form and meaning though there is no exact definition of what similar means, and the definitions differ from one study to another (Letica, 2013, p. 36). There are three possible types of cognates: true cognates whose meanings are totally similar; deceptive cognates whose meanings are totally different, and partial cognates whose meanings may coincide in certain sense but not in others (Ivir, 1978; Ringbom, 2007). As for this study, it focuses on both true cognates and deceptive cognates.

### 2.3. Previous Studies on the Facilitative Effect of Cognates in L3 Production

It was found that formal similarity between two lexical items in two languages generates a facilitating effect if the formally similar words were also similar in meaning, but has negative effect if the two words differ in meaning. For instance, Schepen's (2008) study showed that true cognates produced facilitative effect, while false cognates were more susceptible to negative CLI resulting in erroneous TL production. Yet, Jarvis (2009) claimed that the differentiation across different types of formally similar words in unrelated languages results in fewer cases of negative CLI manifested as errors in TL production.

The facilitative effect of cognates has been widely evoked in the field of SLA and TLA. For instance, Lemhöfer, Dijkstra and Michel (2004) found that L1 Dutch, L2 English and L3 German trilinguals reacted to L3 German items faster if those had a cognate equivalent in L1 Dutch and that their reaction was even faster if there were cognates in all three languages. Szuboko-Sitarek (2011) found similar results in an L3 German task with trilinguals with English as L2 and Polish as L1. Additional evidence of the facilitative effect of cognates was traced in the study of Letica and Stokova (2013) in L3 production of multilingual participants who had L1 Croatian and L2 Italian where the Croatian-English cognates were English loanwords in Croatian and the English-Italian cognates had a common ancestor root (Latin). Letica (2013) examined the effect of both true and deceptive cognates in the L3 written production of Croatian multilingual participants who had previous knowledge of Croatian and Italian. She sought to identify instances of formal CLI in two groups (Croatian L1/Italian L2 and Italian L1/Croatian L2). The main instrument was based on the use of a synonym provision task which required the participants to provide a synonym for each underlined item in each given sentence where the items were Croatian/English true cognates, Croatian/English deceptive cognates, Italian/English true cognates and Italian/English deceptive cognates. The author found that the participants in both groups significantly relied

more often on the formal similarity between their L1 and L3 rather than between L2 and L3.

In short, previous researches showed that CLI manifested in the use of cognates, especially true cognates can have a facilitative effect on TLA.

### 2.4. The Role of Typology in Determining the Source Language of CLI

Typological proximity/distance (language distance) usually refers to the objective distance/similarity between two languages in terms of their origin; their belonging to a certain language family or subgroup within that family (e.g. Indo-European, Germanic) (Jarvis & Pavlenko, 2008, p. 177). Typological distance (typology) between languages has been reported as the most important variable in determining the likelihood of CLI. Studies on CLI in TLA contexts have indicated that CLI is more likely to take place between closely related languages than distantly related languages in TL production (Bouvy, 2000; Cenoz, 2001, 2003b, 2003c; De Angelis, 2005a, 2005b; De Angelis & Selinker, 2001; Hammarberg, 2001; Williams & Hammarberg, 1998). Studies that examined the influence of both Indo-European and non-Indo-European languages on an Indo-European L3 provided evidence for such assumptions. Those studies found, for example, a greater influence on English than Igbo on L3 French (Ahukana et al., 1981) or Spanish than Basque on L3 English (Cenoz, 1997, 2001).

Bouvy's (2000) study, which focused on Indo-European languages whereby one of the languages was typologically related to the L3 and one was less related, yielded similar findings. For instance, more CLI was found in L3 English from Dutch and German than from French. Ringbom (1987, 2007)'s study attested the supremacy of Swedish, a typologically closer language to English, over Finnish as a SL of influence in the use of false friends by both Swedish and Finnish groups. Similarly, De Angelis (2005) provided evidence for the supremacy of closely related languages (Spanish and French over English) to the TL (Italian) in the use of both content and function words by learners of Italian as a third or fourth language with English, Spanish or French as native or non-native languages. Likewise, Cenoz (1997, 2001) found that learners of L3 English with Spanish and Basque as BLs predominantly transferred from Spanish, a typologically closer language to English regardless of whether the language was the participants' L1 or L2. Not very differently, in Letica's (2013) study instances of formal CLI were found predominantly in the category where objective formal similarity existed between an item in one of the BLs (Croatian or Italian) and an item in the TL (English).

Overall, the reviewed studies showed that CLI from closely related languages had a facilitative effect and resulted in formal transfer regardless of the status of the language as L1 or L2. Yet, more distant languages can also share some formal similarities at the level of individual lexical items (De Angelis, 2007; Jarvis & Pavlenko, 2008; Ringbom, 2007) given the existence of loanwords that proved to exert a facilitative effect in the process of TL acquisition (Daulton, 2008; Ringbom, 2007). Such finding will be tested in this study by investigating the role of Arabic, a distant language which shares certain loanwords in English, as a SL of lexical CLI manifested in the use of cognates by Tunisian EFL students who have Arabic as L1 and French as L2.

## III. Methodology

### 3.1. The Sociolinguistic Context of the Study

The present study was conducted in Tunisia which constitutes a rich sociolinguistic landscape due to the existence of Berber language, the diglossic situation of Arabic, the regional and social variation of Tunisian Arabic (TA), the increasing effort of Arabization, the presence of French and the gradual spread of English, among other similar issues (Sayahi, 2011, p. 1).

Tunisia is known for diglossic situation where Arabic (Modern Standard Arabic: MSA) is the official language and TA known as 'tounsi' is the national vernacular variety of Arabic and is used by the public. MSA is considered as the High variety (H) and TA as the Low spoken variety (L). MSA is the educated variety that is used in education and official documents. French and English are introduced as FLs in grade three and six respectively. English is only taught as a FL in third position after MSA and French. Since 1997, English has been taught at the 9th grade of basic school and in 2000, English was introduced in the 3 years of college education: the 7$^{th}$, 8$^{th}$ and 9$^{th}$ grade. In 2006-2007, English was implemented as a compulsory subject in the 6$^{th}$ grade of primary school (Bousabah, 2007, pp. 3-4). As for the present context of higher education, English is studied as a fundamental subject taken as a specialty from the first year of university studies, along with other languages, namely French and Arabic. So the participants of the present study are in the process of learning the three languages (Arabic, French and English), though Arabic and French are studied once a week.

### 3.2. Typology Background

This subsection outlines the typological relationships between the participants' BLs and the TL. Linguistic distance measures the degree of similarities between languages, which is often used for language classification (Trask, 2000, p. 361). Different approaches to measuring linguistic distance have been put forward (e.g. lexical, morphological, and phonological). The lexicostatistical approach, a comparative method estimating cognacy, is an early method for inferring language relatedness, while the structural and phonological approaches are fairly recent (Schepens, 2015, p. 30). In this study, lexical distance measures will be applied to determine the typological relationships between the BLs (Arabic and French) and the TL (English), as the study focuses on lexical CLI.

In this study, the TL is English and the two potential SLs of transfer are Arabic and French. While French and English are Indo-European languages, Arabic belongs to a different language family (Semitic). Yet, despite different genetic relationships between Arabic and English, Arabic has had a great influence on English, especially in vocabulary. For instance, there are over 10.000 words originating from Arabic and many of these words have survived and are commonly used in English up-to-this date such as 'alcohol', 'algebra', 'banana', 'guitar', 'lemon', 'جمـــــــل' (camel), 'كعك' (cake), 'كوب' (cup), etc. (Abdullah, 2012, p. 174). Moreover, many words used in astrology and alchemy have their roots in Arabic because the Arabic world was at the top of these disciplines. People who speak English do not recognize that they are speaking Arabic. At the same time, English lent Arabic some words like 'bicycle' and 'telephone' (ibid, p. 172). Nonetheless, in spite of the presence of many Arabic loan words in the English language, there are very few English/Arabic cognates (Shoebottom, 2017, para. 15).

Regarding the typological relationship between French and English, the two languages are related in a sense as both of them are Indo-European languages, but belonging to different language families. French is a Romance language descended from Latin with German and English influences, while English is a Germanic language with Latin and French influences. Therefore, they share some similarities, most notably the same alphabet, spelling and a number of true cognates as well as false cognates '(Simons, 2017). Unlike other Germanic languages, English shares a large proportion of its vocabulary with French and Latin as a result of the influence of the Norman Conquest of England after 1066. Indeed, the Norman Conquest of England strongly affected the English language, especially its vocabulary; it resulted in a more Romance vocabulary than a Germanic one. Some radical linguists even believe that English should in fact not be seen as a Germanic language, but rather as a Romance-Germanic hybrid or semi-Romance language (ibid, para. 2). To sum up, French is typologically much closer to English than Arabic due to the massive numbers of French/English cognates and being descended of the same language.

### 3.3. The Participants

The participants of the current study are 1st year Tunisian learners of English at the Higher Institute of Human Sciences of Medenine, Tunisia. 14 students with L1 Arabic (Tunisian Arabic and Modern Standard Arabic), L2 French and L3 English participated in this study. All of them started learning English by the age of 10 in the school context. The informants of this study can be described as sequential (consecutive) multilinguals who acquired their first non-native language (French) after the age of 6 and then their second non-native language (English) in addition to some other FLs, namely German and Spanish.

### 3.4. Instruments

#### 3.4.1. The synonym provision task

The main instrument used in this study to quantify the instances of CLI in L3 production consists in the use of the synonym provision task used by Singleton and Ó Laoire (2006a, 2006b). The respondents were required to provide a synonym in English for each underlined word in 35 given English sentences (see appendix B). The sentences used in the task complied with the participants' level in English, but the synonyms of the underlined items were beyond the participants' level so as to create a certain degree of challenge during lexical search.

Since this study seeks to delineate instances of CLI from both BLs (Arabic and French), the items were carefully selected to distinguish clearly between the instances of CLI deriving from Arabic and those deriving from French. Moreover, each underlined word had a translation equivalent in either Arabic or French that was either a true or deceptive cognate with English words. Ten Arabic translation equivalents of the underlined words were true Arabic/English cognates and six were false Arabic/English cognates. On the other hand, ten translation equivalents in French were true French/English cognates and ten

were French/English false cognates.

Additionally, Levenshtein (1965) distance measure was applied to measure the formal similarity between the translation equivalents (Arabic and French) of the underlined words and their cognates (true and false cognates) in English. Levenshtein distance (LD) is a measure of the similarity between two strings, the source string (s) and the target string (t). The distance is the number of deletions, insertions, or substitutions required to transform s into t. The greater the Levenshtein distance, the more different the strings are (Haldar & Mukhopadhyay, 2011, p. 2). Arabic/English and French/English true cognates as well as false cognates were matched on an item-by-item basis in each of the conditions (true and false cognates). The Levenshtein distance measure for each Arabic/English true cognates and false cognates used in the task is presented in appendix C, and for the French/English true cognates and false cognates in appendix D.

### 3.5. Identifying Instances of CLI

CLI in this study is identified as the production of a word that could be traced to the influence of one of the BLs (Arabic or French), regardless of whether the answer provided by the participants was correct or not. That is to say, both positive and negative CLI (manifested as a deviation from the TL leading to errors) is investigated in this study. As a first step, the SL of instances of CLI was determined. The next step in the process was to differentiate between instances that were the result of formal similarity between the translation equivalents of the test items and English words from those that were not. The third step was to distinguish between instances where the synonym was a true cognate with a translation equivalent in either BLs from instances where the synonym was a false cognate with a translation equivalent in either BLs.

## IV. Findings and Discussion

### 4.1. The Dominant Source Language (SL) of CLI

The first concern of the current research is to determine the dominant SL of CLI traced in the synonym provision task. Before identifying the main SL of CLI, the amount of CLI was calculated and presented in table 1 below:

Table 1: Amount of CLI

| | Minimum | Maximum | Sum | % |
|---|---|---|---|---|
| Possible answers | 0 | 35 | 490 | 100 |
| Provided answers | 9 | 34 | 296 | 60.40 |
| CLI identified | 2 | 7 | 66 | 22.29 |

As shown in table 1, the participants provided answers to 60.40% of all test items, and CLI was identified in 22.29% of all the items to which the respondents provided answers. It is difficult to provide decisive commentary on the amount of CLI found in the present data because the percentages of CLI in L3 production traced in different studies have widely varied depending on the type of task and methodology utilized in the analysis of data and the identification of CLI based on erroneous forms traced in the TL. In Letica Krevelj's (2013) study, for example, CLI was identified in 37.6% in the synonym provision task. Such variation in the amount of CLI might be due to the items included in both studies and its level of difficulty. As for the dominant SL of CLI which is the first aim of this study, Arabic (L1) is found to be the main SL of CLI. For instance, 36 instances of CLI originating from Arabic (true Arabic/English cognates) were identified in the participants' production. As for French, 30 instances were traced including 24 instances of true French/English cognates and 6 instances of false French/English cognates. Although French is closer to English and shares more cognates with English than Arabic, instances of CLI deriving from Arabic are more numerous than those originating from French, though the difference is slight. Such finding shows that CLI can also emanate from a distant language with little amount of shared cognates. Similarly, in Letica Krevelj study L1 influence was greater than L2 influence in both groups (Croat L1 and Ital L1). The dominance of L1 over L2 as a source of influence substantiates previous findings that not all BLs have equal chances to exert influence or to be activated in L3 production. Nevertheless, the participants displayed CLI from both BLs, rather than relying on a single BL in their L3 production. This finding consolidates De Angelis' (2007) view that CLI in TLA can emanate from more than one language and cannot be exclusively based on L1 influence since humans are capable of learning more than two languages. Equally, CLI cannot be based on L2 alone (p. 17). The participants' reliance on both L1 and L2 as SLs of CLI lends support to many studies (e.g. Cenoz et al., 2001; Dewaele, 1998; Gibson et al., 2001; Lindqvist, 2009; Letica, 2013; Neuser, 2017).

Overall, the participants of this study had tendency to draw from one BL (L1 Arabic) more than the other. The predominance of L1 Arabic over L2 French further shows that Arabic has indeed had a great influence on English, especially in vocabulary

(Shoebottom, 2017, para. 15).

### 4.2. The Role of Typology in Determining the SL of CLI

The second aim of the present study is to investigate the role of typology in determining the SL of CLI. The typology factor predicts that the language that is typologically closer to the TL will override a distant language as a SL of CLI in L3 production. The preliminary results showed that instances of CLI from L1 Arabic, a distant language, predominates instances of CLI originating from L2 French, a closer language to the TL. Such findings imply that typology does not have a decisive role in predicting the SL of CLI and run counter to previous studies on CLI in TLA contexts which indicated that CLI is more likely to take place between closely related languages than distantly related languages in TL production (Bouvy, 2000; Cenoz, 2001, 2003b, 2003c; De Angelis, 2005a, 2005b; De Angelis & Selinker, 2001; Hammarberg, 2001; Williams & Hammarberg, 1998). The predominance of L1 Arabic over L2 French substantiates the view that more distant languages can also share some formal similarities at the level of individual lexical items (De Angelis, 2007; Jarvis & Pavlenko, 2008; Ringbom, 2007) given the existence of loanwords that proved to exert a facilitative effect in the process of TL acquisition (Daulton, 2008; Ringbom, 2007). Indeed, despite different genetic relationships between Arabic and English, Arabic has had a great influence on English, especially in vocabulary. Furthermore, instances of CLI from Arabic exhibited by the participants are all true Arabic/English cognates. Table 2 below presents some examples of CLI instances based on translation equivalents in Arabic:

**Table 2: Examples of instances of CLI based on the translation equivalents in Arabic**

| Test items | Target form | Translation equivalent in Arabic | Answers |
|---|---|---|---|
| **Germs** | Bacteria | بكتيريا | Bacteria (5)<br>Microbes (2)<br>Bacteries (4) |
| **Cookies** | biscuit | بسكويت | Biscuit (6)<br>Buscots (1)<br>Beskwite (1) |
| **Movie** | film | فيلم | Film (14) |
| **Muffin** | Cake | كايك | Cake (4)<br>Tinker (2)<br>Pie (1)<br>Cupcakes (1) |
| **Wine** | beer | بيرا | Beer (2)<br>Alcohol (5) |

From table 2 it can be seen that three different answers were provided as the synonym of the item 'germs', but the most frequent one is 'bacteria' which is a true cognate with the Arabic translation equivalent 'بكتيـريا'. The effect of CLI in the cited examples is positive. Overall, the CLI instances originating from Arabic provided by the participants are based on translation equivalents that are formally similar to a word in the TL. For example, the answer 'biscuit' corresponds to the Arabic translation equivalent 'بســـــــــكويت', a true cognate. Similarly, the answer 'film' corresponds to the Arabic translation equivalent 'فيلم', a true cognate.

Although Arabic is typologically distant to English and shares less number of true cognates with English than French, it exerted a facilitative effect on the participants' L3 production. This shows that distant languages do not always exert a negative effect as predicted by former studies and corroborates the view that more distant languages can also exert a facilitative effect in the process of TL acquisition given the existence of loanwords (Daulton, 2008; Ringbom, 2007).

Equally, French exerted a facilitative effect on the participants' production. As mentioned in section 4.1, 24 instances of CLI based on true French/English cognates were displayed by the respondents, while only 6 instances were based on false French/English cognates resulting in the production of erroneous items. Table 3 below displays some examples of CLI instances based on translation equivalents in French that are true cognates with English:

**Table 3: Examples of instances of CLI based on the translation equivalents in French**

| Test item | Target form | Translation equivalent in French | Answers |
|---|---|---|---|
| **Disaster** | catastrophe | catastrophe | Catastrophe (5)<br>Big problem (3)<br>Crisis (1) |
| **tasty** | delicious | Délicieux | Delicious (10)<br>Flavoured (1) |
| **Selfish** | egoist | égoïste | Egoist (6)<br>Arrogant (2) |
| **Notorious** | famous | fameux | Famous (10) |

As shown in table, three different items were provided as a synonym for the word 'catastrophe', but the most frequent one is 'catastrophe' which is a true cognate with the French word 'catastrophe'. The formal and semantic similarity between the French word 'catastrophe' and the English item 'catastrophe' seems to have exerted a facilitative effect as it helped the participants to find the appropriate synonym. The same holds true for the other items. However, unlike Arabic, French exerted also a negative effect on the participants' production, though it is typologically closer to English than Arabic. As mentioned in section

4.1, 6 instances of negative CLI which are based on translation equivalents that are false French/English cognates were exhibited by the respondents. Table 4 represents such instances:

Table 4: Examples of negative instances of CLI based on the translation equivalents in French

| Test item | Target form | Translation equivalent in French | Answers |
|---|---|---|---|
| Sit for | Take an exam | passer | Pass (4)<br>Attend (1)<br>Prepare (2) |
| Sensitive | delicate | sensible | Sensible (2) |

As seen in table 4, 4 participants provided the item 'pass', which is a false cognate with the French equivalent 'passer', as a synonym for the English item 'sit for'. It seems that the formal similarity between the French word 'passer', which means taking an exam, and the English item 'pass', which means to succeed in an exam, has confused the respondents leading them to produce an inappropriate item in the intended context. Similarly, the formal similarity between the French item 'sensible', which means 'fragile or delicate', and the English item 'sensible', which means 'reasonable', seems to have confused some of the participants (2) leading them to produce an erroneous item in the intended context.

The negative effect exerted by French indicates that a typologically close language does not always have a facilitative effect on TL production due to the existence of a considerable number of false French/English cognates. Yet, the additional classification of formal CLI in terms of the similarity relations that existed between each BL and the TL showed that the respondents relied on each BL (Arabic and French) when the translation equivalent in a BL was formally similar to a word in the TL, regardless of the dominance of one BL over another as the main SL of CLI.

In short, typology in the present data is not decisive in determining the SL of CLI as Arabic, a distant language to English, is activated as the dominant SL of CLI over French, a typologically closer language to English. This finding runs counter to the assumption that CLI is more likely to take place between closely related languages than distantly related languages in TL production (Bouvy, 2000; Cenoz, 2001, 2003b, 2003c; De Angelis, 2005a, 2005b; De Angelis & Selinker, 2001; Hammarberg, 2001; Williams & Hammarberg, 1998).

**Conclusion:**

The current study sought to determine which BL (Arabic or French) would be the dominant SL of formal CLI in L3 production and whether the typology factor would exert a relative weight in predicting the BL as the SL of formal CLI. The analysis of the frequency of CLI in terms of the SL revealed that the participants drew on both BLs (Arabic and French) in the synonym provision task, but they relied more on their L1 Arabic than their L2 French. This finding indicates that typology is not a determining factor of the SL of CLI in the present data. The findings of this study are based on specific language constellations in a specific sociolinguistic context using a specific task (a synonym provision task), and therefore cannot be generalized to all cases of L3 production and cannot be compared across all studies on CLI in L3 written production. The findings of this study could be seen as a small contribution to understanding the nature of CLI from related and unrelated BLs illuminating the formally similar features that affect lexical retrieval in L3 production. Additionally, the findings have some pedagogical implications such as the use of specific instructional techniques by teachers to raise students' awareness of the negative effects of false cognates on their writings where L1/L2/L3 are compared and similarities and differences are highlighted. Yet, in spite of its significance, the present study is not void of some limitations. One main limitation lays in the design of the test items in the synonym provision task. That is, the test items used in the task were not balanced in terms of formal similarity. For instance, 10 items whose translation equivalents are false French/English cognates were included, as opposed to only 6 items whose translation equivalents are false Arabic/English cognates. Henceforth, future research should focus on lexical items that are formally similar to translation equivalents in both BLs equally. Besides, the test items did not belong to the same part of speech. There were eighteen nouns, ten verbs, six adjectives and one adverb. We suggest using test items belonging to the same part of speech in future research because conceptual features such as the number of possible translations and translation equivalents in the BLs may play an important role in determining the transferability of its formal features.

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Appendices

Appendix A

**The Questionnaire**



**Abbreviations: TA: Tunisian Arabic MSA: Modern Standard Arabic, L1: first language, L2: second language, L3: third language**

Read the questions carefully and circle or supply the answer

Fist name _____ Last name _____

1. Gender: a) male b) female
2. Age: _____ (in years)
3. Institute: _____
4. What is your native language (language you started learning from birth)?

a) Arabic b) French

5. Write down the language in which you received instruction in school, for each schooling level:

Kindergarten or pre-school _____

Primary school _____

6. Please list all the languages you know in the order of acquisition (your native language first).

L1 _____

L2 _____

L3 _____

L4 _____

7. Please, specify the age at which you started learning MSA, L2, L3 and L4 in the following situations:

I started learning MSA at home at the age of _____.

at school at the age of _____.

I started learning L2: at home at the age of _____.

at school at the age of _____.

I started learning L3: at home at the age of _____.

At school at the age of _____.

I started learning L4: at home at the age of _____.

at school at the age of _____.



8. On a scale from 1 to 5, please assess your level of general proficiency in reading, writing, speaking and listening skills in each of the languages you have learned so far.

1 = (poor), 2 = (satisfactory), 3= (good), 4 = (very good), 5 = (excellent)



| | Arabic | French | English | Others |
|---|---|---|---|---|
| General proficiency | | | | |
| reading | | | | |
| writing | | | | |
| speaking | | | | |
| listening | | | | |





9. Please, circle the grade you received at the end of the previous academic year in each of the three languages.

L1: a) excellent b) very good c) good d) sufficient

L2: a) excellent b) very good c) good d) sufficient

L3: a) excellent b) very good c) good d) sufficient

10. Estimate, in terms of percentages, how often you use each of the languages (Arabic, French and English) per day (in all daily activities combined)

TA : a) < 25 % b) 25 % c) 50 % d) 75 % e) 100 %

MSA: a) < 25 % b) 25 % c) 50 % d) 75 % e) 100 %

French: a) < 25 % b) 25 % c) 50 % d) 75 % e) 100 %



*Thank you for your time*

Appendix B

**Synonym Provision Task**



Name _____ Surname _____



**Please read each of the following sentences and try to supply a synonym for the underlined expression in each sentence. Each of your answers will be of great importance for our research purposes so we thank you for your effort. Your names will be unanimous.**

1. Wash your hands so you don't get **germs** on the food.

Synonym: _____

2. She always used to bake delicious chocolate **cookies** for her mother's birthday.

Synonym: _____

3. Let's go to the bar and have a bottle of **wine**

Synonym: _____

4. .After getting his baccalaureate, he wants to go to the **faculty** of Human Sciences of Tunis

Synonym: _____

5. Put a **sweater** on if you are cold.

Synonym: _____

6. My favourite **movie** is 'Casabalnca'?

Synonym: _____

7. She prepared a delicious blueberry **muffin** for Christmas

Synonym: _____

8. He keeps his coffee in a **crock.**

Synonym: _____

9. There's a few **café** in the corner that serves very good coffee.

Synonym: _____

10. She was so engrossed in the book that she forgot the cake in the **oven.**

Synonym: _____

11. She **died** from a heart attack.

Synonym: _____

12. They used metal to make knives and **swords**, and moving parts to build war machines, like catapults.

Synonym: _____

13. Black coffee leaves a **bitter** taste in the mouth.

Synonym: _____

14. Can I **sleep over** at my friend's home tonight?

Synonym: _____

15. This problem is **over** now, so don't worry.

Synonym: _____

16. They **breakfasted** hurriedly on coffee and toast

Synonym: _____

17. It would be a **disaster** for me if I lost my job

Synonym: _____

18. She has a deep **dislike** to getting up early in the morning

Synonym: _____

19. They treated the story of his escape with **caution**

Synonym: _____

19. She was accused of **misusing** company funds

Synonym: _____

20. She never considers anyone but herself - she's totally **selfish**.

Synonym: _____

21. Christina Agulira is a very **notorious** actress

Synonym: _____

22. em! This soup is very **tasty**

Synonym: _____

23. I have to **make up** my mind where to go

Synonym: _____

24. They were **bright** children, always asking good questions

Synonym: _____

25. The burglars were **cautious** not to leave any track behind them.

Synonym: _____

26. He is **currently** directing TV sitcoms

Synonym: _____

27. They are building a new **secondary school** in the town.

Synonym: _____

28. Her writing is barely **comprehensible** to me.

Synonym: _____

29. You'll be paid on **completion** of the project

Synonym: _____

30. To my great **disappointment,** he decided to leave

Synonym: _____

31. I can't **stand** hearing her cry.

Synonym: _____

32. be careful! You are going to fall and **hurt** your hand

Synonym: _____

33. I have to be careful with what I say because she is so **sensitive**.

Synonym: _____

34. I am going to **sit for** my physics exam today in the afternoon.

Synonym: _____

35. I **attended** the seminars for a month or two.

Synonym: _____



THANK YOU

Appendix c

**Arabic/English true and false cognates and the Levenshtein distance measure**



Test items whose translation equivalents are true cognates in Arabic and English



| Test item | Arabic translation equivalent | English synonym | Levenshtien distance |
|---|---|---|---|
| 1. germs | بكتيريا | bacteria | 8 |
| 2. cookies | بسكويت | biscuit | 7 |
| 3. wine | بيرا | beer | 4 |
| 4. faculty | كلية | college | 7 |
| 5. sweater | بلوفر | pullover | 5 |
| 6. movie | فيلم | film | 4 |
| 7. muffin | كايك | cake | 4 |
| 8. crock | جرة | jar | 3 |
| 9. café | كافتيريا | cafeteria | 9 |
| 10. oven | فرن | furnace | 7 |

Test items whose translation equivalents are false cognates in Arabic and English

| Test item | Arabic translation equivalent | Deceptive cognates in English | Levenshtien distance |
|---|---|---|---|
| 1. died | مات | mat | 3 |
| 2. sword | سيف | safe | 4 |
| 3. bitter | مر | mar | 3 |
| 4. Sleep over | بات | bat | 3 |
| 5. over | فات | fat | 3 |
| 6. breakfasted | أفطر | after | 5 |

Appendix D

**French/English true and false cognates and the Levenshtein distance measure**



Test items whose translation equivalents are true cognates in French and English

| Test item | French translation equivalent | Cognate in English | Levenshtein distance |
|---|---|---|---|
| 1. disaster | catastrophe | catastrophe | 0 |
| 2. dislike | aversion | aversion | 0 |
| 3. caution | précaution | precaution | 1 |
| 4. misuse | abuser | abuse | 1 |
| 5. selfish | égoïste | egoist | 3 |
| 6. notorious | fameux | famous | 2 |
| 7. tasty | délicieux | delicious | 3 |
| 8. To make up | décider | decide | 2 |
| 9. bright | brillant | brilliant | 1 |
| 10. cautious | prudent | prudent | 0 |

Test items whose translation equivalents are false cognates in French and English

| Test item | French translation equivalent | False Cognate in English | Levenshtein distance |
|---|---|---|---|
| 1. currently | actuellement | actually | 6 |
| 2. Secondary school | collège | college | 1 |
| 3. comprehensible | compréhensive | comprehensive | 1 |
| 4. completion | achèvement | achievement | 2 |
| 5. disappointment | déception | deception | 1 |
| 6. To stand (s.b) | supporter | support | 2 |
| 7. hurt | blesser | To bless | 2 |
| 8. sensitive | sensible | sensible | 0 |
| 9. to sit for (an exam) | passer | To pass | 2 |
| 10. attend | assister | assist | 2 |