Investigating the L2/L3 Acquisition of English Determiners by Palestinian/Jordanian and Cypriot–Greek Speakers in Cyprus and Jordan

by
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Abstract

This study investigated the L2/L3 acquisition of English determiners by L1 teenager/adult speakers of Palestinian-Jordanian Arabic (PJ/A) and Cypriot-Greek (CG) from the generativist perspective. This approach has considered the decisive roles of transfer from L1/L2 into L2/L3 and L2/L3 input.

A mixed-methods approach was employed by conducting a two-phase study. It started with a cross-linguistic analysis of the article system in English, PJ/A and CG. Then, a grammaticality judgment task, a forced-choice elicitation task and a questionnaire were constructed for the second phase to test six linguistic contexts. These contexts demanded the correct use of the target articles before definite plural/institutional proper names (English=CG≠JA); bare proper names preceded by titles/honorifics (Quirk et al., 1985) (English≠JA=CG); each nominal (N) in the 'of-phrase' construction (the+N1+of+bare N2) (Keizer, 2007) (N1: English=CG≠JA; N2: English≠JA≠CG), and indefinite (non)-specific NPs (English=CG≠JA). Data were collected from an L2 PJ group in Jordan, and from L2 CG, L3 PJ-CG-E and L3 PJ-E-CG groups in Cyprus.

Although CG and PJ/A have the determiner category, the L2 CG and L3 participants showed evidence of positive transfer from CG in using the (in)definite articles while the L2 PJ participants were negatively influenced by PJ/A as CG is structurally closer to English than PJ/A. The L2/L3 groups misused *the* before bare NPs that mismatch with CG and PJ/A.

This study contributed to the fields of L2/L3 acquisition of English determiners. The results of the L2 groups supported the Full Transfer/Full Access Hypothesis (Schwartz and Sprouse, 1996) as the participants reached ultimate attainment with the help of certain types of linguistic experience, especially English proficiency. The L3 groups' results were elucidated by the Scalpel Model (Slabakova, 2017); the

contributing factors that explained the (un)learnability problem of participants were English proficiency, structural (dis)similarity between English and CG or PJ/A and/or Greek proficiency.

The researcher's published work in journals/proceedings

- Asha, Intisar and Al–hawi, Asma. (2016). The impact of cooperative learning on developing the sixth–grade students decision–making skill and academic achievement. *Journal of Education and Practice,* 7(10), pp. 60–70.

- Al–hawi, Asma. (2018). The pragmatic functions of the expression 'Insha'a Allah' in the speech acts of non–native, non–Muslim Arabic speakers. *Journal of Second Language Teaching and Research*, 6(2), pp. 27–45.

- Al–hawi, Asma and Karpava, Sviatlana. (2019). L2/L3 acquisition of the English indefinite article. *The Experimental Linguistics* (*ExLing) Conference proceedings*, Lisbon, Portugal, pp. 25–27.

List of abbreviations and acronyms

ACC	Accusative
ACP	Article Choice Parameter
Adv	Advanced
ART	Article
ANOVA	Analysis of variance
CEFR	Common European Framework of Reference
CEM	Cumulative Enhancement Model
CG	Cypriot–Greek
CLI	Cross–linguistic influence Languages
DEF	Definite
DP	Determiner phrase
FCET	Forced–choice elicitation task
fem	Female
FH	Fluctuation Hypothesis
FT/FA	Full transfer Full Access Hypothesis
GEN	Genitive
GJT	Grammaticality judgement task
IND	Indefinite
Inter	Intermediate
L1/L2/L3	First/second/third language
LI	Low intermediate
mas	Masculine
MD	Mean difference
MSA	Modern Standard Arabic
N	Noun

n	Number
N/A	Not applicable
NEUT	Neutral
NOM	Nominative
NP	Noun phrase
PJ/A	Palestinian-Jordanian Arabic
PJ	Palestinian–Jordanian
PP	Prepositional phrase
Prop.N	Proper noun
SD	Standard Deviation
sig	Significant
SLA	Second language acquisition
SMG	Standard Modern Greek
Std.E	Standard Error
TLA	Third language acquisition
UA	Upper advanced
UG	Universal grammar
UI	Upper intermediate
UK	United Kingdom
USA	United States of America
χ^2	Chi square
1.SG	First person singular
3.SG	Third person singular
Ø	Zero article

Transliteration symbols for Arabic vowels and consonants

Arabic sound	Transliteration	Example
ء	ʔ	Similar to the glottal stop /ʔ/ in Gatwick [gʔwik].
ث	th	Similar to *th*eory
ج	j	Similar to *j*ob
ح	H	Similar to the voiceless pharyngeal fricative:/ħ/
خ	x	Similar to B*ach*
ذ	Dh	Similar to 'th' in 'these'
ز	z	Similar to *z*ebra
ش	sh	Similar to *sh*ell
ص	S	Similar to the voiceless fricative emphatic /ṣ/
ض	D	Similar to the voiced stop emphatic /d/
ط	T	Similar to the voiceless stop emphatic /t/
ظ	TH	Similar to the voiced fricative emphatic /ð/
ع	ʕ	Similar to the fricative voiced non-emphatic/ʕ/
غ	gh	Similar to *Gh*andy
ق	q	Similar to the voiceless stop non-emphatic/q/
وَ	w	Similar to *w*all
يَ	y	Similar to *y*es
فتحةً	a	Similar to 'حرس' '*h*a*ras*'
ضمةً	u	Similar to p*u*t
كسرةٍ	i	Similar to s*i*t
الفٌ طويلةٌ	a:	Similar to 'حارس' *h*a:*ris*
ضمةٌ طويلة	u:	Similar to r*u*le
كسرةٌ طويلة	i:	Similar to s*ea*t
Diphthongs	aw	Similar to *ow*l
	ay	Similar to wh*i*te
	ei	Similar to s*ai*l (this diphthong is only found in the Arabic dialects) as in: 'بيت' *'beit'*

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Chapter 1: Introduction

The abstractness of English determiners causes difficulty for second language learners in that they cannot easily grasp their meaning from the input (White, 2003). Thus, the English article system is one of the most vulnerable domains in second language acquisition (SLA) and third language acquisition (TLA), as it might cause a learning difficulty for second language (L2) learners (Epstein, et al., 1996; Prévost and White, 2000; Tsimpli and Dimitrakopoulou, 2007) and third language (L3) learners of English (Falk and Bardel, 2011; Westergaard et al., 2017).

Cross-linguistically, both English (Lyons, 1999; Hawkins et al., 2006) and Standard Modern Greek (SMG) (Holton et al., 2004; Kyriakaki, 2011), including Cypriot-Greek (CG) (Buschfeld, 2013; Karpava, 2016), have the definite and indefinite articles. In Arabic, prefixes or syntactic constructions signal definiteness, while indefiniteness is marked by case markers as in Modern Standard Arabic (MSA) (Ryding, 2005), or by the zero article which is the case in the different forms of the non-standard Arabic varieties including Jordanian Arabic (Abudalbuh, 2016) and Palestinian Arabic.

The main objective behind conducting this thesis is to examine the L2/L3 acquisition of the English article system by two L2 groups of English who are native speakers of Palestinian or Jordanian Arabic (PJ/A) and CG with L2 English, and by two L3 groups who are different in terms of order of acquisition of CG and English. These L3 groups are native Palestinian-Jordanian (PJ) learners of L3 English with L3 CG (L3 PJ-CG-E), and native PJ learners of L2 English with L3 CG (L3 PJ-E-CG). It should be emphasised that PJ/A is a mixture of dialects used in Jordan because Jordan and Palestine are geographically close (Al-Wer and Herin, 2011). In addition, the majority of the population in Jordan are Palestinians who were expelled from Palestine in 1948 and 1967 (Tianshe, 2009) (See Chapter three, section 3.4).

The choice of the target L2/L3 groups was expected to provide more explanations concerning the acquisition of the target phenomenon not only by L2 learners, who were different in terms of their L1s, but also by L3 learners who were different in the order of acquiring English and CG. However, these L3 learners have the same L1 which is PJ/A. The reason for investigating this linguistic phenomenon is to look at the issues of cross-linguistic influence in L2/L3 English acquisition. It was revealed that determiners are one of the most vulnerable structures for English learners to acquire because of the difficulty in mapping the abstract feature of definiteness into morphological forms (Prévost and White, 2000; Liu and Gleason, 2002; Yoo and Shin, 2020). The main significance of this study is that its experimental findings will not only contribute to the field of SLA, but also to the field of TLA by investigating transfer from L1 PJ/A, L1 CG and L2/L3 CG into L2/L3 English. This study tested a set of L2 and L3 acquisition theories that draw upon the generativist approach to language acquisition. This approach has taken into account the decisive role of universal grammar, learning mechanisms in L2/L3, transfer from L1/L2 and L2/L3 and input. Thus, the findings are expected to be of interest to L2/L3 learners of English and to English teachers as well.

Central to the issue of SLA/TLA is how learning is established and the extent to which learning a non-native language is triggered by the learners' previously acquired language(s) and the type of L2/L3 input. The behaviourists, for example, viewed learning as a habit formation established from the learner's L1 (Lado, 1957). These habits have a negative or positive impact on the formation of the new sets of habits regardless of the non-native input. On the other hand, the generativists defined learning as a mental process constrained by an innate faculty rather than a kind of behaviour because there is no guarantee that transfer might take place (Schwartz and Sprouse, 1994, 1996; Prévost and White, 2000; Lardiere, 2005, 2007, 2008, 2009, 2013). Unlike

the behaviourists, the generativists provided more explanations regarding the type of errors that are irrelevant to L1 influence such as overgeneralisation errors (e.g. *mouses* instead of *mice*). This type of errors is expected to occur as part of the developmental processes that reflect the grammatical knowledge of L2 learners (White, 2003).

According to Chomsky (1986, 1995), the grammars of all human languages are constrained by universal grammar (UG). UG consists of principles (language-based) and parameters (formal universals) (ibid). Thus, what constitutes learners' grammars can be analysed in terms of these principles and parameters. The analysis of learners' grammar is focused on exploring how learners progress from the initial state up to ultimate attainment which is 'the steady-state grammar of people who have completed their L2 acquisition (White, 2003: 241).

In contrast with the behaviourists who only focus on the role of transfer, the generativists' perspective with its different positions (See Chapter two, section 2.3), holds that transfer is one of the factors that are expected to influence the learner's performance, but it is not the only factor as other factors might intervene in the process of learning. For example, any change of parameter values is triggered by (i) the learners' input that might help these learners reset the parameters of the target language by accessing UG (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Prévost and White, 2000; Ionin et al. 2008; Lardiere, 2009, 2013); (ii) positive influence from their L1/L2 if the features of their L1 match with the features of their L2 (Hawkins and Chan,1997; Hawkins and Franceschina, 2004; Ionin et al., 2008), or (iii) using certain learning mechanisms (Bley-Vroman, 1989) and strategies such as inferencing and transfer (O'Malley and Chamot, 1990). In TLA, a group of factors is addressed regarding the learning process, such as the role of the previously acquired languages (Flynn et al., 2004; Slabakova, 2017; Westergaard et al., 2017); order of acquiring the three languages; age factor, and/or L2/L3 input (Falk and Bardel, 2011; Stavans and

Hoffmann, 2015; Slabakova, 2017; Rothman et al., 2019; Singleton and Aronin, 2019). These factors are expected to influence the extent to which learners can reset the parameters of their interlanguage in accordance with the parameters of their L3.

To get more information on the motives for conducting this study, the original claim to knowledge and the gaps this thesis has addressed, more details will be provided in the following sections. Thus, this chapter is organised as follows: it starts with the positionality of the researcher in the study. Section 1.2 then identifies the background and statement of the research problem. Section 1.3 sets out the basic definitions of the linguistic terms used in the study. Section 1.4 outlines the aims and research questions, followed by exploring the methodology undertaken in the study. Then, an overview of the research methodology will be provided in section 1.6. The originality and contributions of the study will be given in section 1.7, followed by an outline on how the thesis is organised in section 1.8.

1.1. Positionality of the researcher in the study

The initial motivation for this thesis originated from the researcher's interest in learning Greek in Cyprus after moving there in 2015. This motivation was threefold. It was related (i) to the status of English in Jordan, where the researcher spent most of her life and worked as an English teacher, and to the status of English in Cyprus; (ii) to the cross-linguistic similarity and differences among Cypriot-Greek, Arabic and English, and (iii) to the bi(dia)lectal situation in Cyprus and Jordan.

One of the difficulties faced by the researcher while trying to learn Greek in Cyprus was related to the wide use of English on the island either by Cypriot-Greek people and Turkish-Cypriot people, or by British and non-native speakers of Greek who live in Cyprus as citizens due to the post-colonial status in Cyprus (Buschfeld, 2013). This environment was not helpful for learning Greek for the researcher. She noticed English was spoken there in almost every aspect of life (cf. Buschfeld, 2013), which

might suggest CG people have more exposure to English than PJ people. The situation in Jordan is completely different. The presence of foreigners in Jordan, especially native English speakers, is limited. English is used there for educational or professional purposes (cf. Alomoush, 2015, Alomoush and Al-Na'imat, 2018).

In 2016, the researcher started her PhD. While working on the proposal of her research study, she decided to focus on how her CG and Arab friends, her children and their private Greek teacher were using English. This stage provided the researcher with the opportunity to focus on different linguistic phenomena in the nominal domain and the verbal domain that might be vulnerable to L1 influence. Still, what caught the researcher's attention was how definite and indefinite noun phrases were used by her CG and Arab friends who were L2 learners of English and L3 learners of English, respectively. Furthermore, the researcher had read a lot of literature and then decided to focus only on this environment in the nominal domain rather than on both the verbal domain and the nominal domain.

The researcher realised that different morpho-syntactic cross-linguistic differences related to the use of English determiners in the nominal domain existed among Arabic, CG and English, but have never been investigated before. Thus, preparing a contrastive analysis in this regard would be of great importance as it would fill a gap in the literature by shedding light on how the Arabic and Greek linguistic contexts that (mis)matched with the English environments might impact the L2 or even L3 acquisition processes. The researcher noticed these differences between the article system in Arabic and English or Greek and English caused variability in the production of English determiners by the researcher's friends and some of her family members. For example, the definite article in CG was utilised with proper names of people and places and genitive constructions, which was not necessarily the case in Arabic, because of the negative transfer from L1 Arabic. Though the indefinite article exists in CG, unlike the

Arabic dialects (Alzamil, 2019), the researcher noticed that it was omitted sometimes with singular indefinite noun phrases, discovering later its use is triggered by the choice of certain kinds of verbs, called verbs of accomplishment and light verbs (Marinis, 2003; Agathopoulou et al., 2012). The last thing that caught the researcher's attention was that PJ/A and CG had something in common by both using the definite article with proper names of people preceded with titles such as 'Doctor' or 'Mrs'.

The bi(dia)lectal situation in Cyprus and Jordan was also of interest to the researcher as it might have some influence on the use of English determiners to various degrees. The researcher noticed Jordan and Cyprus have something in common as people in both countries use two types of varieties: a high (standard) variety and low (non-standard) variety. In Jordan, MSA is the high formal variety, while a mixture of low dialects such as the Jordanian and Palestinian dialects are informally used for daily communication (Al-Sobh et al., 2015; Albiribi, 2018). The high Arabic variety and the low varieties have the morphological overt definite article, yet only the high variety has a morphological indefinite case marker (Abudalbuh, 2016). In Cyprus, SMG is the high variety while CG is the low variety used in everyday interactions (Antoniou et al., 2014; Grohmann et al., 2017). Both SMG and CG have the same article system (Buschfeld, 2013). Accordingly, it was interesting to investigate whether the low Arabic variety would have surpassed the role of the high Arabic variety in relation to the acquisition of the English indefinite article by PJ learners of English. As there were no differences between CG and SMG regarding article use, and Geek has an article system closer to English than is the case between Arabic and English, it was also interesting to find if the bi(dia)lectal situation in Cyprus would have had a less negative influence or none at all on the L2 English acquisition of determiners by CG native speakers or non-native speakers in comparison with the situation in Jordan. This was expected to shed more

light on how L2 CG learners' use of English determiners might be influenced by their exposure to the Greek varieties in a complex acquisition environment.

All these observations paved the way for the researcher to read more about the determiner system in Arabic, Greek and English, and to investigate this linguistic phenomenon thoroughly. Additionally, the linguistic status of English in Cyprus and Jordan motivated the researcher to find whether the CG learners of English residing in Cyprus would have more English input in terms of quality and quantity than the PJ participants living in Jordan, and the extent to which the type of English input might help in overcoming the negative influence of the bi(dia)lectal situation in both countries.

1.2. Background and statement of the research problem

A careful study of the literature reveals that definiteness and specificity are semantic universal features from the generativist approach to language acquisition (Ionin et al., 2004, Ko et al., 2008). Bickerton (1981) proposes that semantic universal features and discourse features are language-specific in that their meanings are recognised differently from language to language. It is argued that when there are similarities between languages, positive or facilitative transfer can occur (Tsimpli and Sorace, 2006; Slabakova, 2016). However, negative or non-facilitative transfer from the background languages is expected if there are differences between them (ibid). Many studies have confirmed the positive/negative role of L1 on L2 acquisition of English determiners (Jiang, 2012; Momenzadea and Youhanaeeb, 2014; Sabir, 2015; Kargar, 2019; Alzamil, 2019) or the role of L1 or L2 in L3 acquisition (Avgerinou, 2007; Treichler et al., 2009; Ouertani, 2013; Hermas, 2018, 2019).

However, the similarity between the native language and any of the non-native languages does not guarantee that positive transfer will take place. Avgerinou argued (2007: 354) the availability of the determiner category in L2 Greek provided the Turkish learners of L3 English with a facilitative cross-linguistic influence at the onset

of L3 acquisition 'whereas the availability of these features in the native language [Greek] does not affect L2 performance in the early stages' of acquisition. Hermas (2018: 159) suggests that L3 learners cannot 'draw on transfer alone because article usage in three languages is already complex and difficult to disentangle', as many factors might intervene in L3 acquisition. One of the most important factors that might influence SLA and TLA is the quality and quantity of input. Though input might overcome the negative transfer from the native tongue or the previously acquired non-native language(s), insufficient input might lead to a learnability problem in the process of learning a new language (Schwartz and Sprouse, 1994, 1996; Prévost and White 2000; Lardiere, 2005, 2007, 2008, 2009, 2013; Ionin et al. 2008; Falk and Bardel, 2011; Slabakova, 2017). Another important factor that might negatively affect the L2 or L3 acquisition of English determiners, as stated by Awad (2013: 3), is related to 'the complicated system in which the English articles operate. As multiple functions are stacked into one form, the speaker has to be aware of the […] number and definiteness [features] at the same time'.

In line with these suggestions, this study entails the need (i) to understand how facilitative transfer and non-facilitative transfer from CG and/or PJ/A might/might not influence the acquisition of English determiners by L2 PJ/A and L2 CG participants as well as the L3 PJ-CG-E and the L3 PJ-E-C-G participants, and (ii) to investigate how structural complexity and input as well as other factors (See section 1.6.3) might affect the degree of transfer from the native and non-native language(s). Thus, this study is unique in that it was designed to investigate new linguistic environments that have not been investigated yet in CG. Some of these linguistic environments have not been investigated yet in PJ/A as well, such as the bare contexts and definite contexts. The linguistic contexts investigated in the current study, as described in Chapter two, section 2.7, are classified into three pairs as follows:

1. The definite article (*the*) was tested in two different environments found to match with CG and mismatch with PJ/A. They are:

   Context A*:* the first nominal of the *'of-phrase'* construction that holds different semantic relations with the second nominal as in attributive/identity/appositive relationship (Hamawand, 2014) between the first nominal, *concept,* and the second nominal, *love,* in the example '*the concept of love'*. Other semantic relationships are theme, partitive and causal relationships (Ryding, 2005).

   Context C*:* the proper names of people/places that demand the use of the definite article in specific linguistic environments (Algeo,1973; Quirk et al., 1985), as in '*the Smiths'* (a reference to the members of a family called 'Smith').

2. The zero article was tested in two different environments of bare noun phrases (NPs) which were found to mismatch with both CG and PJ/A. They are:

   Contexts *B**:* the second nominal (abstract, mass and plural nominals) in the 'of-phrase' construction (Abbott, 2003)*.*

   Context D*:* proper names preceded by appositive titles/honorifics (Quirk et al., 1985) as in '*Ms. Malala Yousafzai*'.

3. The indefinite article *a(n)* was tested in two environments found to mismatch with CG, as CG has the indefinite article but it is not used with certain types of verbs, called verbs of accomplishment and light verbs (Marinis, 2003), and PJ/A, which is devoid of indefinite articles (Sadek, 2016). These contexts are:

   Contexts *E**:* specific NPs, as in '*We had **a birthday party** for Nadia last week*' (See Chapter 2, section 2.10.4). (The reference to the type of *party* was clear and it represents the speaker's *explicit knowledge* as suggested by Ionin et al. (2004). In other words, instead of saying 'a party', the reference was *specified* by identifying the type of the party. In that way, the hearer/reader knows that it is a birthday party.)

Context *F*: non-specific NPs, as in '*John had **a problem** with the manager. I still don't know what kind of problem he had'.* (The reference to the type of *problem* was not clear, and it represents the speaker's *denial of knowledge* as suggested by Ionin et al. (2004); this problem might be personal or related to work.)

1.3. Definitions of the linguistic terms used in the study

The differences between the learners' native language and the second or third language might cause a learnability problem. To better understand the learnability problem, it is necessary first to identify the differences between first language acquisition and what is meant by a native speaker, and SLA and TLA before giving an overview of the different approaches in SLA and TLA.

Fromkin et al. (2002) define SLA as the language that is acquired after the native language. Cenoz (2003: 71) identifies TLA as 'the acquisition of a non-native language by learners who have previously acquired or are acquiring two other languages. The acquisition of the first two languages can be simultaneous (as in early bilingualism) or consecutive'.

Regarding the term *native speaker*, a large and growing body of literature has investigated how learners of L2/L3 English were different from or similar to English native speakers in their performances (e.g. Prévost and White 2000; Lardiere 2005; Ionin et al. 2008; White et al., 2012). Still, these studies never explained what is meant by a native speaker. In the Cambridge Dictionary (Online, s.v. *native speaker*), a native speaker is defined as 'someone who has spoken a particular language since they were a baby, rather than having learned it as a child or adult'. Chomsky (1965) argues that native speakers can recognise whether the target expressions or forms of their mother tongue are grammatical or ungrammatical without explaining the reason behind that, as it is part of their abstract knowledge. However, both definitions do not stipulate the criteria for someone to be a native speaker. The term native speaker adopted in the

current study is based on certain criteria as suggested by Davies (1991), Nayar (1994) and Kubota (2004). Accordingly, native speakers are the ones (i) who identify themselves as native speakers of L1 from birth (Davies, 1991); (ii) who, in terms of ethnicity, were born to native L1 speaker parents (Kubota, 2004); (iii) who belong to an L1-speaking community (Nayar, 1994) and at least finished their school education in their countries, and (iv) who were not bilinguals, but might be L2 learners of other languages.

In accordance with the definitions of SLA and TLA, as provided by Fromkin et al. (2002) and Cenoz (2003), and in accordance with the criteria that identify the term *native-speaker* as provided by Davies (1991), Nayar (1994) and Kubota (2004), none of the participants in the current study were trilingual in English, Greek and Arabic or bilingual in English and Arabic or English and Greek. Therefore, the participants were identified as second/third language learners of English. The reason for excluding bilingual learners in English and Greek or English and Arabic is attributed to the view that bilinguals have already learnt two languages simultaneously from birth or before the age of four (Cenoz, 2003). Gass et al. (2008: 24) stated that:

> from the perspective of second language researchers, bilingual […] refers to someone whose language is in a steady state and who has learned and now knows two languages. That is, bilingual refers to an end point […]. Within a second language research context, the end-point interpretation of the term is generally not a focus of inquiry. Rather, second language researchers, because of their interest in discovering the second language acquisition process, might focus instead on near-native speakers or advanced language learners. In general, SLA researchers are most interested in individuals who are in the process of learning, not those who have learned two languages earlier.

Some of the EN speakers who were recruited in this study started learning Arabic or Greek in Jordan or Cyprus after the age of 18, but all of them including the monolingual English speakers finished their school education in their countries. Although the L1 PJ/A and L1 CG learners of English had to learn English from younger ages, they were deemed second language learners of English; none of them learnt English before the age of four, and learning English was only at school.

However, some of the L3 participants who were native speakers of PJ/A were considered bilinguals in Arabic and Greek, as they learnt/were exposed to Arabic and Greek simultaneously or consecutively (Cenoz, 2003) at kindergarten and in the community (which means that criteria: iii and iv were not applicable to them). Therefore, their proficiency levels in Arabic and Greek were measured. All the procedures for measuring their proficiency levels in Arabic and Greek are explained in the Methodology chapter.

The extensive research within the generativist approach to SLA and TLA has adopted Chomsky and Lasnik's (1993) view that principles are universal, while parameters are language-specific and lead to cross-linguistic differences (White, 2003). In general, all the theories with respect to the Full Access (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Prévost and White 2000; Lardiere 2005, 2007, 2008, 2009, 2013; Ionin et al. 2008), Partial Access (Hawkins and Chan 1997; Hawkins, 2005; Tsimpli and Mastropavlou, 2008) and No Access (Clahsen and Muysken, 1986; Bley-Vroman, 1989, 1990) to universal grammar tried to shed light on the nature of the *interlanguage* initial state as well as the source of that initial state and whether it is transfer or universal grammar. Selinker (1972: 35) characterised *interlanguage* as 'a separate linguistic system based on the observable output which results from a learner's attempted production of a target language norm' whether this attempted production is successful or not successful. Leung (2005: 40) defined the *initial state* of the learner's

interlanguage grammar as 'the grammar at the outset of language acquisition' which was influenced by 'the existence of […] additional variable[s]'. These variables could be 'the L1 (end-state) grammar' (ibid: 40) or the L2 end-state grammar (Falk and Bardel, 2011). An important point to be clarified here is the nature and source of the initial state in L2 acquisition and L3 acquisition. Schwartz and Sprouse (1994, 1996) and White (2003) argue the source of the initial state in SLA might be L1. In contrast, Rothman (2015) uses the term initial stages as opposed to *initial state* and considers that the source of the initial state in TLA can be both L1 and L2, as the L3 learners had more than one mental linguistic system.

The term *interlanguage* at the initial state or subsequent states in L2/L3 acquisition has been investigated by many linguists from different perspectives, and it is argued that it might carry features of the (non-)native language(s) because of cross-linguistic influence (CLI) or transfer (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Slabakova, 2017; Westergaard et al., 2017). The term CLI was first introduced by Sharwood and Kellerman (1986) as an equivalent term to transfer or interference.

The CLI can facilitate or inhibit the acquisition of another language, either the native language or the non-native language (Isurin, 2005). This raises an important question: which properties of the native or non-native background languages determine the acquisition of the subsequent non-native language(s)? To understand how CLI functions in SLA and TLA, it would be better first to identify the different theoretical perspectives in relation to the different terms used in the literature, such as language typology (Cenoz, 2003), on the one hand, and typological proximity (Rothman, 2011, 2015), psychotypology (Kellerman, 1983; De Angelis, 2007) and perceived language distance (Falk and Bardel, 2011), on the other hand. Thus, one possible answer is related to the notion 'psychotypology'. Psychotypology in the sense of Kellerman (1983) is based on how L3 learners perceptually identify the distance between one

language and the other; thus, the greater the learners feel that L1 or L2 is distinct from L3, the less they transfer the properties of the previously learnt language(s) into L3 and vice versa. One of the most prominent studies that offered support to the role of psychotypology was explored by Rothman (2011) by testing his Typological Proximity Model. Rothman's typological proximity (2011) simply refers to how the L1 or/and L2 structure is similar to or different from the L3 structure. Rothman (2011, 2015) proposes that L3 learners can transfer the target structure to their L3 on a holistic basis irrespective of order of acquisition, either from their L1 or L2 if they perceive it to be similar to L3.

Relevant to typological proximity and psychotypology is the notion of perceived language distance. De Angelis (2007) identifies the learners' perceived language distance as an influential psycholinguistic factor, which refers to the learners' ability in identifying the distance between one language and the other. In that way, the directionality of transfer might correlate with a specific background language. This background language can have a transferable structure for L3; yet it might not be recognised as typologically similar by the L3 learner, even when the native language or any of the non-native languages are related (Angelovska and Hahn, 2012).

Another possible answer is related to the notion of typology, which simply refers to the cross-linguistic similarities and/or differences or the relatedness between/among languages. Rast (2010: 162) holds a distinction between typology and psychotypology in that '[l]inguists identify typological similarities and differences by analyzing the languages themselves, whereas language acquisition researchers and psycholinguists identify psychotypology by analysing human performance, namely language that is perceived, comprehended, parsed and produced'.

It should be emphasised that the terms CLI and transfer will be used interchangeably in this study. The notion of structural similarity/difference with its

related terms – language distance and perceived linguistic distance – will be investigated in this study in relation to the tested hypotheses. For example, the Fluctuation Hypothesis (FH) (Ionin et a., 2008) classifies languages into two types. The first type is [+Article] languages if they have the determiner category and [−Article] languages if they do not have the determiner category. The FH (ibid) assumes that the L2 PJ participants and the L2 CG participants will transfer the determiner category from their L1s into their L2 English. The Full Transfer/Full Access Hypothesis by White (1990/1991) and Schwartz and Sprouse (1994, 1996) considers the notion of language distance between L1 and L2 in two ways. The first is similar to the FH, whereas the second takes into account the structural similarity and dissimilarity between the learners' L1 and L2 even if they are typologically (dis)similar.

The L2 Status Factor Model (Falk and Bardel, 2011) adopts the notion of perceived language distance, which is supposed to determine the direction of transfer on a holistic basis. In particular, this model indicates transfer occurs from L2 into L3 if L3 learners are at higher proficiency levels in L2 while transfer from their L1 is blocked. In contrast, the Cumulative Enhancement Model by Flynn et al. (2004) and the Scalpel Model of TLA by Slabakova (2017) embraces the psychotypological notion of CLI. Therefore, transfer occurs from any of the previously learnt languages if the L3 learners perceive a certain nuance of the grammar to be similar to L3. Yet, transfer according to the Cumulative Enhancement Model is only positive while the Scalpel Model of TLA accounts for the occurrence of both positive and negative transfer.

1.4. Aims of the study

The primary goal behind this study is to explore the L2/L3 acquisition of English determiners by speakers of PJ/A and CG. The specific objectives are to:

1. find out how the patterns of acquisition of English articles by the L2/L3 groups are similar to or different from each other.

2. Identify the source of positive (facilitative) or negative (non-facilitative) transfer in L2/L3 acquisition and the direction of transfer in the performance of the L3 groups.

3. Test the theoretical perspectives of the two L2 hypotheses and the three L3 models mentioned in RQ3.

4. Find whether the degree of CLI from CG and/or PJ/A is affected by a set of factors related to input, linguistic experience, length of residence in Cyprus/Jordan and motivation, as well the bi(dia)lectal settings in Cyprus and Jordan.

On the basis of the above objectives, this research aims to answer the following research questions (RQ)s:

RQ1: What are the similarities and differences among the L2/L3 groups with respect to the determiner acquisition in L2/L3 English?

RQ2: Do L2/L3 learners of English transfer from their L1 PJ/A, L1 CG or L2/L3 CG into L2/L3 English with respect to the determiners acquisition?

RQ3: Can the patterns of acquisition of the PJ learners of L2/L3 English and CG learners of L2 English be explained/supported by the relevant SLA/TLA hypotheses namely:

SLA: Full Transfer/Full Access (FT/FA) Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) and Fluctuation Hypothesis (FH) (Ionin et al., 2008), and

TLA: the L2 Status Factor (Falk and Bardel, 2011), the Cumulative Enhancement Model (CEM) (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017)?

RQ4: What is the role of such factors/variables as age of the participants, length of learning English, length of exposure to English, proficiency level in English, length of residence in Jordan or/and Cyprus, motivation, length of learning L2/L3 Greek, order of

acquisition and bi(dia)lectal setting with respect to L2/L3 acquisition of English determiners by L1 PJ and L1 CG speakers?

Relevant to RQ1 and RQ2, it is essential first to find whether the L2/L3 participants' interlanguage grammar can reach the native-like attainment based on the structural (dis)similarity between English and PJ/A and/or CG. PJ/A has the determiner category, but it partially overlaps with English as the former does not mark the indefinite article (cf. Jiang, 2012). Yet SMG/CG has a full determiner category (*SMG:* Marinis, 2003; Lazaridou–Chatzigoga, 2009; Kyriakaki, 2011; Agathopoulou et al., 2012; *CG*: Buschfeld, 2013; Karpava, 2016). This study suggests the L1 transfer of the structural complexity associated with the determiner category in CG and PJ/A might pose a difficulty for L2 CG and L2 PJ participants. However, the degree of difficulty, as this study suggests, is expected to vary from one group to another. For example, the L2 PJ participants are expected to have more difficulty in using the indefinite article than the definite article. In contrast, the L2 CG participants with L1 CG and the L3 groups with L2/L3 CG are expected to perform better than the L2 PJ group, as CG (Hawkins et al., 2006) is closer to English than Arabic (Jiang, 2012). However, the four experimental groups are expected to follow the same pattern in using the zero article in the English experimental contexts, as they mismatch with the PJ/A and CG contexts (See chapter two, section 2.7).

Accordingly, whether the L2/L3 participants reached the native attainment or not, their achievements are measured, as informed by the literature, in terms of specific linguistic factors, all of which are mentioned in RQ4, but considered differently under the theoretical proposals suggested by the L2 hypotheses and the L3 models stated in RQ3. The role of L1 positive transfer as predicted by the FH (Ionin et al., 2008) is supposed to occur regardless of the L2 learners' proficiency level in English. The predictions of the FH contradict the FT/FA Hypothesis (White, 1990/1991; Schwartz

and Sprouse, 1994, 1996; White et al., 2009), as the latter predicts L1 negative transfer is also possible, but it is supposed to be overcome by the increase of L2 input and English proficiency level (e.g. Abudalbuh, 2016; Kwame, 2018).

The different positions of the tested L3 models have some similarities and differences. For example, the CEM (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017) rejects the 'wholesale transfer' (holistic) proposed by the L2 Status Factor (Falk and Bardel, 2011) and suggests that acquisition is selective. The L2 Status Factor, and the Scalpel Model of TLA, however, are not in agreement with the CEM, which only predicts the occurrence of facilitative transfer; these L3 models propose that CLI can be both facilitative and non-facilitative. The L2 Status Factor (Falk and Bardel, 2011) considers the chronological order of the previously acquired languages and that L2 has the privileged status in TLA, as well as the role of L2 proficiency. In contrast, the CEM (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017) propose that transfer can occur regardless of order of acquisition.

1.5. Overview of research methodology

This study employed a mixed-methods embedded design: *qualitative (analysis of the literature), QUANTITATIVE-qualitative* (Bijeikienė and Tamošiūnaitė, 2013) that falls into the post-positivist worldview (Lincoln et al., 2018). This design was of two phases. The first phase was based on the literature review to shed light on the cross-linguistic variations (Stake, 2005 cited by Onwuegbuzie and Frels, 2016) among English, PJ/A and CG, as no research has investigated the target contexts in relation to the bi(dia)lectal situations in Jordan and Cyprus. Guided by the descriptive cross-linguistic analysis of the determiner system in the languages under question, six contexts were identified (See section 3.5.1.1) (cf. Abumlhah, 2016; Kimambo, 2016). This cross-linguistic analysis was necessary to construct the tools of the study that were used in the second *QUANTITATIVE-qualitative* concurrent phase within the basic embedded design.

With regard to the *QUANTITATIVE-qualitative* design, more weight was given to the quantitative approach. The tasks/tool used to collect quantitative and qualitative data were a production forced-choice elicitation task, a comprehension grammaticality judgement task and a Language Experience and History Questionnaire (Dörnyei, 2003; Li et al., 2006; Mackey and Gass, 2005; Marian et al., 2007, Otwinowska-Kasztelanic and Karpava, 2015).

1.6. Original contributions of the study

The findings from this study demonstrate originality and make several contributions to the current literature in several ways and will be explained in this section.

1.6.1. Original contributions to knowledge

The originality of this research rests upon the fact that it is based on examining new linguistic phenomena related to the acquisition of English determiners at the syntax-semantics and syntax-discourse interfaces. To the author's best knowledge, there is no previous research exploring L2 PJ and L2 CG and L3 PJ learners' use of English determiners within the nominal domain of the linguistic environments tested in the current study (except for the acquisition of the indefinite article by L2 Arab learners). These environments demand the correct use of the English target article before the definite proper names and bare proper names preceded by appositive titles/honorifics (Algeo, 1973; Quirk et al., 1985) and before each nominal in the 'of-phrase' construction (the first nominal is definite, while the second nominal is bare) in argument positions (Quirk et al., 1985; Abney, 1987; Keizer, 2007; Alexiadou et al., 2007). Some L2 studies examined how L2 Arab learners of English used determiners in relation to the 'of-phrase' construction (e.g. Awad, 2011; El Werfalli, 2013), but without examining their performance before the two nominals together, and without examining how the second constituent that is realised as a bare noun might influence the first

definite constituent, and vice versa. They also examined this construction regardless of their position in the sentence. In contrast, this study focused on the use of the target articles in argument positions which were triggered by semantic and discourse factors.

Though there is an extensive body of research on the use of the English indefinite article before specific and non-specific NPs by L2 Arab learners of English (e.g. Kharma, 1981; Awad, 2011; El Werfalli, 2013; Sabir, 2015; Sadek, 2016; Abudalbuh, 2016; Abumlhah, 2016; Alzamil, 2019), there is no study on the use of the indefinite article by L2 CG and L2/L3 learners of English with L2/L3 CG in relation to the semantic choice of some verbs. The use of the indefinite article in SMG or CG is triggered by the semantic choice of light verbs and verbs of accomplishment (Marinis 2003; Kanellou, 2005; Alexiadou, 2014).

1.6.2. Original contributions to context: Bi(dia)lectal setting in Jordan and Cyprus

This study is the first that looks into the L2/L3 acquisition of English in relation to the bi(dia)lectal situations in Cyprus and Jordan. It is anticipated the complex linguistic situation in Cyprus and Jordan could play a role in providing an extensive explanation of the reasons behind the errors committed by the L2/L3 learners of English. The status of the linguistic situation in Jordan and Cyprus is influenced by the diglossic situation or the mutually intelligible dialectal continuum of PJ/A in Jordan, and CG and SMG in Cyprus. Therefore, this piece of research will shed light on how this linguistic situation may influence the acquisition of the English article system in Jordan and Cyprus.

Furthermore, this research project is based on a cross-sectional study with four unique L2/L3 groups; two L2 groups and two L3 groups in two different settings: Jordan and Cyprus. The results of this study had further pedagogical implications for teaching English determiners in SLA/TLA. This study suggests that having adequate knowledge about the cross-linguistic variations between the learners' native tongue and their L2 or/and L3 can help English language teachers/educators in designing structured,

drilled activities. It is suggested, as provided in Chapter six, this might help the L2/L3 learners restructure their interlanguage grammar during the process of L2/L3 learning.

1.6.3. Original theoretical contribution

This study, also, made an important contribution to the field of L2 and L3 acquisition by preparing a contrastive/cross-linguistic study on how the English article system is utilised in the three languages. This was of a great advantage to determine the source(s) of transfer in SLA/TLA and the direction of transfer in TLA. The role of contrastive analysis was initially based on the hypothesis that the differences between the learners' native tongue and L2 was expected to play an impeding role in L2 acquisition, and that L1 interference or negative influence was a kind of habit formation (Odlin, 1996). The contrastive analysis approach is criticized because of its failure to predict some errors especially the errors related to non-transfer. In response to the drawbacks of the contrastive analysis approach, the contrastive cross-linguistic analysis of the current study has focused on the role of different factors that might help in explaining L2/L3 learners' transfer and non-transfer errors.

In addition, this study demonstrates originality and contributes to providing empirical evidence by testing a set of L2/L3 hypotheses to explain the reasons behind the L2/L3 learners' (non-)transfer errors. Thus, transfer from L1 PJ/A or CG into L2 English was operationalised in terms of the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) and the FH (Ionin et al., 2008). The L1/L2 or L2/L3 transfer was investigated under the CEM (Flynn et al., 2004), the L2 Status Factor (Falk and Bardel, 2011) and the Scalpel Model of TLA (Slabakova, 2017).

According to these L2/L3 hypotheses, the linguistic factors that might correlate with CLI and which might, in turn, help in explaining the nature of the L2/L3 learners' interlanguage development, are related to proficiency level and input. Ionin et al. (2008: 566) stated that '[l]earners with greater English proficiency have presumably received

more input and/or attended better to the input than learners with lesser proficiency'. Most of L2 and L3 studies have focused on the role of the learners' proficiency level in the acquisition of English determiners (e.g. *SLA:* Jiang, 2012; 2016; Kargar, 2019; *TLA:* Avgerinou, 2007; Treichler et al., 2009; Ouertani, 2013; Hermas, 2018, 2019; inter alia) or correlate the role of the linguistic experience of the L2 learners of English with their proficiency level, rather than their target-like performance in the acquisition of English determiners (e.g. Kwame, 2018). However, there has been little discussion about the role of the age of the participants in relation to the acquisition of English determiners (e.g. Karpava, 2016). In contrast, this study took into consideration the role of a set of factors, instead of only focusing on the L2/L3 learners' proficiency level in English. The factors tested in this study in relation to input were English proficiency, length of learning English, daily exposure to English at home, work/university and in the community, and age of participants, as it was supposed to provide the participants with more linguistic experience in the process of L2/L3 acquisition.

Though the L2 Status Factor (Falk and Bardel, 2011) and the Scalpel Model of TLA (Slabakova, 2017) consider the motivation factor and non-native setting as predictor factors in the TLA, no empirical evidence in this regard has been provided yet. Therefore, this study investigated these two factors and their impact on the performance of the L2 and L3 groups.

The extra factors tested in the current study are related to the number of learnt/acquired languages, length of learning Greek by L3 groups, proficiency level in Arabic and Greek and the order of acquisition that might affect the TLA process. Thus, in TLA, the CLI is more complex and needs more investigation. This can be attributed to the fact CLI is multidirectional as it does not only occur from L1 to L3 or from L2 to L3 (Rothman, 2011; Rothman et al., 2019), but also from L3 to L2.

1.7. Organisation of the thesis

This chapter has provided the rationale, research problem, aims and RQs of the study. It has also defined the key terms relevant to this research. Furthermore, this chapter has explored the theoretical assumptions underpinning the research and methodology of the study. Finally, it identified the contributions and main significance, and it has highlighted the knowledge gap in the fields of SLA and TLA.

The remainder of the thesis is organised into five further chapters. Chapter two consists of two main parts. The first part presents a detailed discussion of the different theoretical positions of the generative approach to L2/L3 acquisition. It is also focused on the factors that might influence learners' interlanguage grammar. Moreover, this chapter provides an overview of previous research on the L2/L3 acquisition of English determiners. The second part focuses on the morpho-semantic features in PJ/A and MSA, as well as CG and SMG, and English. It also sheds light on the cross-linguistic similarities and differences among the three languages under question. Furthermore, this chapter provides an explanation of the tested contexts and the predictions on the basis of language distance and structural (dis)similarity regarding the use of the definite, indefinite and zero articles.

The third chapter outlines the methodology of the study with respect to the design, ethical considerations, sampling, data collection methods, procedures of data collection and validity and reliability. Chapter five deals with the discussion of the results reported in Chapter four on the data obtained from the L2 and L3 groups across the tasks/tools of the study. Chapter six contains the conclusion, implications, limitations of the study and suggestions for further research.

Chapter 2: Literature review

2.1. Introduction

This chapter has three main objectives. Firstly, it aims to look into the different semantic viewpoints of the determiner phrase (DP) within the framework of the generativist approach. Different views have been proposed concerning the definiteness feature on articles in relation to other features such as uniqueness, identifiability and familiarity, and the definiteness and specificity features in section 2.2. Ionin et al., (2004) claim that the definiteness and specificity features are realised differently cross-linguistically. For example, determiners in some languages such as English (Ionin et al., 2003, 2004), Arabic (Hermas, 2018) and Greek (Hawkins et al., 2006) encode definiteness. In contrast, Samoan encodes only specificity (Ionin et al., 2003, 2004).

To understand the role of cross-linguistic influence (CLI) or transfer, this factor is explained via the different implications provided by the generativist approach in second language acquisition (SLA) and third language acquisition (TLA) as presented in sections 2.3 and section 2.4, respectively. A review of some of L2/L3 existing research on the acquisition of English determiners is provided. These studies presented an analysis of the contexts that were found to cause learnability problems for second language (L2) and third language (L3) learners of English from different background languages, including Arabic and Greek. Section 2.5 is then set out to shed light on the bi(dia)lectal situation in Cyprus and Jordan. Thereafter, section 2.6 explains how the linguistic status of English in Cyprus is different from that in Jordan.

English and Cypriot-Greek (CG) or Standard Modern Greek (SMG) have both definite and indefinite articles. Palestinian/Jordanian Arabic (PJ/A) has a definite article, but it does not mark the indefinite article morphologically (Abudalbuh, 2016). Hence, another objective behind this study is to provide a cross-linguistic variation of the features that signal definiteness and specificity in English, PJ/A and CG, as in section

2.7. Then, some L2 studies concerning the errors attributed to the negative transfer from Arabic and CG are discussed in section 2.8. Afterwards, the English experimental linguistic contexts based on a contrastive analysis of the cross-linguistic variations between English and both PJ/A and CG are specified in detail in section 2.9. This analysis is expected to help in predicting the difficulties that the L1 PJ and L1 CG learners might face in learning English as an L2 or L3.

2.2. Semantic and morpho-syntactic features of determiners

2.2.1. The overlap between 'locability', 'identifiability' and 'familiarity'

Christopherson (1939) explored the concept of definiteness from the viewpoint of familiarity in what is known as the Familiarity Hypothesis. Christophersen (1939: 28) states that: 'the speaker must always be supposed to know which individual he is thinking of; the interesting thing is that *the*-form supposes that the hearer knows it too'. But Christophersen (1939: 73) was aware that familiarity between the speaker and the hearer may not hold true as represented by the following example:

> (1). 'The author is unknown'.

Christophersen (1939) made it clear that the speaker may have a book, but s/he might not know the name of the author of that book. In that way, the speaker is not always able to recognise the target referent as familiarity was not established on the basis of the speaker's prior knowledge of the referent (ibid).

However, interlocutors can identify the target referent on the basis of the identifiability feature by relying on discourse without the need to be familiar with that referent. Lyons (1999: 4-6) provided the following two situations (more explanations were added by the researcher):

> (2) a. Just give *the shelf* a quick wipe, will you, before I put this vase on it.
>   (the interlocutors know where *the shelf* is.)

b. Ann is alone in the sitting-room trying to hang a picture on the wall and no one is there to help her. Then, her friend, Joe, stepped into the room and Anne said to him: *Pass me the hammer, will you?*
(Only the speaker: Anne is familiar with the place)

In example (2.a), the interlocutors seemed to have prior knowledge regarding the exact place of the shelf while in sentence (2.b) the hearer (Joe) seemed to have no idea where the hammer was until he checked and found it (ibid). In other words, the assumed familiarity between the speaker and the hearer and their shared knowledge with the referent in sentence (2.a) helped them identify the place in which the shelf is located (on the basis of the familiarity and identifiability features). Regarding sentence (2.b), the presumed knowledge of the speaker (Ann) with the target referent contributes to the familiarity and identifiability features. The hearer (Joe), by contrast, was able to identify the referent in a certain discourse on the basis of the identifiability feature without being necessarily familiar with that referent (ibid). Of course, for the referent to be identifiable, the subject matter of the utterance and the clues that the interlocutors can rely on in discourse have to be sufficient.

This way of identifying the NP in a specific place or situation is also based on the concept of locatability. Locability enables the interlocutors to 'locate' a referent to a NP in discourse (Chesterman, 1991). Hawkins (1978) indicated that this feature is associated with (i) the visible situation or immediate physical situation, or (ii) the larger situation that makes the referent uniquely identifiable. This is represented by examples (3.a) and (3.b) (more explanations were added by the researcher):

(3) a. Visible situation

I'll get *the butler* to show you out.
(The speaker has a butler in her house, but this is the first time that she has the chance to introduce the butler to her guest.)

b. Larger situation

Meet me at *the horse-trough tonight*.
(The interlocutors are familiar with this place in their village.)
(Lyons, 1999: 263)

The locatability of the referent in sentence (3.a) and the fact that the house has a butler is based on the immediate situation of the utterance (ibid). This helped the hearer identify the referent that is new to discourse. However, the shared knowledge between the speaker and the hearer in sentence (3.b) indicates that their ability to identify the referent in a larger situation is based on prior knowledge related to the existence of a horse-trough in a specific place in their village (ibid).

In that way, the concept of locability can be correlated with the concept of identifiability (Chesterman, 1991) as represented by examples (2) and (3) above. Hawkins (1978) and Chesterman (1991) asserted that context-related factors are relevant to the hearer/writer and the speaker/reader's general knowledge or mutual knowledge, the immediate situation of the utterance and previous discourse or the associations elicited by contextual clues. Accordingly, the definite article, which marks a unique identifiability of a referent, is sanctioned when it is based on the speaker's intention to refer to a NP in a way that makes the hearer assume that the NP is uniquely identifiable in discourse (Trenkic, 2009).

Following ideas based on Hawkins (1978) and Chesterman's concept (1991) of locability, Quirk et al. (1985) and Lyons' classifications (1999) of the different uses of the definite article, this section will proceed by pointing to the different contexts that sanction the use of *the*, all of which are triggered by discourse.

The first contextual situation is related to presuppositionality or anaphoric use of *the*. This can be illustrated by two types of anaphoric uses as follows:

- The first is called direct anaphora as in (emphasis was added by the researcher)

   (4) John bought a TV and *a video recorder*, but he returned *the video recorder* (Quirk et al., 1985: 267).

The second mentioning of the definite NP, *the video recorder,* is based on the indefinite NP, *a video recorder*, which has been directly introduced in the context.

- The second type of anaphoric use is referred to as bridging cross-reference (Lyons, 1999), indirect anaphora (Quirk et al., 1985) or associative use (Hawkins, 1978). The associative reference depends on the context, which the hearer can easily recognise or anticipate by associating a definite NP with an entity mentioned earlier in discourse (Lyons, 1999; Ryding, 2005). Consider the following example in which the definite article is used before the word: *doctor* whose referent is uniquely identifiable based on general knowledge with an entity evoked by the *hospital* setting:

  (5) Yesterday, I was admitted to *the hospital* for flu, but *the doctor* told me it was not something serious.

The hearer can build on the knowledge that there is a relationship between the NP: *the hospital* and its associated definite NP: *the doctor.* Therefore, the idea of identifiability, which correlates with presuppositionality or anaphora, is based on previous discourse related to identifying the setting: *the hospita*l.

Another contextual situation in which the definite article is sanctioned is associated with the cataphoric reference of the NP (Hawkins, 1978; Quirk et al., 1985; Chesterman, 1991; Lyons, 1999) or the so-called suppositionality (Berezowski, 2009). This kind of DP is modified by a complement NP that entails a cataphoric reference with restricted modifiers (Quirk et al., 1985). In the cataphoric use, the DP is identified by the following contexts in specific syntactic structures. The *of-construction*, for example, bears an argument relation with the preceding NP. The NP that comes before the *of-construction* must be preceded with the definite article when it semantically denotes a larger situation (Quirk et al., 1985; Lyons, 1999) or entailment (Yang and Ionin, 2009). For example, in the sentence 'The president of Mexico is to visit China' (Quirk et al. 1985: 268)*,* the argument of the NP *The president* refers to a uniquely identifiable referent.

Most interestingly, Abbot (1993: 44) disagrees with Woisetschlaeger's view (1983) that the definite article in 'the smell of pot all over the apartment' has a generic reference, as she refers to it as cataphoric definite. According to Abbot (1993: 44), the DP 'the smell of pot' is 'uniquely specifying an entity, nevertheless does not denote something which has already been introduced into the discourse context or whose existence can otherwise be assumed to be part of the discourse context'. Birner and Ward (1994: 93) stated that 'a unique but unfamiliar entity may be felicitously referred to with the', and they provided the following example:

> (6) If you're going into the bedroom, would you mind bringing back *the big bag of potato chips* that I left on the bed?

In another article, Abbot (2004: 12) used example (6) from Birner and Ward (1994) to confirm her proposal that the information provided in that example is sufficient to consider this cataphoric DP uniquely identifiable without the need to introduce it in discourse.

Another structure that encodes a cataphoric meaning occurs with a *relative clause*, which is normally marked for uniqueness, as in:

> (7) Sam finally got the promotion, *which he was waiting for* a long time ago.

Other structures include:

> (8) the boy ahead (post modifier adverbial phrase)
> (9) the boy in the room (post modifier prepositional phrase)
> (10) the guy living next door (post modifier non-finite clause)
>   (Verspoor and Sauter, 2000: 126).

The third context-related factor that triggers the definite article use is linked to the immediate situational uses of the utterance (Hawkins, 1978; Birner and Ward, 1994; Berezowski, 2009). For example, the definite article in example (2) is licensed as its referent with the NP locates a physical entity in a visible situation; this situation is triggered by the context and shared by the speaker and hearer's familiarity with that referent (Löbner, 1985; and Lyons, 1999). In that example, the situation is immediate in

the sense that *the shelf*, which is the physical entity, is visible to the speaker and the hearer. Also, the larger situational use is another way for sanctioning the definite article use (Hawkins 1978; Quirk et al., 1985). It relies on specific or general knowledge as in 'The Prime Minister' (Quirk et al., 1985: 266).

What can be understood from the above uses of the definite article is that the role of discourse marks a kind of uniqueness, identifiability, familiarity or a combination of some of these meanings. The significant issue here is the notion of 'uniqueness', which might imply 'identifiability and/or familiarity'. The focal point of the following section will be on the specificity feature.

2.2.2. (In)definiteness and specificity features

The difference between definite NPs and indefinite NPs is not only a matter of a semantic issue, but also a matter of discourse. Accordingly, Ionin et al. (2004: 5) argue that 'the feature [+definite] reflects the state of knowledge of both speaker and hearer, whereas the feature [+specific] reflects the state of knowledge of the speaker only'. Lyons (1999) and Ionin and Wexler (2003) divide specific indefinite NPs into two types. They are either referential/specific or non-referential/non-specific and the distinction between both of them is based on discourse and the speaker's intention to refer. Referential/Specific indefinite NPs are presumed known to the speaker. Thus, if the speaker intends to refer, the referent is specific; otherwise; it is non-specific (Ionin and Wexler, 2003). In other words, some of the discourse features that make the context transparent and help in recognising that the indefinite NP is specific/referential imply explicit speaker knowledge (Ionin and Wexler, 2003; Ionin et al., 2004; Ko et al., 2008) as in:

> (11) (*Meeting on a street*)
> Roberta: Hi, William! It's nice to see you again. I didn't know that you were in Boston.

William: I am here for a week. I am visiting (a, the, —) friend from college –
his name is Sam Bolton, and he lives in Cambridge now
(Ionin et al., 2004: 23).   [–definite, +specific]

On the other hand, the referential/specific use of NPs is different from the non-referential use, which implies the speaker has no previous knowledge of the target NP and does not intend to refer to someone/something in particular (Ionin and Wexler, 2003; Ionin et al., 2004; Ko et al., 2008). An illustrative example of the non-referential/non-specific type is taken from Ionin et al. (2004: 23) as follows:

(12) [–definite, –specific]
    Chris: I need to find your roommate Jonathan right away.
    Clara: He is not here – he went to New York.
    Chris: Really? In what part of New York is he staying?
    Clara: I don't really know. *He is staying with* [*a*] *((a, the, —) friend—
    but he didn't tell me who that is.* He didn't leave me any phone number
    or address.

Another discourse feature that encodes the referential use of the indefinite article is the partitivity feature (Ko et al., 2008). This feature is similar to the associative feature and it is based on introducing the indefinite NP in a previous discourse. Consider the following example:

(13) This pet shop had *five puppies and seven kittens*. Finally, John chose a
    puppy (Ko et al., 2008: 118).

In sum, this section as well as the sections that preceded it, attempt to cover a wide variety of theoretical perspectives concerning the semantic and morpho-syntactic features of determiners. In the following section the concept of definiteness and specificity features will be discussed from the viewpoint of the Fluctuation Hypothesis (FH) by Ionin (2003), Ionin et al. (2004, 2008).

2.2.2.1. The Fluctuation Hypothesis

The Fluctuation Hypothesis (FH) was first formulated by Ionin (2003) and subsequently investigated by Ionin and her colleagues (2004). The main aim behind this hypothesis is to investigate the acquisition of the article system by L2 learners regarding the Article Choice Parameter (ACP) within the framework of generative grammar. The ACP (Ionin et al., 2003) involves the distinction between two binary parameter settings: the *definiteness setting* and the *specificity setting*.

Therefore, when the L2 learners have full access to these settings, they are expected to exhibit fluctuation between the *two settings* only if the learner's L1 is an article-less language. This fluctuation ends once L2 learners are provided with adequate input, which can ultimately help them in resetting the ACP to its target value (Ionin and Wexler, 2003; Ionin et al., 2003, 2004; Ionin et al., 2008). However, positive transfer from L1 to L2 takes place if the learners' native language is an article language (Ionin et al., 2008). More specifically, in languages such as Samoan, determiners are distinguished on the basis of specificity, while in English, determiners are markers of definiteness (Ionin et al., 2004). Accordingly, L2 English learners whose L1 is an article language, just like Arabic and Greek, are expected to transfer the target semantic setting of their L1 into L2 English.

To test this hypothesis, Ionin et al. (2004) explored how learners of English from different article-less L1s, such as Russian and Korean, produced English determiners by using a forced-choice elicitation task and a written production task. Ionin et al. (2004) aimed to find out how L2 learners were fluctuating between the definiteness setting and the specificity setting of the ACP especially that English determiners have values associated with the definiteness setting.

In Ionin et al.'s study (2004), the Korean participants (n=40) and the Russian participants (n=30) could not depend on their L1s to use *the* or *a(n)*. Based on the ACP,

Ionin et al. (2004) explained the L2 learners were fluctuating between the definiteness setting and the specificity setting, which explains the reason behind the two types of errors committed by the participants. The first type was related to the participants' preference to use *the* instead of *a(n)* with indefinite specific NPs because the use of the definite article is associated with the specificity feature (ibid). The second type of errors showed the participants' preference to use *a(n)* instead of *the* before non-specific NPs because the use of *a(n)* is associated with the non-specificity feature (ibid).

A key criticism of the first version of the FH (Ionin and Wexler, 2003; Ionin et al., 2003, 2004) is that it did not provide an answer to the performance of L2 learners who were speakers of article languages. Hawkins et al. (2006), in their article *Accounting for English article interpretation by L2 speakers,* aimed to extend the population of Ionin et al.'s study (2004) into L2 learners whose L1 was an article language. Accordingly, they did not only test adult speakers of Japanese (n=12), an article-less language, but also adult speakers of Greek (n=12), an article language by means of a forced-choice elicitation task. Accordingly, a (universal) feature-based account was suggested by Hawkins et al. (2006), instead of the ACP (universal) account to explain the L2 Greek and Japanese learners' use of English determiners. They proposed the L2 learners could have access to the interpretable features of definiteness either from UG, as was the case for the Japanese speakers, or by means of the learners' L1, as was the case for the Greek speakers. Also, Hawkins et al.'s study (2006) revealed the effect of L1 in L2 acquisition was important for understanding and anticipating the performance of L2 learners.

In a subsequent study carried out by Ionin and her colleagues (2008), the authors tested the FH on article languages, Spanish in particular, by focusing on the role of positive transfer, which was first initiated in Hawkins et al.'s study (2006). Ionin et al. (2008) developed the predictions of the FH, which seem to provide a new proposal

related to the main sources of knowledge: positive transfer from L1 into L2 for article languages, access to UG and input. Hence, two predictions are possible. The first is associated with article languages in that positive transfer from L1 into L2 is expected to override fluctuation. The second prediction is that fluctuation overrides transfer as L2 learners of L1 article-less languages have no choice but to have access to the semantic universals of the ACP. However, the L2 learners are expected to converge with the L2 grammar once they have adequate exposure to the L2 input.

In their study, Ionin et al. (2008) recruited 23 adult Russian and 24 adult Spanish learners of L2 English. A control group of six native speakers of English was recruited as well. The L2 Russian and L2 Spanish groups were tested on an elicitation test. The predictions of the FH were supported by the findings of Ionin and her colleagues (2008); L Spanish provided the Spanish learners of English with facilitative transfer, and they, therefore, correlated the correct use of English determiners with the definiteness semantic feature available in their L1. On the other hand, the findings of the L2 Russian participants were compatible with Ionin (2003) and Ionin et al.'s findings (2004) of article-less languages in that fluctuation overrode transfer. The authors correlated the L2 participants' fluctuation with the proficiency level of the participants which, in turn, correlated with the quality and quantity of input they were exposed to.

However, the results related to the L2 Spanish group, in Ionin et al.'s study (2008), did not seem to replicate the findings of Ionin (2003), and Ionin and her colleagues (2004). Ionin et al. (2008: 565) claimed the performance of the Spanish group could be close to the English native group only after excluding their performance with definite specific NPs that showed a negative structural influence of the genitive construction 'house of Ben's parents' from their L1 Spanish. Inconsistent with the predictions of the FH, the authors realised the L2 Spanish learners had a negative (structural) influence from their L1, though positive transfer was expected. This transfer

was expected because the determiner category existed in the representation of the L2 Spanish learners' L1 regardless of the structural dissimilarity between Spanish and English. However, Ionin and her colleagues (2008) did not take into account that structural complexity might pose a difficulty for the L2 Spanish participants.

Previous L2 studies conducted by Ionin (2003), Ionin et al. (2004), Ionin et al. (2008) and Hawkins et al. (2006) focused on L1 languages that either have determiners or lack them. In the case of Arabic, the situation is mixed as Arabic has a determiner system that partially overlaps with English determiners (Jiang, 2012). Both MSA and its low (non-standard) varieties have the determiner category, and they encode the definiteness feature, but unlike MSA, Arabic low varieties do not mark the indefinite article morphologically. Accordingly, the two predictions of the FH (Ionin et al., 2008) can be tested in Arabic. The first prediction of the FH (Ionin et al., 2008) is that *transfer overrides fluctuation* in the case of the definite article use, while the second is that *fluctuation overrides transfer* in the case of the indefinite article use.

One of the studies that tested the two predictions of the FH by Arabic speakers was carried out by Abudalbuh (2016). The author tested the acquisition of English determiners in definite and indefinite contexts by 30 adult speakers of Jordanian Arabic, which is a low variety of Arabic language. The participants were classified into three English proficiency levels: low, intermediate and advanced. The length of learning/exposure to English by the participants of the study ranged between 12-14 years, and the length of residence in an English-speaking country did not exceed three months. Data were obtained from a forced-choice elicitation task. As shown in Table 2.1, the author's results revealed the L2 participants were more accurate in their use of *the* than *a(n)*; yet they were fluctuating between the two settings of the ACP as they provided more *the* than *a(n)* in the indefinite specific contexts.

Table 2.1: Overall accuracy scores of the L2 Jordanian group (Abudalbuh, 2016: 113)

[+definite,+specific]	[+definite, –specific]	[–definite,+specific]	[–definite, –specific]
83 %	76 %	59 %	73 %

Abudalbuh (2016) also showed the proficiency effect was more pronounced in the performance of the L2 participants from the low English proficiency level than the other levels as they were fluctuating on the basis of the specificity setting. In other words, the participants overused *the* before indefinite specific NPs (33%) in comparison with the indefinite non-specific context (22%). In contrast, the results of the intermediate participants indicated there was no evidence of fluctuation as their use of *the* in the former contexts was equal (8%). The advanced participants, on the other hand, used more *the* in the indefinite specific contexts (5%) than the indefinite non-specific contexts (0%).

Abudalbuh (2016) indicated that the results of the accuracy rate of *a(n)* supported the prediction of the FH that fluctuation overrode transfer at the lower English proficiency levels. The author also revealed that there were no signs of fluctuation at the advanced level of English proficiency. However, Abudalbuh (2016) did not clearly specify whether or not his results related to the definite article use were in line with the FH; the L2 participants relied on their English proficiency rather than the positive effect of their L1 that has the definite article. It should be emphasised that Abudalbuh's results (2016) did not indicate any statistically significant analysis tests as data were only tested numerically.

Alzamil (2019), on the other hand, investigated how structural difficulty might influence the acquisition of English determiners with two types of genericity at the NP level and sentence level. The participants in Alzamil's study (2019) were Saudi university students who were studying English as a second language. Arabic has the definite article, but it differs from English in the semantic realisation of genericity. For

example, generic NPs in Arabic are always definite, which mismatches with English generic NPs. Yet, Arabic matches English in the generic definite singular context at the NP-level.

The L2 Saudi participants were grouped into two English proficiency levels: elementary and low intermediate, after taking the Oxford Quick Placement Test. The participants were asked to judge the grammaticality of the experimental sentences on an acceptability judgement task from 1 (unacceptable) to 5 (acceptable). Based on statistical analysis results, Alzamil's findings (2019) did not concur with the predictions of the FH for the following reasons. Firstly, the L2 Saudi participants had significantly less target-like scores than the English native participants in using *the*. Secondly, the L2 Saudi participants were target-like in judging the grammaticality of the definite plurals at the NP level because Arabic grammaticalises this structure like English. In contrast, their target-like performance in the ungrammatical definite NPs at the sentence-level cannot be ascribed to their L1. It was also revealed their target-like performance before the indefinite singulars with sentence-level genericity was low because of the difference between English and Arabic. The results proved the learnability problem cannot be solely explained by L1 transfer, as the L2 participants showed knowledge of grammaticality with the definite singular NPs at the sentence-level genericity that are grammaticalised differently in Arabic and English.

Though the FH helps in explaining when and how L2 learners might resort to positive transfer or have direct access to the semantic settings of the ACP, inevitably, a crucial question has been left unanswered. For example, the FH does not take into consideration the occurrence of negative transfer linked to structural difficulty, especially by learners whose L1s are article languages. Languages such as Greek, for example, have the indefinite article, but the definite article is omitted with the presence of some verbs such as light verbs or verbs of accomplishments (Marinis, 2003;

Kanellou, 2005; Alexiadou, 2014). In Arabic, on the other hand, definiteness can be realised by means of a syntactic structure called Idafa. Accordingly, the L1s – CG and PJ/A – provide a good testing ground for the FH in order to find whether the L2 PJ/A and CG learners of English would rely on positive transfer from their L1s as they have the target articles, or whether they would find it difficult because of the morpho-syntactic differences associated with the target articles in their L1s.

Investigating the acquisition of the article system by predicting the possible errors that might be committed by L2 learners is central to the work of Ionin (2003) and Ionin et al. (2004, 2008). According to their FH, these errors are not supposed to be random, but systematic. The FH is also focused on the role of three main factors in L2 acquisition. These factors are transfer, having access to UG and input (one form of input is English proficiency level). It should be emphasised that transfer is a fundamental issue in L2 and L3 acquisition, and it has been given great attention in the literature. To understand how transfer might hinder or facilitate language acquisition, it is essential to explain how this factor might affect learners' interlanguage development, and whether this can be attributed to other factors. Thus, the focus, in the following sections, will be on the generative L2/L3 theories which will be discussed in detail in relation to a variety of factors that might pertain to the acquisition of English determiners.

2.3. Generative second language acquisition (SLA) theories and existing research

This study is going to concentrate on how the patterns of acquisition of the PJ learners of L2/L3 English and CG learners of L2 English can be explained by the relevant L2 hypotheses (and L3 models) mentioned in RQ4. The L2 hypotheses tested in the current study are the Full Transfer Full Access (FT/FA) Hypothesis (Schwartz and Sprouse, 1994, 1996) and the Fluctuation Hypothesis (FH) (Ionin et al., 2008) which support the Full Transfer with Full Access position. To understand these hypotheses, it is necessary first to identify the different positions and how they are different from the theoretical

perspectives of the tested hypotheses in this study. This issue falls into three main positions and they will be discussed along with some of the studies that supported or opposed these positions based on empirical findings by speakers of L1 Arabic and L1 Greek and from other world languages.

2.3.1. The No Access to UG

The first position is the No Access to UG (Clahsen and Muysken, 1986; Bley-Vroman, 1989, 1990). The advocates of this position consider that learners' initial state in SLA starts out with their native language (ibid). They also hold that learners' interlanguage grammar at the initial state of L2 acquisition is based on non-linguistic processes that are cognitively different from first language acquisition (ibid). Those who adopt this view build their assumption on the hypothesis that L2 adult learners cannot have access to UG because they pass the critical age, which is a constraint on subsequent language acquisition. For example, Penfield and Roberts (1959) and Lenneberg (1967), in their Critical Period Hypothesis, propose that L2 learners might be disconnected from UG after puberty. Also, Bley-Vroman (1989), in his Fundamental Difference Hypothesis, suggests that L1 learners can have access to UG and use a domain-specific system to construct their mother language. In contrast to L1 child acquisition, L2 adult learners cannot acquire L2 in the same way within the framework of UG.

This position will not be tested in this study as it does not take into account the role of transfer or accessing the semantic universals in explaining the performance of the L2 PJ and CG participants. Instead, this position claims the variation in the degree of L2 learners' success is based on individual differences, and that is why some learners are more/less successful than others (Bley-Vroman, 1989).

2.3.2. The Partial/Indirect Access to UG with Full Transfer

The second position is the Partial/Indirect Access to UG with Full Transfer. According to this position, the L2 learner can only learn the new language through the mediation of L1 (Cook, 1985). One of the hypotheses that supports this position is the Interpretability Hypothesis by Tsimpli and Mastropavlou (2008) in relation to the (un)interpretable features. Interpretable features are those which have semantic contents and belong to a set of universal semantic features such as definiteness and specificity (Tsimpli and Mastropavlou, 2008). Uninterpretable features, such as case, gender and number, are purely syntactic and do not have any semantic content, yet they are necessary for the grammaticality of a sentence (ibid).

The Interpretability Hypothesis lends partial support to the Critical Period Hypothesis by Lenneberg (1967), as it considers age at first exposure to L2 as a decisive factor in SLA. The interpretable and uninterpretable features may cause differences in resetting the L2 parameters with regard to the critical period. In other words, Tsimpli (2003) envisions that L2 learners can have access to UG if the target features are interpretable even after puberty, while the uninterpretable features are inaccessible after the closure of the critical period. In that way, the uninterpretable features might cause learnability problems in SLA. For example, L2 adult learners might show different patterns in the acquisition of Greek determiners as they bundle some other features, such as case, gender and number. These features are uninterpretable as they demand overt morphological agreements between all the constituents of a determiner phrase (Tsimpli and Mastropavlou, 2008). In contrast, the Greek indefinite article always bears the interpretable feature: [−definite] and their acquisition is expected to be easier than the Greek definite articles which encode values of uninterpretable features and no specification of the definiteness feature (ibid). English (Ionin et al., 2004) and MSA and its varieties (Abudalbuh, 2016), on the other hand, encode the definiteness feature.

Accordingly, both of them bear the interpretable feature of definiteness. Thus, as argued by Hawkins et al. (2006: 23), 'L2 speakers' interlanguage grammars are UG-derived. In this case, speakers have access to the inventory of interpretable features which include [+/−definite] and [+/−specific]'.

Similar to the Interpretability Hypothesis, the Representational Deficit Hypothesis by Hawkins and Franceschina (2004) (also known as the Failed Functional Features Hypothesis by Hawkins and Chan (1997)), suggests uninterpretable features relevant to functional categories might cause learnability problems. According to this hypothesis, these features are not available in the process of SLA as they cannot be accessed by means of UG after puberty. In contrast, interpretable features are accessible by means of UG in SLA even after the end of the critical period (ibid).

A piece of research that tested the predictions of the Interpretability Hypothesis (Tsimpli and Dimitrakopoulou, 2007) and the Representational Deficit Hypothesis (Hawkins and Hattori, 2006) came from Momenzadea and Youhanaeeb (2014). The researchers recruited 43 university students who were speakers of Persian. Unlike English, Persian has only the indefinite article. However, English and Persian have the interpretable features of definiteness and number (ibid). The participants were placed into three proficiency levels in English (ibid). The results obtained from a grammaticality judgment task were not congruent with both hypotheses. The researchers concluded that though both Persian and English have the same interpretable features of definiteness and number, L2 Persian learners failed to positively transfer these features into L2 English. The analysis of the data indicated the three groups of participants showed the same patterns of difficulty in using the (in)definite articles with plural and singular nouns.

Momenzadea and Youhanaeeb (2014) also drew on the Feature Assembly Hypothesis by Lardiere (2007) which did not consider the difficulty in L2 production as

a sign of language impairment. This hypothesis belongs to the Full Access with Full Transfer position (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Prévost and White, 2000; Lardiere, 2008, 2009, 2013). In relation to the predictions of Lardiere's hypothesis (2007), the authors revealed that article misuse did not occur because the number feature was absent in the learner's mental grammar. Instead, they asserted that this occurred 'because the learners were unable (temporarily, at least) to disintegrate the features associated with a particular form in their first language and re-assemble them in a way that represents the second language characterization' (ibid: 1186).

Leaving aside the explicit implications that the advocate of this position added to our knowledge, several questions have been raised on how the L2 learners' learnability problem is addressed, and on how to account for the L2 input. The advocates of this position tend to define the learnability problem as a form of language impairment; L2 learners are expected to fail to acquire the abstract uninterpretable feature of the syntactic and morphological properties of the functional categories even at higher English proficiency levels. Also, these hypotheses have not considered the importance of the quality of input in L2 acquisition. Opposing this position is the Full Access to UG (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Prévost and White 2000; inter alia), which provides alternative perspectives. This position will be discussed in the following section.

2.3.3. The Full Access to UG

The third position is the Full Access to UG with Full Transfer (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Prévost and White, 2000; Lardiere 2005, 2007, 2008, 2009, 2013; Ionin et al. 2008). This position takes into consideration three important factors in SLA. They are input, transfer and access to UG. According to White (2003), all the hypotheses that support the full access position suppose that UG is available to L2 learners. The first hypothesis that supports this position and will be

tested in this study is the Full Transfer/Full Access (FT/FA) Hypothesis, which was instantiated first by White (1990/1991) and developed later by Schwartz and Sprouse (1994, 1996). The second hypothesis that belongs to this position and will also be tested in this study is the FH by Ionin et al. (2008). Though some studies that tested the FH were discussed in detail in section 2.2.2.1, more studies will be provided in this section. Other advocates of this position are Lardiere (2005, 2007, 2008, 2009, 2013) in his Feature Reassembly Hypothesis, and Lardiere (1998, 2008, 2009) and Prévost and White (2000) in their Missing Surface Inflection Hypothesis.

The advocates of the Full Access to UG agree that L2 acquisition is different from L1 acquisition in terms of the initial state and the subsequent states. They also focus on the role of transfer and UG but from different perspectives. The FT/FA Hypothesis by Schwartz and Sprouse (1996), for example, suggests that L2 learners can have full access to UG, but at the initial state of L2 acquisition, they fully transfer the L1 abstract grammatical features into L2 that constitutes the learners' interlanguage grammar. Then, with more input to L2 and practice, the amount of transfer from L1 decreases, and L2 learners become able to restructure their interlanguage grammar to converge with the grammar of their L2 by having full access to UG (ibid). In that way, Schwartz and Sprouse (1996) emphasise the importance of L2 developmental sequences; L2 learners who are of different L1 backgrounds are not expected to go through the same developmental paths.

While the FT/FA Hypothesis (Schwartz and Sprouse, 1994) looks at the target and non-target like performance of the L2 learners to explain how they progress in SLA, the theoretical perspective of the Missing Surface Inflection Hypothesis (Lardiere 1998; Prévost and White, 2000) addresses this issue in different theoretical terms by focusing on omission errors. The principal claim of the Missing Surface Inflection Hypothesis (ibid) is that the absence of the morphological representations of the functional

categories is not related to impairment but is rather a sign of a mapping problem that occurs at the surface level. Therefore, the features associated with the functional categories of determiners are parts of the L2 learners' underlying syntactic representations in spite of article omission at the surface level of L2 production (ibid).

The Feature Reassembly Hypothesis (Lardiere, 2008, 2009) goes beyond the simple parametric selection of features as suggested by the FH (Ionin et al., 2008). It is built on the proposal that languages vary on the basis of how they encode features in their functional morphology, and how these features are voiced on lexical items. Lardiere (ibid) suggests that the acquisition of functional categories is possible if L2 learners figure out how to remap the features in a way that makes them match with the L2 configuration. This hypothesis also predicts the degree of difficulty L2 learners might face in L2 acquisition. For example, if a specific feature requires more feature reassembly, then the learning process is expected to be more difficult, consequently the L2 learner might need more time to acquire the target feature. Having full access to the inventory of UG, L2 learners are expected to eventually acquire the target features.

The L2 studies that supported the Full Access to UG position provided evidence of L1 properties in the interlanguage grammar of L2 learners at the initial state of L2 acquisition. They also provided evidence on how L2 input and L2 proficiency might help in restructuring the learners' interlanguage grammar in the subsequent states on the basis of (i) the universal-based account as found in the FH; (ii) mapping problems as suggested by the Missing Surface Inflection Hypothesis; (iii) reassembly of features as indicated by the Feature Reassembly Hypothesis, and (iv) a mixture of the former theoretical perspectives as represented by the FT/FA Hypothesis.

Kwame's study (2018), for example, is among the studies that supported this position from the perspective of the feature reassembly account rather than the universal-based account. Kwame (2018) investigated the extent to which the role of

some factors might correlate with the interpretation of English articles in relation to the definiteness and genericity features in Dagbani (a language that, like Arabic, has the definite article marker, but lacks the indefinite article). Eight English native speakers and 45 L2 Dagbani participants were recruited. The L2 Dagbani participants were grouped into low intermediate and high intermediate L2 proficiency levels. To collect data, Kwame (2018) used a written forced-choice elicitation test and an acceptability judgement test.

Kwame (2018) concluded that the results were not in line with the FH, as the percentages of the overuse of *the* and *a(n)* in the relevant pair of contexts were lower than the overuse of the same articles in the non-fluctuation pair of contexts. Instead, Kwame's findings (2018) lent support to the Feature Reassembly Hypothesis and the FT/FA Hypothesis. The results showed that the L2 participants' incorrect acceptance of the ungrammatical sentences with the zero article were more than their correct acceptance of the grammatical sentences with the indefinite article, reflecting L1 Dagbani grammar. Their performance in the forced-choice elicitation test was not different, as their accuracy rates in using the zero article in obligatory bare contexts did not exceed 30%. The findings also revealed that their performance in the definite contexts was higher than the indefinite contexts as their L1 has the definite article but not the indefinite article. The results of both tasks maintained L1 Dagbani influenced the L2 participants' article choice at the initial state of L2 acquisition as it encodes definiteness and not specificity. The author maintained the L2 participants had mapping and reassembly problems that were overcome with the increase of English proficiency level. His study also indicated significant positive correlations between the L2 learners' proficiency levels in English and their levels of education, years of learning English, practising the language with a friend and the onset of age to English. Still, the age of participants as a factor did not correlate with the learners' proficiency levels in English.

While Kwame's study (2018) did not substantiate the theoretical assumption of the universal-based account of the FH, Kargar's study (2019) was partially in line with it. Kargar (2019) tested the first proposal of the FH suggested by Ionin et al. (2004) on the acquisition of English (in)definite articles by Iranian university students who were speakers of Persian, an article-less language. The participants were classified into three English proficiency levels – elementary, intermediate and advanced – and were asked to complete a forced-choice elicitation task. Kargar's results (2019) highlighted the FH only predicted the performance of the advanced participants. For example, the results revealed fluctuation was only detected in the performance of the participants from the advanced level rather than the elementary and intermediate levels. Kargar (2019) attributed the low performance of the participants in using the (in)definite articles to the cross-linguistic differences between Persian and English and to the lack of L2 input.

On the other hand, Jiang (2012) provided evidence in support of the theoretical perspectives underpinning the feature reconfiguration and feature mapping by testing the FT/FA Hypothesis and the Missing Surface Inflection Hypothesis, respectively. Jiang's study (2012) explored the degree of difficulty the L2 learners with different L1 backgrounds might face in using English determiners with plural and singular nouns. The participants, in Jiang's study (2012), were divided into different proficiency levels, and their L1s were Spanish, Syrian Arabic, Turkish and French. Spanish and French have both definite and indefinite articles, just like English. Syrian Arabic, on the other hand, has only the definite article, while Turkish is devoid of definite articles. Both hypotheses predict the participants can still access the UG features and transfer from their L1 at the initial state of L2 acquisition. Consistent with both hypotheses, the study demonstrated the degree of difficulty in retrieving the relevant forms of English determiners was linked to the learners' L2 proficiency and their experience with L2 input. More specifically, Jiang's (2012) findings indicated the L2 Spanish and L2

French speakers had a native-like performance, but they committed errors related to the overuse of *the* with bare plural nouns (L1 negative transfer) at the lower English proficiency levels of L2 acquisition. It was also found that article omission was based on L1 negative transfer by the L2 Arabic learners and L2 Turkish learners. Article omission was the most frequent type of errors in the indefinite contexts and the [+definite, –specific] contexts. In addition, the Turkish learners had fewer article omission errors in the [+definite, +specific] contexts than the [+definite, –specific] contexts because their L1 correlates the definiteness feature with the specificity feature in the latter contexts. However, the increase of L2 proficiency helped the participants overcome this mapping problem.

To understand how article production/comprehension reflects the L2 learners' interlanguage grammar, the following section will provide an overview of some studies that tested this position on data obtained from speakers of Arabic or Greek.

2.3.3.1. Existing research on L2 acquisition by L1 Arab/Greek speakers

One of the studies that provided evidence in favour of the Full Transfer with Full Access position was done by Abumlhah (2016) under the Features Reassembly Hypothesis (Lardiere, 2008) and the FT/FA Hypothesis (Schwartz and Sprouse, 1994, 1996). Abumlhah (2016) examined the role of input in the L2 acquisition of English determiners by four groups of participants: an English control group (n=10) and three L1 Najdi Arabic undergraduate groups in Saudi Arabia (n=54) at different proficiency levels in English. The three Arabic groups were two experimental groups that received treatment by means of explicit/implicit instructions and an uninstructed control group. The contexts examined by Abumlhah (2016) encoded semantic features related to definiteness, specificity and genericity. The experimental tasks were used as pre-tests, post-tests and delayed post-tests. They were a forced-choice task, a sentence repetition task, and a written production task.

The participants' performances, in Abumlhah's study (2016), in all tasks were not consistent. Some of her results showed that the post-test findings were higher than the pre-test findings on the forced-choice task In contrast, the results the author obtained from the repetition task did not show any difference in performance regarding the use of *the* in the pre-test or the post-test. Abumlhah (2016) suggested the L2 learners' errors, particularly in the second test, might have occurred because of the linguistic experience the learners got during a certain developmental stage. According to her, this stage might be the result of the unstructured treatment that the participants received as part of the reassembly progression before converging with the L2 grammar, which agreed with the FT/FA Hypothesis.

Abumlhah (2016) indicated that the results of the written production task showed no evidence of reassembly features or fluctuation; the participants did well on using the plural generic NPs (while reassembly was expected) and indefinite specific NPs (while fluctuation was expected) in the pre-test and post-test as well. Abumlhah (2016) revealed that the factors found to influence the production of the L2 participants were English proficiency and different types of input. The author further added that positive correlations were detected (i) between the participants' English proficiency levels and their target-like use of articles; (ii) between the accuracy rate of the zero article use and the employment of explicit instructions in generic plural NPs *only* on the forced-choice task (post-test), and (iii) between the accuracy rate of the indefinite article use and the employment of explicit instructions on generic singular NPs on the repetition and forced-choice tasks.

Another study that tested the FT/FA was carried out by Sabir (2015). Her results supported the FT/FA and the FH as they identified the errors made by 67 Saudi-Hejazi Arabic-speaking learners of English. Data were elicited by means of an acceptability judgement task, elicited written production task and article elicitation task as a pre-test,

an immediate post-test and a delayed post-test. The results of Sabir's study (2015) proved that fluctuation was evident in the production of the participants from the lower English proficiency level, but it was less evident with the participants from the intermediate English proficiency level. Her results indicated that the Hijazi participants, who were at higher English proficiency levels, were more target-like in using *the* and *a(n)* in comparison with their lower performance in using Ø in bare singular NPs even receiving structured classroom lessons. Congruent with the tested hypotheses, Sabir's findings (2015) revealed the L2 participants transferred their knowledge of definiteness from L1 Saudi Arabic into L2 English at lower English proficiency levels, though the target English contexts mismatched with the Arabic contexts.

In her cross-sectional study, Awad (2011) investigated the acquisition of English determiners as manifested in the production of Arab female university students by using a composition task, a multiple-choice blanks test and a grammaticality judgement test. The participants were divided into different proficiency levels. She also revealed the participants' use of *the* was better than *a(n)* for the reason that Arabic has the definite article but lacks the indefinite article. Awad (2011) argued the L2 participants' most difficult task was to use the zero article in a context having non-referential nominals which mismatched with the Arabic context. The author's findings agreed with the FT/FA Hypothesis, as she found the L1 negative transfer had impacts on the L2 English article acquisition at the lower English proficiency levels more than the higher levels. Furthermore, Awad's results (2011) regarding the delayed mastery of *a(n)* were congruent with the Failed Functional Features Hypothesis (Hawkins and Chan, 1997) and the Representation Deficit Hypothesis (Hawkins and Chan, 1997), which propose the L2 features which are not available in the learners' L1 can cause a learnability problem. Awad's findings (2011) did not agree with the FH as the participants from the

lower English proficiency in some tests, particularly the written task, did not fluctuate between the indefinite specific contexts and the indefinite non-specific contexts.

In section 2.2.2.1, Hawkins et al.'s study (2006) was reviewed regarding the acquisition of English determiners by L1 Greek learners by testing the first version of the FH (Ionin et al., 2004). In this section, a review of a study conducted by Thomas (1989) and Karpava (2016) on L2 learners who were native speakers of Greek will be provided. In her cross-sectional study, Thomas (1989) tested the role of transfer and UG-based access. Thomas (1989) explored the developmental patterns of adult L2 learners regarding the acquisition of English determiners on an oral production task. Data were collected by means of a narrating story with a series of drawings. Thomas' study (1989) was based on the distinction between two groups of learners who were from different L1 backgrounds. The first group consisted of seven speakers of different article languages; one of them was a Greek speaker (with a high level in English). The second group was made up of 23 speakers of four article-less languages. Thomas (1989) found the L2 learners of L1 article languages performed better than the L2 learners of L1 article-less languages in using *the* and *a(n)*. Her findings revealed that the participants of the former group associated the use of *the* with the specificity feature. The participants of the latter group, on the other hand, seemed to overuse *Ø* in (in)definite contexts that demanded the use of *the/a(n)*.

Karpava (2016) examined the L2 acquisition of the English article system by analysing written corpus obtained from 100 Cypriot-Greek university students by testing the FH (Ionin et al., 2008). The author also used a forced-choice elicitation task. She tried to find whether the quality and quantity of L2 input, English proficiency, age of onset to L2 English and age of L2 participants contributed to the acquisition of English articles. The L2 participants were 17-23 years old. Inconsistent with the FH, Karpava (2016) found that the L2 Cypriot-Greek participants' non-target-like

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performances were due to negative transfer from L1. Accordingly, their omission errors or overuse of articles occurred irrespective of discourse-based triggers in L2 English. She reported that the rate of omitting *a(n)* (32.77%) in direct object positions with the verb *have* was higher than the rate of overusing *the* with proper names and places (24.69%). The findings in her study proved that the L2 participants were fluctuating between the two settings of the ACP on their use of *a(n)*. The Paired Samples t-test indicated their use of *a(n)* with the [–definite, +specific] NPs was significantly lower than the [–definite, –specific] NPs. Karpava (2016) provided evidence in support of the role of age of participants and age of onset to L2 English rather than the role of English proficiency in the acquisition of English determiners.

In sum, the Full Access with Full Transfer position (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Prévost and White, 2000; Lardiere 2005, 2007, 2008, 2009, 2013; Ionin et al. 2008) seems to provide a better explanation than the other positions on how, why and under what circumstances L2 learners might have problems in acquiring the target feature of the functional categories. According to this position, the learnability problem is discussed from different perspectives. Drawing on the predictions of this position, L2 learners can still have access to the semantic universals, and consequently, they are expected to reach native-like ultimate attainment if exposed to enough input. In other words, if UG is not available in SLA, then there will be no clear explanations on how the L2 learners restructure their unconscious knowledge of the abstract grammatical features not available in the learner's L1 (White, 2003).

2.4. Third language acquisition (TLA) models

Most of the research conducted within the generativist approach, with respect to third language acquisition (TLA), has focused on the decisive role of the cross-linguistic influence (CLI). This research aims to examine the initial state of the learner's language acquisition of L3/Ln to describe its grammar in the following developmental stages and

evaluate the learner's linguistic ability. The hypotheses that investigated the role of the CLI are the Cumulative Enhancement Model (Flynn et al., 2004), the Typological Primacy Model (Rothman, 2010, 2011), the L2 Status Factor (Falk and Bardel, 2011), the Linguistic Proximity Model (Westergaard et al., 2017) and the Scalpel Model of TLA (Slabakova, 2017). These hypotheses are different/similar in the way they try to identify the source(s) of transfer.

As part of RQ3, the aim is to examine the role and source of transfer and whether it comes from L1 or L2 or from both of them. The two L3 groups that were recruited in the current study were native speakers of PJ/A, but they were different in the order of acquiring English and CG. Accordingly, the relevant L3 hypotheses to be tested in this study are focused on the role and source of transfer and whether it is correlated with the L3 groups' order of acquisition of English and CG, and proficiency levels in PJ/A, CG and English. These tested hypotheses are the L2 Status Factor (Falk and Bardel, 2011), the Cumulative Enhancement Model (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017).

2.4.1. The Cumulative Enhancement Model (CEM)

Flynn (2009) proposes in his Cumulative Enhancement Model (CEM) that learning is cumulative in that it is not only the properties of L1 or L2 that trigger the acquisition of L3, but rather the properties inherent in all the former acquired/learned languages which facilitate the learning process. Flynn (2009) posits that the knowledge of all the former languages is represented in the learner's mind and it is always available.

Therefore, in terms of language-specific features, Flynn et al. (2004) predicted that the background languages can play a role in facilitating the acquisition of L3, and that the L3 grammar shapes the initial state of the learners' interlanguage. In other words, if only one of the background languages shares a particular grammatical feature

with L3, then that language has the privileged source of transfer, while the role of the other language that mismatches with the learners' L3 is blocked (ibid).

The predictions of this model will be tested in this study. Therefore, it is expected the two L3 English learners will positively transfer all the features associated with the (in)definite articles from their L2/L3 CG into L2/L3 English. This means that negative transfer is not expected to occur.

2.4.2. The L2 Status Factor Model

The L2 Status Factor Model is credited to Williams and Hammarberg (1998), but it was developed later by Bardel and Falk (2007). In parallel with William and Hammarberg (1998) and Hammarberg (2001), Bardel and Falk (2007) put forward that L2 operates as a filter in L3 acquisition while L1 transfer is blocked. Bardel and Falk (2007) and Falk and Bardel (2010, 2011) consider that L2 status has a stronger influence than L1 status because of the influence of some factors. These factors are related to (i) recency, which means that the use of or exposure to L2 is more dominant than L1 as L2 becomes more easily activated than L1; (ii) language proficiency in L2; (iii) age of onset to L2; (iv) native vs. non-native setting of L2 and (v) motivational factors. This model suggests both facilitative and non-facilitative transfer are possible (ibid).

Thus, this model will be tested in the present study by correlating the L3 PJ-CG-E participants' proficiency levels in L2 Greek with their L3 performance in L3 English. It is hypothesised that the more advanced the learners are in L2 Greek, the more likely they are expected to transfer the target properties from L2 into L3. However, the implications of this model are not valid to test the L3 PJ-E-CG group, because they are different from the former group in the order of acquiring English and CG.

2.4.3. The Typological Primacy Model

Unlike the L2 Status Factor (Falk and Bardel, 2011), the Typological Primacy Model (Rothman, 2010, 2011; Rothman et al., 2019) suggests that the wholesale morpho-syntactic transfer at the L3 initial state occurs from one of the previously learned languages into L3 if the structure of any of the previously learned languages is perceived as psycho-typologically closer to the L3. Accordingly, TLA is expected to take place irrespective of the order of acquisition. The Typological Primacy Model (Rothman, 2010, 2011; Rothman et al., 2019) considers that both positive and negative transfer are possible, which is different from the CEM's account (Flynn et al., 2004) that only positive transfer is possible.

2.4.4. The Linguistic Proximity Model

The Linguistic Proximity Model by Westergaard et al. (2017) adopts the CEM's account (Flynn et al., 2004) that L3 acquisition is an accumulative process and that each of the background languages can provide a privileged source of transfer. However, the L3 learners' background languages cannot only lead to facilitative learning but also to non-facilitative transfer which is in line with the Typological Primacy Model (Rothman 2010, 2011) and the Scalpel Model of TLA by Slabakova (2017). Westergaard et al.'s model (2017) explains that non-facilitative learning occurs when the L3 learner fails to analyse the L3 input or when s/he is exposed to insufficient L3 input. According to Westergaard et al. (2017), structural similarity is the reason behind facilitative transfer. In that way, Westergaard et al.'s model (2017) rejects the wholesale transfer proposed by the Typological Primacy Model (Rothman 2010, 2011). This model seems to be similar to the Scalpel Model of TLA (Slabakova, 2017) except with the additional factors that the latter model has added to our knowledge in TLA. The theoretical assumptions of the Scalpel Model of TLA will be discussed in the following section.

2.4.5. The Scalpel Model of third language acquisition (TLA)

In accordance with the Linguistic Proximity Model (Westergaard et al., 2017), Slabakova (2017) proposed the Scalpel Model of TLA, which rejects the wholesale transfer and suggests that transfer is selective and can be both facilitative and non-facilitative. Unlike all the aforementioned L3 models, this hypothesis aims to examine the L3 learners' developmental sequences that go beyond the initial state (Slabakova, 2016). Accordingly, what accounts for L3 acquisition is a group of factors that go beyond the L1/L2 transfer and typological similarity (ibid). Slabakova (2017) identify the following factors: (i) structural linguistic complexity which has been also proposed by Westergaard et al. (2017); (ii) cognitive psychological prominence related to the role of the native vs. non-native language, language proficiency of the non-native language(s), adult-onset vs. child-onset, strong additional vs. weak additional language in that the strong language is more dominant than the weak language in terms of use and exposure; (iii) L3 linguistic experience; (iv) structural similarity or difference and how this structure is consciously or unconsciously perceived as typologically (un)related, and (v) L3 input. Another factor, according to Slabakova and Garcia (2015), is related to motivation and aptitude.

The Scalpel Model of TLA (Slabakova, 2017) will be tested in this study as it provides more factors relevant to TLA than the Typological Primacy Model (Rothman 2010, 2011) and the Linguistic Proximity Model (Westergaard et al., 2017). These factors are expected to impact the degree of cross-linguistic influence in TLA. They are related to motivation and L3 learners' linguistic experience such as age of participants, length of learning English, daily exposure to English and English proficiency. In light of the predictions of the Scalpel Model of TLA, it is expected that transfer might occur from either PJ/A or/and CG not only because of the linguistic similarities/differences between one language and the other, but because of other factors linked to the L3

groups' linguistic experience and structural linguistic complexity between PJ/A or CG and English. In the following section, some L3 studies will be reviewed in relation to some L3 models.

2.4.6. L3 studies that tested the L3 models regarding the acquisition of determiners

To the best of the author's knowledge, no study, so far, has been found testing the implications of the Scalpel Model of TLA (Slabakova, 2017) or the Linguistic Proximity Model (Westergaard et al., 2017) on the acquisition of English determiners. A careful study of the literature reveals the CEM (Flynn et al., 2004), the L2 Status Factor (Bardel and Falk, 2007) and the Typological Primacy Model (Rothman, 2011) have not been investigated thoroughly in the field of TLA with regard to the acquisition of English determiners. Henceforth, there is still a need for further empirical investigation. In this section, some L3 studies were reviewed to shed light on how some models accounted for the L3 acquisition of determiners.

Evidence to support the L2 Status Factor Model (Falk and Bardel, 2011) comes from a study done by Angelovska and Hahn (2012) by challenging the suggestions of the CEM (Flynn et al., 2004). Angelovska and Hahn (2012) analysed a corpus of free written production tasks from L3 English learners with L2 German and different L1 backgrounds: five L1 Russian, three L1 Polish and a group of five L1 Bulgarian, Croatian, Ukrainian and French at different levels of L3 proficiency. The classification of L3 proficiencies was based on the *Common European Framework of Reference* and they were as follows: A1, A2, B1, B2 and C1. The participants were 20 to 25 years old. The study was based on a contrastive analysis of each of the learners' L1s to trace the source of the non-facilitative transfer on the basis of different grammatical properties, and to explain whether L2 is activated in L3 production. The CEM's predictions were not corroborated in their study, as the participants showed evidence of negative transfer. Angelovska and Hahn (2012) revealed that some of the errors committed by the L3

learners were properties related to English determiners that were different from the learners' L1s. Consistent with the L2 Status Factor, Angelovska and Hahn's (2012) analysis correlated the error patterns of the L3 participants with their higher proficiency level in L2 and the recency of using L2 as well. They revealed these errors did not only occur in the initial state of TLA, but also occurred at advanced stages of English learning. Angelovska and Hahn (2012) found the overuse of the definite article was common among the participants who were at the A2, B2 and C1 levels.

In addition to the work of Angelovska and Hahn (2012), Ben Abbes (2016) tested the L2 Status Factor Model and the Typological Primacy Model. Ben Abbes (2016) investigated the L3 acquisition of French determiners by adult learners with L2 English and different L1s. The participants in her study were of two L1 groups: Turkish (n=16), which is an article-less language and typologically different from English, and Spanish (n=22), which is an article language just like French and English. Ben Abbes (2016) collected the data from a multiple-choice translation task and an acceptability sentence correction task to examine four morph-syntactic features. However, the morpho-syntactic properties relevant to determiners will be discussed here.

Ben Abbes (2016) revealed that the Spanish participants had a native-like performance in their use of the L3 French (in)definite articles, while the Turkish group had a near native-like performance in their use of the same articles. The analysis of her data did not seem to fully support the tested hypotheses. For example, unlike the predictions of the L2 Status Factor that takes into consideration the significant role of L2 proficiency, the author found the L1 proficiency seemed to have an influence on the L3 article choice by the Spanish group as their L1 and French are typologically related. In contrast, L2 English seemed to have the triggering source of positive transfer for the Turkish group as it is structurally closer to French than Turkish. Accordingly, the results were not in line with the Typological Primacy Model in that the typological similarity

between L1 Spanish and L3 French did not provide them with facilitative influence with regard to the definiteness feature. Also, the participants did not reach the native-like attainment because of the negative influence from their L1 Turkish. However, the results revealed the more advanced the Turkish learners were in L2 English, the more sensitive they were to the specificity feature than the definiteness feature.

2.4.7. L3 studies on Arab/Greek learners that tested the L2 hypotheses

Similar to the L3 models previously explained, there are many L2 theories that have suggested many proposals concerning the interlanguage grammar of L3 learners within the generativist perspective. Thus, literature reviewed so far has shown a preference to explore the CLI in L3 acquisition from the viewpoints of the L2 theories, especially in the domain of the L3 acquisition of the morpho-syntactic features that are relevant to the acquisition of English determiners (by speakers of languages other than Arabic or Greek: e.g. Jaensch (2009) and Treichler et al. (2009) tested the FH, and Leung (2005) tested the FT/FA Hypothesis and the Failed Functional Features Hypothesis). One possible explanation might be that, unlike the L3 models, the L2 hypotheses have provided more detailed approaches on the role of either L1 or UG or both, and they were supported with empirical evidence.

Some studies were found providing details on the L3 acquisition of English determiners by L1 Arab or Greek learners. Hermas' (2018) paper, for instance, empirically tested the FH (Ionin et al., 2008) by examining the role of three sources of article semantics that might influence the L3 Moroccan Arabic adult learners' acquisition of English determiners. These sources were: UG, L1 status factor (Moroccan Arabic) and L2 status factor (French). Moroccan Arabic, French and English have the definite article, but only French and English have indefinite articles. Also, in French, (in)definite articles are marked for number and gender. The author tested the role of other factors such as the learners' proficiency levels in English and the non-native

setting in which the participants were learning English. Accordingly, 25 intermediate and 22 advanced learners were recruited. They all began learning L2 French and L3 English when they were eight and 15, respectively. They were asked to perform a written forced-choice elicitation task based on Ionin's (2003). The items of the task were count singular nominals, and they were distributed into [±specificity] and [±definiteness] contexts.

Hermas (2018) revealed the results of the L3 participants who were at the intermediate level of English proficiency were partially in line with the FH; they fluctuated between the definiteness and specificity settings in their use of *the* and *a(n)*. Hermas (2018) discovered the L3 learners found it difficult to rely on positive transfer either from their L1 or L2 in the case of the definite article use or from their L2 in the case of the indefinite article use. He attributed that to the complexity of the article system in the three languages even though they were similar. That is why the participants in Hermas' study (2018) found it hard to parse the target structure in the [−definite, +specific] and [+definite, −specific] contexts. However, the author found the participants used their L1 as a facilitative source of transfer in using the zero article in the [−definite, −specific] contexts. Another finding in Hermas' (2018) revealed the performance of the advanced learners of English was close to the English native speakers.

In a subsequent study, Hermas (2019) tested the L3 participants' knowledge of the English genericity feature reported on an acceptability judgement task. The L3 participants were of the same background languages (n=27) as his previous study (2018) and they were at the advanced level of English proficiency. The prediction that the L3 proficiency was supposed to reduce the negative influence of L1 was not confirmed in Hermas' study (2019) with regard to the L3 participants' performance in some contexts. For example, Hermas (2019) revealed the L1 negative influence was

found in the L3 participants' interpretation of the generic definite plural nouns. Furthermore, the L2 participants negatively transferred the existential interpretation of the indefinite singular NPs from their L1 into their L3. However, the acceptability judgements of the L3 learners concerning their interpretation of the generic bare plurals were target-like although these NPs imply an existential reading in L1 Moroccan Arabic, and they are not sanctioned in L2 French. Facilitative transfer was also detected in the performance of the L3 participants as they did not face any difficulty with definite and bare singular NPs.

Ouertani (2013), on the other hand, provided an analysis of errors involving English articles used by adult native speakers of Tunisian Arabic. The author grouped the participants into two groups. The first group was made up of first-year students while the second group was made up of fourth-year students. Both groups were attending the Higher Institute of Languages of Tunis. Ouertani (2013) indicated the latter group had a higher English proficiency level than the former group. The L3 participates were learners of L2 French. They learned it at the age of six or eight while they learned English in the last two years of primary education. Two main types of errors were identified, as obtained from a cloze test, a multiple-choice test and a translation test from English to French. The first type was an overgeneralisation error such as the overuse of *the* before nouns of places (of the common proper names type). The second type was transfer error from Arabic and French. Ouertani (2013) maintained that, though the L3 article acquisition posed challenges to both English level students, their progress in using English determiners correlated with their progress in the class.

Following the interpretability of features account by Tsimpli and Roussou (1991), Avgerinou (2007) investigated the role of Greek as an L1 and L2 in the L2 and L3 acquisition of English determiners. Avgerinou's study (2007) was conducted on two groups of adolescent learners in Greece. They were seven L1 Turkish learners of L2

Greek and L3 English (L3 Turkish-Greek-English) whose L1 lacks articles, and five L1 Greek learners of L2 English whose L1 has articles (L2 Greek-English). The participants had a beginner level of English proficiency and they were 14-16 years old.

After analysing the data obtained from two oral tasks – an elicited response task and a map task – Avgerinou (2007) revealed the groups' use of the zero article was equally high. Regarding the target production of *the*, the L3 group performed better than the L2 group in both tasks. Additionally, the two groups had a high level of performance in producing *a(n)* in the elicited response task. However, the L3 group outperformed the L2 group in the use of *a(n)* in the map task.

Avgerinou's composite results (2007) revealed that the use of *the* by the L3 Turkish-Greek-English group was better than the L2 Greek-English group. Avgerinou (2007) found that the L3 participants correlated the use of *the* with the specificity feature by accessing UG to ensure interpretability. Furthermore, Avgerinou's findings (2007) provided positive evidence in favour of the L2 (Greek) status factor in the acquisition of L3 (English) over the L1 (Greek) status in L2 acquisition. Avgerinou (2007) revealed the L1 learners' knowledge of L2 Greek provided them with facilitative transfer. In contrast, she found that L1 Greek had a neutral role in SLA though the two languages are similar. She also found the L2 Greek participants did not seem to transfer the semantic features associated with the definite article to their L2 English (ibid).

In what follows, the focus will be on the bi(dia)lectal setting in Jordan and Cyprus, as well as the status of English in both countries.

2.5. The bi(dia)lectal situations in Jordan and Cyprus

In this study, the participants' data were not only analysed in relation to the cross-linguistic comparison in the three languages in question but also in relation to the bi(dia)lectal situations in Cyprus and Jordan. It is anticipated that the bi(dia)lectal situation in both countries might influence the L2/L3 learners' interlanguage grammar.

2.5.1. The bi(dia)lectal situation in Jordan

The status of Arabic in the Arab world, namely in the Levant area, Iraq, the Arabian Peninsula, Libya, Egypt, and Sudan (Ryding, 2005), can be characterised as diglossic (Al-Sobh et al., 2015; Albirini, 2018) and bi(dia)lectal in which a high variety and some low varieties are used. This means that the forms of Arabic, which are used in any Arabic country (including Jordan) are: (a) the formal 'High' standard variety: Modern Standard Arabic (MSA) and (b) the 'Low' informal or non-standard varieties (ibid).

The non-standard form of the low Arabic varieties is a mixture of dialects influenced by regional and geographical variations (Al-Tamimi and Abdul-Khaliq, 2013; Al-Sobh et al., 2015). For example, the dialect of the Palestinian city of Nablus is different from the dialect of the Syrians in Damascus or the Egyptians in Cairo (Al-Wer and Herin, 2011). In addition, the dialects used in the former (urban) cities are different from the forms of dialects used in rural areas because of social variations (ibid).

This divergence among the several dialects of Arabic causes a linguistically multifaceted situation in the Arab world. Therefore, the importance of MSA, in particular, comes from the fact that this standard form is used as a way of communicating between Arabs whose dialects are unintelligible to each other. In addition, learning MSA by Arabs enables them to overcome the difficulty resulted from the dialect differences, and it also helps them assimilate with their literary legacy, history and tradition. That is why, according to the constitutions in all the Arab countries, MSA is decreed as the official language. Furthermore, MSA is marked for prestige, a high degree of education and social status (Ryding, 2005). This standard variety is used in the news, journalism, national ceremonies, education and academic writing (Alomoush, 2015).

The linguistic situation in Jordan with regard to the high and low varieties is similar to the linguistic situation in the other Arab countries. However, the goal of this

study is to focus on the dialects in Jordan. To understand this situation, it is better first to introduce the kind of dialects used in the Levant area: Jordan, Palestine, Syria and Lebanon. The linguistic situation in the Levant area with its three sub-dialects – urban, rural and Bedouin – is unique (Milhem, 2014). These three dialects are subject to regional variations only in Syria, Palestine and Lebanon, while in Jordan only the rural and Bedouin dialects are regional varieties. The urban dialect that is used in Jordan is originally a Palestinian regional dialect associated with the cities of Palestine; however, in Jordan, the urban dialect is a social variety as it is associated with social factors related to ethnicity, gender and context (Al-Wer and Herin, 2011).

Both the Jordanian and Palestinian dialects are spoken in Jordan (Jaradat, 2018) as Jordan and Palestine are geographically close (Al-Wer and Herin, 2011). In addition, the majority of the population in Jordan are Palestinians who were expelled from Palestine in 1948 and 1967 (Tianshe, 2009). Hence, the kind of dialects used in Jordan is a mixture of the Jordanian and Palestinian dialects, and it is called in this study Palestinian/Jordanian Arabic (PJ/A).

2.5.2. The bi(dia)lectal situation in Cyprus

The linguistic situation in Cyprus can be described as diglossic or bi(dia)lectal (Rowe and Grohmann, 2013; Karpava, 2015), as there are two types of varieties used by CG population. These varieties are Standard Modern Greek (SMG), which is the high formal variety, and CG, which is the low non-standard variety (Antoniou et al., 2014). The low variety is the native language of the country, while the high variety is taught at school (Karpava and Grohmann, 2014). SMG is the official language of Greece and Cyprus. Thus, the use of the high variety in Cyprus is a reflection of the Greek political, national, cultural and religious impact, as CG people consider themselves connected to Greece (Pavlou, 1992; Rowe and Grohmann, 2013).

It should be emphasised that Greek people find it more difficult to understand Cypriot-Greek (CG) (Arvaniti, 1999; Grohmann et al., 2017) because they are not exposed to it in Greece. In contrast, CG people do not find it difficult to understand Standard Modern Greek (SMG) as it is officially used in the country in formal situations (ibid) both in the oral and written modes and in informal situations in the written mode (Grohmann et al., 2017). These situations include education, academic writing and written literature, political speeches, news and journalism. In addition, this high variety is utilised in the written informal mode (Karatsareas, 2018) for the reason that CG neither has an established written system (Arvaniti, 1999) nor a standard spelling system to match with the CG sounds (Pavlou, 2012).

Though the high and low varieties are typologically similar, it has been reported that CG people can figure out the grammatical differences between the two varieties, but they unconsciously seem to be influenced by their L1 CG when using SMG either in written or oral situations (Grohmann et al., 2017). Part of the change in the linguistic situation in Cyprus is related to the rise of urban CG, which is considered a competing variety to SMG. This form is referred to as 'Cypriot Standard Greek' (Arvaniti, 2010). However, considering 'Cypriot Standard Greek' a high variety is a matter of debate, especially that this variety is still a non-standard form, because there is no agreement on its grammatical features.

2.5.3. A comparison between the bi(dia)lectal linguistic situation in Cyprus and Jordan

The diglossic or bi(dia)lectal situation in Cyprus can be described as *standard-with-dialects* (Rowe and Grohmann, 2013), and the same can apply to the linguistic situation in Jordan. For example, CG people can use the high variety with Hellenic Greek speakers as the latter find it hard sometimes to understand the CG variety. Likewise, PJ people can utilise the high variety when contacting other Arabs whose dialects are not

intelligible, or when speaking with second language learners of Arabic. However, in the Arab world, learning the high variety does not mean using it easily, as it is most commonly utilised in the written mode.

In addition, the use of the different dialects in both Cyprus and Jordan can serve many functions. The regional Jordanian variety with its two sub-dialects, rural and Bedouin, and the Palestinian regional varieties with their three sub-dialects, urban, rural and Bedouin, are markers of identity. However, the use of the rural dialect in Jordan either by the Jordanians or Palestinians, especially in the capital Amman, has a social function associated with prestige, gender and context (Al-Wer and Herin, 2011).

Similar to the situation in Jordan, different sub-dialects are used in Cyprus. Still, the CG dialects are mainly regional, and they are the rural and urban dialects, but the former is a more prestigious variety of CG than the latter (Leivada et al., 2017). It should be stressed that, in the informal Jordanian contexts, the low varieties are utilised not only in the oral mode but also in the written mode. In contrast, the written form in Cyprus is only performed by using SMG irrespective of the formality of the situation.

It is necessary to bear in mind that whether the CG or PJ/A varieties are prestigious or not, they are non-standard-native dialects. It is anticipated the PJ and CG learners' performance in using the English article system will be influenced by the linguistic bi(dia)lectal situation they are exposed to in their environments.

2.6. The role of English in Jordan and Cyprus

The former British colonial status, both in Jordan and Cyprus, explains the reason behind the widespread use of English in the post-colonial era of these two countries. However, the status of English in both countries is different. English is widely used in Cyprus in a way that gives it semi-official status, or what can be referred to as *facto* status. This is related to (i) the strong historical relations between Cyprus and Britain; (ii) the physical presence of the British within the island, especially that Cyprus joined

the European Union in 2004, and (iii) the fact that English is used in public communication with the interethnic community who cannot speak Greek, such as visitors, immigrants and foreigners (Buschfeld, 2013).

The function of English in Jordan is different from the semi-official (*de facto*) function of English in Cyprus. One important reason is that the Jordanian community is not multilingual. This is attributed to the fact the foreigners' presence in Jordan is restricted to the domains of tourism, business, commerce, and government-related institutions (Alomoush, 2015, Alomoush and Al-Na'imat, 2018). Therefore, English in Jordan is used as lingua franca (ibid) since it functions as a means of communication between the Jordanians and the foreigners in the country.

The status of English as an L2 in Jordan and Cyprus has to be taken into consideration. Although Jordan and Cyprus are non-native English-speaking countries, English is widely spoken in Cyprus, which is not the case in Jordan. Accordingly, it is predicted that the L2 CG and L3 PJ learners of English living in Cyprus will benefit from the linguistic status of English there more than the L2 PJ in Jordan in which the use of English is restricted to certain domains.

2.6.1. The status of English in Jordan and Cyprus

There is a debate on whether to consider learners of English either in Jordan (cf. Al-Zoubi and Abu eid, 2014; Alomoush and Al–Na'imat, 2018) or Cyprus (cf. Matsidi, 2019) as second language learners or foreign language learners. However, the L2/L3 participants of the current study were viewed as *second/third language* learners as the aim was not to classify learners according to these terms but rather according to the linguistic status of English in Jordan (non-official) and Cyprus (semi-official). However, it is still important to explain the linguistic status of English in both countries in light of Kachru' model (1985, 1992), and how English is viewed in each country as suggested by Buschfeld (2013) and Al-Zoubi and Abu eid (2014).

Kachru (1985, 1992) formulated a model of World Englishes based on three concentric circles to describe the spread of the American or British English varieties and how they developed in the native and non-native countries. The concentric circles of Kachru's model (1985) are (i) the Inner Circle, in which English is used as a native language in the United Kingdom, the United States of America, Canada, Australia and New Zealand; (ii) the Outer Circle, in which English is used as a second language in a bilingual or multilingual society because of colonisation as in India, Kenya and Singapore, and (iii) the Expanding Circle, in which English is recognised as a foreign language and serves as a lingua franca in countries that had no colonial relations with an English-speaking country as in China, Japan, Egypt and Saudi Arabia.

Jordan and Cyprus were within the Outer Circle, as they were occupied by the United Kingdom, and English was used as an official language in Jordan (Alomoush and Al–Na'imat, 2018) and Cyprus (Matsidi, 2019). Some scholars considered that Jordan (Alomoush and Al–Na'imat, 2018) and Cyprus (Matsidi, 2019) moved from the Outer Circle into the Expanding Circle, but they did not explain how English progressed after this movement as the term *Expanding* suggests. One possible explanation is that Kachru's model (1985) fails to describe how the sociolinguistic status of English progressed in countries like Jordan and Cyprus after the post-colonial era.

The view adopted in the current study is that though Jordan (Alomoush and Al–Na'imat, 2018) and Cyprus (Buschfeld, 2013; Matsidi, 2019) can be seen as countries within the Expanding Circle, the status of English in both countries is viewed differently. This is related to the expansion of English in each country which is associated with different linguistic roles. The present sociolinguistic profile of English in each country can be characterised as a second/third language in Cyprus (cf. Buschfeld, 2013) and a foreign language in Jordan (cf. Al-Zoubi and Abu eid, 2014), as the status of English in Cyprus, which is viewed as *de facto,* has more importance than

that in Jordan in which English is used as a lingua franca (See section 2.6). Nonetheless, as stated previously, the L2/L3 participants in the current study were viewed as *second/third language* learners for convenience.

2.6.2. The importance of English in Jordanian and Cypriot universities

Teaching English in elementary and secondary education in both Jordan (Drbseh, 2013; Chatwin, 2017) and Cyprus (Buschfeld, 2013) is compulsory. English entrance exams are prerequisite for attending the private Cypriot universities, which is not the case with the public Cypriot universities or the private and public Jordanian universities. Instead, the educational system in Jordan stipulates that first-year university students must pass an English placement test as a prerequisite for the completion of their bachelor's degree (*Instructions for granting a bachelor's degree at the University of Jordan*, 2017). If students fail the exam, they have to register for a compulsory English subject to enhance their level in English (ibid).

In general, Jordanian and Cypriot students should have a global English exam such as the TOEFL, IELTS or any other comparable exam as a requirement for postgraduate education. In Jordan, any of the aforementioned exam options is a requirement for PhD students before registration, but it is a requirement for master's studies before registration or for graduation (*Ministry of Higher Education and Scientific Research*, 2017).

2.6.3. Motivation for learning English

The CG and PJ participants can be motivated to learn English because of the linguistic status of English in both Cyprus and Jordan. As mentioned in section 2.6, the use of English in Jordan is limited to formal domains for educational, professional and political purposes, whereas the use of English in Cyprus is more associated with formal and informal situations because of the huge presence of the foreigners on the island. The

linguistic status of English in both countries is expected to motivate the participants in each country to learn English to serve certain purposes.

Keller (1983: 398) conceptualises motivation as 'the choices people make as to what experiences or goals they will approach or avoid and the degree of effort they will exert' to achieve their goals. Motivation as a factor will be investigated in the current study. Thus, two main types of motivation are identified. The first is intrinsic motivation, which simply refers to the person's interest in 'doing something because it is inherently interesting or enjoyable', and the second type is called 'extrinsic motivation, which refers to doing something because it leads to a separable outcome' (Ryan and Deci, 2000: 55). Richards and Schmidt (2002) argue that extrinsic motivation can be driven by parental pressure or educational requirements, while intrinsic motivation is driven by the willingness to learn a new language.

Gardner and Lambert (1972) also identified two equivalent types of motivation: integrative and instrumental. Integrative motivation, which is similar to intrinsic motivation, represents the learners' desire to learn a new language, and their attitudes toward learning more about people and their culture (Gardner, 2005). On the other hand, instrumental motivation, which overlaps to some extent with extrinsic motivation, was more associated with practical purposes (ibid) such as getting a job and travelling (Gardner and Lambert, 1972). Gardner (1985) hypothesised that integrative motivation is expected to have more positive influence in L2 learning than instrumental motivation. In this study, integrative motivation and intrinsic motivation are used interchangeably as are the terms instrumental motivation and extrinsic motivation.

Though a plethora of studies investigated the role of motivation in learning English, these studies did not examine how motivation might impact the L2/L3 learners' progress in the acquisition of English determiners. The reason behind reviewing some of these studies is to shed light on the relationship between motivation and learners'

outcome, the different constructs of instrumental/extrinsic motivation and integrative/intrinsic motivation, and whether one type might have a more triggering role than the other for learners of English. For example, Bekasi and Harkouss' study (2018) on Lebanese university students concluded that intrinsic motivation rather than extrinsic motivation was a strong indicator of professional development. In contrast, Al-Sohbani's study (2015), on Yemeni public secondary school students (16 to 17 years old), revealed that the students' desire to learn English (intrinsic type of motivation, and motivational intensity which is beyond the scope of this study) did not predict their school marks in English.

Carrió-Pastor and Mestre-Mestre (2014) demonstrated L2 Spanish university students had more instrumental motives than integrative motives to study a specific language; yet both types of motivation contributed to learning a second language. The authors revealed the constructs of integrative motivations reflected the learners' desire to progress in learning English. They also found the learners were motivated to learn English because of instrumental reasons such as their interest in impressing others, getting a good job or visiting a foreign country where English is necessary.

In a study conducted on Pakistani university students to examine the role of instrumental and integrative motivations in learning English, Bilal et al. (2014) found that instrumental motivation constituted 70% of the constructs such as getting good marks and a good job, applying for higher education and as requirements for a future career. In contrast, 24% of the students showed their integrative motivation reflected their willingness to learn English because they loved it and considered it the language of the upper classes, and because they were willing to travel abroad.

The prediction based on the role of motivation on the acquisition of English determiners by the L2/L3 participants is that the participants living in Jordan are expected to be more extrinsically/instrumentally motivated than the participants living

in Cyprus. This is attributed to the limited use of English in Jordan in which it is used as a lingua franca in comparison with the widespread use of English in Cyprus because of the de facto status of English on the island.

After presenting the linguistic situation in both Jordan and Cyprus and the motivation for learning English, the focus in the following section will be on the cross-linguistic variations among the three languages under investigation.

2.7. An overview of the determiner system in English, PJ/A and CG/SMG

2.7.1. Article system in English

English (Brinton, 2000; Ionin et al., 2004), Greek (Hawkins et al., 2006) and Arabic (Deprez et al., 2011; Hermas, 2018) are definiteness-based languages; however, Arabic is different from English and Greek in that it only has the definite article. The English article system consists of three main determiners: two overt articles, which are *the* and *a(n),* as well as a covert article which is the zero article (Ø) (Radford, 2004). These three articles encode grammatical properties related to person and number: singular, plural or mass, and semantic properties such as generic, partitive (Radford, 2004), definiteness and specificity (Ionin et al., 2004). The definite article *the* is marked for definiteness, while the articles *a(n)* and *Ø* are used to mark indefiniteness (Lyons, 1999). To understand how the morpho-syntactic properties of determiners are realised in English, PJ/A and MSA, and CG and SMG, the following sub-sections will provide a cross-linguistic analysis in this regard.

2.7.2. Arabic article system

It is helpful to distinguish between MSA and its varieties to understand how these varieties influence L1 Arabic learners in the learning process. MSA and PJ/A share many features, but they are different (Sadek, 2016). Thus, the use of the term 'Arabic' in this study refers to both MSA and PJ/A as long as these two forms have the same

structure; otherwise, the distinction will be by referring to each form separately. For example, if the structure in both forms is different, the terms MSA or P/JA will be used independently to refer to the target structure.

MSA encodes definiteness in two ways. The first is by the overt article /al–/, and the second is by using a syntactic construction called *Idafa* (Fehri, 2002). Ryding (2005) provided an in-depth analysis of Arabic determiners. He states that the Arabic definite article has many types of pronunciation according to the different phonological environments in which it occurs. For example, the definite article in MSA is spelled 'ال' '*al*' /ʔal/ (similar in pronunciation to the English word '*el*bow') and /l/ or /ʔil/ in colloquial Arabic (ibid, 40) which is the case in PJ/A. This is illustrated by the following examples in both MSA and PJ/A:

(14) a.   MSA: الليل
        al–layl

    b.   PJ/A: الليل
        ʔil–leil
        'The night.'

Hawwari et al., (2016) and Al-Shaer (2014) state this construct phrase occurs when two nominals, which could be nouns, adjectives or proper names, are linked together to form a construct phrase. Fehri (2002) and Hawwari et al. (2016) indicate the first nominal (N1) in this phrase is the head noun and it is called the '*mudaf*', 'annexed' or 'the construct state' to which the 'genitive case' is employed. But this head noun is realised as a bare noun (ibid). They further add that the second noun (N2) in this phrase comes after the head noun and it is called 'al-mudaf-elayh', 'annexing noun' or the possessor, and it is always preceded by the definite article. Thus, the two nouns of 'Idafa' constitute a phrase and they function as one syntactic unit (ibid). According to Ryding (2005), if the annexing noun is indefinite, the entire phrase is marked for indefiniteness (Ø N1+ Ø N1), but if it is a definite noun or a proper name, the whole NP is marked for definiteness (Ø N+ ART N).

It should be emphasised the Idafa construction has the same manifestation in PJ/A, but without case markers. Thus, the definite and indefinite Idafa takes these two structures in both MSA and PJ/A as follows:

–Idafa in MSA:

     (15) a. Definite Idafa = [Ø N+ $^{+}$ART N] as in:

                    ورقة الامتحان
                Waraqat–u   *l*–emtiHan-i
                paper–IND   DEF–exam
                'the exam paper'

       b. Indefinite Idafa = [Ø N+ $^{-}$ART–N]

                    ورقة امتحان
                Waraqat–u + emtiHan–in
                exam–IND   paper–case–IND
                'an exam paper'.

–Idafa in PJ/A:

     (16) a. Definite Idafa = [Ø N+ $^{+}$ART–N] as in:

                    ورقة الامتحان
                Waraqit   + *l*–emtiHan
                exam–IND   DEF–paper
                'the exam paper'

       b. Indefinite Idafa = [Ø N+ $^{-}$ART–N]

                    ورقة امتحان
                Waraqat + emtiHan–IND
                DEF–exam   paper–case–IND
                'an exam paper'

Ryding (2005) points out that MSA encodes indefiniteness via case markers called nunation. These case markers are: –*un* in nominative (NOM) case, –*in* in genitive (GEN) case or ablative case or –*an* in accusative (ACC) case. Abudalbuh (2016) argues that Jordanian Arabic and the other Arabic varieties are similar to MSA in that they have the definite article, but they do not have the case markers system to encode indefiniteness. This means that in the PJ/A, as well as the other colloquial forms, the 'indefinite nouns are unmarked morphologically or phonologically' (ibid: 106).

2.7.3. Greek article system

In Cyprus, two varieties are used by CG people: SMG, which is the high variety, and CG, which is the low one (Rowe and Grohmann, 2013; Neokleous, 2014; Karpava, 2015). Greek has both definite and indefinite articles, and they are characterised as being free morphemes, as in (1.a) and (1.b):

> (17) a. to vivlio   *definite article*
>   'the book.'
>
>   b. ena vivlio   *indefinite article*
>   'a book'.

Table 2.2 illustrates how the definite and indefinite articles are realised in both SMG and CG (*SMG:* Marinis, 2003; Lazaridou-Chatzigoga, 2009; Kyriakaki, 2011; Agathopoulou et al., 2012; Karpava, 2015; *CG*: Buschfeld, 2013; Neokleous, 2014).

Table 2.2: Greek articles (Lazaridou-Chatzigoga 2009: 54)

Features	Definite						Indefinite		
	Singular			Plural			Singular		
	NOM	ACC	GEN	NOM	ACC	GEN	NOM	ACC	GEN
Masculine	o	to(n)	tu	i	tus	ton	enas	enan	enos
Feminine	i	tin	tis	i	tis	ton	mia	mia(n)	mias
Neutral	to	to	tu	ta	ta	ton	ena	ena	enos

     Regarding the differences between the definite and indefinite articles in SMG/CG, the definite articles are richer in their inflectional paradigm as they inflect for the *ph-*features (gender, and number) and for case NOM, ACC and GEN while the indefinite articles inflect for case and gender only (*SMG:* Marinis, 2003; Tsimpli, 2003; Lazaridou-Chatzigoga, 2009, Kyriakaki, 2011; Agathopoulou et al., 2012; *CG:* Buschfeld, 2013; Karpava, 2015). This can be exemplified by the following sentences, provided by Marinis (2003: 56):

(18) a. Aghorasa   to   neo   vivlio
         Tis   Galanaki

         Bought   the–ACC/NEUT/SG   new   book–ACC/NEUT/SG
         the–GEN/fem/SG   Galanaki–GEN/FEM/SG
         'I bought the new book of Galanaki [sic]'

     b. Aghorasa   ena   neo vivlio
        tis   Galanaki
        bought   a/one–ACC/NEUT/SG   new book–ACC/NEUT/SG
        the–GEN/fem/SG   Galanaki–GEN/FEM/SG
        'I bought a/one new book of Galanaki [sic]'.

Also, Tsimpli and Stavrakaki (1999) argue that the definite article bears uninterpretable features of case, number and gender because of their expletive use with proper names, generic nouns, demonstratives and so on. In contrast, Agathopoulou, et al. (2012) claim that the Greek definite article may bear the interpretable features [+definite] and [+specific], whereas the English definite article bears the interpretable feature [+definite].

2.8. Cross-linguistic variations in English, MSA-PJ/A and SMG/CG

2.8.1. Definite pre/post–nominal nouns

This section aims to explain the cross-linguistic variations regarding the use of the definite article before the English 'of-phrase' construction and before the Arabic (MSA-PJ/A) and Greek (SMG/CG) genitive constructions.

2.8.1.1. English 'of-phrase' construction

One of the major English constructions within the nominal domain is the 'of-phrase' construction. It consists of two nominals and normally takes the structure:

(19). DP [N1+PP [of+ *N2*]] as in:
     The   capital   of   Spain
     The *N1*[capital+ PP[of+N2 Spain]].

According to Alexiadou et al. (2007), the first constituent of this construction, which is in that case 'N1: *capital*, takes place in the prenominal position of the 'of-phrase'

construction. Alexiadou et al. (2007) also show that the second constituent, 'N2: *Spain*', occurs in the postnominal position of the 'of-phrase' construction.

The English 'of-phrase' construction is of many types. The first type is the 'of-genitive' construction as represented by example (19) above. The semantic relation that this type implies, as argued by Keizer (2007), is the possessive/appositive relation.

The second type occurs in a nominal argument structure. The kind of nouns in this structure is de-verbal as it is a derivative form of a verb (Abney, 1987; Keizer, 2007; Ntelitheos, 2012). Derivative nouns are produced when specific suffixes are attached to the verbs. For example, the suffixes *-tion and -er* were added to the verbs *produce* and *train* to form the nouns *production* and *trainer*, respectively. More specifically, Abney (1987) demonstrates that the noun *destruction* in 'Nero's destruction of Rome' is derived from the verb *destroy* as shown in 'That Nero destroyed Rome'. The semantic relations between the derivative N1 and N2 imply a theme relationship (Quirk et al., 1985; Abney, 1987; Keizer, 2007; Alexiadou et al., 2007) which, in turn, implies other semantic relations such as:

(20) Agent relationship between the derivative N1 and N2:
The trainer of dogs (Alexiadou et al., 2007: 523).

(21) Object relationship between the derivative N1 and N2:
The production of penicillin (Keizer, 2007: 65).

The third type of the 'of-phrase construction' is called partitive construction, which implies:

(22) Container semantic relations:
This box of chocolates (Hamawand, 2014: 122).

Other types of the 'of-phrase' construction encode the following meanings:

(23) Identity/attributive relationship as in:
There are employment opportunities in the field of healthcare
(Hamawand, 2014: 121).

(24) Causal relationship as in:
The dangerous consequences of obesity are associated with the increased
risk of diabetes, type 2.

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In all the former types of the 'of-phrase' constructions, the N1s function as the head of the construction (Keizer, 2007; Payne, 2010). Solstad (2010) argues the definiteness of the N2 is based on N1; subsequently, if N1 is definite, the constituent is definite, even if N2 is not preceded with the definite article. This can be attributed to the fact that a postnominal element is not a referring expression by itself, as it cannot function in isolation from N1 (Keizer, 2007; Solstad, 2010). In that way, the head of the 'of-phrase' construction achieves all, or almost all, the morpho-syntactic and semantic criteria for headedness and it implies the referent to this construction (Keizer, 2007).

2.8.1.2. MSA and PJ/A Idafa construction

In Arabic, as mentioned in section 2.7.1.1, definiteness can be encoded by an overt definite article 'al–', and a syntactic structure called Idafa or *'a construct phrase'* (Fehri, 2002; Ryding, 2005). If this construct phrase is definite, then its first constituent, *N1*, is always a bare noun while the second constituent, *N2*, obligatorily takes the definite article when the whole construction is definite. However, the definite article cannot be used with proper names, even if they are the second noun of Idafa, as proper names in Arabic are inherently definite (Ryding, 2005). This is seen in (25) below:

(25) a. مدينة عمان
     N1 [mad:natu]   N2[ʕma:n]
     N1[city–IND]   N2[Prop.N–$^{+inherent}$ DEF–Amman–GEN]
     'The city of Amman'.   *'of–genitive'*

To some extent, the word order structure in Arabic is free; this is triggered by the type of the sentence as some structures allow more word order flexibility than other structures. However, Al-Shaer (2014) points out that the word order structure in Arabic is fixed in the Idafa construction. Hawwari et al. (2016) emphasise that this construction has no one-to-one equivalent structure in English. Unlike English, the two nominal elements of the Idafa construction are always linearly adjacent without any connecting morpheme such as the English formative 'of'.

Ryding (2005), Al–Shaer (2014) and Hawwari et al. (2016) agree the Idafa construction denotes different semantic readings. However, the focus will be only on those relevant to this study. This syntactic Idafa construction obtains its definiteness feature in harmony with the specificity semantic feature associated with the properties of familiarity, identifiability (Alenizi, 2013; Jaber, 2014; Sabra, 2014), and uniqueness (El Werfalli, 2013; Harb, 2014; Shalaby, 2014; Jaber, 2014) in a way that makes it different from its equivalent English structure counterparts. Al-Shaer (2014: 184) states that this construction 'spares Arabic the need for another syntactic genitive variant'. The semantic readings of Idafa as articulated by Ryding (2005), Al-Shaer (2014) and Hawwari et al. (2016) are as follows (the example sentences are from Ryding, 2005: 207–208, 260):

(26) Identity/appositive relationship as in
مدينة القدس
N1[madiinat–u]   N2[l–quds–i]
N1[city–IND]   N2[Prop.N–Jerusalem-DEF]
'The city of Jerusalem'.

(27) Thematic relation (e.g.: agent or object relation):
    agent relationship
حماية الرضع
N1[Himayat–u]   N2[r–ruDaʕ–i]
N1[protection–IND]   N2[DEF–infants]
'the protection of infants'.

(28) Part–whole relationship:
اخر الطابور
N1[ʔa:xir–u]   N2[l–Ta:bu:r –i]
N1[end–IND] N2[line]
'The end of the line'.

(29) Container/content relationship
صناديق الذهب
N1[sana:di:q–u]   N2[l–dhahab–i]
N1[boxes–IND]   N2[DEF–gold]
'[The] Boxes of gold'.

Hawwari et al. (2016: 3575) specify another two semantic readings:

(30) Causal relationship
اخطار التدخين
N1[ʔa:xTaru]   N2[t–tadxi:ni]
N1[dangers–IND]   N2[DEF–smoking]
'The dangers of smoking'.

(31) Attribute–holder
رائحة البرتقال
N1[raʔiHatu]   N2[l–burotuqali]
N1[smell–IND]   N2[DEF–oranges]
'The smell of oranges'.

2.8.1.3. CG/SMG 'linear genitive NP'

In Greek, there is an NP juxtaposed construction, which will be referred to in this study as the 'linear genitive NP' construction. As argued by Alexiadou et al. (2007), the two nominal elements of this Greek construction occur without the connecting morpheme *of* unlike the English construction that demands the use of the formative *of* and takes the construction 'N-of-N-phrase'.

Regarding the differences between the Greek definite and indefinite 'linear genitive NPs', the indefinite construction does not have the spreading feature or the polydefiniteness feature the definite construction has. Tsimpli (2003), Alexiadou et al. (2007), Lazaridou-Chatzigoga (2009) and Kyriakaki (2011) define polydefiniteness as a linguist feature that simply refers to the multi-use of the definite article that spreads to other nominals within the DP structure.

This 'linear genitive NP' construction implies many semantic readings which are equivalent to the English argument deverbal nominal 'of-phrase' and the partitive 'of-phrase' constructions, and they can be classified as follows (explanations were added by the researcher):

(32) Theme relationship as in the object relation:
i   kritiki   tu   vivliu
the review the–GEN book–GEN
'The review of the book' (Alexiadou et al., 2007: 80).

(33) Container/content reading as in:
    to   bukali to   aroma[tos].
    the bottle-NOM/ACC   the perfume-NOM/ACC[-GEN]
    (Alexiadou et al., 2007: 467)
    'the bottle of perfume'

(34) Identity/appositive reading as in:
    I   poli tis   Kypru
    The city   the–GEN   Cyprus–GEN
    'The city of Cyprus.'

(35) Causal relationship as in:
    i   pikra   tu   xorismu
    the bitterness (due to)   the–GEN   separation–GEN
    (Nikiforidou, 1991: 194)
    'The bitterness of separation.'

(36) Part–whole reading (Nikiforidou, 1991;) as in:
    to sinolo *(ton)   ghramatikon   katighorion
    the set   the-GEN-PL grammatical-GEN-PL categories-GEN-PL
    'the set of grammatical categories (that…)'
    (Alexiadou et al., 2007: 469)

But how is the Greek polydefiniteness interpreted within the nominal domain? Determiner spreading or polydefiniteness has been thoroughly investigated within the generativist perspective (Tsimpli, 2003; Alexiadou, et al., 2007; Lazaridou-Chatzigoga, 2009). However, this feature is subject to considerable debate because Greek researchers themselves are not on the same wavelength on how to explain this linguistic phenomenon. For example, some researchers correlate the spreading feature of the definite article with the grammar of the language. This means that the Greek definite article is used before each nominal to encode some features like case, gender and number (Lazaridou-Chatzigoga, 2009; Panayidou, 2013). Lekakou and Szendrői (2009, 2012, 2014) explain that the Greek definite article has an expletive function as its multi-realisations spell out the Greek morphological agreement. In other words, the spreading of the definite article in Greek does not denote different referents; nevertheless, these articles are all associated with the head noun of the nominal construction, which has only one referent (Campos and Stavrou, 2004).

2.8.2. Definite common proper names of people/places

2.8.2.1. Proper nouns of people and places in English

The use of the English definite article with proper names varies. For example, it is possible to use the definite article with the NP 'Brooklyn Bridge' as in the following example:

> (37) A Yale professor has said that *the Brooklyn Bridge* is the most majestic embodiment of the American experience of the road (Quirk et al., 1985: 1027).

From the semantic perspective, the use of *the* with some proper names can be correlated with Quirk et al.'s view (1985) in that this use of *the* depends on how far the proper noun can be considered an institutionalised name by English native speakers. Another reason, as specified by Algeo (1973), is that some proper nouns are considered common, which justifies using the definite article with them. In the same vein, Brinton (2000: 110) considers that NPs like 'the Times' and 'the Suez Canal' are common nouns that imply unique or fixed referents. There are specific categories of English proper names which are preceded by the definite article. They are categorised in Table 2.3 as articulated by Quirk et al. (1985: 296-297). Some of these categorisations are also adapted from Brinton (2000), Langendonck (2007), Radden and René Dirven (2007) and Motschenbacher (2020).

Table 2.3: Classifications of proper nouns preceded with *the* (Quirk et al., 1985: 296-297)

Categories of English names	Subcategories	Examples
[1.a] Plural names	(i) General plural names:	the Netherlands, the Midlands, the Great Lakes.
	(ii) Names that refer to groups of islands:	the Hebrides, the Shetlands, the Canaries/the Canary Islands, the Bahamas.
	(iii) Names of ranges of mountains or hills:	the Himalayas, the Alps, the Andes, the Rockies/the Rocky Mountains, the Pyrenees, the Pennines.
[1.b] Non–plural names	Mountain ranges:	the Caucasus, the Sierra Nevada. (some exceptions are Kensington Gardens, Burnham Beeches).
	(i) Names of rivers:	the Avon, the Danube, the Euphrates, the Potomac, the Rhine.
	(ii) Seas and oceans:	the Pacific (Ocean), the Atlantic (Ocean), the Baltic (Sea), the Kattegat.
	(iii) Canals:	the Panama Canal, the Suez Canal, the Erie Canal.
	(iv) Geographical features of coastline:	the Gulf of Mexico, the Cape of Good Hope, the Bay of Biscay, the Strait of Magellan, the Sound of Bute, (the) Bosphorus, the Isle of Man, the Isle of Wight.
[2] Public institutions and facilities	(i) Names of hotels and restaurants:	the Grand (Hotel), the Waldorf Astoria.
	(ii) Names of theatres, opera houses, cinemas, museums and clubs:	the Criterion (Theatre), the Globe (Theatre), the Athenaeum.
	(iii) Names of museums, libraries, hospitals, etc:	the British Museum, the Bodleian (Library), the Middlesex Hospital.
Newspapers and periodicals		The Economist, The New York Times, The Observer, The Providence Journal, The London Review of Books. (with this category, the definite article starts with a capital letter).

[1.a+1.b] Motschenbacher's corpus-based study (2010) examined the use of the English definite article with country/place and geographical names using the *Corpus of Contemporary American English* (COCA). Motschenbacher (2010) found that the definite article was utilised with high accuracy rates (80% and above) before the following place names: (i) plural forms as in 'Bahamas, Netherlands, Philippines, Seychelles, etc'; (ii) compound place names as in 'Central African Republic, Czech Republic, Dominican Republic, Soviet Union, United Kingdom, etc'; (iii) abbreviations as in 'USA [United States of America], UK [United Kingdom]', and (iv) river names as in 'Rhine, Nile, Thames, etc'.

[2] Radden and Dirven (2007: 101) stated that '[t]he principles governing the choice of proper names of buildings' […] are more complex. As a rule, proper names consisting of noun– noun compounds are seen as denoting a well-established unique thing and take no article, as in London Bridge, Oxford Street, and Buckingham Palace. Adjective– noun compounds, by contrast, look like normal phrases with a qualifying modifier and are therefore normally seen as less unique and therefore take the definite article, as in the Golden Gate Bridge, the British Museum, and the White House'. Radden and Dirven (2007) indicated that there are some exceptions to the aforementioned formal rules as in 'Big Ben' which is an adjective-noun proper name but is not preceded with *the*.

Another issue is related to the conditions which trigger the use of the definite article with proper nouns (either personal or place names). English proper names are inherently definite and do not need to be used with the definite article (Lyons, 1999) and they signal unique denotation (Algeo, 1973). Yet, when the proper names are preceded with the definite article, they can be considered common names under certain morpho-syntactic criteria in specific semantic environments (ibid). For example, the definite article can be used with proper names when it is used as a reference to the people who bear the same name (Algeo, 1973; Quirk et al., 1985) as in:

(38) The *Georges* are here (Algeo, 1973: 23).

The definite article can also be used with the plural form of proper names of people that are used to refer to all members of the same family (Quirk et al., 1985) as in:

(39) I met the *Smiths* at the graduation party.

2.8.2.2. Proper names of people and places in MSA and PJ/A

In Arabic, proper names of people and places should not be attached to the definite article unless that definite article is an integral part of its morphology. The example provided in (40.a) is a name of a country that originally has the definite article, while example (40.b) is a proper name of a country that is commonly realised without the definite article:

(40). a Al–Yunan   but not with   b. Filastin
         اليونان   فلسطين
          DEF–Greece   Palestine
          'Greece'   'Palestine'

Similar to proper names of places, in Arabic, the definite article cannot be used with proper names of people, even if they are the second noun of Idafa, as they are inherently definite (Ryding, 2005). What should be emphasised here is that when some Arabic proper names (most commonly family names) are introduced with the definite article 'al', it means this article is morphologically part of the name itself. For example, the

family name in example (41.a) is not attached to the definite article, whereas the definite

article in example (41.b) is part of the family name:

(41) a. ʕa:ʔilatu   Hamad
 عائلة حمد
Family–IND   Prop.N –DEF–Hamad–GEN
(family Hamad)
'The Hamads'.

(41) b. ʕa:ʔilatu   AL-Hamad
عائلة الحمد
Family–IND   DEF–SG–Prop.N–Hamad–GEN
(family the–Hamad)
'The Al–Hamads' or 'The Hamads'

The proper names in examples (41.a) and (41.b) are names of two different

families in which the former is not introduced with the Arabic definite article but it is

inherently definite, and the latter, though inherently definite, has the definite article as

part of the family name, not because of discourse or context–related factors, but because

it is morphologically part of the NP.

Another issue that should be discussed here is related to pluralising proper

names in Arabic. It should be emphasised that MSA and PJ/A do not follow the same

pattern in pluralising proper names of people. In Arabic, there are three main types of

plurals: masculine plural form, feminine plural form and broken plural form. In MSA,

pluralising proper names is more common than in colloquial Arabic. Also, pluralising

proper names in MSA is not random as it is triggered by the construction of the name,

its gender and its morphological structure. For example, if the name is masculine, it can

be pluralised using the masculine plural form. Consider the following example of a

proper name that accepts the masculine plural form when it does not end with 't':

(42)   حضر المحمدون في حينا
HaDara   al–muHammadona   fi: Hayyina
Came–3.SG   DEF–MuHammado:na in neighborhood–GEN
'(All) the Muhammads in our neighborhood came.'
(AL–Afaghani, 2003: 127).

Pluralising the masculine names that end with the feminine suffix –āt, such as 'حمزة' 'Hamzah' and 'معاوية' /Moʔawiyah/ (AL–Afaghani, 2003), is a matter of debate in MSA. While one view argues that these names cannot be pluralised, another view suggests it is possible to pluralise such names using the feminine plural form (A–Naderi, 2006). Thus, when the former names are pluralised, they follow the feminine plural form as in الحمزات 'al–Hamz:t': 'the Hamzas' (ibid: 48) and المعاويات /Moʕawiyah/: 'the Mo'aweyyas'.

On the other hand, if the proper name is feminine and it ends with an original /ʔ/ 'ء', it can be pluralised using the feminine plural form even if it is an adjective (AL–Afaghani, 2003; A–Naderi, 2006). Consider the example below (explanations were added by the author):

(43) حسناء   حسناوات
      Hasna:ʔ   [al] Hasna:wa:t (AL–Afaghani 2003: 128)
      'Hasna'a.'   'The Hasna'as.'

'Hasna'a' is an adjective that can be used as a proper name and can be, consequently, pluralised because of its morphological formation; the /ʔ/ 'ء' is an original sound in the name. Nonetheless, pluralising other adjectives that are treated as proper names is impossible as it is triggered by the triconsonantal roots (morphological phonotactic formation of consonants and vowels in accordance with the basic root of the word). For example, عبلة /ʕabla/ 'Ablah' is an adjective with phonotactics (CVCC(V)) similar to the name دعد /Daʕd/ 'Da'ad' (AL–Afaghani 2003: 128). Still, 'Ablah' cannot be pluralised as it is an adjective, while 'Daad' can be pluralised by forming a phonotactic grid into which the vowel 'a' should be inserted (ibid).

In PJ/A, pluralising names of people is not common as there are no systematic rules for pluralising proper names of people. In some cases, even if the proper name is pluralised in PJ/A, it does not follow a morphological rule. For example, the masculine name 'Muhammad' can be pluralised using the feminine plural form instead of the

MSA masculine form. Furthermore, some plural names are found to be unacceptable in PJ/A, which is not the case with MSA, as in the plural 'الحسناوات' 'Al–Hasna:wa:t' 'حسناء' 'Hasna:ʔ'. One possible reason is that PJ/A in particular, and the low Arabic dialects in general, do not undergo the complex morphological processes of MSA in changing the glottal stop in the singular 'حسناء' 'Hasna:ʔ' into a different sound.

It is predicted that the L2 PJ participants and the L3 PJ participants will find it difficult to use the English definite article before proper names of people such as 'the Smiths'. This can be traced to the negative influence from PJ/A, even if the PJ participants are aware of the MSA uses of the definite article with plural names, because of the complexity of this structure in MSA, and the asymmetrical uses of the definite article with plural nouns in PJ/A.

2.8.2.3. Proper nouns of people and places in SMG/CG

The definite article in SMG and CG is not only utilised with common names of places, but also with proper names of people when they occur in argument positions (*SMG:* Giurgea, 2007; Lazaridou-Chatzigoga, 2009; *CG:* Buschfeld, 2013). These names have to inflect for gender, case and number, as shown in:

> (44) a. (O)   Ghiannis   perimeni (tin)   Eleni.
>   The.mas.nom.SG John.mas.NOM wait.3.SG Def.fem.ACC.SG Helen
>   'John is waiting for Helen.' (Kyriakaki, 2011: 6)
>
> b. Ime   pu   tin   Agglia.
>   am.1.SG   from   DEF.fem.ACC.SG   England
>   'I come from England.' (Buschfeld, 2013: 80, explanations were
>   added by the author)

While the definite article is used more than one time because of the expletive nature of the definite article with proper names, it is construed only once (Marinis, 2003; Alexiadou et al., 2007; Alexiadou, 2014).

2.8.3. Appositive titles with proper names

2.8.3.1. English appositive titles with proper names

In the English addressing system, address forms of appositive titles are not preceded by articles. The title is an appositive that pre–modifies the proper name and denotes familiarity (Quirk et al., 1985). Address forms have social functions; thus, they are used before proper names of people to express respect and politeness (Yang, 2010). Such addressing forms are not only used in oral forms but also in written forms (ibid).

Appositive titles are classified into many types. The first type is called honorifics. Some examples are 'Sir', Mr', 'Mrs' and 'Miss' (Jucker, 1992), as in 'Mr. Smith'. The second type is used to refer to the social status of people (Jucker, 1992; Yang, 2010). These types are called courtesy or title ranks. They are classified by Quirk et al. (1985: 291–292) into the following types with their illustrative examples:

> (45) Titles:
> a. royalty titles: *Queen Elizabeth*
> b. nobility titles: *Lord Nelson* and *Judge Fox*
> c. political, clerical and judicial office titles: *President (+proper name)*
> d. military titles: *Major/Private Walker*
> e. academic or professional titles: *Doctor Brown* and *Inspector Harris.*

In English, some appositive titles can be preceded with the definite article when they occur without the personal name in argument positions, such as 'the doctor', 'the president' and 'the judge' (Algeo, 1973, Quirk et al., 1985); however, this feature is not applicable to 'Mr', 'Mrs' and 'Miss' as they cannot occur by themselves (Quirk et al., 1985). For example, you can talk about the president of Cyprus by refereeing to his title as in: *The president had a speech yesterday*, but you cannot use the title *Ms.* without prefixing a woman's name: **Ms. met me yesterday*.

2.8.3.2. MSA and PJ/A appositive titles with proper names

In Arabic, the use of appositive titles in addressing systems serves many functions. Titles in Arabic are referred to as 'ألقاب' 'ʔalqaab' and their use is based on the situation

and the formal relation between interlocutors (Abuamsha, 2010; Ethelb, 2015). The categories of titles with proper names in English are similar to Arabic but, compared with English titles, the Arabic equivalent ones are utilised with the definite article which precedes the titles, as illustrated by the following examples:

	Honorifics	Profession titles	military/political titles	Royalty titles
(46)	السيد+اسم	الدكتور+اسم	الرائد+اسم	الملك+اسم
	ʔasayed+Prop.N	ʔadoktoor+Prop.N	ʔara:ʔid+Prop.N	ʔalmalik+Prop.N
	DEF–Mr.Prop.N	DEF–doctor+Prop.N	DEF–Major+Prop.N	DEF-king+Prop.N
	'Mr. Prop.N.'	'Doctor+Prop.N.'	'Major+Prop.N.'	'King+Prop.N.'

2.8.3.3. SMG/CG appositives with proper names

In Greek, the use of the definite article with 'title + Proper names' construction is not only limited to the addressing system, as the definite article is utilised with all kinds of proper names, either modified or not modified. One exception to the use of the definite article with proper names occurs in vocative and naming constructions (Holton et al., 2004; Lekakou and Szendrői, 2014; Matushansky, 2015). Consider the examples below:

	Honorifics	Profession titles	military/political	Royalty titles
(47)	*O*	*O*	*O*	*O*
	kirios+Prop.N	Jatros+Prop.N	prothipougos+Prop.N	vasilias+Prop.N
	DEF	*DEF*	*DEF*	*DEF*
	Mr+Prop.N	doctor+Prop.N	Major+Prop.N	king+Prop.N
	'Mr. Prop.N	'Doctor+Prop.N'	'Major+Prop.N.'	'King+Prop.N'

2.8.4. Referential and non-referential indefinite NPs

2.8.4.1. Indefinite NPs in English

Within the linguistic perspective of the English indefinite NPs, indefinites are divided into two types: referential/specific or non-referential/non-specific, and the distinction between them is based on discourse and the speaker's intention to refer (Lyons, 1999; Ionin and Wexler, 2003, Ionin et al., 2004; Ionin et al., 2008).

Referential indefinite NPs are presumed to be known to the speaker. Hence, if the speaker intends to refer, the referent is specific [–definite, +specific]; otherwise; it is non-specific [–definite, –specific] (Ionin and Wexler, 2003). These types are illustrated with examples, as follows:

(48) specific indefinite NP as in:
I am here for a week. I am visiting a friend from college – his name is Sam Brown, and he lives in Cambridge now (Ko et al., 2008: 120).

(49) Non-specific indefinite NP as in:
Mary read a book (but I don't know which one) (Ionin and Wexler, 2003: 150).

2.8.4.2. Indefinite NPs in MSA and PJ/A

Arabic low dialects including PJ/A have no indefinite articles; hence, indefinite NPs – either specific or non-specific – are marked as bare NPs (Kharma, 1981; Kharma and Hajjaj, 1997; Bataineh, 2005; 2014; Sadek, 2016) even if they are singular or plural, and referential or non-referential. In contrast, it is claimed that indefiniteness is marked via case markers (e.g. –an, –un, –in) in MSA (Ryding, 2005; Abudalbuh, 2016). Consider the following examples from MSA and the PJ/A:

(50) a.   اشتريت كتاباً جديداً
Ɂishtarayt-u   Ø [kita:b-an jadi:d-an]
bought–1.SG IND.SG–[new book]'
'I bought a new book.'   *Indefinite NP in MSA*

b.   اشتريت كتاب جديد
Ɂishtareit   Ø [ikta:b ijdi:d]
bought–1.SG IND.SG–[new book]'
'I bought a new book.'   *Indefinite NP in PJ/A*

2.8.4.3. Indefinite NPs in Greek (SMG and CG)

In Greek, the indefinite article functions as a numeral (Marinis, 2003; Holton et al., 2004; Kyriakaki, 2011), a determiner and a quantifier (Kyriakaki, 2011). Furthermore, in Greek, sometimes bare NPs are not sanctioned in the object position, not only with massive and plural nouns (Marinis, 1998), but also with singular nouns (Marinis, 2003;

Kyriakaki, 2011; Agathopoulou et al., 2012). This is based on the morpho-syntactic characteristics of the NP in relation to the lexical choice of some verbs, which are associated with certain semantic features (Marinis, 2002). One type of these verbs is the verbs of creation of the class of accomplishment that semantically imply a process rather than an event (Sioupi, 2002). Some examples of such verbs are 'aghorase' 'buy' (Marinis, 2002; 2003; Kyriakaki, 2011) 'build': 'htizo' and 'grafo': 'write' (Sioupi, 2002; Marinis, 2002, 2003). Consider the following sentences:

(51) verbs of accomplishment:
   a. htizo   Ø spiti.
      build–1.SG   IND.SG–house–ACC
      'Build a house.'

   c. Aghorase   Ø kinito.
      buy–PAST–3.SG   IND.SG–cellphone–ACC
      'S/he bought a cellphone.' (Kyriakaki, 2011: 20)

Also, bare nouns in Greek are licit when they are the object of some light verbs[3], such as *'kano':* 'do' or 'make', or the copular *'exo':* 'have' (Marinis, 2003). Similar to English, the verb *'exo':* 'have' takes indefinite object nominals; however, the Greek counterpart can be a bare indefinite object (Kanellou, 2005; Alexiadou, 2014), as in:

(52)   ehi   Ø   kali dulia
        Has–IND.3.SG good job
        'He has a good job.' (Alexiadou, 2014:26).

So far, the focus has been on the cross-linguistic variations in using the article system in English, CG and PJ/A. The following section will review some studies whose findings revealed how linguistic distance and structural complexity of the article system in Arabic and Greek influenced the acquisition of L2 English determiners by L1 speakers of Arabic or Greek.

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[3] Light verbs are also referred to as delexicalised verbs (Lewis, 1993). For example, the English verb 'have' as in 'have a bicycle' means 'possess', which is a lexical meaning, but it is delexicalised when it is used with the NP 'a bath' as in 'have a bath' (Bonelli, 2000: 229). The light verb 'have' as well as 'do' and 'take' denote less semantic contents than verbs such as 'give' and 'take' (Butt, 2003: 1). Delexicalised verbs or light verbs form a predicate with other NPs and constitute *verb+noun phrase* constructions 'as in *have a rest, a read, a cry, a think';* 'take a sneak, a drive, a walk, a plunge', and ' *give a sigh, a shout, a shiver, a pull, a ring* [emphasis added]' (Jespersen, 1965: 117, cited by Butt, 2003).

2.9. Article misuse by L1 Arab/Greek speakers

This section will provide a review of some studies in relation to article misuse by L2 Arab and Greek learners of English. These errors are related to the structures or contexts discussed earlier and found to be problematic for learners of English. In addition, some of these studies investigated the role of the cross-linguistic influence and L2 proficiency in relation to the acquisition of the target properties in English.

2.9.1. Existing research on L2 Arab learners' error types

2.9.1.1. L1 transfer errors related to the use of the definite article

Alenizi (2013) attributed the reason behind the L2 Arab learners' errors in using English determiners to the complexity caused by their L1 structure, as determiners are manifested differently in both languages. However, Alenizi (2013) highlighted that having higher levels in English proficiency was a contributing factor in overcoming the learners' L1 negative influence. One of the constructions that might lead Arab learners to commit errors regarding the use of English determiners is related to the 'of-phrase' construction. In Arabic, the equivalent construction to that English phrase is the Arabic Idafa, which holds a semantic relation between the head noun and the annexing noun.

El Werfalli (2013), for example, compared the composition task results of L2 Libyan Arab university students, who were at the intermediate English proficiency level, with an old study conducted by Kharma (1981). El Werfalli (2013) asserted that the omission errors before the English 'of-phrase' construction were attributed to the L1 negative transfer. However, she confirmed this type of error was less problematic for her participants compared with Kharma's. El Werfalli (2013: 207) provided an example in which some of the participants in her study omitted the definite article before the N1 of 'of-phrase' construction as follows:

> (53) I study at *faculty of Arts.

Another study was conducted by Sadek (2016), who examined Emirati university learners' acquisition of English articles by analysing a corpus of data obtained from first-year university test essays. Sadek (2016: 82) provided this example:

(54) The importance of *the *honesty* in our lives.

Sadek (2016) pointed out that the use of the definite article with the noun 'honesty' might refer to transfer from Arabic, as the Arabic definite article is normally attached to abstract Ns. However, Sadek (2016) missed the fact that this error in particular is related to the negative influence of the Arabic Idafa. In sentence (44), we notice that the italicized NP corresponds to the Idafa construction in which the second noun, which is in this case *honesty*, must be preceded by the definite article in the Arabic equivalent construction.

Awad (2011) found instances of errors traceable to the learners' L1. Some of them were related to the omission of *the* before the name of the city 'Alain' by many of the participants, as elicited from a free composition task. Awad (2011: 74) also documented (transfer) errors from a grammaticality judgement test related to the omission of *the* before the genitive construction, as in 'Price of oil has gone up'.

2.9.1.2. L1 transfer errors related to the use of the indefinite article

Abudalbuh (2016), El Werfalli (2013) and Sadek (2016) confirmed the role of transfer from L1 Arabic in the use of the (in)definite articles since Arabic has the definite article and lacks the indefinite article. More specifically, Abudalbuh (2016) revealed the L2 participants were less target-like in the indefinite [–definite, +specific] and [–definite, –specific] contexts than the [+definite, +specific] and [+definite, –specific] contexts. On the other hand, El Werfalli (2013) found the adult Arab L2 participants' article omission of *a(n)* with singular countable nouns in a multiple-choice task (62%) because of L1

negative influence was less than their errors in the composition task (74%). Some of the examples she provided from the former task are provided below:

(55) a. He has *shop and car.
b. I went to *restaurant.

There were also instances in which the L1 Arab learners of English committed errors which were not related to transfer from L1 Arabic. El Werfalli (2013) and Sadek's findings (2016) demonstrated these instances were related to the overuse of *a(n),* though they were frequently less than transfer errors in the form of article omission. Furthermore, Sadek (2016) provided an analysis of essay texts written by the participants recruited in his study. The analysis showed that the L2 participants overused *the* for Ø with plural generic NPs as they are definite in L1 Arabic. He also reported errors related to the use of Ø for *a(n)* with indefinite NPs because of L1 negative interference.

2.9.2. Existing research on L1 Greek learners' error types

Buschfeld (2013) carried out a study on the linguistic status of English in Cyprus by means of interviews with speakers of Cypriot-Greek. Buschfeld (2013) examined different English linguistic features of oral data obtained from the participants. Thus, the (oral) qualitative data were quantified. For the scope of this study, only results on determiner acquisition will be reported. The L2 Cypriot-Greek participants in Buschfeld's study (2013) were categorised into three groups based on sociolinguistic and historical backgrounds, and they were as follows. The older generation group consisted of L2 participants who were above 60 and had more natural exposure to English. Those participants witnessed the British occupation of Cyprus up to the decline of utilising English in 1974. The middle-aged participants were 30-60 years old. They were also exposed to natural English, but they formally learned it at school. The

participants from the younger generation group were under 30. They mainly learned English through formal schooling.

Buschfeld (2013) hypothesised the L2 participants from the younger generation would show a drop in feature use because of the sociolinguistic decline in using English after the British colony era. The results indicated the performance of the three groups regarding their use of the (in)definite articles was similar. The findings counteracted the hypothesis the older group would be more native-like than the younger group (ibid).

Buschfeld's analysis (2013) of the oral data indicated the L2 Cypriot-Greek participants seemed to be influenced by their L1 by the employment of the spreading feature in the structure 'most of the'. This structure included the quantifier 'most', which should not be preceded by *the*. However, some of the participants seemed to negatively transfer the use of the definite article from their L1 before this quantifier, as in:

(56) a. The most of the times, I was working alone in the bars.
    b. [...], I think the most of the countries (ibid: 115).

The author also recorded instances of the omission of the definite article with place nouns in obligatory definite contexts, as in:

(57) a. I: Uh no, I've never been to England. I've been to New York […] to
    [Ø def. article] *USA*, but never been in England.
    b. I: [...] Uhm, uh sometimes, I just wanted to go somewhere and
    one of the times, I decided to go to [Ø def. article] UK, to England.'
    (ibid: 115).

In addition, Buschfeld (2013) found the rates of the incorrect use of *a(n)* were low or even marginal. Yet, the incorrect use of *a(n)* before singular NPs in the object position (6.32%) was higher than the use of the numeral 'one' in the same position (2.80%), as the Greek indefinite article is confused between two readings: *a(n)* vs. *one*. According to Buschfeld (2013: 116), article omission *a(n)* occurred before singular NPs in the object position; especially with the verb 'have', as in:

(58) I have [Ø indef. article] friend who was in love with uhm with a man

from...Turkey. She has [Ø indef. article] different culture. She has [Ø indef. article] different way to speak.

2.10. The taxonomies of the English experimental items

After discussing the cross-linguistic variations with regard to the determiner system in English, Arabic (PJ/A and MSA) and Greek (CG and SMG), this section will explain how the experimental contexts tested in the two written tasks were designed for the sake of this study to find out how the L2/L3 participants are expected to use the English determiners before definite and indefinite NPs (See chapter three, section 3.5.1). It will also outline how the experimental items incorporate the theoretical perspectives of the semantic features discussed in section 2.2. Thus, six experimental contexts were identified in relation to the theoretical perspectives of the semantic and morpho-syntactic features of determiners.

2.10.1. Contexts (A and B): The N1+N2 items in the 'of-phrase' construction

In English, the definite article can be used with N1 and sometimes with N2 in the 'of-phrase' construction. In contrast, the Greek linear genitive NP construction should pattern with determiner spreading (polydefiniteness) only if N2 accepts the definite article. In Arabic, on the other hand, the use of the definite article occurs only with N2 if the whole structure is definite.

The target experimental items in the 'of-phrase' constructions are based on the different semantic cataphoric relations between the N1 and N2. It is worth noting the English target environment that will be investigated in context (A) is the first constituent 'the+N1', while the environment that will be investigated in context (B) is the second constituent: 'zero+N2'. This construction takes the following English structure:

DEF[$^+$ART N1]+[of–phrase+ $^-$ART N2]
'definite N1+ of + bare N2'.

The prenominal N1 in the above structure is a definite noun, which is premodified with *the*, while the postnominal: N2 is a bare abstract, mass or plural noun. The equivalent English genitive structures in Arabic and Greek are realised as:

'⁻ART–N1 + ⁺ART–N2'   PJ/A Idafa linear adjacent construction
'⁺ART N1 + ⁺ART N2'   CG linear adjacent construction

In relation to Chesterman's concept of locability (1991), Hawkins' Location Theory (1978); Quirk et al. (1985) and Lyons' classifications (1999) of the different uses of the definite article, this section will specify the taxonomy of English determiners that demand the use of the definite article before the 'of-phrase' construction. These taxonomies are triggered by syntax and semantic properties or previous discourse (Abbot, 2004; Hawkins, 1978), and they encode unique identifiable referents by entailment in the cataphoric 'of-phrase' construction. Thus, the type of DPs in which the definite prenominal (N1) and the bare postnominal nouns (N2) occur are *absolutely unique NPs* or *contextually unique NPs*.

The first type of unique NPs is the absolutely unique NPs which does not demand discourse-related factors as the constituents of this construction denote the entailment use of proper names (Lyons, 1999). This type of unique reference was tested in relation to the N1 experimental items of the 'of-genitive' construction. The prenominal, N1, in this construction conveys an appositive relationship (Quirk et al., 1985). For example, if N1 is postmodified with N2: a proper name of people or places, the N1 has to be headed with the definite article but not the post-proper name. An example from the writen tasks is:

(59) THE+[N1+[of+IND–N2]
     The Palace of Versailles

The second type is the contextually unique NPs of the 'of-phrase' construction. This type was tested in relation to both N1 and N2 items, which demand discourse-related factors. This type of contextually unique NPs occurs in nominal deverbal

argument structure (Abney, 1987; Keizer 2007; Ntelitheos, 2012) that implies theme relationship (Quirk et al., 1985; Abney, 1987; Keizer, 2007; Alexiadou et al., 2007). It also occurs in partitive constructions, which imply different semantic relations such as the container (Alexiadou et al., 2007) and part-whole relationships, or attributive (Quirk et al., 1985), identity and causal relationships (Hamawand, 2014).

These contextually unique NPs will be explained with relevant examples from the tasks of the study and they are of three types. The first type is the cataphoric structure (Quirk et al., 1985; Lyons, 1999; Abbott, 2003) that follows the 'of-phrase' construction. The DPs of the experimental examples were modified by a complement NP that entails a cataphoric reference in contexts A and B and they are as follows:

(60) a. NP modified by a relative clause (in parentheses) as in:

The aspects of reality (that you are referring to) are not mentioned in the report.

b. contextual clues (in parentheses) that help in identifying the referent of the NP (Abbott, 2003) as in:
The rules of business have changed (because of the financial crisis that our company suffered from).

The second type of contextual unique NPs is the situational use of the utterance (Hawkins, 1978; Quirk et al., 1985; Birner and Ward, 1994; Lyons, 1999; Berezowski, 2009;). These situations are triggered by contextual factors and shared by the speaker and hearer's familiarity with that referent (Löbner, 1985; Lyons, 1999) as in:

(61) We are against the domination of machines in our society.

The third type is the indirect anaphora (Quirk et al. 1985) or the associative use of NPs (Hawkins, 1978). The associative reference depends on the context, which the hearer can easily recognise or anticipate by linking a definite NP to an entity in a given situation as part of the interlocutors' knowledge (Lyons, 1999; Ryding, 2005), as in:

(62) Philosophy means *the science* of logic.

It is anticipated that using *the* before the N1 in the English 'of-phrase' construction might confuse the L2 groups. More specifically, the L2 PJ participants' non-target-like performance might be linked to negative transfer in the form of omission errors. For the L2 CG group, two different scenarios were predicted. The first is related to the use of *the* before the N1 items in that the L2 CG participants might correctly supply *the,* which is supposed to provide evidence of positive transfer, as L1 in CG is preceded with the definite article in definite environments. The second is to overuse *a(n)* or omit articles*,* as in CG if the N2 is bare, then N1 should be preceded with *a(n).* In that case, their performance will be irrespective of the context-related factors that demand the use of *the* before the target NPs. The L3 participants from both L3 groups are expected either to perform like the L2 PJ participants or the L2 CG participants.

For more clarification, consider the sentence in Table 2.4 which provides an example of contexts A and B from one of the tasks of the study and how the 'of-phrase' construction is realised in Arabic (MSA and PJ/A) and Greek (SMG and CG).

Table 2.3: English 'of-phrase construction and its equivalent constructions in Arabic and Greek

Language	Sentence	Context A: N1	Context B: N2
English	The death of humanity	*the*	Bare
Arabic	Ø death $^{+}$ART–humanity	Ø	Definite unless it is a proper name
Greek	$^{+}$ART death $^{+}$ART humanity	Definite	Definite

2.10.2. Context (C): Definite common proper names of people and places

In English, the use of the definite article with proper names of people and places is sanctioned in specific semantic environments. In contrast, in Arabic, the use of the definite article immediately before proper names is not sanctioned unless the definite article is morphologically an integral part of the noun itself. On the other hand, the

Greek definite article, is utilised with proper names regardless of their syntactic structure.

The types of the tested English DPs of this context are definite and specific proper names in the sense that they denote references but treated as common nouns (Quirk et al., 1985). These proper nouns do not demand discourse-related factors. The use of the definite article in such DPs is licit in certain environments (See section 2.7.3.1). Some of the examples from the tested items are provided in Table 2.5.

Table 2.4: Examples of English common proper names preceded with *the* from the tasks

Example	Type of definite proper names of people/places
Sam will take me to *the New York State Theatre*.	A name of public institutions/facilities such as theatres, houses, hospitals and museums.
The Netherlands is not the same as Holland.	A name of a country in the plural form.
The Smiths in my class are Americans.	A reference to the people who bear the same name.
The Taylors are going to Harvard while their cousin is going to Oxford.	A reference to all the members of the same family.

Thus, it is anticipated the L2 PJ participants will use Ø before the target NPs in context C because of negative transfer from L1 PJ/A. In contrast, the L2 CG participants are expected to use *the* in context C because of the positive transfer from CG/SMG. It is also expected both L1 PJ/A and/or L2/L3 CG might influence the L3 groups as they are the two sources of knowledge available to them.

2.10.3. Context (D): Bare appositives of proper names

The English, Arabic and Greek address forms of courtesy/rank and honorific titles are similar in function. In both Arabic and Greek, appositive restrictive titles are pre-modified with the definite article while in English the same construction is realised without the use of the definite article. The types of English DPs that will be tested in this study are inherently definite, but they are recognised as bare NPs. Some of the illustrative examples from the tasks of the study are as follows:

(63) courtesy or title ranks:
Senator Smith is a respected person, but he is not qualified for his position.

(64) honorifics:
Ms. Malala Yousafzai confronted the Taliban when she was very young.

Thus, it is anticipated the PJ participants and CG participants will overuse *the* in this context because of the negative transfer from Arabic and Greek.

2.10.4. Context (E and F): (Non-)specific indefinite NPs

In English, indefinite singular nouns should be preceded by an indefinite article with (non-)specific NPs regardless of their syntactic positions. In contrast, PJ/A has no overt exponent for indefiniteness, consequently, indefinite NPs are always marked as bare NPs, whether these NPs are singular or plural, specific or non-specific. MSA, on the other hand, has case markers for indefiniteness (Jiang, 2012).

Though the indefinite markers are available in CG (and SMA), the CG indefinite article is omitted with certain types of verbs even in referential contexts. Thus, the specific and non-referential contexts that were investigated in this study aimed to shed light on the use of *a(n)* before NPs as objects of the following types of verbs:

(i) verbs of accomplishment: attend, build, write and buy, and

(ii) light verbs such as 'do'/ 'make': *'kano'*, and copular *'exo'* 'have'.

Though in CG *Ø* is most commonly used with indefinite NPs in the object position, the use of the indefinite article before these NPs does not affect the grammaticality of the sentence. Therefore, this study represents a good ground for investigating the extent to which the L1 CG/SMG learners of English negatively transfer this bare indefinite structure into L2/L3 English.

Accordingly, context E and context F will be tested. Following Ionin et al. (2003), Ionin et al. (2004) and Ko et al. (2008), the target behind context E is to examine the referential/specific indefinite NPs which encode the features [–definite,

+specific]. On the other hand, the goal behind context F is to examine the non-referential/non-specific indefinite NPs which encode the features [–definite, +specific].

The experimental items of context E imply explicit speaker knowledge (ibid), as in the example below from one of the tasks of the study:

(65) I attended *a workshop* in statistics. It was boring.

On the other hand, the experimental items in context F denote denial of speaker knowledge. In other words, the speaker has no previous knowledge of the target NP and does not intend to refer to someone/something (Ionin et al., 2004). Consider the following example from one of the tasks of the study:

(66) My aunt bought *a house,* but I don't know where exactly.

Thus, it is anticipated the L2 PJ participants whose L1 is PJ/A will use Ø before the target NPs in contexts E and F because of the negative transfer from L1 P/JA; PJ/A lacks the indefinite article. In case the L2 PJ participants use the indefinite article properly, then this might be related to the positive influence from MSA (if MSA has an underlying indefinite determiner (Jiang, 2012)). On the other hand, the L2 CG participants are expected to either (i) use the indefinite article as they exist in CG (positive transfer), or (ii) omit the indefinite article because of negative transfer from CG/SMG that is expected to result from the influence of the verbs of accomplishments and light verbs. It is also expected the L3 groups will be influenced either by L1 PJ/A or L2/L3 CG or by both of them (See Table 4.14 in chapter four).

2.11. Summary

This chapter has outlined the different generativist approaches to L2/L3 acquisition. In SLA, three main positions have been discussed. The first is the No Access position (Clahsen and Muysken, 1986; Bley-Vroman, 1989, 1990) which proposes that L2 learners cannot have access to the semantic universals after puberty. The second is the

Partial/Indirect Access to UG (Hawkins and Chan, 1997; Hawkins, 2005; Tsimpli and Mastropavlou, 2008) which claims that the L2 learner can only learn some grammatical aspects of the non-native language by having indirect access to UG through the mediation of L1. The third position is the Full Access to UG with Full Transfer (White, 1990/1991; Schwartz and Sprouse, 1994, 1996; Prévost and White 2000; Lardiere 2005, 2007, 2008, 2009, 2013; Ionin et al. 2008), which proposes that the full access to UG is stable and available to L2 learners. On the other hand, the L3 models are focused on the role of transfer either from the previously learned languages as proposed by the Cumulative Enhancement Model (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017) or from one of them which is the case with the L2 Status Factor (Falk and Bardel, 2011). Consequently, transfer is expected to take place from different perspectives.

It has been argued that the concepts of definiteness and specificity can be determined by means of the semantic interpretation and context-related factors, such as discourse and pragmatics which reflect the speaker/hearer ability of understanding the situation as a whole. Based on these two concepts, the cross-linguistic dichotomies between English, PJ/A (and MSA) and CG (and SMA) were explicated in this chapter to get a better understanding regarding the semantic and parametric variations associated with the determiner system in these three languages/varieties.

It is expected that the L2/L3 learners' interlanguage development can be better understood by examining the role and degree of transfer from L1 PJ/A and L1 CG into L2/L3 English. Accordingly, the cross-linguistic influence can be attributed to many factors, either in SLA or TLA but with different degrees. These factors are age of participants, length of learning L2/L3 English, length of residence in Jordan or/and Cyprus and order of acquisition. In relation to these factors, the bi(dia)lectal situation and the status of English in Jordan and Cyprus, as well as motivational factors, have

been discussed. One of the objectives of this study is to examine the influence of these factors on the acquisition of English determiners by the L2/L3 participants of the study.

There have been several studies in the literature that aimed to inspect how L1 Arab learners of English used the English article system, especially from the generativist perspectives (e.g. Crompton, 2011; Deprez et al., 2011; El Shalaby, 2014; Sabir, 2015; Abudalbuh, 2016; Abumlhah, 2016; Alzamil. 2019; inter alia). On the other hand, there is a little research concerning the acquisition of the English article system by CG speakers within the generativist perspectives to SLA, as seen in studies conducted by Thomas (1989), Hawkins et al. (2006), Buschfeld (2013) and Karpava (2016), and to TLA as represented by Avgerinou's study (2007). Additionally, studies relating to TLA of English determiners by L1 Arab learners have been relatively sparse (e.g. Ouertani, 2013; Hermas, 2018, 2019). In general, based on the results of these studies, the findings revealed the Arab/Greek learners of L2/L3 English used one or two sources of knowledge as (i) they exhibited either negative/positive transfer from the (non-)native language(s), or/and (ii) they accessed UG when the target structure did not exist in L1 and/or L2. These studies attributed the reason behind the learners' misuse of the (in)definite articles to some factors such as (i) the learners' proficiency levels in L2 English; (ii) typological differences between L1 Arabic/Greek and L2 English, or (iii) certain syntactic-semantic or syntactic-discourse structures. The findings of these studies will be later compared with the findings of the current study in the discussion chapter to reach a detailed and theoretical explanation offered by the generativist perspective regarding the acquisition of L2/L3 English determiners.

The main objective behind this piece of research is to investigate the L2/L3 acquisition of English determiners by L1 speakers of PJ/A and CG. Accordingly, six linguistic contexts were specified as problem areas via a contrastive analysis that aims to identify the structural differences and similarities between PJ/A, CG and English.

The following chapter will set out the methodology. It will explain how the tasks of the current study were constructed on the basis of these contexts. It will also help in understanding how the following research questions (RQ)s will be addressed:

-RQ1: What are the similarities and differences among the four experimental groups with respect to the determiner acquisition in L2/L3 English?

-RQ2: Do L2/L3 learners of English transfer from their L1 PJ/A, L1 CG or L2/L3 CG into L2/L3 English with respect to the determiners acquisition?

-RQ3: Can the patterns of acquisition of the PJ learners of L2/L3 English and CG learners of L2 English be explained by the relevant L2/L3 hypotheses namely:

> *SLA:* Full Transfer/Full Access Hypothesis (FT/FA) (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) and Fluctuation Hypothesis (FH) (Ionin et al., 2008), and

> *TLA:* the L2 Status Factor (Falk and Bardel, 2011), the Cumulative Enhancement Model (CEM) (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017)?

RQ4: What is the role of such factors/variables as age of the participants, length of learning English, length of exposure to English, proficiency level in English, length of residence in Jordan or/and Cyprus, motivation, length of learning L2/L3 Greek, order of acquisition and bi(dia)lectal setting with respect to L2/L3 acquisition of English determiners by L1 PJ and L1 CG speakers?

Chapter 3: Methodology

3.1. Introduction

This thesis adopted an embedded sequential mixed-methods design, which required the application of different research methods (Bijeikienė and Tamošiūnaitė, 2013). This study falls into the post-positivist worldview (Lincoln et al., 2018). To understand the research processes of this worldview and its implications, further explanations will be discussed in section 3.2. Section 3.3 provides a detailed analysis regarding the design of the study, namely the sequential embedded mixed-methods design. From there, it discusses the rationale behind choosing this design and the advantages gained from using it. Furthermore, section 3.4 provides information about the participants and how they were chosen and classified. This chapter presents a description of data collection methods, particularly in section 3.5. Issues related to the second language (L2) and third language (L3) participants' proficiency levels in English, Arabic and Greek, recruitment methods, context and data collection methods, are discussed in section 3.6. It also pinpoints the theoretical perspectives followed to construct the questionnaire of the study. Thereafter, it explains the pilot study that was conducted prior to the main study and how it helped in improving the procedures used in the main study. Data analysis and reliability and validity are also discussed in sections 3.8, and 3.9, respectively.

3.2. Philosophical worldview proposed in the study

Morgan (2007: 49) defined paradigm or worldview as a system 'of beliefs and practices that influence how researchers select both the questions they study and methods that they use to study them'. Amongst the most well-known worldviews or paradigms that are discussed in the literature are post-positivism, constructivism, and pragmatism. In order to explain the different theoretical perspectives underpinning each worldview, this section first focuses on identifying the fundamental characteristics of the qualitative,

quantitative and mixed-methods research, and which methodology best fits each worldview philosophy. Then, this section considers the four main criteria that constitute any of the worldview philosophy to justify the theoretical perspectives that ground this study within the mixed-methods approach.

Each of the worldviews positions itself either to qualitative, quantitative or mixed research methodologies. One important and fundamental distinction between the qualitative research and quantitative research is that quantitative research is concerned with numerical data, whereas the qualitative method is not (Rosenthal, 2018). The quantitative approach is 'a set of methods that is based on quantification or measurement and [it] employs statistical, mathematical and computational techniques' (Bijeikienė and Tamošiūnaitė, 2013: 18). This method is mainly used in the *constructivist research*. It can be also used in *the post-positivist research*, depending on the design of the study. The quantitative methodology, along with its relative experimental designs such as the cross-sectional study utilised in this study, can be characterised as being obtrusive because of the use of controlled tools (Mackey and Gass, 2005). Therefore, the researcher designed the suitable tasks to examine a particular phenomenon to obtain data from the participants of the study (ibid). It is also outcome-oriented, as it aims to examine the linguistic performance of a comparatively large number of subjects (ibid). Additionally, the summaries of the quantitative research can be both descriptive and analytical (Easterby-Smith et al., 1994). Quantitative research is based on a known theory, and it is designed to test a set of hypotheses by using suitable tools and tasks to elicit data from the subjects (Rasinger, 2010; Callies, 2015). In view of that, accepting or rejecting these hypotheses is based on the data obtained from the participants (Larsen-Freeman and Long, 1991).

The qualitative research, on the other hand, is associated with the *pragmatic paradigm* more than the other paradigms. Qualitative research does not demand numerical findings. This methodology has the following merits: (a) the collection of data can be obtained from natural or uncontrolled observations and interviews; (b) it is process-oriented, as data can be collected in more than one session (Mackey and Gass, 2005); (c) in terms of validity, it provides 'real', 'rich' and 'deep' data (Larsen-Freeman and Long, 1991: 12) by shedding light on a specific linguistic phenomenon over a long period of time, and (d) it is inductive in that it uses data by focusing on a particular topic to come up with new theories or hypotheses (Silverman, 2011).

The use of qualitative data collection methods needs more time and effort than the use of quantitative methods (e.g. questionnaires including close-ended questions and elicitation tasks) (Creswell, 2014). Qualitative research methods include a variety of techniques for collecting data, such as participants' observations, interviews, content analysis, questionnaires including open-ended questions, case studies, longitudinal studies (Cohen et al., 2011), audio and/or video tape recording (Savin-Baden and Major, 2013) and quantification of data (Bijeikienė and Tamošiūnaitė, 2013).

In the current study, a questionnaire was used to collect qualitative and quantitative data from the participants. The quantitative data were collected by means of close-ended questions to test existing L2/L3 theories in accordance with the relation held among the independent (six linguistic contexts) and dependent variables (Creswell, 2014). The dependent variables were related to the participants' age; onset of learning English, Greek and Arabic; L2/L3 English proficiency level; L2/L3 Greek proficiency level and Arabic proficiency level (for the L3 participants), and how English was used by the participants at home, work, school and university and in the community. The kind of questions used in the questionnaire were also explanatory open-ended questions to collect data related to (i) what motivated the participants to learn English, and (ii)

situations (ibid) about the bi(dia)lectal setting and linguistic status of English in Jordan and/or Cyprus (See section 3.5.2).

The type of the method paradigm and worldwide philosophy chosen by researchers should be guided by the research questions of the study. Some research questions might require the application of mixed-methods approach. The mixed-methods approach simply demands the use of both a quantitative and qualitative data collection in one study (Callies, 2015). This type of research serves many objectives. The integration between the quantitative and qualitative approaches (i) provides a better understanding of the linguistic phenomenon under investigation by comparing qualitative data to quantitative data, and by using both types of data to help report the findings and reach a logical explanation regarding the learner's learnability problem, (ii) provides a multi-level of data collection (Morse, 2003) that is not only based on close-ended quantitative questions but also open-ended qualitative questions (Creswell, 2014), (iii) increases the validity and reliability of the study (Easterby-Smith et al., 1994; Rasinger, 2010) by providing better explanations regarding the research questions and the problems faced while conducting the study (Manchón, 2016), and (iv) helps in overcoming the limitations of one study through the strength of the other strategy (Creswell, 2014; Angouri, 2010). More explanations regarding the different types of mixed-methods approach will be discussed in section 3.4.

Each of the worldview paradigms is defined in terms of four main criteria that best fit their research inquiry and data collection methods. According to Creswell and Clark (2011: 42), the elements that shape any of the worldwide philosophies are *ontology*: 'the nature of reality' (Creswell, 2014: 17); *epistemology*: the relation between the researcher and what is being examined; *axiology*: the role of values and beliefs, and *methodology*: identifying the process of research.

In constructivism, priority is given to qualitative research. According to Lincoln et al. (2018), the advocates of this paradigm believe that there are multiple realities, and they adopt subjective epistemology as it is based on their experiences and their attempt to interpret how the participants construct reality. Creswell (2014) empahsises that constructivists believe that knowledge is constructed in social contexts in relation to their cultural and historical backgrounds. Also, their research is inductive in nature in that they do not test an existing theory but construct their knowledge of reality by generating a pattern of meaning (ibid).

In pragmatism, on the other hand, researchers have the freedom to choose the kind of method or technique that best suits their research (Cherryholmes, 1992). Thus, in terms of priority, the weight of qualitative and quantitative methods can be either equal or not, depending on the research questions of the study (Teddlie and Tashakkori, 2003). In search for reality, pragmatists utilise a pluralistic epistemological approach to generate knowledge about the research problem in social contexts (Morgan, 2007).

The post-positivist paradigm is the worldview implemented in this study. In terms of *ontology*, post-positivists acknowledge the existence of reality which is based on critical realism (Lincoln et al., 2018). Thus, reality is not absolute, but rather imperfect, and it is probabilistically apprehendable (ibid). Post-positivism is commensurable in that researchers can draw features from another paradigm if this paradigm 'share[s] axiomatic elements that are similar, or that resonate strongly between them' (ibid: 174). Post-positivists, for example, can draw from constructionism in forming their understanding and definition of reality (Miller, 2007). In that way, reality is viewed as being objective (Clark, 1998; Lincoln et al., 2018).

Concerning *axiology*, post-positivists adopt the assumption that knowledge is neutral (Scotland, 2012) and the aim behind it is to pursue objectivity (Annells, 1997). Thus, researchers need to scrutinise the methods and conclusions of their studies to enhance validity and reliability by reducing bias (Phillips and Burbules, 2000). Unlike the constructivist philosophy that believes in multi-realities and is constructed in a social way, post-positivists believe reality is single and can be reached in scientific and experimental ways.

Therefore, this study followed some steps in search for reality. It started with identifying the learnability problem faced by the L2/L3 participants in relation to the use of the English (in)definite articles in six contexts, and how these contexts were similar to or different from Arabic and Greek. It also reviewed the literature to identify the potential factors that might influence the degree of cross-linguistic influence from Arabic and/or Greek into English.

As post-positivists believe that knowledge is fallible (Miller, 2007) or imperfect, then the role of the researcher of this study was to test how the participants constructed their knowledge of language. Accordingly, this study followed a scientific approach by conducting an experimental study. It drew features from the qualitative approach and quantitative approach to conjecture the probabilistic causal relationships between transfer and L2/L3 learning outcomes (*ontology*). The quantitative data was obtained by means of a forced-choice elicitation task (FCET) and a grammaticality judgment task (GJT). The tasks aimed to categorise the participants' answers into (non-)target-like use of the (in)definite articles (See section 3.5.1). In addition, quantitative and qualitative data were obtained from the participants using a questionnaire in the form of close-ended quantitative questions and a few open-ended qualitative questions (See section 3.5.2). This triangulation of data collection methods was used after pre-testing these methods through a pilot study for validity purposes. The collected data focused on a

variety of perspectives and judgments as provided by different groups of L2/L3 participants.

As post-positivists suggest that cause influences outcome, the epistemological stance of this study is conceptualised as being reductionistic and cause-and-effect oriented (Creswell, 2013). This study examined small and separate sets of data that encompassed the different theoretical perspectives in second language acquisition (SLA) and third language acquisition (TLA) in relation to the factors that might pertain to L2/L3 acquisition (e.g, age factor, input, motivation, setting, exposure to the L2/L3, etc.).

In addition, the *epistemological stance* of this paradigm views the researcher as an observer during the process of conducting the research; thus, the role of the researcher of the current study was to control the research process without interfering in the actions because any action on the part of the researcher is expected to threaten objectivity and cause bias (Lincoln et al., 2018). According to post-positivists, the goal of empirical research is to start with testing a theory by collecting a set of data (Phillips and Burbules, 2000). However, researchers' findings are not necessarily in line with or against the tested hypotheses (ibid). For example, one of the aims of this study was to test two theories in SLA and three models in TLA. It was found that the results of the L2 groups were in line with the Full Transfer Full Access Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996), but not the Fluctuation Hypothesis (Ionin et al., 2008). The results of the L3 groups were consistent with the predictions of the Scalpel Model of TLA (Slabakova, 2017), and they provided partial support to the L2 Status Factor (Falk and Bardel, 2011). In contrast, the

findings of the L3 groups were not in line with the Cumulative Enhancement Model (Flynn et al., 2004). The four elements that shape the worldwide post-positivist philosophy of the current study are summarised in Table 3.1.

Table 3.1: Characteristics of the post-positivist philosophy adopted in this study

Worldview Elements	How they were realised
Ontology	-This study followed a scientific approach by conducting an experimental study. - It is commensurable in that it drew features from the qualitative approach and quantitative approach to conjecture the probabilistic causal relationships between transfer and L2/L3 learning outcomes.
Epistemology	The study started with testing a set of L2/L3 theories by collecting a set of data by means of two tasks and a questionnaire. The tasks that were designed in accordance with the semantic features of definiteness and specificity. - It is reductionistic and cause and effect oriented. The study examined small and separate sets of data per each RQ. It aimed to provide a logical explanation to the learnability problem in L2/L3 acquisition of English determiners by correlating the participants' performance with some linguistic factors.
Axiology	-Specific procedures and methods were followed to enhance validity and reliability by reducing bias. -A pilot-study was conducted for validity purposes.
Methodology	-The study is deductive in nature. -A triangulation of data collection methods was used.

3.3. The embedded mixed-methods design of the study

This study adopted an embedded sequential mixed-methods design (Bijeikienė and Tamošiūnaitė, 2013). A key feature of this design is that quantitative or qualitative data were nested within a larger design, and the type of nested data were used to support that larger design (Creswell and Clark, 2011). To understand how this design is relevant to the RQs of the study, it is more convenient first to explain the three criteria this design

is based on, as specified by Creswell et al. (2003), Creswell (2014) and Creswell and Clark (2011). These criteria are *implementation,* (Creswell et al., 2003), *priority* (Creswell and Clark, 2011) and *integration* (Creswell, 2014).

Implementation means the sequence or timing of data collection (Creswell and Clark, 2011). Morse (1994, cited by Creswell et al., 2003) proposed a notation system based on sequencing and timing. She identified four types of mixed-methods approaches and they are:

QUAL + quan   (Simultaneous)
QUAL → quan   (Sequential)
QUAN + qual   (Simultaneous)
QUAN → qual   (Sequential)

In Morse's notation system (1994, cited by Creswell et al., 2003), the arrow indicates (→) a sequence, whereas the plus sign (+) indicates a simultaneous collection of data through qualitative and quantitative methods (ibid).

Priority refers to the weight given to the quantitative and/or qualitative research during the process of data collection (Creswell et al., 2003; Creswell and Clark, 2011). The use of any method depends on the design of the study. The design can apply either equal weight or emphasis to each approach, as in the qualitative-quantitative model (qual+quan), or an unequal mixed-methods approach in which the quantitative or qualitative approach is the most dominant. In the models diagrammed by Morse (1994), the approach with the upper case (e.g. *QUAL)* is the most dominant, whereas the approach with the lower case (e.g. *qual*) is the least dominant in terms of the priority criteria.

Integration refers to how quantitative research and qualitative research are combined during the process of data collection and data analysis (Creswell, 2014).

Integration can occur by (i) quantifying data which is essential for data analysis, or (ii) explicitly forming quantitative or qualitative research questions (Creswell et al., 2003).

The basic embedded sequential mixed-methods design of the entire study can be represented by the following notation: 'Cross-linguistic analysis → QUAN+qual' as illustrated by Figure 3.1. The rationale behind choosing the sequence or timing of each phase was (i) to start by exploring the research problem under study (Creswell et al., 2003), which was related to the learnability problem in acquiring English determiners by L2/L3 learners, and (ii) to supplement the second phase in order to answer the RQs of the study. Concerning the *priority* criterion, the first phase underwent a qualitative analysis of the literature while the second phase was characterised for having a less dominant qualitative strand.

Figure 3.1: Embedded Cross-linguistic analysis→ QUAN+qual) sequential design

Phase 1: A cross-linguistic analysis study	*Phase 2: QUAN+qual*	
-This phase started with a cross-linguistic analysis of the literature on how the English article system is utilised in six linguistic environments and how theses contexts match or mis-match with the Arabic and Greek contexts.	Constructing the tasks of the study (FCET and GJT) to examine the six linguistic environments that were identified in phase one in relation to English determiners.	Interpretation *Phase 1 + Phase 2*
- It identified the factors that might pertain to acquisition of English determiners by the L2/L3 participants.	Constructing the questionnaire of the study to examine the role of the different reflections of input, motivation for learning English, bidialectal setting, and length of residence in Jordan and Cyprus on the acquisition of English determiners.	
	Data collection methods	
	Quantification of qual data *Quantitative data analysis*	

As for the *QUAN+qual* concurrent design in phase two, the *integration* of data collection showed features of the embedded design. Thus, the feature of *integration* criteria was fulfilled by incorporating the qualitative linguistic analysis of the determiner system in English, Arabic (PJ/A and MSA) and Greek (CG and SMG) that led to identifying specific linguistic environments in which English determiners (mis-)matched with Arabic and Greek. These environments were quantified into six contexts as demonstrated in section 5.5.1.1. The target contexts were integrated within the *QUANT+qual* design as they were used to construct the tasks/tools of the study (See section 3.5). Finally, the interpretation of data analysis was based on the two phases: influence of a set of factors on the degree of the cross-linguistic influence from Arabic and/or Greek into English.

3.3.1. Phase one: A cross-linguistic analysis of the determiner system in English, PJ/A and CG

Many researchers consider that the literature review can be used as a method and a source of data in mixed-methods designs (e.g. Schmied, 1993; Stake, 2005; Sunderland, 2010; Lewandowska-Tomaszczyk, 2011; Kimambo, 2016; Onwuegbuzie and Frels, 2016). Sunderland (2010) holds the view that a fundamental property of the literature review is that it is a source of the research questions of any study. Sunderland (2010) considers that the researcher can use the literature review to address research questions that have never been answered but are worthy of investigation. Sunderland (2010: 11) further adds that the benefit 'of arriving at research questions through a literature review […], as Andrews (2003: 17–18) points out,' is essential to establish 'a coherence between the literature review and the rest of the thesis'. In order to establish this coherence, the embedded mixed-methods design of the current study started with a thematic analysis of the information obtained from the literature. This analysis was necessary for the post-dominant and complementary quantitative phase.

Following Stake's view (2005, cited by Onwuegbuzie and Frels, 2016), the literature review of the current study was used as an instrumental case study in the sense that it was designed to explore a specific linguistic phenomenon associated with the article system in the three languages under investigation. Therefore, a descriptive cross-linguistic analysis of the determiner system in English, PJ/A and CG in relation to the bi(dia)lectal situations in Jordan and Cyprus was provided in section 2.5 in Chapter two, as no research has investigated this issue. The six experimental contexts that were based on that analysis were divided according to the linguistic environments in which each context occurs, as provided in section 3.5.1.1.

Similar to Stake's view (2005), Onwuegbuzie and Frels (2016) consider the literature review as an embedded study, and more particularly as a case study. Kimambo (2016) used an embedded mixed-methods design that consisted of two phases. Kimambo (2016) indicated that the first phase in his study was based on the literature to prepare a qualitative descriptive analysis of the article system in English and Swahili followed by a quantitative-qualitative phase during which data were collected by using five tasks. Kimambo (2016: 118) stated that the first phase was essential 'to define the 'differences and similarities between English and Swahili in the morpho-syntactic mapping of (in)definiteness and (non-)specificity. The results enabled […Kimambo] to make predictions regarding the possible non-target-like' performances of the L2 Swahili learners.

Following Stake (2005), Sunderland (2010) and Kimambo' (2016) accounts, the cross-linguistic analysis in this study is considered as one type of qualitative analysis within the qualitative methodology. Lewandowska-Tomaszczyk (2011) also suggests that a cross- linguistic analysis involves evident qualitative identifications of the similarities and difference between one language and the other. However, this consideration of the qualitative methodology was used with caution as it did not involve

data collection but rather helped in obtaining information from the literature to prepare a contrastive cross-linguistic analysis. As mentioned previously, there is no previous research exploring L2 PJ, L2 CG and L3 PJ learners' use of English determiners within the nominal domain of the linguistic environments tested in the current study (except for the acquisition of the indefinite article by L2 Arab learners). This highlighted the need to start with a thematic analysis based on the literature to achieve the following goals:

(i) identify the contexts of the linguistic phenomenon under investigation;

(ii) form the research questions of the study;

(iii) construct the tools/tasks of the experimental study in phase two, and

(iv) analyse the data obtained from the participants in light of the tested L2 hypotheses and L3 models.

3.3.2. Phase two: *QUAN+qual* approach and the research questions of the study

In this phase, the primary data were collected by means of two tasks and a questionnaire. The tools were constructed to investigate some linguistic contexts related to English determiners and some of the factors that might pertain to the acquisition of English determiners. All these contexts and factors were identified in the first phase.

This study held a deterministic philosophy by identifying the problem faced by L2/L3 learners while using English determiners, what might cause it and the factors or variables that might influence it (Creswell, 2014). These questions made up the four primary research questions (RQs). The RQs are provided in Table 3.1 Each RQ intended to provide an explanation to a specific idea. For example:

– *RQ1* aimed to experimentally investigate the similarities and differences in the patterns of SLA and TLA of English determiners by the L2/L3 groups;

– *RQ2* looked at the issues of cross-linguistic influence in L2/L3 English acquisition by examining the probabilistic causal relationships between transfer and L2/L3 learning outcomes;

– *RQ3* intended to test the different theoretical perspectives to L2 and L3 hypotheses from the viewpoints of generative grammar 'with a focus on assessing the relationship or association among variables or testing a treatment variable' (Creswell et al., 2003: 173), and

– *RQ4* aimed to investigate the learners' use of language by trying to examine the factors that might contribute to the acquisition of English determiners. This helped explain the L2/L3 learners' learnability problems, which represents the outcome of the learning process.

Details on the design of the second phase are summarised in Table 3.2.

Table 3.2: The research design of the second phase of the study

Approach	NO	Research questions (RQs)	Data collection methods	Type	Materials and/or data analysis techniques
QUAN+qual post-positivist	1	What are the similarities and differences among the four experimental groups with respect to the determiner acquisition in L2/L3 English?	Forced-choice elicitation task (FET)	Production	-Deductive data analysis. -Parametric statistics: analysis of variance (ANOVA): one-way ANOVAs followed by Scheffe post hoc tests.
	2	Do L2/L3 learners of English transfer from their L1 PJ/A, L1 CG or L2/L3 CG into L2/L3 English with respect to the determiners acquisition?	Grammaticality judgment task (GJT)	Grammaticality of language (competence)	
	3	Can the patterns of acquisition of the PJ learners of L2/L3 English and CG learners of L2 English be explained/supported by the relevant L2/L3 hypotheses namely: SLA: Full Transfer/Full Access Hypothesis (FT/FA) (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) and Fluctuation Hypothesis (FH) (Ionin et al., 2008), and TLA: the L2 Status Factor (Falk and Bardel, 2011), the Cumulative Enhancement Model (CEM) (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017)?	FET GJT Language Experience and History questionnaire (Dörnyei, 2003; Li et al., 2006; Mackey and Gass, 2005; Marian et al., 2007; Otwinowska-Kasztelanic and Karpava, 2015)	Production Grammaticality of language (competence) Survey: factual, attitudinal and behavioural data	-Inductive and deductive data analysis -Interpretive commentary: to see if the findings are in line with previous results -Quantification of qualitative data
	4	What is the role of such factors/variables as age of participants, length of learning English, length of exposure to English, proficiency level in English, length of residence in Jordan or/and Cyprus, motivation, length of learning L2/L3 Greek, order of acquisition and bi(dia)lectal setting with respect to L2/L3 acquisition of English determiners by L1 PJ and L1 CG speakers?	FET GJT Language Experience and History questionnaire	Production Grammaticality of language (competence) Survey: factual/ attitudinal/ behavioural data.	-Quantification of qualitative data -Regression analyses

3.4. Participants

A convenience snowball sampling technique as a form of a nonprobability method was followed to get a deeper insight into the phenomenon under investigation (Naderifar et al., 2017). This technique is also called network sampling (Bijeikienėand Tamošiūnaitė, 2013). It was based on choosing the participants randomly by first identifying a group of potential participants; after that, the researcher asked those participants to nominate comparable cases (Milroy and Gordon, 2003). This technique was effective as it saved time, and it maximised the opportunity of recruiting the participant with the target characteristics especially that some of them were not reachable (Naderifar et al., 2017). For example, the researcher found a difficulty in recruiting L2/L3 participants who were supposed to match in terms of certain constructs such as the learners' native tongue: English, PJ/A and CG; learners' standard language: Modern Standard Arabic (MSA) and/or Standard Modern Greek (SMG); type of learners based on the number of languages they acquired: L2 English or CG learners, and L3 English or CG learners, order of acquiring English and CG, and setting: Jordan and Cyprus. Thus, when the researcher met some of the candidate participants, she asked them to nominate other participants and so on.

Different recruitment methods of snowball sampling were followed at different times to collect data. These recruitment methods will be discussed in section 3.4.1. To reduce the bias that might result from using this technique (Naderifar et al., 2017), the researcher had a meeting with the potential participants prior to conducting the study to make sure the L2/L3 participants were grouped in terms of specific variables.

In this study, a control group and four experimental groups of participants, who were 16 years old and above, were recruited. The researcher assumed that this age group would provide more comprehensible metalinguistic judgement, and attitudinal and behavioural data which might not be easily obtained from younger participants. This

might, in turn, help in correlating the participants' interlanguage development with the relevant factors that were tested in the study. The experimental groups were two L2 learner groups and two L3 learner groups. These groups were as follows:

1. L2 Palestinian-Jordanian (L2 PJ) group: the participants in this group were native speakers of Palestinian or Jordanian Arabic (PJ/A). This group consisted of 91 learners of L2 English residing in Jordan.

2. L2 Cypriot-Greek (L2 CG) group was made up of 93 native speakers of CG who were learners of L2 English living in Cyprus.

3. L1 PJ learners of L2 English and L3 CG (L3 PJ-E-CG) group. This group consisted of 50 participants who were recruited from Cyprus.

4. L1 PJ/A learners of L2 CG and L3 English (L3 PJ-CG-E) group: they were 52 participants residing in Cyprus.

5. English native (EN) control group: the participants of this group were 27 English native speakers who were recruited from the United Kingdom (UK), Jordan or Cyprus. They were originally from the UK, United States of America (USA) or Australia.

The L2 and L3 PJ participants were either native Jordanians or from Palestinian origins. They were all matched in terms of certain criteria such as their L1 and their bi(dia)lectal experience in Jordan. The Jordanian participants from Palestinian origins descended from Palestinian families that were expelled from Palestine to Jordan after the Israeli occupation to Palestine between 1948 and 1967. The information extracted from the questionnaire confirmed that the L2 PJ participants were born in Jordan and went through the same bi(dia)lectal linguistic experience in Jordan all their life (See Chapter 1, section 2.5). The reason for checking this piece of information was to find out whether the bi(dia)lectal setting in Jordan had an influence on the acquisition of English determiners by the L2/L3 participants who were native Jordanians or from

Palestinian origins, especially that Palestinian Arabic and Jordanian Arabic do not have the indefinite article while indefiniteness is realised via case markers in MSA (cf. Abudalbuh, 2016).

However, the L3 PJ-CG-E and L3 PJ-E-CG participants had different linguistic experiences than the L2 PJ participants regarding their direct exposure to MSA and PJ/A. This is because the L3 participants either moved from Jordan to Cyprus or were born in Cyprus. Some of the L3 participants spent more years in Jordan than in Cyprus and the opposite holds true for other L3 participants.

In addition, the information extracted from the participants by means of a questionnaire revealed that none of them had lived in an English-speaking country except the EN participants. Table 3.3 provides some pieces of information related to demography and English language background in each group.

Table 3.3: The L2/L3 participants' demographic data and English language background

Groups		Age	Length of learning English	Age of onset to English	Length of residence in Jordan	Length of residence in Cyprus	Gender Male	Gender Female	Length of residence in an English-speaking country
L2 PJ	Number	91	91	91	91		36	55	
	Means (years)	26.15	14.25	6.73	26.15				Not applicable
L2 CG	Number	93	93	93		93	33	60	
	Means (years)	22.99	11.99	7.43		22.99			
L3 PJ-CG-E	Number	52	52	52	52	52	21	31	
	Means (years)	25.94	12.73	7.94	2.94	23.02			
L3 PJ-E-CG	Number	50	50	50	50	50	18	32	
	Means (years)	30.38	12.86	6.76	19.18	11.26			
EN Control	Number	27	23	27	27	27	7	20	27
	Means (years)	32.85	21.78	2.44	.80	2.04			29.04

All the L2 and L3 participants were of different proficiency levels in English on the basis of standardised English proficiency tests such as the TOEFL and IELTS (See section 3.6.2.2 and Appendix 10). The L2 CG participants and the L2 PJ participants

were competent in both the standard and low varieties as they finished their school education in Cyprus and Jordan, respectively (cf. Gass et al., 2008). Some of the participants of the L3 groups were less competent in MSA than the L2 PJ/A participants as they learnt it at home. The L3 groups were also different in the directionality of acquiring English as a second or third language. Furthermore, the participants of the L3 PJ-CG-E group were born in Cyprus or migrated to it when they were 1-13 years old. They acquired CG/SMG when they started attending public or private Cypriot kindergartens/schools. The L3 PJ-E-CG participants were all migrants who moved to Cyprus when they were 6-38 years old. Though the participants from the L3 groups were exposed to Greek in Cyprus, they were different in terms of their age of exposure to and length of learning Greek at school/university/language centres. All the relevant pieces of information are provided in Table 3.4.

Table 3.4: The L3 participants' L2/L3 Greek language background

L3 Groups		Age of onset to Greek	Length of learning Greek
L3 PJ-CG-E	Number	52	52
	Means (years)	5.63	13.38
L3 PJ-E-CG	Number	50	50
	Means (years)	18.08	7.48

3.4.1. Recruitment methods and context

Data were collected from the UK, Cyprus and Jordan. In the UK, the participants were only recruited from Preston, particularly from the University of Central Lancashire. In Jordan, the participants were recruited from two cities: Irbid City and the capital, Amman as they were linked to specific institutions where the researcher had access to the participants. In Cyprus, the participants were recruited from four cities: the capital Nicosia, Pafos, Limassol and Larnaka to maximise the possibility of recruiting L2/L3 learners in their institutions or from the community.

Different recruitment methods were followed, each of which had special characteristics. The first method was a direct recruitment method by contacting the potential L2/L3 participants in their schools/institutions/organisations. The L2 PJ participants were recruited from three private international schools, a public agency and three universities. The L2 CG participants were recruited from an international school, a private university and an engineering company. The focus was on recruiting postgraduate learners or learners from international schools. The reason behind choosing these types of learners was related to the fact that English proficiency levels based on institutional classifications: scores/grades/levels were easily compared with the IELTS bands or TOEFL scores to get consistent and comparable measures for equivalent proficiency levels (see Table 1 in Appendix 10).

In addition, a convenient snowball sampling method was used by asking the participants who were recruited from schools/institutions/organisations to ask other family members or acquaintances if they would participate in the current study (*Guidance and Procedure: Recruitment Methods and Tools, UCLA*, 2012). Regarding the L3 candidate participants, this convenience sampling was used by contacting the expatriate Jordanians who were living in Cyprus after contacting the Jordanian Embassy and the Arab community. It should be noted that the researcher herself is Jordanian of a Palestinian origin, and she normally attends the Jordanian national events (e.g. the Independence Day) at the Jordanian Embassy in Cyprus. Thus, the researcher provided the embassy with the information sheet of the study. After obtaining the official permission from the embassy, the researcher asked the employees there to ask the Jordanians who were in Cyprus if they would like to take part in the study. The Jordanian participants, who gave their consents to take part, were asked to provide their contacts or email addresses. Then, the potential participants (or their guardians) decided

where to meet according to their convenience, especially if they were living in another city.

The recruitment methods used in the UK, Cyprus or Jordan to collect data from the EN speakers were direct or indirect by means of convenient snowball sampling. The EN speakers were directly recruited from the University of Central Lancashire, Cyprus/UK where they were studying. Also, the EN speakers were (i) directly recruited in Jordan; they were American Erasmus L2 learners of Arabic, or (ii) indirectly recruited in Cyprus; they were British, Americans or Australians living in Cyprus, temporarily or permanently.

3.5. Data collection methods

Sampling does not only specify how to select and sample the participants of the study, but also how to specify the sources of data collection methods that should be employed in the study (Bijeikienė and Tamošiūnaitė, 2013). Such methods can be performed by using elicitation tasks, questionnaires and interviews to collect data from the participants.

The basic type of research design that was employed in this study was cross-sectional. The cross-sectional approach takes the form of an experimental study (Rasinger, 2010). Thus, this design was based on investigating a large number of samples in a random way to examine the participants' performances in a particular linguistic phenomenon in two sessions (Callies, 2015; Larsen-Freeman and Long 1991).

A triangulation of data collection methods and theoretical stance were used in this study. The kind of cross-sectional data obtained from the participants was based on two written tasks and a questionnaire, all of which were of the written mode. They are as follows:

1. a Language Experience and History Questionnaire (LEHQ) partially based on Dörnyei, (2003) and Li et al. (2006), Mackey and Gass (2005), Marian et al. (2007) and

Otwinowska-Kasztelanic and Karpava (2015) (See Appendix 6). This tool was used to collect both quantitative and qualitative data.

2. A comprehension grammaticality judgment task (GJT) (See Appendix 7).

3. A production forced-choice-elicitation task (FCET) (See Appendix 8).

The rationale behind using the target tool/tasks is driven by the epistemological stance of this study that aimed to identify the probabilistic causal relationship between transfer (RQs 1 and 2) and the set of factors mentioned in RQ4 in light of the tested L2/L3 hypotheses (RQ3). Therefore, the questionnaire was constructed to collect data related to the target set of factors by focusing on factual, behavioural and attitudinal information as suggested by Dörnyei (2003) (See section 3.5.2). The FCET and the GJT were also constructed to identify the learnability problem faced by the L2/L3 participants regarding their use of the definite, indefinite and zero articles in the relevant contexts. The results related to the participants' performance in both tasks were then explained in light of the target factors (based on factual, behavioural and attitudinal data collected by means of the questionnaire) using suitable statistical analyses to find whether data analysis was/was not in line with the tested L2/L3 hypotheses.

It should be emphasised that the triangulation of both comprehension and production methods does not only boost the reliability and validity of the study, but also provides a deep insight into the differences between language production and language comprehension (Schmitt and Miller, 2010).

3.5.1. Design of the tasks of the study and criteria for data selection

Data selection was based on the following criteria. The first criterion was related to the type of the linguistic environments that were identified in terms of six contexts. The second was the number of items in each context. The final criterion was related to context related factors that were based on the definiteness feature (Hawkins, 1978; Quirk et al; 1985; Chesterman,1991; Lyons, 1999) and the specificity feature (Ionin el

al., 2008) in relation to the different uses of the (in)definite articles. Thus, the data obtained from both tasks were from similar contexts, which according to Bolarinwa (2015), validated the study. For example, contexts A and C aimed to investigate the use of the definite article in definite and specific environments; contexts B and D were related to the use of the zero article with inherently definite NPs and bare nominals as part of the second constituent of the definite 'of-phrase' construction, and contexts E and F were associated with the use of the indefinite article in specific and non-specific environments (See section 3.5.1.1).

Each context in both tasks included 18 sentences (six sentences for each context) of the same linguistic phenomenon in which the English article system was (il)licit. The overall number of the sentences of the two tasks was 108: 72 experimental items and 36 distractors. As a result, each of the FCET and the GJT, as provided in Table 3.5, had 36 sentences as experimental items and 18 sentences as distractors.

Table 3.5: Production FCET/Comprehension GJT

Type of context	Number of contexts	Sentences per context per task	Sentences per task
Experimental items	6	6	36
Distractors	3	6	18
Overall	9	12	54

The distractors of this study were grouped into three contexts (G, H and I). Each context represented an environment of the imperfective aspect in the verbal domain, and it had six sentence items. Also, those aspects implied habitual situations, progressive situations and present situations with stative verbs. The investigation of the distractor items was beyond the scope of this study. However, it was within the potential linguistic phenomena suggested by the researcher in her PhD proposal along with word order in English. Ultimately, the focus of the study was put on the English article system to

thoroughly investigate the learnability problem and structural difficulties associated with this linguistic phenomenon.

The positive effects of distractors, as suggested by Mackey and Gass (2005), lay in the fact that they distracted the attention of the participants from guessing the kind of grammatical phenomenon under investigation. Keating and Jegerski (2015) recommend the distractor items should constitute at least 50% of the overall grammatical items. However, this proportion of distractors might influence the participants' performance in a negative way because of fatigue or tiredness (ibid). Keating and Jegerski (2015) further propose that the number of sentences per session should range between 120 sentences to 160 sentences. To avoid this negative influence on the participants and to keep the normal range of sentences, the tasks of the study were administered in one session, to make sure that the outcome of the participants' performance was more reliable. The questionnaire, on the other hand, was filled in by the participants in another session.

Another limitation that might cause fatigue and familiarity with the experimental grammatical items is related to how the sentences of the tasks are distributed. Thus, the stimulus sentences were balanced 'because data from any cognitive task are potentially affected by both (lack of) task familiarity and fatigue effects, which would most likely occur toward the beginning and the end of an experiment respectively' (Keating and Jegerski, 2015: 17-18). For that reason, the six sentences of each context were balanced in terms of complex vs. simple sentences and subject position vs. object position (except the indefinite contexts in which the relevant NPs were in the object position in specific verb–complement constructions). The aim behind keeping this balance was to enhance the validity and reliability of the tasks, as the participants should react to the stimulus items without being influenced by one type/argument position over the other. In

addition, the distribution of the sentences within each task were randomised by using the Latin Square method (Pezzullo, 2008).

In the FCET, the participants were asked to fill in the blank of each experimental item with the correct use of the definite (*the*), indefinite (*a(n)*) and *zero* articles. Therefore, each context was provided with options in parentheses: (*the, a/an, zero*) (See Appendix 8). It has been argued that this task can test learners' explicit and conscious metalinguistic knowledge (Leung, 2005). This was achieved by designing the task in accordance with the semantic conditions, which are the manifestations of the context-related clues that were important for stimulating the learners' linguistic production of the target structure (ibid). A sample of some experimental sentences from the task are provided in Figure 3.2.

Figure 3.2: A sample of examples from the FCET

Forced elicitation task
Date: _____   Sex: ☐Male   ☐Female
Email address: _____
Please circle the right item in parentheses
A.(I)   1. _____ (The, A/An, Zero) Sultanate of Oman is a beautiful country.
B.(I)   2. The death of_____ (the, a/an, zero) humanity was the topic of our last lecture.

The kind of the GJT that was utilised in the current study was a five-point Likert scale (See Appendix 7). The participants were asked to judge the grammaticality of the target sentence by providing them with grammatical and ungrammatical items. The reason for choosing such a scale was that it is used in linguistic studies (e.g. Al-Mansour, 2007; Carrasco et al., 2011; Alzamil, 2019). This scale is also suggested by Mackey and Gass (2005). The linguistic scheme of the five-point Likert scale is provided with a sample of examples as illustrated in Figure 3.3.

Figure 3.3: A sample of examples from the Grammaticality judgment task (GJT)

Grammaticality Judgment task	

Date: _____   Sex: ☐Male   ☐Female

Email address: _____

Please read the 54 sentences below and judge the grammaticality of each of them. You need to specify in the space after each sentence how the sentence sounds to you by choosing one of the values with their numbers below:

Definitely correct   Probably correct   Don't know   Probably incorrect   Definitely incorrect

    4   3   2   1   0

E.(1I). 5. I finally got high mark in the physics exam. _____

A. (II). 6. City of Amman is a highly populated city. _____

D.(1I). 7. The President Obama was the first black president in the history of the United States of America. _____

It is highly advisable that the grammatical items should not exceed the number of the ungrammatical items, or the other way around (Schütze, 2016). Therefore, the experimental sentences were divided evenly into 18 grammatical items and 18 ungrammatical ones: three grammatical and three ungrammatical items for each context.

In general, judgement methods provide researchers with information about the test takers' competence (Schütze, 2016) as test takers are not asked to produce language, but rather to judge if the items given to them are acceptable on a scale or have a truth value like *yes* and *no* (Ambridge and Rowland, 2013). Thus, the design of the GJT used in this study was in accordance with the assumption that the way L2/L3 participants learnt the target linguistic phenomenon was based on how input was processed (Ganta, 2015). By this means, 'input is converted into intake', which helps learners use 'this material for dual purposes, namely, comprehension and acquisition' (Sun, 2008: 2).

3.5.1.1. The taxonomies of the English experimental items

The taxonomies of English determiners of the tested experimental items as displayed in Table 3.6 were distributed into six contexts, according to the linguistic environments

provided in Chapter 2, section 2.9 (phase one). These contexts were divided into three pairs, and they were tested by means of the two tasks of the study. The first pair of contexts include context A and context C, which signal definiteness and specificity at the syntax-semantics interface. In context A, the use of the definite article is manifested in the different semantic readings of the 'of-phrase' constructions. Context C, on the other hand, is manifested in the use of *the* with proper names of people and places in certain semantic environments.

The second pair of contexts include context B and context D, which are realised as bare nominals. Context B is the second constituent of the 'of-phrase' construction (N2), while context D refers to proper names preceded with appositive titles.

Context E and context F constitute the last pair of experimental items. They signal indefiniteness and (non-)specificity at the syntax-pragmatics interface by either focusing on the referential semantic use of the indefinite article (context E) or the non-referential use of it (context F).

Based on these taxonomies, the cross-sectional data were collected by means of the two tasks of the study: and GJT (see Appendix 7) and FCET (see Appendix 8). The kind of transfer this research was focused on was the negative transfer and positive transfer either from L1 PJ/A to L2/L3 English or L1/L2/L3 CG to L2/L3 English.

Table 3.6: Taxonomies of the determiner system in English, PJ/A and CG

Target experimental Context	Linguistic environment	Target in English	Target in		Kind of transfer		Examples from the tasks *FCET* has three alternatives: *the*, a(n), zero *GJT* on a scale from *0-4*	
			PJ	CG	From PJ/A	From CG		
Context A: Definite prenominal nouns	N1: the head of the 'of-phrase' construction as in 'The goal of life'	*the*	Ø	*the*	negative	positive	FCET	____ (The, A/An, Zero) Sultanate of Oman is a beautiful country.
							GJT	John does not respect the views of people in his team.
Context B: bare postnominal	N2: the second constituent of the 'of-phrase' constructions	Ø	*the*	*the*	negative	negative	FCET	This article talks about the mystery of ____ (the, a/an, zero) love.
							GJT	I found the tank of water empty yesterday.
Context C: Definite common proper nouns	Definite proper nouns of people and places in argument positions	*the*	Ø	*the*	negative	positive	FCET	____ (The, A/An, Zero) Smiths in my class are Americans.
							GJT	When I went to Amsterdam, I visited Van Gogh Museum.
Context D: bare proper names preceded with appositive titles	Proper personal names headed by titles used in addressing system	Ø	*the*	*the*	negative	negative	FCET	(The, A/An, Zero) Senator Smith is a respected person, but he is not qualified for his position.
							GJT	The Ms. Malala Yousafzai confronted the Taliban when she was very young.
Context E: specific indefinite NPs	Singular indefinite NPs as objects verbs of accomplishments, and light verbs	*a(n)*	Ø	Ø	negative	Not clear	FCET	I attended ___ (the, a/an, zero) workshop in statistics. It was boring.
							GJT	My neighbour has Slavic accent. He is from Serbia.
Context F: non-specific indefinite NPs	Singular indefinite NPs as objects verbs of accomplishments, and light verbs	*a(n)*	Ø	Ø	negative		FCET	My professor wrote ___ (the, a/an, zero) book. I wish I knew what it is about.
							GJT	My young brother was wearing a helmet. It looked strange to me.

3.5.2. Design of the questionnaire and criteria for data selection

The Language History and Experience Questionnaire (LEHQ) of the current study was constructed to elicit quantitative and qualitative information from the participants (Appendix 6). It was partially based on Dörnyei, (2003) Mackey and Gass (2005), Li et al. (2006), Marian et al. (2007) and Otwinowska-Kasztelanic and Karpava (2015).

This questionnaire adopted the theoretical perspectives of the former authors as data selection was based on two criteria. The first criterion was related to recruiting the participants in terms of certain constructs such as the participants' L1 to investigate the role of the learners' native tongue on the L2/L3 acquisition of English determiners; whether the participants were second language learners or third language learners as each type of learners was expected to go through different developmental processes; order of acquisition for L3 learners to check the direction of transfer, and setting to investigate the influence of the linguistic status of English and the bi(dia)lectal situation in Jordan and Cyprus on the performance of the participants.

The second criterion for data collection was related to the type of information collected from the participants. Following Dörnyei's taxonomy (2003), the questionnaire was designed to collect factual, behavioural, and attitudinal data as follows:

− Factual data were quantitative in nature and collected by means of close-ended questions to obtain information about the L2 learners' age, gender, onset of time of learning English, and length of learning L2/L3 English or L2/L3 Greek that was based on formal English learning at school, university or language centres (Dörnyei, 2003; Creswell, 2014).

− Behavioural data were collected by means of open-ended qualitative questions and close-ended quantitative questions (Mackey and Gass, 2005; Li et al., 2006; Marian et al., 2007; Otwinowska-Kasztelanic and Karpava; 2015). Close-ended questions were

related to the learners' lifestyles and habits (Dörnyei, 2003) such as their daily exposure to English in three different settings: home, community and university/school/work. Concerning the open-ended questions, the aim was to perceptually get deeper insight into the linguistic experience that the participants had with the high variety (standard) and the low variety (non-standard/dialect) in their countries. The participants were asked to explain why/how/where they learnt each form to make sure that they could identify the difference between the high variety and the low variety. This type of explanatory data was necessary to establish that the factual (quantitative) data (years of learning/exposure to the high and low varieties and length of residence in Jordan or Cyprus) could help in explaining the status of English and the influence of the bi(dia)lectal setting on the acquisition of English determiners by the L2/L3 participants.

− Attitudinal data were obtained by means of open-ended qualitative questions related to the learners' attitude and motivations toward learning English (Dörnyei, 2003; Mackey and Gass, 2005). The L2/L3 learners' attitude/motivations were then quantified into intrinsic/integrative type and extrinsic/instrumental type (See Chapter four, section 4.2).

3.6. Procedures

3.6.1. Ethical considerations

An information sheet (See Appendix 2) and three written consent forms were prepared (See Appendices 3-5) in accordance with the research ethics in SLA (and TLA), as provided by Mackey and Gass (2005). They were also based on the ethics declared by the University of Central Lancashire as represented in the *Ethical Principles for Teaching, Research, Consultancy, Knowledge Transfer and Related Activities* (2012) and the *Code of Human Research Ethics* (2014).

The information sheet (See Appendix 2), consent forms (See Appendices 3-5) and LEHQ (See Appendix 6) were translated from English into MSA and SMG to make sure the participants, who were of low proficiency levels in English, understood everything mentioned in the documents. Thus, a Greek teacher translated them from English into SMG. The Arabic translation of those documents was performed by the researcher, as she speaks Arabic fluently. All the documents were used in the pilot study to make sure they were readily understood by the participants.

3.6.1.1. The information sheet

The information sheet provided the participants with the aims of the study, possible risks, possible benefits of taking part in the study, confidentiality, participants' rights, and who to contact in case of complaints. Therefore, the researcher declared the participants would have time before the study to ask questions and decide if they wanted to take part in the study. While performing the tasks, the participants were given the right to ask the researcher for any further details and to tell her if they wanted to take a break or withdraw. Furthermore, any form of data provided by the participants who withdrew from the study or while conducting it was properly destroyed. Furthermore, the researcher made sure the names of the participants would be kept anonymous.

3.6.1.2. Consent forms

The researcher prepared three types of consent forms (See Appendices 3-5). The first was the parental consent for the participants who were 16 and 17 year olds (Appendix 3). The second was a personal consent for the participants who were 18 and above (See Appendix 4). The third type was an institutional consent (See Appendix 5), which was attained from the organisation: school/university/institutions where participants studied or worked.

3.6.2. Data collection procedures and methodological procedures

3.6.2.1. Data collection procedures

This study was conducted in the UK, Cyprus and Jordan over a period of 16 months. After meeting the participants, each one was given an information sheet. Regarding the participants who were recruited from some institutions/organisations in Cyprus and Jordan, extra procedures were implemented. The researcher started by explaining the aims and objectives of her research study to the school principals and teachers and the managers of those institutions/organisations, before meeting the candidate participants to make sure they were all fully aware of the nature of the study. To avoid any negative impact on the candidate participants from the side of the school principals or teachers and the managers of institutions/organisations, the researcher met all the participants before giving them the consent forms to explain what exactly was required from them. This helped the participants get familiar with the researcher before the start of the study. The participants who gave their consent to take part in the study were given a two-copy consent form to sign; one remained with them, the other remained with the researcher.

To ensure the reliability of the study, the researcher addressed the drawbacks of the participants' familiarity with the experimental items (Keating and Jegerski, 2015) which might have influenced the participants' performance. Thus, distractors were used along with the experimental items. In addition, the distractors and experimental items within each task were randomised by using the Latin Square method to distract the participants' attention from the target linguistic phenomenon (Pezzullo, 2008). In addition, the researcher addressed the drawbacks of the participants' fatigue (Keating and Jegerski, 2015). Accordingly, the tasks of the study were administered in two sessions either on the same day or different days. The participants were asked first to fill out the questionnaire. Then, the FCET was administered straight after the GJT. The participants performed the tasks in different places in quiet environments.

The estimated time for performing the tasks/survey was 45-60 minutes. The participants spent 15-20 minutes for each task/survey. They performed the tasks/survey either individually or in groups. The number of participants in each group ranged between three to 15 in Cyprus and 10 to 30 in Jordan.

3.6.2.2. Procedures for classifying the L2/L3 proficiency levels in English

The information about the L2/L3 learners' proficiency levels in English was collected through the LEHQ. The participants were asked to provide the type of proficiency exams they had in English as L2 and L3 learners, along with their scores or grades in those exams. Based on the 'Common European Framework of Reference (CEFR) for Languages: Learning, teaching, assessment' (2011); 'CEFR Levels: A1, A2, B1, B2, C1 and C2' (2020), and 'Common European Framework: Understanding language levels' (2020-2021), the L2/L3 participants were classified into five proficiency levels in English, as provided in Table 3.7 (See Appendix 10).

Table 3.7: The L3 participants' L2/L3 English proficiency levels

Participants	English Proficiency	CEFR	Number of participants
L2 PJ	Low intermediate	B1	9
	Intermediate	B2	16
	Upper intermediate		25
	Advanced	C1	25
	Upper advanced	C2	16
	Total		91
L2 CG	Low intermediate	B1	16
	Intermediate	B2	14
	Upper intermediate		22
	Advanced	C1	22
	Upper advanced	C2	19
	Total		93
L3 PJ-CG-E	Low intermediate	B1	13
	Intermediate	B2	9
	Upper intermediate		12
	Advanced	C1	10
	Upper advanced	C2	8
	Total		52
L3 PJ-E-CG	Low intermediate	B1	10
	Intermediate	B2	9
	Upper intermediate		14
	Advanced	C1	9
	Upper advanced	C2	8
	Total		50
EN Control	Native		27

Based on the criteria and classifications of all the references cited in Appendix 10 (*Common European Framework of Reference (CEFR) for Languages: Learning, teaching, assessment,* 2011; *CEFR Levels: A1, A2, B1, B2, C1 and C2,* 2020; *Common European Framework: Understanding language levels,* 2020-2021; inter alia), the researcher prepared Table 3.8, which provides the comparable categorisations used to place the participants into the relevant proficiency levels. The diversity of the proficiency examinations was related to recruiting different types of participants in terms of educational levels or status: undergraduate and postgraduate; private sectors

and public sectors, and settings: Jordan and Cyprus. Thus, the different types of English proficiency examinations/taxonomies were as follows:

– placement testing of global English proficiency examinations such as the IELTS bands or TOEFL scores (Gass et al., 2008) for postgraduate students;

– placement testing of global English proficiency examinations (ibid) such as Cambridge GCSE and A level English exams for the participants who were high school students at private schools or in their first year-university, and

– institutional classifications (with institutional criteria comparable to the IELTS/TOEFL) (Callies, 2015).

The participants' proficiency levels that were based on institutional taxonomies, or Cambridge IGCSE, GCSE, or A level English exams and CEFR were compared to the IELTS bands or TOEFL scores to get consistent and comparable measures for equivalent proficiency levels (See Table 3 in Appendix 10).

One last point to add is that some of the L2 CG participants who were recruited from one of the universities in Cyprus, were of the low intermediate level. Their level was based on the Oxford Quick Proficiency Test to determine their language level.

It should be noted that the IGCSE, GCSE, A level examinations and CEFR criterion were not only used to categorise the participants into the different English proficiency levels for the L2/L3 groups, but into the Greek and Arabic proficiency levels for the L3 groups as well.

Table 3.8: English proficiency examinations/taxonomies used in the study

CERF	Proficiency	IELTS Scores	TOEFL Paper	TOEFL CPT (Computer)	TOEFL IBT	Alexander College	University of Nicosia	Intercollage	International English Examination in Jordan	IGCSE as an L2	-IGCSE as an L1 -GCE AS Level English /O level/ A Level
B1	Low intermediate	4-4.5	437-493	123-166	41-58	Academic Preparation: ENGL 095	BENG-060 BENG-070	As obtained from the participants	Not specified (any ≥ 40 and $< 50\%$ was considered within this level)	Not specified	Not included
B2	Intermediate	5	494-510	167-180	59-64	Academic Preparation: ENGL 096	BENG-100	As obtained from the participants	50%	(Any passing grade lower than B)	(Any passing grade lower than C)
B2	Upper intermediate	5.5-6	513-547	183-210	65-78	Academic Preparation: ENGL 097	ENGL-100	ENGL-100	65%	B	C
C1	Advanced	6.5-7	550-587	213-240	79-95	Academic Preparation: ENGL 099	ENGL-101	ENGL-101	75%	A	B
C2	Upper advanced	7.5-9	590-677	243-300	96-120	Academic Preparation: Strategies for University Writing	Not specified	Not specified	(Any score above 90%)	(The *A* score was excluded) A+	(The *B* score was excluded) A

3.6.2.3. Procedures for classifying the L2/L3 proficiency levels in Greek

The L3 PJ participants were of two groups. One of them learnt Greek as an L2 and English as an L3 (L3 PJ-CG-E group). The second L3 group learnt English as an L2 and CG as an L3 (PJ-E-CG group). Their Greek proficiency levels were based on college/language centre certificates such as:

– The national high school certificate (Apolytirion/Lyceum exams) which was classified into different language levels specified by the Cypriot-Greek Ministry of Education and Culture, or the IGCSE, GCSE and A levels of SMG as an L1 (See Appendix 12), which were similar to the English classification exams, or

– Language centre classifications based on the CEFR (see Appendix 12).

Therefore, four groups of Greek proficiency were identified as presented in Table 3.9.

Table 3.9: The L3 participants' L2/L3 Greek language proficiency levels

L3 Participants	Greek Proficiency	CEFR	Number of participants
L3 PJ-CG-E	Intermediate	B2	8
	Upper intermediate		7
	Advanced	C1	21
	Upper advanced	C2	16
	Total		52
L3 PJ-E-CG	Intermediate	B2	11
	Upper intermediate		19
	Advanced	C1	9
	Upper advanced	C2	11
	Total		50

3.6.2.4. Procedures for classifying the L2/L3 proficiency levels in Arabic

The L3 participants were all native speakers of PJ/A. However, their proficiency levels in MSA were evaluated as their experiences with the bi(dia)lectal setting in Jordan was different from the L2 PJ participants who spent all their life in Jordan. Thus, the L3 groups' length of residence in Jordan was identified as a factor associated with the influence of the bi(dia)lectal setting there in relation the acquisition of English

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determiners. The information extracted from the L3 participants revealed that (i) they were studying/ had studied in Cypriot schools, (ii) they learnt MSA at home by their parents or private Arabic tutors, or (iii) they spent more of their life in Cyprus.

The Arabic proficiency levels of the participants in MSA were based on the IGCSE or A levels. Similar to the English and Greek classifications, the same criteria were used to classify the L3 participants into their proficiency levels in MSA. In addition, an Arabic language proficiency placement test was used for the PJ/A speakers who did not have the aforementioned tests (See Appendix 9). This test was based on A level and IGCSE Arabic examinations. It was reviewed and corrected by an Arabic teacher in Jordan under the supervision of a professor in educational psychology and a professor in Arabic literature. The test took 30 minutes. The marks were awarded based on specific mark schemes. The total marks for the test were 16. Accordingly, five groups of Arabic proficiency were identified, and they are provided in Table 3.10[4].

Table 3.10: The L3 participants' L2/L3 Arabic language proficiency levels

L3 participants	Arabic Proficiency	CEFR	Number of participants
L3 PJ-CG-E	Intermediate	B2	16
	Upper intermediate		15
	Advanced	C1	11
	Upper advanced	C2	4
	Native	C2	6
	Total		52
L3 PJ-E-CG	Intermediate	B2	7
	Upper intermediate		7
	Advanced	C1	3
	Upper advanced	C2	6
	Native	C2	27
	Total		50

[4]The CEFR was not directly compared to the Arabic proficiency exam or the Arabic IGCSE/A Level exams. The classifications adopted in this study are based on comparable classifications provided by *different references*. One of these references is the *CEFR Levels: A1, A2, B1, B2, C1 and C2 (2020: Online)* which clearly indicates that the CEFR is used 'to describe achievements of learners of foreign languages across Europe and, increasingly, in other countries'.

3.7. Pilot study

A pilot study was conducted before the main study. The pilot study was used as an assessment of the feasibility of the proposed design, techniques or processes (i) to identify or refine the research questions (Ismail et al., 2017), (ii) to pre-test the tasks/survey (Baker, 1994), (iii) to improve the quality of the main study, and (iv) to know more about the participants' cultural experiences in order to communicate with them easily (Calitz, 2009).

This pilot study started on the 5th of September 2017 and continued for eight weeks in Cyprus and Jordan by implementing a quantitative approach with a(n) (American and British) English control group (n=10); L2 PJ group (n=20); L2 CG-E group (n=20); L3 PJ-CG-E group (n=7), and L2 PJ-E-CG group (n=15).

The quantitative data of the pilot study as well as the main study were collected by means of two written tasks and a questionnaire. They were a production forced-choice-elicitation task (FCET); a comprehension grammaticality judgment task (GJT); and a Language History and Experience Questionnaire (LEHQ) (Dörnyei, 2003; Mackey and Gass, 2005; Li et al., 2006; Marian et al., 2007; Otwinowska-Kasztelanic and Karpava, 2015). The between-group and in-group results of the FCET were analysed thoroughly, whereas only the between-group results of the GJT were analysed because of time limitation.

Teijlingen and Hundley (2001) specified the necessary procedures the researcher should follow while conducting a pilot study. These procedures aimed to enhance the validity of the tools related to the time needed to perform the tasks by the participants; feedback provided by the participants; evaluating the type of the questions used in the questionnaire and the two tasks, and whether the participants provided suitable responses. By following these instructions, the piloting of the experimental items through the FCET and the GJT, allowed the researcher:

– to improve the instructions and procedures used in the main study; thus, the researcher kept reminding the participants to answer all the questions;

– to estimate the time needed to perform the tasks/survey: The participants spent 15-20 minutes for each task/tool;

– to check the participants' familiarity with the tools, and

– to check the appropriateness of the target experimental items. This was based on the answers provided by ten native speakers of English – six of them were undergraduates of English language or academics in linguistics or postgraduate students in linguistics residing in Jordan or the UK.

3.8. Data analysis

The obtained data were analysed by using IMB SPSS Statistics 26 (IBM Corp, Armonk, NY, US) and STATA/MP 14.0 (Stata Corp, Texas, USA) software. The statistical tests used in the current study were as follows:

-One-way analysis of variance (ANOVAs) followed by Scheffe post-hoc tests to find whether the L2/L3 groups followed (a)symmetrical ways in using the English articles and the extent to which their use of articles was similar to or different from the EN control group (cf. Ionin et al., 2008; Snape, 2008; Abudalbuh, 2016; Kimambo, 2016).

-Paired Sample t-tests to identify the source and direction of transfer.

-Ordered Probit regression analyses and multiple linear regression analyses to assess the relationship between the factors mentioned in RQ4 and the performance of the L2/L3 participants, and if any of these factors can help in explaining the learnability problem faced by the L2/L3 participants regarding their use of English determiners.

Furthermore, the results of the two tasks were compared with each other and relevant conclusions with respect to the tested L2/L3 acquisition hypotheses were drawn. The qualitative data that were collected by means of the questionnaire were

quantified. All the statistics in relation to the RQs of the study are presented in Table 3.1, section 3.3.2. They were also explained thoroughly in the results chapter.

3.9. Validity and reliability

Two important concepts regarding the quantitative and qualitative methods are related to reliability and validity. Validity is concerned with the truth-value of a certain measurement, and the scores obtained from the use of that measurement (Davies and Elder, 2005). It refers to the extent to which the test/measurement tests/measures the variable supposed to be tested/measured, whether this variable refers to knowledge, skill, or even ability (Hulstijn, 2005). Creswell (2014) holds the view that establishing validity in qualitative research has different procedures and types from that found in quantitative research. The forms of qualitative validity in this study were based on checking certain research criteria such as range of data collection; recruiting a justifiable and representative sample of participations; using a triangulation of data, methodology and philosophical stance, as well as integrity, deepness and objectivity on the side of the researcher (Winter, 2000 cited by Cohen et al., 2011).

In quantitative data, validity can be enhanced by taking into account the importance of careful sampling and numerical treatments of data and the design of suitable instruments (Cohen et al., 2011). The most prototypical types of validity are internal validity, external validity and face/content validity. External validity implies the findings can be generalised to a bigger population (Mackey and Gass, 2005; Quimby, 2012). Thus, sufficient data have to be obtained about the participants and settings (Mackey and Gass, 2005). Therefore, a questionnaire was prepared to collect the necessary data about the participants. In addition, further descriptions of the settings in which, and during which, the tasks of the study were conducted were provided.

Internal validity is the treatment effects which are based on certain circumstances (Quimby, 2012). Thus, the researcher's role was (i) to make sure the number of experimental items in each task of the study was balanced; (ii) to make sure some of the details remained uncovered to the participants to reduce any potential bias, but without causing any harm to the participants; (iii) to check that the test takers were provided with clear instructions, and (iv) to decrease the factors expected to negatively influence internal validity such as the participants' lack of attention, attitude, fatigue, the place, the instruments used and the effects of the tests (Mackey and Gass, 2005).

Face Validity is based on how the test takers consider the contents and items of the test as being related to the study before administering the tasks. To ensure this type of validity, all the tools – including the information sheet and the consent forms –were approved by the University Research Ethics Committee at the University of Central Lancashire on 13 September 2017 (See Appendix 1a). They were also approved by the Cyprus National Bioethics Committee on 14 March 2018 (See Appendix 1b). Prior to this step, the tasks/tool of the study were first checked and approved by the researcher's supervisory team. In addition, the participants' familiarity with the tasks of the study was confirmed via the pilot study to pre-test the questionnaire and the tasks before conducting the main research. The participants did not show any difficulty while performing the tasks as they stated that they had done similar elicitation tasks at school.

Reliability, on the other hand, is defined by the degree to which the use of the same measurements can bring about or duplicate the same findings, or approximately similar findings (Rasinger, 2010). The problem with checking reliability lies in keeping the outer factors steady (ibid); otherwise, the divergence in results between one measurement and the other may influence validity. The reliability of this study was estimated by three ways: stability, equivalence and internal consistency. Stability was tested by parallel-form reliability or alternate-form reliability. Bolarinwa (2015)

suggests that, in parallel-form reliability, the participants' responses to the experimental items should be consistent when using alternative forms of tasks that aim to measure the same construct(s). Additionally, the instrument is said to be reliable if the same test is administered to two different groups of participants who are matched in terms of specific construct variables such as age, gender and so on (Cohen et al., 2011). To secure the parallel-form reliability of this study, the researcher followed these steps. First, the experimental items of the two tasks were constructed to test the same contexts. Second, the experimental items in each task were of the same number (six sentences for each context). Furthermore, the researcher addressed the limitations of the study, such as the participants' fatigue and familiarity with the experimental grammatical items (Mackey and Gass, 2005; Keating and Jegerski, 2015), which might influence the participants' performances. Consequently, the tasks and the questionnaire were administered in two separate sessions either on the same day or on different days. In addition, the participants did not exceed the estimated time for performing the tasks and the questionnaire, which took 45-60 minutes. Finally, the instruments were administered to four experimental groups of participants who were matched in terms of specific variables (Cohen et al., 2011), all of which are mentioned in RQ4.

Equivalence is another variety of alternate-form reliability. Equivalence is threatened when more than one person provides different judgements or when their judgments are not consistent (Bolarinwa, 2015). In order not to threaten equivalence reliability, this study was conducted by the researcher herself; she followed the same procedures and instructions with all the groups of the study.

The internal consistency related to the scores of the tasks was checked using the coefficient alpha (Hogan et al., 2000). The values of coefficient alpha tests were 0.83 for the FCET and 0.87 for the GJT. Thus, the reliability of the tasks was proved, as the values were good for the internal consistency of both tasks (George and Mallery,

2003). Internal consistency highlights that experimental items probing the same variable/context are essential for ensuring validity (Tavakol and Dennick, 2011). Accordingly, six experimental contexts were tested by means of the two tasks of the study.

3.10. Summary

This study employed an embedded sequential mixed-methods design, which best fits the post-positivist paradigm. It started with a contrastive analysis study and followed by a QUAN-qual concurrent phase. The first phase was based on the literature review in Chapter two to gain insights into the cross-linguistic similarities and differences of the determiner system in PJ/A and CG and English. This cross-linguistic analysis constitutes the infrastructure of the study, as it helped in addressing the research questions of the main study and to construct its tasks: the production FCET and the comprehension GJT as well as the LEHQ. These tasks/tools were used to collect quantitative and qualitative data, and they incorporated the different kinds of validity, either in qualitative research or in quantitative research.

Moreover, this chapter provided information about the participants who were recruited by following a snowball random sampling technique. Furthermore, detailed explanations were provided concerning the procedures used for data collection, and the criterion utilized to classify the L2/L3 participants into different proficiency levels in English and the L3 participants into different proficiency levels in Greek and Arabic. The current study also explained how data were analysed and what kind of measures were utilised to establish the validity and reliability of the study.

In what follows, Chapter four will present the findings in relation to the performance of the L2/L3 groups. Chapter four will also address the RQ of the study.

Chapter 4: Results

4.1. Introduction

This chapter presents the results of the data obtained from four experimental groups from Cyprus and Jordan in relation to the acquisition of English determiners in second language acquisition (SLA) and third language acquisition (TLA). The experimental groups were second language Palestinian/Jordanian (L2 PJ) group; L2 Cypriot-Greek (CG) group; L1 PJ learners of L2 English and third language (L3) learners of CG (L3 PJ-E-CG), and L1 PJ/A learners of L2 CG and L3 English (L3 PJ-CG-E). It also presents the results of an English native (EN) control group. Data were collected by means of a questionnaire and two tasks: a production forced-choice elicitation task (FCET) and a comprehension grammaticality judgement task (GJT). Both tasks were designed to test the same linguistic environments of English determiners as they (mis)match with Palestinian-Jordanian Arabic (PJ/A) or CG. These environments were classified into six contexts: contexts A and C to test for the definite article (*the*) use; contexts E and F for the indefinite article (*a(n)*) use, and contexts B and D for the zero article (*Ø*) use. The analysis of the data aimed to answer four research questions (RQ)s:

-*RQ1:* What are the similarities and differences among the four experimental groups with respect to the determiner acquisition in L2/L3 English?

-*RQ2:* Do L2/L3 learners of English transfer from their L1 PJ/A, L1 CG or L2/L3 CG into L2/L3 English with respect to the determiners acquisition?

-*RQ3:* Can the patterns of acquisition of the PJ learners of L2/L3 English and CG learners of L2 English be explained/supported by the relevant SLA/TLA hypotheses, namely:

SLA: Full Transfer/Full Access (FT/FA) Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) and Fluctuation Hypothesis (FH) Ionin et al., 2008), and

TLA: the L2 Status Factor (Falk and Bardel, 2011), the Cumulative Enhancement Model (CEM) (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017)?

-RQ4: What is the role of such factors/variables as age of participants, length of learning English, length of exposure to English, proficiency level in English, length of residence in Jordan or/and Cyprus, motivation, length of learning L2/L3 Greek, order of acquisition and bi(dia)lectal setting with respect to the L2/L3 acquisition of English determiners by L1 PJ and L1 CG speakers?

4.2. Logic behind the analysis of the data

Data were analysed using IMB SPSS Statistics 25 (IBM Corp, Armonk, NY, US) and STATA/MP 14.0 (Stata Corp, Texas, USA) software. All the statistical tests were considered to be significant at the *0.05 level and highly significant at **0.001. To answer RQ1, one-way analysis of variance (ANOVA) and Scheffe follow-up post-hoc statistical tests were computed to determine whether the means of the scores across the five groups of participants indicated significant differences (cf. Ionin et al., 2008; Snape, 2008; Abudalbuh, 2016; Kimambo, 2016). This was necessary in order to compare the L2/L3 groups' performance to the ceiling performance of the EN group, and to find whether the performance of the L2/L3 groups was similar to or different from each other.

To answer RQ2, which was focused on identifying the source(s) of transfer, Paired Samples t-tests were performed to find whether the means of transfer errors from Arabic or/and Greek were higher than the means of non-transfer errors. Further statistical analyses were run to double-check the source(s) of transfer for the L3 groups. Therefore, Ordered Probit regression analyses were conducted to assess the relationship between the L3 groups' use of the target article and their proficiency levels in Arabic

and Greek. Regarding the L2/L3 groups' use of the indefinite article, Paired Sample t-tests were run to check for the specificity effect (cf. Ionin et al. 2008, Abudalbuh, 2016; 2008; Kimambo, 2016). Checking the specificity effect was essential to test the FH (Ionin et al. 2008).

In relation to RQ1 and RQ2, the results of the FCET were measured based on the mean percentages, as the participants' answers were either target-like or non-target-like. In contrast, in the GJT, the participants were asked to rate the (un)grammaticality of the sentences on a five-point Likert scale ranging from 0 to 4 to determine whether each sentence was acceptable or not (See Chapter three, section 3.5) as follows:

Definitely correct 4	Probably correct 3	Don't know 2	Probably incorrect 1	Definitely incorrect 0

As the participants' answers were based on a scale of judgements rather than clear-cut *yes* or *no* answers, the raw data were provided as mean scores (cf. Kimambo, 2016). For example, in the FCET, the participants were provided with three options: a correct answer and two incorrect answers. Accordingly, the mean percentage scores represented a clear cut of the target and non-target-like use of English determiners. In the GJT, on the other hand, the results were provided as mean scores; the participants' answers were based on a scale of judgments (from 0-4) rather than a definite answer of correct or incorrect judgments. Moreover, to specify the source(s) of transfer, the experimental sentences in the GJT were divided evenly into three grammatical sentences and three ungrammatical sentences. The sentences provided as ungrammatical had to be given 0 or 1 on the Likert scale. The grammatical sentences, on the other hand, had to be rated 3 or 4 on the Likert scale. The researcher assisted the participants and provided support and explanation. If the participants were confused or not sure about their judgements, they were asked to rate the sentence with a score of 2 'I don't know', on the Likert

scale. In this way, two types of data were collected from the participants. The first type was related to the participants' comprehension (GJT) that reflected their competence (Schütze, 2016), whereas the second was related to the participants' production (FCET) that demanded more metalinguistic awareness (Leung, 2005).

The focus of RQ4 was on investigating the influence of a set of factors. To identify these factors, the L2/L3 participants were asked to complete a Language History and Experience Questionnaire (Dörnyei, 2003; Li et al., 2006; Mackey and Gass, 2005; Marian et al., 2007; Otwinowska-Kasztelanic and Karpava, 2015). One of these factors was related to the different reflections of English input. These reflections of input were in the form of (i) English proficiency; (ii) length of learning English; (iii) rate of daily exposure (from 0% into 100%) to English at home; (iv) rate of daily exposure (from 0% into 100%) to English at university/school/work; (v) rate of daily exposure (from 0% into 100%) to English in the community, (vi) age of participants, and length of residence in Jordan and/or Cyprus which was associated with the influence of the bi(dia)lectal setting in both countries.

Another factor was related to motivation. The data extracted from the participants by means of the questionnaire showed they were extrinsically or/and intrinsically motivated. The types of *extrinsic* and *intrinsic* motivations as provided by the L2/L3 groups are tabulated in Table 4.1. They were ordered in an ascending order: *extrinsic* for the participants who learnt English for functional reasons such as job perspectives, education and family pressure; *intrinsic* for the participants whose interest in learning English was driven by their willingness to learn a new language, and *both* for the participants who were intrinsically and extrinsically motivated.

Table 4. 1: Categories of motivation as provided by the L2/L3 participants

	Constructs for *extrinsic* motivation	Constructs for *intrinsic* motivation	*Not clear*
L2 PJ	–Job and school; I studied in an English school; a mandatory subject; participation in the UN mission; for higher education. –The language of the world; global language; international language.	–I am fond of watching movies*;* to become an English teacher. –to understand others' cultures; for communication. –To improve my language; education ambition; the urge for learning; to get more experience.	Use of short expressions or words, *e.g.* my sister; need; community.
L2 CG	–Family wish [to learn English]; my mum's wish ; my dad's [wish]; parents' [wish]. –Society: [i]t is used in Cyprus a lot. –Educational reasons; career reasons; communication; to study in the UK. –I must learn it; I have to; no motivation since I studied in an English school; I'm forced to learn it. –The language of the world; a worldwide language; global language; international language.	My self (I want to study it); my girlfriend. For myself (self–motivation).	–Use of abbreviations, *e.g.* Idh. –Use of short expressions or words, *e.g.* normal; very much.
L3 PJ–CG–E	–Important for communication in Cyprus; used all the time in Cyprus; because I live in Cyprus; used in daily life and work/study/ school/university. –Globalisation; the language of the world; a worldwide language; international language. –Parents (parents' wish to learn English).	–[For] knowledge, I love English. –to communicate with the foreigners. –Hobby.	Use of short expressions or words*,* *e.g.* English.
L3 PJ–E–CG	–School; work, university, work, community; widely used in the country; I grew up learning it. –The language of the world, a worldwide language. international language; important language. –Parents' (wish to learn English).	–Hobby. –Communication with foreigners; to learn new things/ new languages. –It is easy to learn. –TV; movies; songs; friends.	

Some of the L2/L3 participants did not provide any explanations on what motivated them to study English and some of the explanations were not clear. The L2 participants from both groups who did not provide any explanation (*none*) or whose explanations were *not clear* were more than the L3 participants from both L3 groups. This can be explained in light of the fact that the number of the L2 participants was more than the L3 participants who were met in separate meetings which, in turn, provided the researcher with '[l]ittle or no opportunity' to elaborate on the [L2] respondents' answers or the unclear ones (Dörnyei 2003: 11). Table 4.2 illustrates the sums and percentages of the L2/L3 participants who were classified in each category.

Table 4.2: Number/percentage of the L2/L3 participants in each category

Classification	L2 PJ		L2 CG		L3 PJ-CG-E		L3 PJ-E-CG	
	sum	%	sum	%	sum	%	sum	%
none	10	11.0	17	18.3	4	7.7	-------	-------
not clear	3	3.3	4	4.3	1	1.9	-------	-------
extrinsic	54	59.3	50	53.8	33	63.5	37	74.0
intrinsic	17	18.7	18	19.4	10	19.2	6	12.0
both	7	7.7	4	4.3	4	7.7	7	14.0
Total	91	100.0	93	100.0	52	100.0	50	100.0

Following Yow and Li (2015), different statistical techniques were used to maximise the opportunity of testing the influence of all the variables mentioned in RQ4 and to avoid multicollinearity. Accordingly, Ordered Probit regression analyses and multiple linear regression analyses were performed for each context for each group with different sets of independent variables. This helped in getting more reliable and interpretable results (Dormann et al., 2013). Thus, two set-up independent variables were entered in the Ordered Probit models, as displayed in Table 4.3, namely in column three. Regarding the second statistical test, three set-up independent variables were entered in the multiple linear regression models, as seen in column four in the same table.

Table 4.3: Sets of variables measured by the Ordered Probit model and the multiple linear regression analysis model

Group	FCET	GJT	Ordered Probit regression models	Multiple linear regression models
	Dependent variables in each model		Set of independent variables	Independent variable
L2 PJ group	Model 1.(i): Context A Model 1.(ii): Context B Model 1.(iii): Context C Model 1.(iv): Context D Model 1.(v): Context E Model 1.(vi): Context F	Model 5.(i): Context A Model 5.(ii): Context B Model 5.(iii): Context C Model 5.(iv): Context D Model 5.(v): Context E Model 5.(vi): Context F	(1) English proficiency; (2) length of learning English; (3) rate of daily exposure to English at home; (4) rate of daily exposure to English at university/school/work; (5) rate of daily exposure to English in the community, and (6) age of the participants	(1) length of residence in Jordan (1) Motivation: intrinsic vs. extrinsic (3) Motivation: intrinsic vs. *both*
L2 CG	Model 2.(i): Context A Model 2.(ii): Context B Model 2.(iii): Context C Model 2.(iv): Context D Model 2.(v): Context E Model 2.(vi): Context F	Model 6.(i): Context A Model 6.(ii): Context B Model 6.(iii): Context C Model 6.(iv): Context D Model 6.(v): Context E Model 6.(vi): Context F		(1) length of residence in Cyprus (2) Motivation: intrinsic vs. extrinsic (3) Motivation: intrinsic vs. *both*
L3 PJ-CG-E	Model 3.(i): Context A Model 3.(ii): Context B Model 3.(iii): Context C Model 3.(iv): Context D Model 3.(v): Context E Model 3.(vi): Context F	Model 7.(i): Context A Model 7.(ii): Context B Model 7.(iii): Context C Model 7.(iv): Context D Model 7.(v): Context E Model 7.(vi): Context F	(1) English proficiency; (2) length of learning English; (3) rate of daily exposure to English at home; (4) rate of daily exposure to English at university/school/work; (5) rate of daily exposure to English in the community; (6) age of the participants; (7) Greek proficiency; (8) Arabic proficiency, and (9) length of learning Greek	(1) length of residence in Cyprus (2) length of residence in Jordan (3) Motivation: intrinsic vs. extrinsic (5) Motivation: intrinsic vs. *both*
L3 PJ-E-CG	Model 4.(i): Context A Model 4.(ii): Context B Model 4.(iii): Context C Model 4.(iv): Context D Model 4.(v): Context E Model 4.(vi): Context F	Model 8.(i): Context A Model 8.(ii): Context B Model 8.(iii): Context C Model 8.(iv): Context D Model 8.(v): Context E Model 8.(vi): Context F		

Both models were performed to find whether any of the explanatory independent variables had a significant influence on each of the dependent variables (Yow and Li, 2015). The aim behind conducting the Ordered Probit regression analyses was to see how the increase of the independent variables might accelerate the process (Sy et al., 1997) of learning English articles. The dependent variable y_i^* for each context represents six categorical/total scores: 1, 2, 3, 4, 5 and 6 on the FCET and four factor scales: 1, 2, 3 and 4 on the GJT. There was one set of coefficients with five intercepts (cut-points or thresholds) and six sets of marginal effects for the FCET. For the GJT, there was one set of coefficients with three intercepts and four sets of marginal effects. The marginal effects obtained from the Ordered Probit regression analyses explained the change of probability in the independent variable in relation to each dependent variable (Breen et al., 2018). The likelihood-ratio of the Chi square (χ^2) tests of all the models (p <0.0001 or p-value=0.000) implied that at least one of the coefficients in the model was not equal to zero (Sy et al., 1997). The likelihood-ratio of the χ^2 tests are provided in Appendix 14 for the FCET and Appendix 18 for the GJT.

To test the FH (Ionin et al., 2008), the focus was on the English proficiency effect mainly investigated in the literature; particularly by Ionin (2003), Ionin and Wexler (2003) and Ionin et al. (2004, 2008), as well as other studies that investigated the acquisition of English determiners by Arab speakers (Sabir, 2015; Abudalbuh, 2016; Alzamil, 2019) and Greek speakers (Hawkins et al. 2006). Thus, the analysis of data that were relevant to the use of *the* and *a(n)* aimed to test for the specificity effect of the FH by focusing on the English proficiency level of the participants.

4.3. L2/L3 predictions based on the tested L2 and L3 hypotheses

The findings of the study were analysed in light of the L2/L3 theories mentioned in RQ3. In relation to the data obtained from the L2 groups, the definite contexts (A and C) and indefinite contexts (E and F) tested the predictions of both L2 hypotheses.

However, contexts B and D tested the predictions of the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) but not the FH (Ionin et al., 2008) as the latter hypothesis only predicts the errors linked to *the* and *a(n)*. These predictions are based on how the determiner system is realised in PJ/A and MSA and in CG and SMG in relation to the bi(dialectal) situation in Jordan and Cyprus. However, more emphasis will be given to PJ/A and CG.

Hence, to lend support to the theoretical perspectives of the L2 hypotheses, it is envisaged that the FH (Ionin et al., 2008) will be accepted if fluctuation overrides transfer because PJ/A lacks the indefinite article. Therefore, the participants will have full access to the principles and parameter settings of universal grammar. They are expected to fluctuate between the definiteness feature and the specificity feature of the Article Choice Parameter (ACP) at the initial state of L2 acquisition. However, the L2 participants' interlanguage grammar is expected to be more target-like with the increase of input. The FH will be also accepted if transfer overrides fluctuation because, as argued by Jiang (2012), MSA, has an underlying indefinite determiner.

The FH will also be accepted if transfer overrides fluctuation in the case of the L2 PJ whose L1 PJ/A and MSA have the definite article. Hence, it is predicted the participants will not find it difficult to supply *the* in the target contexts, even when they are at lower English proficiency levels.

Regarding the L2 CG participants' performance, the study will be in line with the FH if transfer overrides fluctuation, as L1 CG and SMG have the definite and indefinite articles. Therefore, it is predicted the L2 CG participants will not find it difficult to supply *the* and *a(n)* in the target contexts even when they are at lower English proficiency levels.

On the other hand, the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) will be substantiated if the L2 PJ and L2 CG participants'

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interlanguage grammar (that reflected the configurations of their L1 article system) are restructured with the help of the different forms of input investigated in this study. Thus, the L2 groups are expected to transfer the determiner category which is present in the representation of their L1s (CG/SMG or MSA) into their L2 with the increase of certain forms of input. As PJ/A has a determiner system that partially overlaps with English (Jiang, 2012), the L2 PJ participants are expected to be negatively influenced by their L1 PJ/A in using *a(n)* at the initial state of L2 acquisition. If, however, the L2 PJ participants resorted to MSA, then they are expected to use *a(n)* properly at the initial state of L2 acquisition.

The L2 groups are also expected to show negative transfer of the structural configurations associated with the form and functions of the definite article in their L1s before the 'of-phrase' construction and to overuse *the* before bare noun phrases (NP)s (Contexts B and D). The L2 PJ participants are also predicted to negatively transfer the form and functions of the definite article from their L1 PJ/A into L2 English before proper names of people and places. As the use of *the* with proper names of places is not sanctioned in MSA, and pluralising proper names is not random due to the construction, gender and morphological structure of the name, the L2 PJ participants might be negatively influenced by MSA; especially because the use of *the* with the equivalent target NPs is triggered by morpho-syntactic criteria in specific semantic environments. In contrast, the L2 CG participants are predicted to positively transfer the form and functions of the definite article from their L1 into L2 English before proper names of people and places.

Regarding the L3 models, it is envisaged the CEM (Flynn et al., 2004) will be accepted only if the L3 groups exhibit (i) positive transfer from L2/L3 CG concerning the use of *the* either from PJ/A or CG and (ii) positive transfer from CG rather than

negative transfer from L1 PJ/A concerning the use of *a(n)* as the latter is structurally different from English irrespective of order of acquisition.

On the other hand, the Scalpel Model of TLA (Slabakova, 2017) will be accepted if the L3 groups exhibited both positive and negative transfer from their L1 PJ/A or MSA (Arabic) and/or L2/L3 CG/SMG (Greek) in relation to certain factors. These factors are related to the different forms of English input mentioned in RQ4 and Greek input in the form of proficiency level in L2/L3 Greek and length of learning L2/L3 Greek as well as structural difficulty, and cognitive psychological prominence on how the L3 participants consciously or unconsciously perceived English, Greek and Arabic as structurally similar.

The last tested L3 model is the L2 Status Factor (Falk and Bardel, 2011). This hypothesis will be accepted only if the L3 PJ-CG-E participants, who are at advanced levels of L2 Greek, show evidence of the positive wholesale transfer from their L2 Greek into L3 English in the contexts related to *a(n)* and *the*. Yet, the negative wholesale transfer from L2 Greek into L3 English in using Ø before bare NPs (contexts B and D) can be confirmed only if it is proven there is statistically significant impact of L2 Greek rather than L1 Arabic (as Arabic and Greek are similar in the target contexts). This hypothesis cannot be tested on the L3 PJ-E-CG group, as their L2 is English.

In relation to the Scalpel Model of TLA (Slabakova, 2017) and the L2 Status Factor (Falk and Bardel, 2011), it is predicted motivation and the length of residence in Cyprus and Jordan as non-native English-speaking countries might influence the acquisition of English determiners. Hence, the former factor is expected to have a positive impact on the L3 groups' performance, while the latter factor is expected to have a negative impact on them.

4.4. Forced-choice elicitation task (FCET): The acquisition of *the*

Three options were provided to the L2/L3 participants before each target NP: (*the, a/n, zero*). The target response was *the*; *a(n)* and *zero* (Ø) were signs of negative transfer from CG only before the 'of-phrase' construction in the form of substitution errors and omission errors; respectively, and Ø was an indication of L1 PJ/A negative transfer in the form of omission errors. All the predictions regarding the participants' expected performances in both contexts are provided in Table 4.4.

Table 4.4: Predictions based on the structural (dis)similarity between English and Arabic/Greek on the use of *the*

Contexts	Predictions	Reason
A	It is predicted that the first constituent of the 'of-phrase construction' (N1) might confuse the L2 PJ and L2 CG participants as well as the L3 participants.	The type of transfer from L1 Arabic is not clear as in L1 P/JA and MSA the N1 should be preceded with Ø, and the second constituent (N2) should be preceded with the definite article rather than Ø unless it is a proper noun (See Chapter two, section 2.9.1).
		The type of transfer from L1 Greek is not clear as in L1 CG and SMG both N1 and N2 should be preceded with the definite article (See section 2.9.1). However, L1 negative transfer is expected if the L2 CG and L3 participants substitute *a(n)* or even Ø for *the*.
C	It is predicted that the L2 PJ participants will have a difficulty in using *the*.	The participants' non target-like performance can be attributed to the negative transfer from P/JA and MSA (See Chapter two, section 2.9.2).
	It is predicted that the L2 CG and L3 participants will use *the* properly.	The participants' target-like performance can be attributed to the positive transfer from CG and SMG (See Chapter two, section 2.9.2).

4.4.1. Overall group results on the use of *the*

Overall, the analysis of the data as provided in Table 4.5 showed the mean percentages of the L2 groups and the L3 groups in using *the* in context A were higher than their scores in context C. However, the mean scores of the experimental groups were lower than the EN group in both contexts. Accordingly, independent ANOVA tests and Scheffe follow-up post-hoc tests were computed to specify the locus of the differences.

Table 4.5: Per-group target-like ratings for *the* in each context

Groups	Context A			Context C		
	Mean	SD	Std. E	Mean	SD	Std. E
L2 PJ	83.88 (458/546)	17.647	1.850	54.4% (297/546)	23.417	2.455
L2 CG	84.95 (474/558)	18.886	1.958	60.2% (336/558)	24.331	2.523
L3 PJ-CG-E	77.56 (242/312)	20.315	2.817	70.2% (219/312)	19.620	2.721
L3 PJ-E-CG	80.67 (242/300)	17.288	2.445	67.0% (201/300)	21.160	2.992
EN Control	96.30 (156/162)	7.061	1.359	95.7% (155/162)	7.061	1.359

Regarding RQ1, One-way ANOVA tests showed that there were significant differences among groups in supplying *the* in context A ($F(4,308) = 5.391$, p =.000) and context C ($F(4, 308) = 20.575$, p =.000). As represented in Table 4.6, follow-up Scheffe post-hoc tests revealed there were clear differences between the performance of the EN group and the L2 PJ group and the L3 groups in the use of *the* in context A. Concerning the groups' performance in context C, there were significant differences between the EN group and the experimental groups, and between the L2 PJ group and the L3 groups.

Table 4.6: Scheffe post-hoc tests of mean ratings for *the* in the target contexts

(I) Groups	(J) Groups	Context A			Context C		
		MD (I-J)	Std. E	Sig.	MD (I-J)	Std. E	Sig.
EN Control	L2 PJ	**12.414***	3.906	*.041*	**41.283***	4.785	*.000*
	L2 CG	**11.350**	3.896	.078	**35.464***	4.773	*.000*
	L3 PJ-CG-E	**18.732***	4.228	*.001*	**25.487***	5.179	*.000*
	L3 PJ-E-CG	**15.630***	4.256	*.010*	**28.679***	5.214	*.000*
L2 PJ	L2 CG	-1.063	2.628	.997	-5.819	3.219	.515
	L3 PJ-CG-E	6.319	3.098	.387	**-15.797***	3.796	*.002*
	L3 PJ-E-CG	3.216	3.137	.902	**-12.604***	3.844	*.031*
L2 CG	L3 PJ-CG-E	7.382	3.086	.224	-9.977	3.781	.141
	L3 PJ-E-CG	4.280	3.125	.759	-6.785	3.829	.536
L3 PJ-CG-E	L3 PJ-E-CG	7.382	3.086	.224	3.192	4.325	.969

*. The mean difference is significant at the 0.05 level.
**. The mean difference is highly significant at the 0.01 level

However, more analysis was needed to identify the source of transfer and to confirm whether the findings supported the tested hypotheses. Thus, sub-sections 4.4.2 and 4.4.3 are focused on the L2 and L3 participants' performances by trying to specify the source(s) of transfer.

4.4.2. Influence of Greek/Arabic on the L3 Groups' target-like performance

The marginal effects of the Ordered Probit regression models were run to find whether the L3 groups' proficiency levels in L1 Arabic and/or L2/L3 Greek had an influence on their performance in each context (See Appendix 15). Answering RQ2, the results of the L3 PJ-CG-E group yielded no statistically significant results. Yet, the results demonstrated that the increase of Arabic proficiency level of the L3 PJ-CG-E participants had more negative impact on their performance in context C. It was proven that participants with lower Arabic proficiency levels were 9.8% (*sig* at α=.01) more target-like on their use of *the* than the participants with higher Arabic proficiency levels

4.4.3. Error types and transfer regarding the use of *the*

To specify the source of transfer, which was the target behind RQ2, the error types committed by the L2/L3 groups were compared based on the groups' raw scores and the mean percentage scores. These error types are tabulated in Table 4.7.

The results indicated the mean percentages of the omission errors by the experimental groups in both contexts were more than the substitution errors for each group. They also showed that the L2/L3 groups had more omission errors in context C than context A.

Table 4.7: Elicitation test results of the errors committed by the groups

| Groups | Context A: [+definite, +specific] | | Context C: [+definite, –specific] | |
	Substitution a(n)	Omission Ø	Substitution a(n)	Omission Ø
L2 PJ	6.04% (33/546)	10.07% (55/546)	3.30% (18/546)	42.31% (231/546)
L2 CG	6.99% (39/558)	8.06% (45/558)	3.41% (19/558)	36.38% (203/558)
L3 PJ-CG-E	8.33% (26/312)	14.10% (44/312)	1.28% (4/312)	28.53% (89/312)
L3 PJ-E-CG	2.33% (7/300)	17.00% (51/300)	4.0% (12/300)	29.00% (87/300)
EN Control	3.09% (5/162)	0.62% (1/162)	0.62% (1/162)	3.70% (6/162)

To find whether the use of *a(n)* or *Ø* by the L2 CG participants in particular and the other groups in general were significantly different, Paired Sample t-tests were performed. The results are presented in Table 4.8. The Paired Sample t-tests of the L2 PJ participants revealed that their omission errors in context A were statistically higher than their substitution errors. The results of the L2 PJ group revealed that they had more positive influence (universal-based account) than negative influence (structural difficulty) from their L1; the PJ participants' accuracy scores were high, but their omission errors were statistically higher than their substitution errors though both types of errors were low. The Paired Sample t-tests of the L2 CG participants revealed there were no statistically significant differences in using either type of errors because the structure was found to be confusing for them. As the accuracy scores of the L2 CG were high and both types of errors were not high it was concluded that the performance of the L2 groups can be attributed to facilitative transfer from their L1; CG has the definite article. Examples of omission and the substitution errors, as provided by some L2 CG participants or L2 PJ participant, are as follows:

L2 PJ participant

(67)   *<u>Zero</u> (The, A/An, Zero) Sultanate of Oman is a beautiful country.
                                                                (Omission)

L2 CG participant

(68)   Some people argue against <u>*a</u> (the, a/an, zero) domination of machines in
         our society.   *(Substitution)*

Table 4.8: Paired Sample t-tests on the error types by the L2/L3 groups

Groups	Context A: Omission errors vs. Substitution errors *Ø +NPs vs. *a(n)+NPs						Context C: Omission errors vs. Substitution errors *Ø+NPs vs. *a(n)+NPs					
	MD	SD	Std.E	t	df	Sig. *p* value	MD	SD	Std.E	t	df	Sig. *p* value
L2 PJ	4.029	18.315	1.920	2.099	90	.039	39.011	26.784	2.808	13.894	90	.000
L2 CG	1.075	15.308	1.587	.677	92	.500	32.975	25.417	2.636	12.511	92	.000
L3 PJ-CG-E	5.769	20.315	2.817	2.048	51	.046	27.244	22.147	3.071	8.870	51	.000
L3 PJ-E-CG	14.667	16.714	2.364	6.205	49	.000	25.000	24.571	3.475	7.194	49	.000
EN control	-2.469	7.601	1.463	-1.688	26	.103	3.086	8.056	1.550	1.991	26	.057

The Paired Sample t-tests indicated the omission errors committed by the L2 experimental groups in context C were significantly higher than their substitution errors. The omission errors committed by the L2 PJ participants can be traceable to their L1 PJ/A. In contrast, the L2 CG participants' omission errors in context C were contrary to predictions, because facilitative learning was expected from their L1 CG (on the basis of the universal-based account and structural similarity between English and Greek). Accordingly, the results were not consistent with the universal-based account of the FH (Ionin et al., 2008) as the L2 groups did not transfer the semantic features of the definite article from their L1s into their L2 English. However, more explanations will be provided with regards to the L2 theories in section 4.10. An example of the omission errors by the L2 participants from both groups in context C is as follows:

(69) *<u>Zero</u> (The, A/An, Zero) Smiths in my class are Americans.

Regarding the L3 groups' performance, the Paired Samples t-tests demonstrated the mean scores of the omission errors were higher than the substitution errors in both contexts. The results implied the L3 participants' omission errors in context A can be

traceable to negative transfer from their L1 PJ/A as their results were similar to the L2 PJ groups. Yet, the source of transfer in context C was not clear as their results were similar to both L2 groups.

4.4.4. Linguistic factors that might pertain to the use of *the*

This section aims to provide an answer to RQ4, which was focused on the role of input factors and length of residence in Cyprus and Jordan, as well as the role of motivation in the acquisition of the English definite article.

4.4.4.1. Input factors that might influence the use of *the*

It was expected the different forms of input (See section 4.2) might be relevant to the acquisition of *the*. Using the marginal effects of the Ordered Probit regression analyses, the predicted probabilities can be identified. The results are in Appendix 15. As an answer to RQ4, the marginal effects in relation to the use of *the* by the L2 PJ group and the L3 PJ-CG-E group indicated significant results between the participants' performance and some forms of input in context A but not context C. Yet, the results of the L2 CG and L3 PJ-E-CG groups in both contexts indicated there were significant differences between the participants' performance and some forms of input.

The marginal effects of the influential variables in relation to the results of the L2 PJ participants showed that:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 14.7% (significant (sig) at α=.001).

2. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 10.7% (sig at α=.001).

Figure 4.1 shows the probability of converging with L2 English on the use of *the* in context A by the L2 PJ participants.

Figure 4.1:The relationship between the probability of converging with L2 English on the use of *the* by the L2 PJ group and some forms of input in context A

Predictive Margins with 95% CIs

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
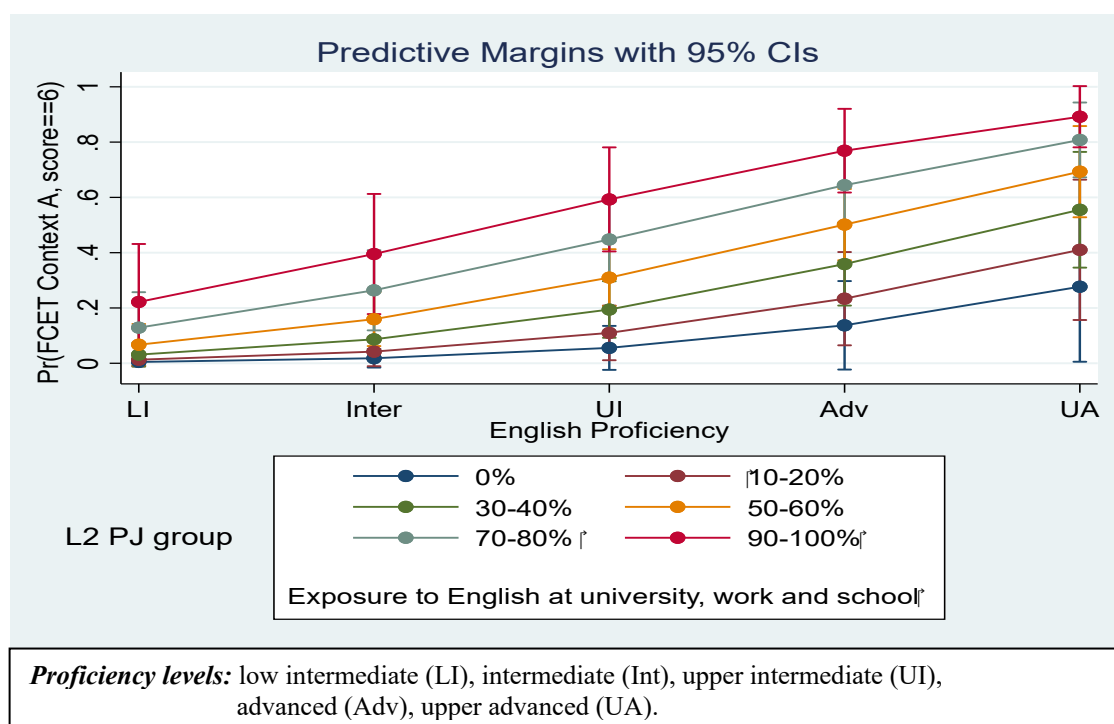
The marginal effects of the influential variables in relation to the results of the L2 CG participants in context C revealed that one day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 6% (sig at α=.001). The marginal effects of the influential variables in context A showed that:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 12% (sig at α=.001).

2. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 11.7% (sig at α=.001).

Figure 4.2 shows the probability of converging with L2 English by the L2 CG participants on the use of *the* in contexts A and C.

Figure 4.2: The relationship between the probability of converging with L2 English on the use of *the* by the L2 CG group and some forms of input factors in contexts A and C

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
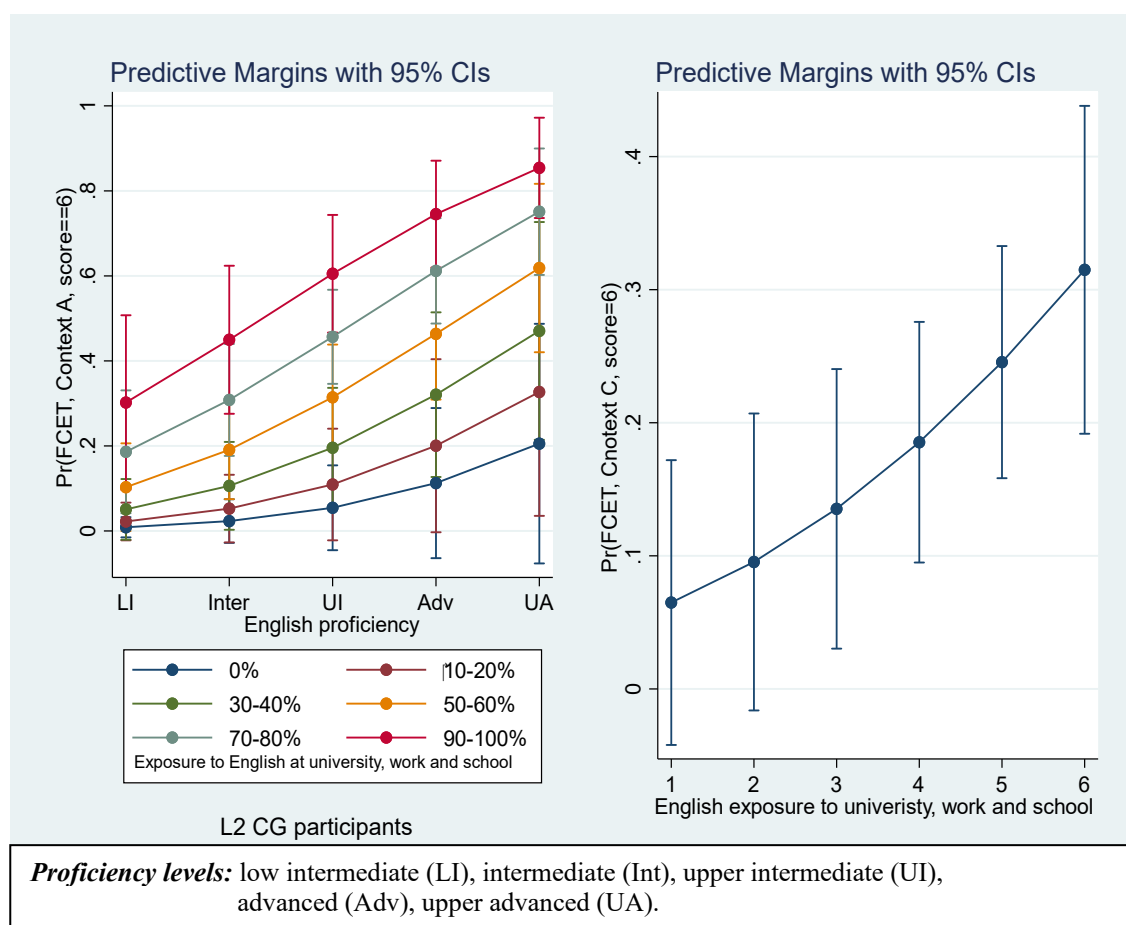
Similar to the results of the L2 PJ group, the marginal effects in relation to the L3 PJ-CG-E participants' use of *the* in context C indicated no significant results. Yet, the marginal effects of the influential variables in context A showed that:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 13% (sig at α=.001).

2. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 8.5% (significant at α=.01).

Figure 4.3 shows the probability of converging with L2 English by the L3 PJ-CG-E participants on the use of *the* in context A.

Figure 4.3: The relationship between the probability of converging with L3 English on the use of *the* by the L3 PJ-CG-E group and some forms of input in context A

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
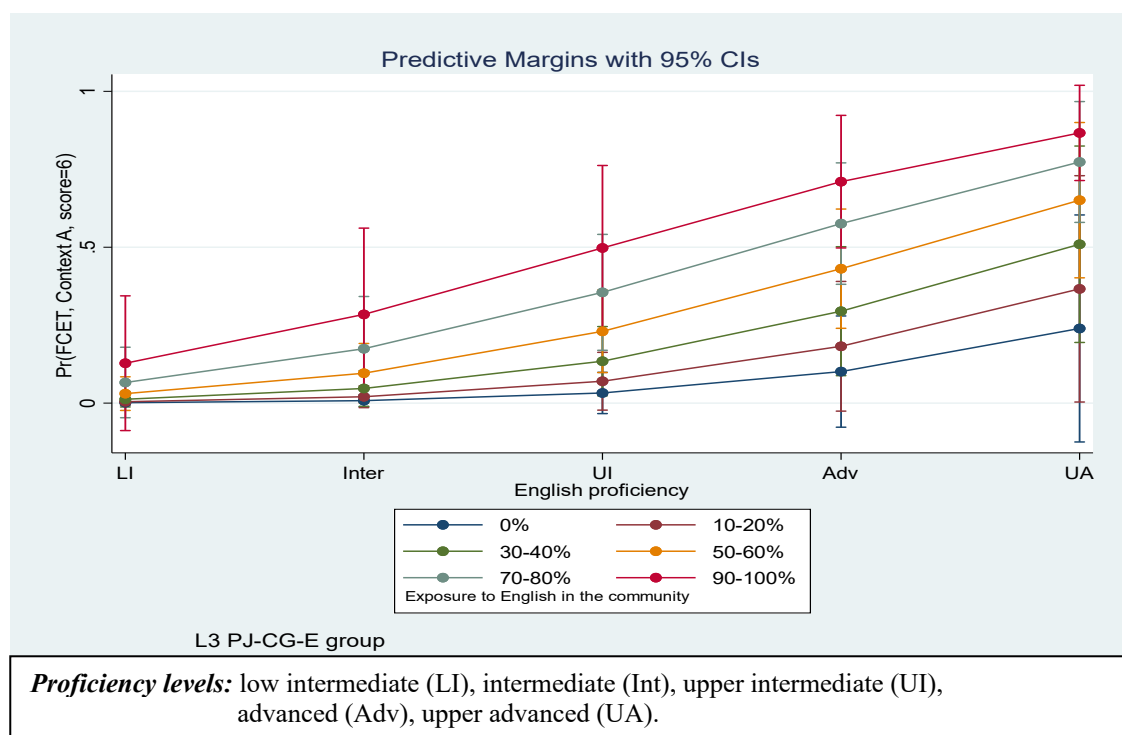
Figure 4.4 shows the probability of converging with L2 English by the L3 PJ-E-CG participants on the use of *the* in contexts A and C. Their accuracy scores in context A revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 20.2% (sig at α=.001). On the other hand, the marginal effects of each influential variable in relation to the L3 PJ-E-CG participants' performance in context C revealed that:

1 One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 9.6% (sig at α=.001).

2. One year increase in the length of learning English increased the probability of the correct use of the relevant article by 2% (sig at α=.01).

Figure 4.4: The relationship between the probability of converging with L2 English on the use of *the* by the L3 PJ-E-CG group and English proficiency level

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
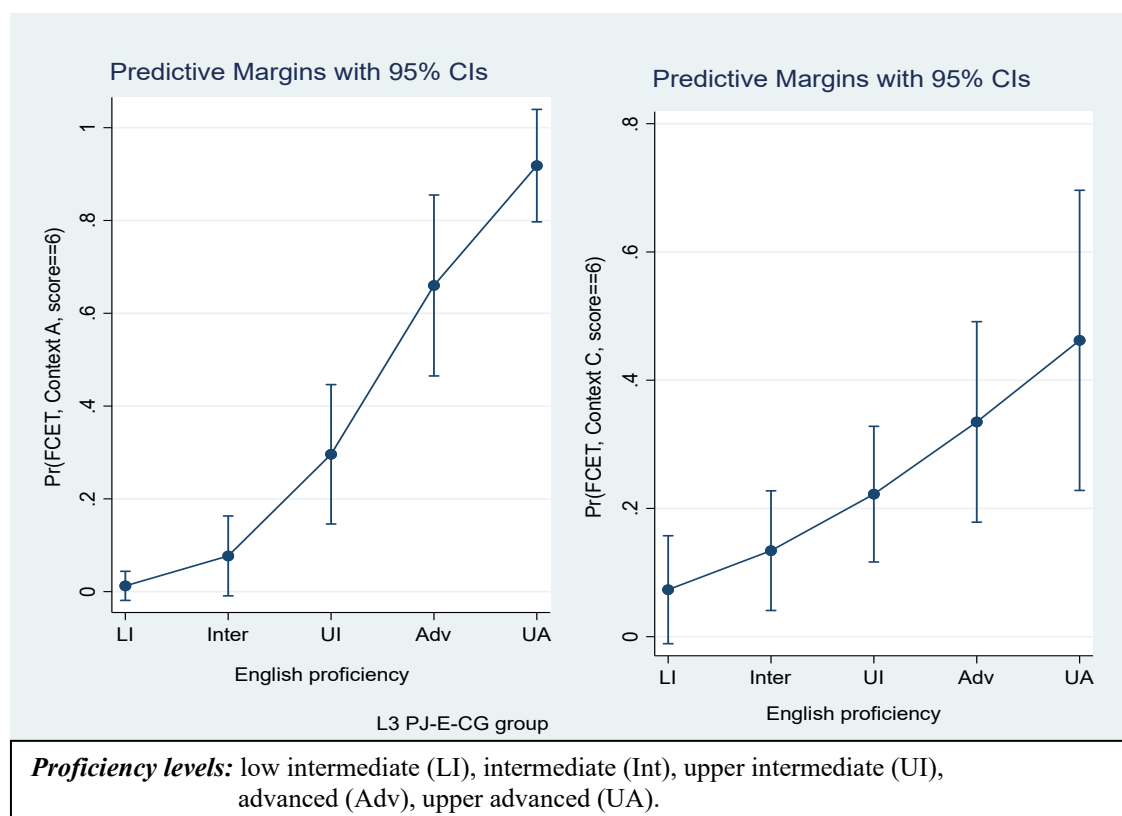
4.4.4.2. The effect of motivational factors and length of residence in Cyprus and/or Jordan on the use of *the*

It was expected that motivation might have a positive impact on the acquisition of *the*. It was also expected that the participants living in Cyprus would get more English input than the L2 PJ participants who spent all their life in Jordan. Hence, to answer RQ4 fully, separate linear regression models were computed to assess the relationship between the L2/L3 participants' means on the use of *the* in each context and the target factors (See Table 4.3 in section 4.2).

The results of the L2 groups and the L3 PJ-CG-E group, as represented in Appendix 13, indicated these factors did not contribute to the acquisition of *the* in both contexts. The exception was for the L3 PJ-E-CG, in that their results in context C revealed that *Model 4.(iii)* was significant. The four factors explained 23.2% of the

variance: ($F(4, 45) = 3.402$, p $=.016$, $R^2=.232$, $R^2_{Adjusted}=.164$). The means were significantly predicted by the length of residence in Jordan (Beta=-0.088, t(86)=2.606, p=.002), indicating the increase of residence in Jordan had a negative influence on the use of *the*.

4.5. FCET: The use of Ø in contexts B and D

In this task, three possible responses were provided to the participants: (*the, a(n), zero*). The target response was Ø; *a(n)* represented one form of substitution errors, and *the* was the other form of substitution errors. The latter type of substitution errors was supposed to be a sign of negative transfer. All the predictions regarding the participants' expected performance in contexts: B and D are provided in Table 4.9.

Table 4.9: Predictions based on structural (dis)similarity between English and Arabic/Greek regarding the use of Ø

Contexts	Predictions	Reason
B	It is predicted that N2 in context B, the second constituent of the 'of-phrase' construction, might confuse the PJ and CG participants because the target experimental items should be preceded with Ø rather than *the* (See section 2.9.1).	The L2/L3 participants' non-target-like performance can be attributed to negative transfer from their L1.
D	It is predicted that PJ and CG participants would use *the* instead of Ø before the target noun/NP (See section 2.9.3).	

4.5.1. Overall group results on the use of Ø

The aim behind RQ1 was to detect the similarities and differences among the groups of the study regarding their use of Ø. Therefore, the mean percentage scores are provided and statistical ANOVA tests and follow-up Scheffe post-hoc tests were performed. The mean percentages in Table 4.10 showed the mean scores of the four experimental

groups were much lower than the EN group, indicating their low performance might be related to negative transfer from CG or/and PJ/A.

Table 4.10: Per-group target-like ratings for Ø in each context

Groups	Context B			Minimum	Maximum	Context D			Minimum	Maximum
	Mean	SD	Std.E			Mean	SD	Std.E		
L2 PJ	60.07 (328/546)	24.706	2.590	.00	100	68.86	25.845	2.709	.00	100
L2 CG	51.79 (289/558)	27.743	2.877	.00	100	73.84	29.935	3.104	.00	100
L3 PJ-CG-E	53.85 (168/312)	27.931	3.873	.00	100	64.42	29.341	4.069	.00	100
L3 PJ-E-CG	64.00 (192/300)	23.895	3.379	16.67	100	75.33	23.143	3.273	16.67	100
EN Control	95.68 (155/162)	10.932	2.104	50.00	100	98.15	5.338	1.027	83.33	100

One-way between group ANOVA tests showed there were significant differences among groups in using Ø in context B ($F(4,308)$ =16.989, p =.000) and context D ($F(4,308)$ =8.220, p =.000). To confirm where the differences occurred, Scheffe post-hoc tests were performed.

As represented in Table 4.11, the Scheffe post-hoc tests revealed there were clear differences between the EN group's performance and each of the L2/L3 groups on the use of Ø in both contexts (p <.05). Nevertheless, no differences were found among the four experimental groups in both contexts. The results showed the L2 groups might have a negative transfer from their L1s as these two contexts are structurally different from L2 English. For the L3 groups, the results indicated the L3 participants might have been negatively influenced by their L1 PJ/A or/and L2/L3 CG.

Table 4.11: Scheffe post-hoc tests of mean ratings for Ø

(I) Participants		Context B			Context C		
		MD (I-J)	Std.E	Sig.	MD (I-J)	Std.E	Sig.
EN Control	L2 PJ	**35.606***	5.537	*.000*	**29.284***	5.769	*.000*
	L2 CG	**43.887***	5.523	*.000*	**24.313***	5.755	*.002*
	L3 PJ-CG-E	**41.833***	5.993	*.000*	**33.725***	6.245	*.000*
	L3 PJ-E-CG	**31.679***	6.034	*.000*	**22.815***	6.287	*.012*
L2 PJ	L2 CG	8.281	3.725	.296	-4.971	3.882	.801
	L3 PJ-CG-E	6.227	4.392	.734	4.441	4.576	.918
	L3 PJ-E-CG	-3.927	4.448	.941	-6.469	4.634	.745
L2 CG	L3 PJ-CG-E	-2.054	4.375	.994	9.412	4.558	.374
	L3 PJ-E-CG	-12.208	4.431	.111	-1.498	4.617	.999
L3 PJ-CG-E	L3 PJ-E-CG	-10.154	5.004	.392	-10.910	5.214	.359

*. The mean difference is significant at the 0.05 level.
**. The mean difference is highly significant at the 0.01 level

To address RQ2, the results will be discussed in sub-sections: 4.5.2 and 4.5.3 by specifying the type of transfer in relation to the error types committed by the L2/L3 groups and in relation to the L3 groups' proficiency levels in Greek and Arabic.

4.5.2. Influence of Greek/Arabic on the performance of the L3 groups

As the source of transfer for the L2 groups can be linked to their L1s, the L3 groups were left with two possible sources: Arabic or/and Greek. Accordingly, separate Ordered Probit analyses (marginal effects) were computed to find whether the L3 groups' proficiency levels in L1 PJ/A and/or L2/L3 Greek had an influence on their performance in each context. The marginal effects indicated neither Arabic proficiency nor Greek proficiency predicted the L3 groups' performance in both contexts (See Appendix 16).

4.5.3. Error types and transfer in using Ø

To double-check the source of transfer for the L2/L3 groups, which was the target behind RQ2, the error types committed by the L2/L3 groups were compared based on

the groups' raw scores and the mean percentage scores. These errors were in the form of substitution errors: overuse of *the* because of negative transfer from PJ/A and/or CG and overuse of *a(n)*. The results are provided in Table 4.12.

Table 4.12: Elicitation test results of the errors committed by the groups

Groups	Context B				Context D			
	Non-transfer *a(n)*	Sum of raw scores *a(n)*	Transfer *the*	Sum of raw scores *the*	Non-transfer *a(n)*	Sum of raw scores *a(n)*	Transfer *the*	Sum of raw scores *the*
L2 PJ	5.86%	32/546	34.07%	186/546	3.85%	21/546	27.29%	149/546
L2 CG	12.54%	70/558	35.66%	199/558	4.66%	26/558	21.51%	120/558
L3 PJ-CG-E	8.33%	26/312	37.82%	118/312	2.88%	9/312	32.69%	102/312
L3 PJ-E-CG	6.67%	20/300	29.33%	88/300	2.00%	6/300	22.67%	68/300
EN Control	.00%	0/162	4.32%	7/162	.00%	0/162	1.85%	3/162

The mean percentages of transfer errors in both contexts were more than non-transfer errors for each experimental group. To find whether the use of *a(n)* or the use of Ø by the L2/L3 groups were significantly different, statistical analysis Paired Sample t-tests were performed. The results are presented in Table 4.13.

Answering RQ2, the findings showed, as predicted, that the L2 groups' overuse of *the* in both contexts can be attributed to the negative transfer from their L1s because of the structural dissimilarity between L2 English and L1 PJ/A and/or L1 CG. As the L3 groups followed a pattern similar to the L2 groups in both contexts, it was suggested the source of transfer can be ascribed to both L1 PJ/A and L2/L3 CG. Examples of article substitution (*the*) as provided by the four experimental groups are as follows:

Context B

(70)   This article talks about the mystery of *the (*the, a/an, zero*) love.

Context D

(71)   *The (*The, A/An, Zero*) Senator Smith is a respected person, but he is not qualified for his position.

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Table 4.13: Paired Sample t-tests on the groups' transfer vs non-transfer error

| | Context B | | | | | | Context D | | | | | |
| | *The*+NPs vs. *an*+NPs | | | | | | *The*+NPs vs. *an*+NPs | | | | | |
Groups	MD	SD	Std.E	t	df	Sig. *p* value	MD	SD	Std.E	t	df	Sig. *p* value
L2 PJ	33.714	21.813	2.287	14.744	90	.000	23.443	22.632	2.372	9.881	90	.000
L2 CG	34.910	23.549	2.442	14.296	92	.000	16.846	25.478	2.642	6.376	92	.000
L3 PJ-CG-E	37.321	24.236	3.361	11.104	51	.000	29.808	25.637	3.555	8.384	51	.000
L3 PJ-E-CG	28.933	23.076	3.263	8.866	49	.000	20.667	21.707	3.070	6.732	49	.000
EN control	4.321	10.932	2.104	2.054	26	.050	1.852	5.338	1.027	1.803	26	.083

P ** value is significant at the 0.01 level.
P* value is significant at the 0.05 level (2-tailed).

4.5.4. Linguistic factors that might pertain to the use of Ø

This section aims to provide an answer to RQ3, which was focused on the role of input factors and the length of residence in Cyprus and Jordan, as well as the role of motivation in the use of Ø.

4.5.4.1. The effect of input factors on the use of Ø

Input is one of the linguistic factors mentioned in RQ4. It was expected that this linguistic factor with its different forms (See section 4.2) might be relevant to the use of Ø. Answering RQ4, the marginal effects indicated there was a significant influence of some forms of input on the performance of each experimental group in each context (See Appendix 16).

The probability of converging with L2 English on the use of Ø by the L2 PJ group in both contexts are shown in Figure 4.5. Their results in context B showed that:

1. One year increase in the age of participants increased the probability of the correct use of the relevant article by 0.5% (sig at α=.01).

2. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 9% (sig at α=.001).

The results of the L2 PJ group in context D were as follows:

1. One level improvement in English proficiency increased the probability of the correct use of the relevant article by 13.8% (sig at α=.001).

2. One day increase in exposure to English at university/work/school increased the probability of the correct use of the relevant article by 7% (sig at α=.001).

Figure 4.5: The relationship between the probability of converging with L2 English on the use of Ø by the L2 PJ group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
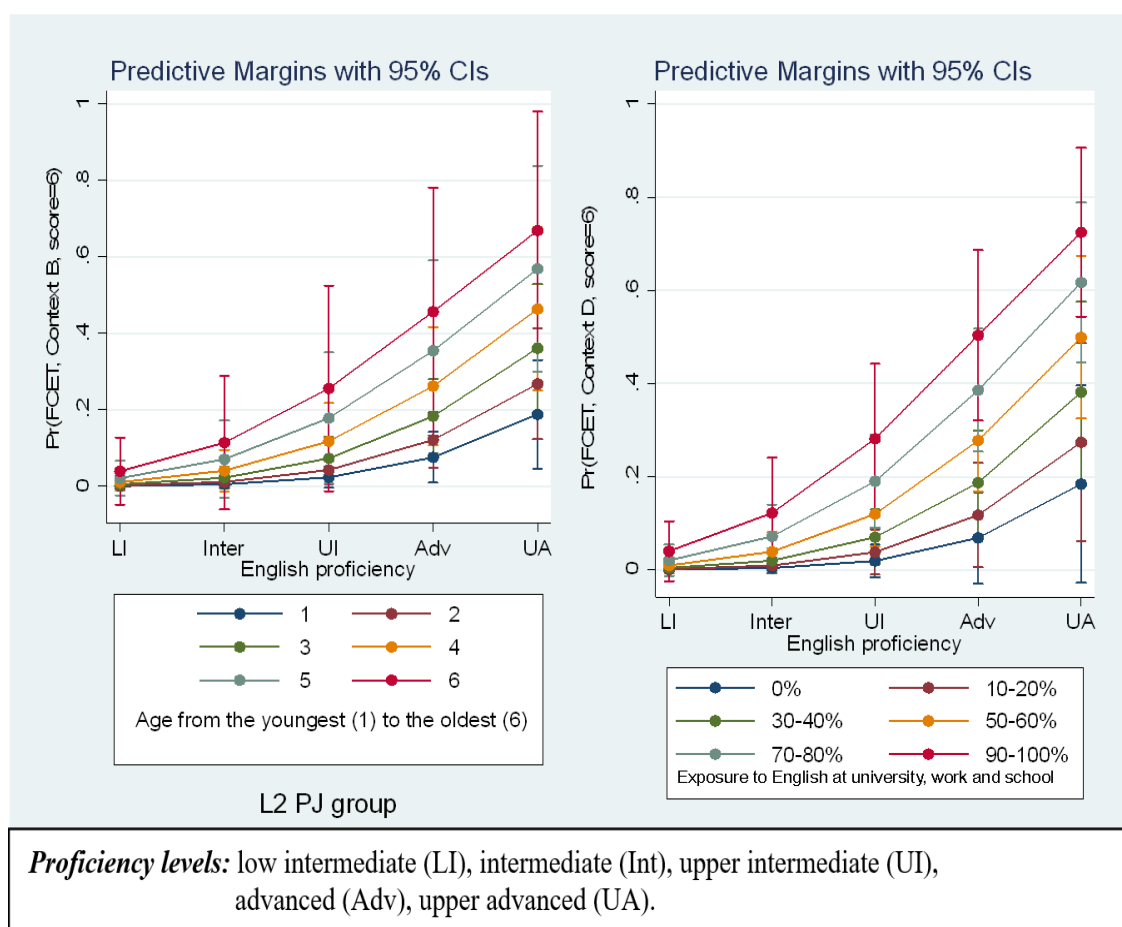
Figure 4.6 shows the probability of converging with L2 English by the L2 CG group on the use of Ø in both contexts. Their results in context B indicated that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 7.1% (sig at α=.001). The L2 CG group's results in context D revealed that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 2.1% (sig at α=.001).

Figure 4.6: The relationship between the probability of converging with L2 English on the use of Ø by the L2 CG group and English proficiency level in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
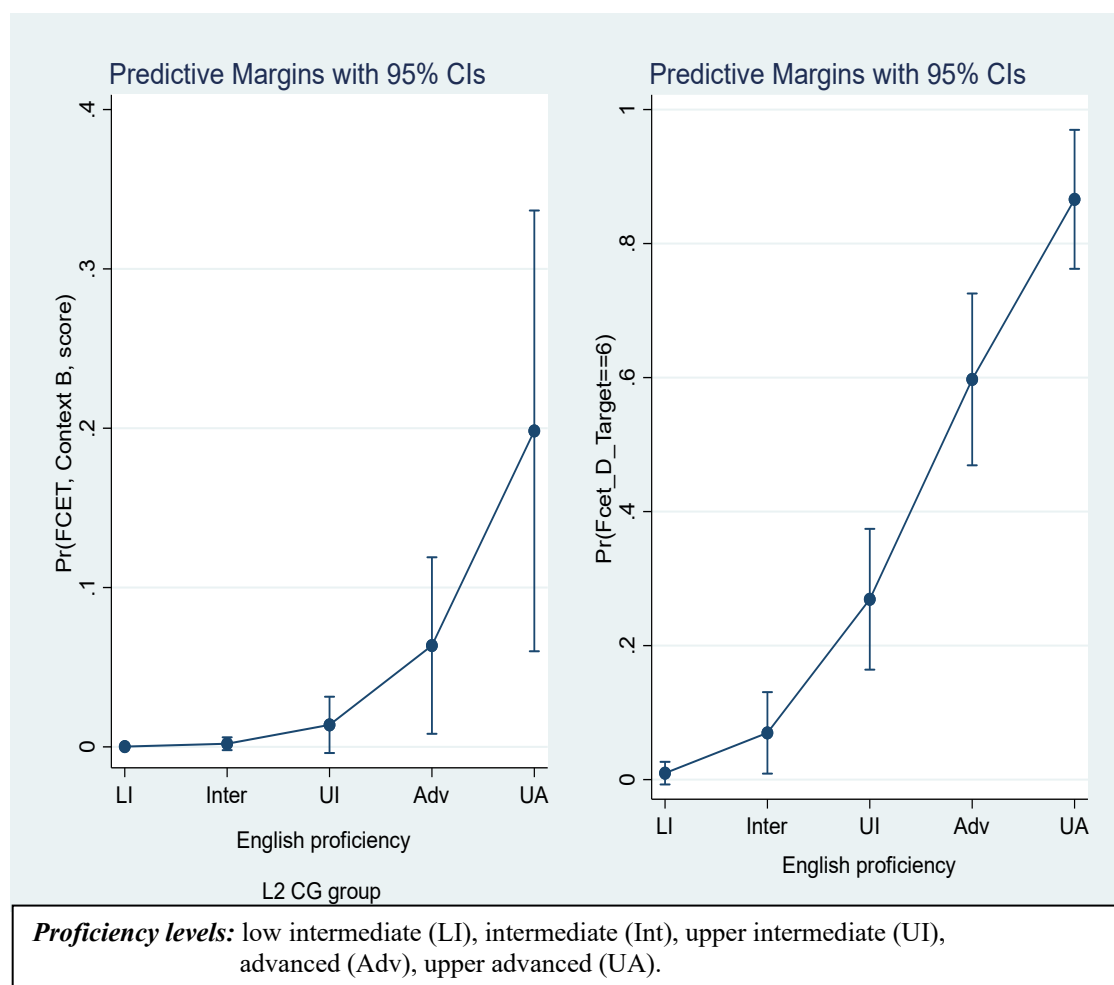
The results of each influential variable in relation to the L3 PJ-CG-E participants' native-like use of Ø in both contexts are provided in Figure 4.7. The L3 PJ-CG-E group's results in context D revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 11.4% (sig at α=.001).

Their marginal effects in context B proved that:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 7.2 (sig at α=.001).

2. One day increase in exposure to English at home increased the probability of the correct use of the relevant article by 2.5% (sig at α=.01).

Figure 4.7: The relationship between the probability of converging with L2 English on the use of Ø by the L3 PJ-CG-E group and some forms of input in both contexts
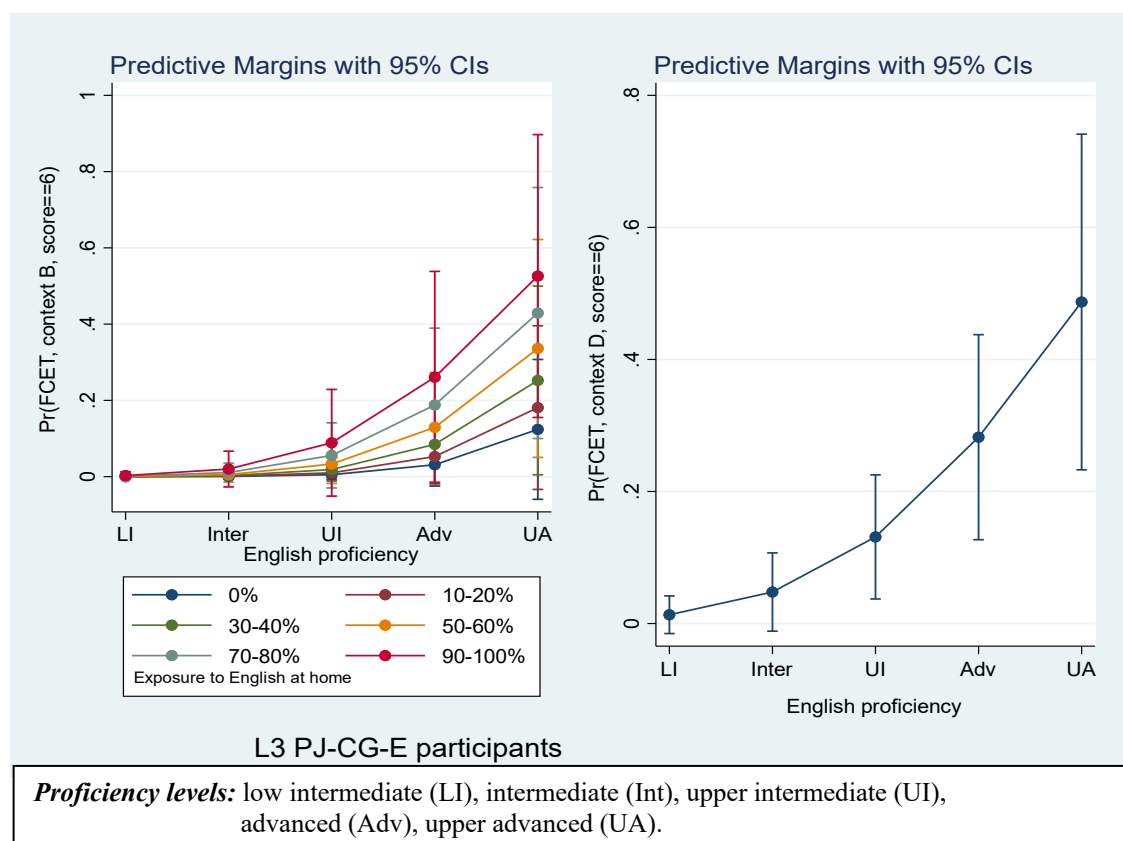
The probability of converging with L2 English on the use of Ø by the L3 PJ-E-CG participants is illustrated in Figure 4.8. Their marginal effects in context D demonstrated that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 13.3% (sig at α=.001).

The L3 PJ-E-CG group's results in context B showed that:

1. One year increase in the age of participants increased the probability of the correct use of the relevant article by 0.6% (sig at α=.01).

2. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 8.9% 6 (sig at α=.001).

Figure 4.8: The relationship between the probability of converging with L2 English on the use of Ø by the L3 PJ-E-CG group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
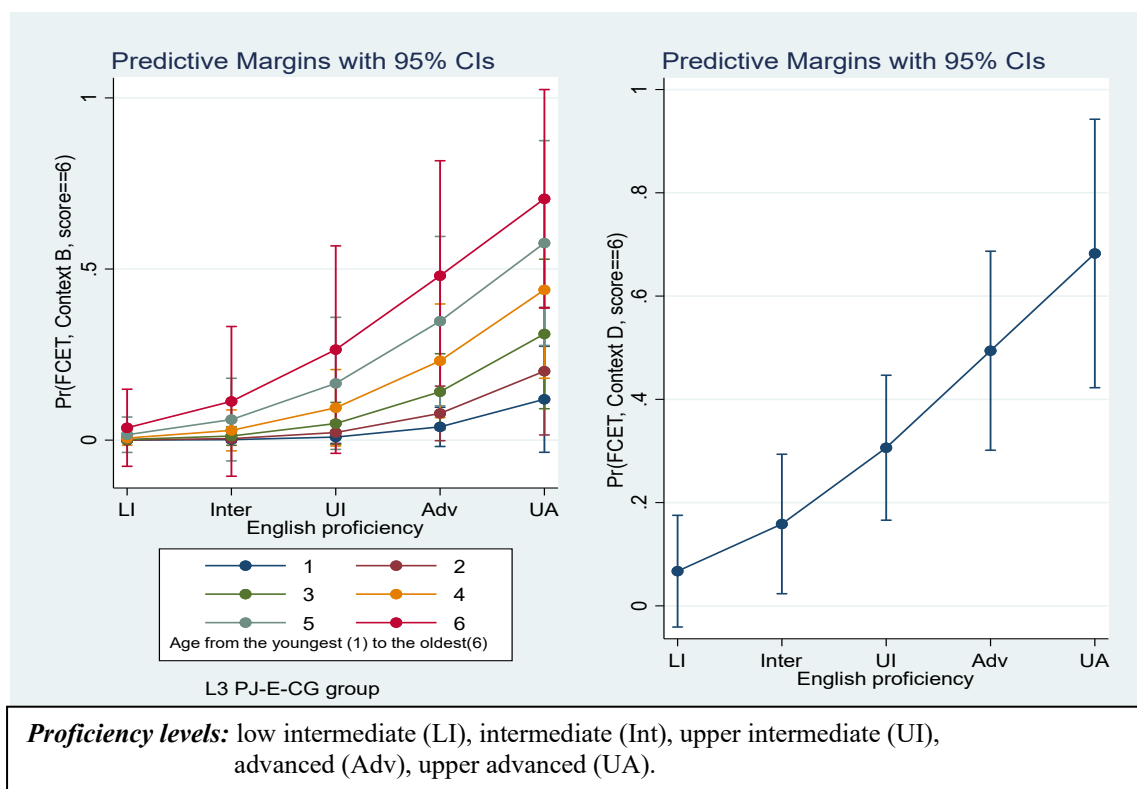
2.5.4.2. The effect of motivational factors and length of residence in Cyprus and/or Jordan on the use of Ø

It was expected that motivation might have a positive impact on the acquisition of Ø. It was also expected that the participants living in Cyprus would have more English input than the L2 PJ participants who spent all their life in Jordan. Hence, separate linear regression models were computed to assess the relationship between the L2/L3 participants' means on using Ø in each context and the target factors (See Table 4.3 in section 4.2). Answering RQ4, the results of the experimental groups indicated these factors did not contribute to the use of Ø (See Appendix 13).

4.6. Forced-choice elicitation task (FCET): The use of *a(n)* in contexts E: [+specific] and F: [−specific]

In this task, three possible responses were provided to the participants: (*the, a/n, Ø*). The target response was *a(n)*; Ø was an indication of omission errors which provided

evidence of negative transfer, and *the* provided evidence for fluctuation in the form of

substitution errors. All the predictions regarding the participants' expected performance

in contexts E and F are provided in Table 4.14.

Table 4.14: Predictions based on structural (dis)similarity and linguistic distance
between English and Arabic and Greek regarding the use of *a(n))*

Contexts	Predictions	Reason
Contexts E and F	Two predictions are expected regarding the L2 P/J participants' use of *a(n)*:	This can be attributed to:
	Prediction one: not to use the indefinite article, or	negative transfer from L1 P/JA as it lacks the indefinite article, or
	Prediction two: to use the indefinite article.	positive transfer from MSA as it has a case marker for indefiniteness (if MSA has an underlying indefinite determiner (Jiang, 2012)).
	Two predictions are expected regarding the CG participants' use of *a(n)*:	This can be attributed to:
	Prediction one: to use the indefinite article, or	positive transfer from CG (and SMG) because Greek has the indefinite article, or
	Prediction two: not to use the indefinite article.	negative transfer from CG (and SMG) as the Greek indefinite article is most commonly deleted with certain types of verbs (the English experimental items were designed in accordance with the CG/SMG contexts (See Chapter two, section 2.9.4).
	Two predictions are expected regarding the L3 participants' use of *a(n)*:	This can be attributed to:
	Prediction one: to use the indefinite article, or	positive transfer from CG (and SMG) because Greek has the indefinite article; positive transfer from MSA as it has a case marker for indefiniteness, or
	Prediction two: not to use the indefinite article.	negative transfer from L1 P/JA (as it lacks the indefinite article) and negative transfer from CG/SMG (the Greek indefinite article is omitted with certain types of verbs.

4.6.1. Overall group results on the use of *a(n)*

The mean percentage scores provided in Table 4.15 revealed the four experimental groups had lower scores than the EN group. Also, none of the experimental groups appeared native-like. To find whether the results were statistically significant, one-way independent ANOVA tests and Scheffe follow-up post-hoc tests were computed. Regarding RQ1, the results of the one-way ANOVA revealed there were statistically significant differences among groups in supplying *a(n)* in context E ($F(4, 308)= 13.991$, p=.000) and context F ($F(4,308)= 8.561$, p =.000).

Table 4.15: Per-group target-like ratings for *the* in contexts E and F

Groups	Context E			Context F		
	Mean	SD	Std.E	Mean	SD	Std.E
L2 PJ	67.03 (366/546)	21.225	2.225	82.60 (451/546)	19.863	2.082
L2 CG	80.47 (449/558)	21.085	2.186	84.77 (473/558)	19.863	2.082
L3 PJ-CG-E	70.51 (220/312)	25.483	3.534	76.28 (238/312)	21.794	2.260
L3 PJ-E-CG	69.67 (209/300)	20.396	2.884	73.00 (219/300)	21.730	3.013
EN Control	97.53 (158/162)	6.034	1.161	98.15 (159/162)	19.015	2.689

As represented in Table 4.16, the Scheffe post-hoc tests revealed that there were clear differences between the EN groups' performance and each of the experimental groups on the use of *a(n)* in context E. In context F, there were significant differences between the EN group and the L2 PJ group and the L3 groups. Regarding the differences among the four experimental groups, the Scheffe post-hoc tests revealed the mean percentage scores of the L2 CG group were significantly higher than the L2 PJ group in context E and between the L2 CG group and the L3 PJ-E-CG groups in context F.

Table 4.16: Comparison of mean ratings for *a(n)*

(I) Participants	(J) Participants	Context E [–definite/+specific]			Context F [–definite/ –specific]		
		MD (I-J)	Std.E	Sig.	Mean.D (I-J)	Std.E	Sig.
EN Control	L2 PJ	**30.498***	4.603	*.000*	**15.547***	4.357	*.014*
	L2 CG	**17.065***	4.592	*.009*	**13.381***	4.346	.053
	L3 PJ-CG-E	**27.018***	4.983	*.000*	**21.866***	4.716	*.000*
	L3 PJ-E-CG	**27.864***	5.017	*.000*	**25.148***	4.748	*.000*
L2 PJ	L2 CG	**-13.433***	3.097	*.001*	-2.166	2.932	.969
	L3 PJ-CG-E	-3.480	3.652	.923	6.319	3.456	.503
	L3 PJ-E-CG	-2.634	3.698	.973	9.601	3.500	.114
L2 CG	L3 PJ-CG-E	9.953	3.637	.115	8.485	3.443	.197
	L3 PJ-E-CG	10.799	3.684	.075	**11.767***	3.486	*.024*
L3 PJ-CG-E	L3 PJ-E-CG	.846	4.160	1.000	3.282	3.938	.952

*. The mean difference is significant at the 0.05 level.
**. The mean difference is highly significant at the 0.01 level

4.6.2. Influence of Greek/Arabic on L3 groups' target-like performance

In order to specify the source of transfer of the L3 groups, marginal effects of regression tests were computed to find whether the L3 groups' proficiency levels in L1 PJ/A and/or L2/L3 Greek had an influence on their performance in each context. The results of the L3 PJ-CG-E participants in context E showed one level increase in Greek proficiency increased the probability of the correct use of the relevant article by 8.2% (sig at α=.001). Similarly, the marginal effects in relation to the L3 PJ-E-CG group's performance in context E showed one level enhancement in Greek proficiency increased the probability of the correct use of the relevant article by 8% (sig at α=.001). The results related to context F revealed one level increase in Greek proficiency increased the probability of the correct use of the relevant article by 5.3% (sig at α=.001).

4.6.3. Specificity effect regarding the use of *a(n)*

The FH (Ionin et al., 2008) assumed that L2 PJ participants from the lower English proficiency levels would fluctuate between the definiteness and specificity settings of the ACP as their L1 lacks the indefinite article. However, fluctuation was expected to decrease with the increase of English proficiency. For the L2 CG groups, the FH

predicts the L2 CG participants would not find it difficult to supply *a(n)* in the target contexts even when they are at lower English proficiency levels. To test the predictions of the FH, Paired Sample t-tests were run to compare between the L2 groups by providing the group results and the results based on the participants' English proficiency levels.

The statistical analyses of the Paired Sample t-tests are provided in Table 4.17. Regarding the groups' target-like use of *a(n)* in context E, the overall group results revealed that the L2 PJ, L2 CG and L3 PJ-CG-E groups were significantly less target-like in supplying *a(n)* in context E than context F. It was also found the mean percentage scores of the substitution errors by the L2 CG group and the L3 PJ-CG-E group in context E were not significantly different from their percentage scores in context F. However, the L2 PJ and L3 PJ-E-CG groups' results indicated that the participants from these groups significantly supplied more *the* in the [+specific] context than the [–specific] context.

Table 4.17: Paired Sample t-tests for the accuracy use of *a(n)* and substitution error

Groups	Independent variables	MD	SD	Std.E	t	df	Sig p value
L2 PJ	*a(n)* + [+specific]NP *a(n)* + [–specific]NP	-15.568	20.608	2.160	-7.206	90	*.000*
	the + [+specific]NP *the* + [–specific]NP	7.143	16.507	1.730	4.128	90	*.000*
L2 CG	*a(n)* + [+specific]NP *a(n)* + [–specific]NP	-4.301	18.042	1.871	-2.299	92	*.024*
	the + [+specific]NP *the* + [–specific]NP	.717	14.727	1.527	.469	92	.640
L3 PJ-CG-E	*a(n)* + [+specific]NP *a(n)* + [–specific]NP	-5.769	17.429	2.417	-2.387	51	*.021*
	the + [+specific]NP *the* + [–specific]NP	2.885	16.739	2.321	1.243	51	.220
L3 PJ-E-CG	*a(n)* + [+specific]NP *a(n)* + [–specific]NP	-3.333	18.443	2.608	-1.278	49	.207
	the + [+specific]NP *the* + [–specific]NP	5.333	16.302	2.305	2.313	49	*.025*
EN Control	*a(n)* + [+specific]NP *a(n)* + [–specific]NP	-.617	7.282	1.401	-.440	26	.663
	the + [+specific]NP *the* + [–specific]NP	.000	6.537	1.258	.000	26	1.000

As represented in Table 4.18, the Paired Samples statistical analysis t-tests on the target-like use of *a(n)* per English proficiency level indicated the means of the L2 PJ participants from the low intermediate, intermediate, upper intermediate and advanced levels in the [–specific] context were significantly higher than the [+specific] context. The L2 PJ participants were more sensitive to the specificity feature in the [+specific] context than the [–specific] context, even at higher proficiency levels in English.

Table 4.18: Paired Sample t-tests on using of *a(n)* per English proficiency level

Dependent variable	Group	English proficiency	Paired differences			t	df	Sig. P value
			MD	SD	Std.E			
Means of target-like suppliance of *a(n)* in context (E) vs. Means of target-like suppliance of *a(n)* in context (F)	L2 PJ	Low intermediate (LI)	-22.222	20.412	6.804	-3.266	8	*.011*
		Intermediate (Inter)	-12.500	21.517	5.379	-2.324	15	*.035*
		Upper intermediate (UI)	-22.667	17.925	3.585	-6.323	24	*.000*
		Advanced (Adv)	-12.000	21.794	4.359	-2.753	24	*.011*
		Upper advanced (UA)	-9.375	20.156	5.039	-1.861	15	.083
	L2 CG	Low intermediate (LI)	-4.167	23.174	5.794	-.719	15	.483
		Intermediate (Inter)	-10.715	21.290	5.690	-1.883	13	.082
		Upper intermediate (UI)	-6.818	20.353	4.339	-1.571	21	.131
		Advanced (Adv)	-1.515	11.396	2.430	-.624	21	.540
		Upper advanced (UA)	.000	13.608	3.122	.000	18	1.000
	L3 PJ-CG-E	Low intermediate (LI)	-10.256	27.671	7.674	-1.336	12	.206
		Intermediate (Inter)	-5.556	16.667	5.556	-1.000	8	.347
		Upper intermediate (UI)	-5.556	12.975	3.746	-1.483	11	.166
		Advanced (Adv)	-5.000	8.051	2.546	-1.964	9	.081
		Upper advanced (UA)	.000	12.599	4.454	.000	7	1.000
	L3 PJ-E-CG	Low intermediate (LI)	.000	20.787	6.573	.000	9	1.000
		Intermediate (Inter)	-11.111	18.634	6.211	-1.789	8	.111
		Upper intermediate (UI)	.000	21.681	5.795	.000	13	1.000
		Advanced (Adv)	-1.852	15.466	5.155	-.359	8	.729
		Upper advanced (UA)	-6.250	12.400	4.384	-1.426	7	.197
	EN Control	Native	-.617	7.282	1.401	-.440	26	.663

P ** value is significant at the 0.01 level.
*P** value is significant at the 0.05 level (2-tailed).

The pairwise comparisons of the L2 CG group and the L3 groups in each context showed there were no statistically significant differences in the use of *a(n)* in context E over context F at all English proficiency levels. This means the specificity feature had a significant effect only on the performance of the L2 PJ group when considering proficiency level as a factor.

Regarding the substitution errors in both contexts, the Paired Sample t-tests as shown in Table 4.19 revealed the mean percentage scores of the L2 PJ group in providing *the* in the [+specific] context were significantly higher than their percentage scores in the [–specific] context at the low intermediate and upper intermediate levels. The findings of the L2 PJ group supported the prediction of the FH: *fluctuation overrode transfer* which took place at the low intermediate level and again at the upper intermediate level of English proficiency. Additionally, the results revealed fluctuation between definiteness and specificity decreased as proficiency increased.

For the L2 CG group, the findings provided partial support to the FH. In particular, the results based on the proficiency levels of the L2 CG participants showed no evidence of fluctuation; nonetheless, the participants showed evidence of proficiency effect. Similar to the L2 CG group's results, the L3 groups' pairwise comparisons showed no evidence of fluctuation and, consequently, the results suggested the source of transfer can be traced to L2/L3 CG.

Table 4.19: Paired Sample t-tests of substitution errors per English proficiency level

Dependent variable	Groups	English proficiency	Paired differences			t	df	Sig. P value
			MD	SD	Std. E			
Means of substitution errors in context (E) vs. Means of substitution errors in context (F)	L2 PJ	Low intermediate (LI)	20.370	23.241	7.747	2.630	8	.030
		Intermediate (Inter)	5.208	18.972	4.743	1.098	15	.289
		Upper intermediate (UI)	8.000	17.427	3.485	2.295	24	.031
		Advanced (Adv)	3.333	10.758	2.152	1.549	24	.134
		Upper advanced (UA)	6.250	13.437	3.359	1.861	15	.083
	L2 CG	Low intermediate (LI)	3.125	22.948	5.737	.545	15	.594
		Intermediate (Inter)	3.571	17.515	4.681	.763	13	.459
		Upper intermediate (UI)	2.273	11.836	2.523	.901	21	.378
		Advanced (Adv)	-.758	8.095	1.726	-.439	21	.665
		Upper advanced (UA)	-3.509	13.122	3.010	-1.166	18	.259
	L3 PJ-CG-E	Low intermediate (LI)	7.692	26.887	7.457	1.032	12	.323
		Intermediate (Inter)	3.704	13.889	4.630	.800	8	.447
		Upper intermediate (UI)	2.778	13.914	4.017	.692	11	.504
		Advanced (Adv)	.000	7.857	2.485	.000	9	1.000
		Upper advanced (UA)	-2.083	10.681	3.776	-.552	7	.598
	L3 PJ-E-CG	Low intermediate (LI)	1.667	21.445	6.781	.246	9	.811
		Intermediate (Inter)	9.259	18.840	6.280	1.474	8	.179
		Upper intermediate (UI)	4.762	17.817	4.762	1.000	13	.336
		Advanced (Adv)	7.407	12.108	4.036	1.835	8	.104
		Upper advanced (UA)	4.167	7.715	2.728	1.528	7	.170
	EN Control	Native	.000	6.537	1.258	.000	26	1.000

P ** value is significant at the 0.01 level.
*P** value is significant at the 0.05 level (2-tailed).

4.6.4. Error types and transfer regarding the use of *a(n)*

To specify the source of transfer, which was the target behind RQ2, the error types committed by the L2/L3 groups were compared based on the groups' raw scores and the mean percentage scores. These errors were substitution errors (overuse of *the*) and omission errors (Ø). The results are provided in Table 4.20.

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Table 4.20: Elicitation test results of the five groups of the study

Groups	Context E: [–definite, +specific]				Context F: [–definite, –specific]			
	Substitution (*the*)	Raw scores (*the*)	Omission (Ø)	Raw scores (Ø)	Substitution (*the*)	Raw scores (*the*)	Omission (Ø)	Raw scores (Ø)
L2 PJ	15.93%	87/546	17.03%	93/546	8.79%	48/546	8.61%	47/546
L2 CG	10.04%	54/558	9.86%	55/558	8.96%	50/558	5.91%	35/558
L3 PJ-CG-E	11.86%	37/312	17.63%	55/312	8.97%	28/312	14.74%	46/312
L3 PJ-E-CG	17.67%	53/300	12.67%	3/300	12.33%	37/300	14.67%	44/300
EN Control	1.85%	3/162	0.62%	1/162	1.85%	3/162	0.00%	0/162

The Paired Sample t-tests were conducted to specify the locus of the differences. The findings are presented in Table: 4.21. It was found the percentage scores of the omission errors by the L2 and L3 groups in context E were not significantly different from the substitution errors. It was also found the percentage scores of the omission errors by the L2 groups and the L3 PJ-E-CG group in context F were not significantly different from the substitution errors. However, the L3 PJ-CG-E group's omission errors were higher than their substitution errors in this context.

Table 4.21: Paired Sample t-tests on the error types

	Context E: Omission errors vs. Substitution errors						Context F: Omission errors vs. Substitution errors					
	*Ø +NPs vs. *the+NPs						*Ø+NPs vs. *the+NPs					
Groups	MD	SD	Std.E	t	df	Sig. *p* value	MD	SD	Std.E	t	df	Sig. *p* value
L2 PJ	1.099	30.103	3.156	.348	90	.728	-.183	18.508	1.940	-.094	90	.925
L2 CG	.179	22.184	2.300	.078	92	.938	-3.047	19.651	2.038	-1.495	92	.138
L3 PJ-CG-E	5.769	26.790	3.715	1.553	51	.127	5.769	20.045	2.780	2.075	51	*.043*
L3 PJ-E-CG	-5.000	22.144	3.132	-1.597	49	.117	2.333	24.049	3.401	.686	50	.496
EN control	-1.235	6.415	1.235	-1.000	26	.327	-1.852	5.338	1.027	-1.803	26	.083

P ** value is significant at the 0.01 level.
*P** value is significant at the 0.05 level (2-tailed).

Accordingly, the findings showed article omission by the L2 CG participants, though low in percentage, can be traced to CG. However, the source of transfer for the L2 PJ group and the L3 groups was not clear. Still, as the L3 groups were fluctuating between the two settings of the ACP, it can be concluded L2 CG had more influence on the L3 groups than PJ/A. Some examples of error types committed by the L2/L3 groups are as follows:

> *Article omission as mainly provided by some L2 CG participants:*
> (72)   My aunt bought *(Ø)* house but I don't know where exactly.

> *Article substitution as mainly provided by some L2/L3 PJ participants:*
> (73)   I attended *(the)* workshop about statistics.

4.6.5. Linguistic factors that might pertain to L2/L3 use of *a(n)*

This section aims to provide an answer to RQ4, which was focused on the role of input factors and the length of residence in Cyprus and Jordan, as well as the role of motivation in the acquisition of the English indefinite article.

4.6.5.1. The role of L2 input regarding the use of *a(n)*

Ordered Probit regression tests were conducted (Appendix 17) to find if the different forms of input that were tested in the current study had an influence on the L2/L3 groups' accuracy scores in using *a(n)* in each context. As an answer to RQ4, the marginal effects indicated some forms of input predicted the L2/L3 participants' performance in each context.

The probability of converging with L2 English on the use of *a(n)* by the L2 PJ participants in relation to the relevant forms of input in both contexts are shown in Figure 4.9. The L2 PJ group's results in context E indicated that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 9% (sig at α=.001). On the other hand, the marginal effects of the factors on rating *a(n)* in context F by the PJ participants were as follows:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 11% (sig at α=.001).

2. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by11.2% (sig at α=.001).

Figure 4.9: The relationship between the probability of converging with L2 English on the use of *a(n)* by the L2 PJ group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
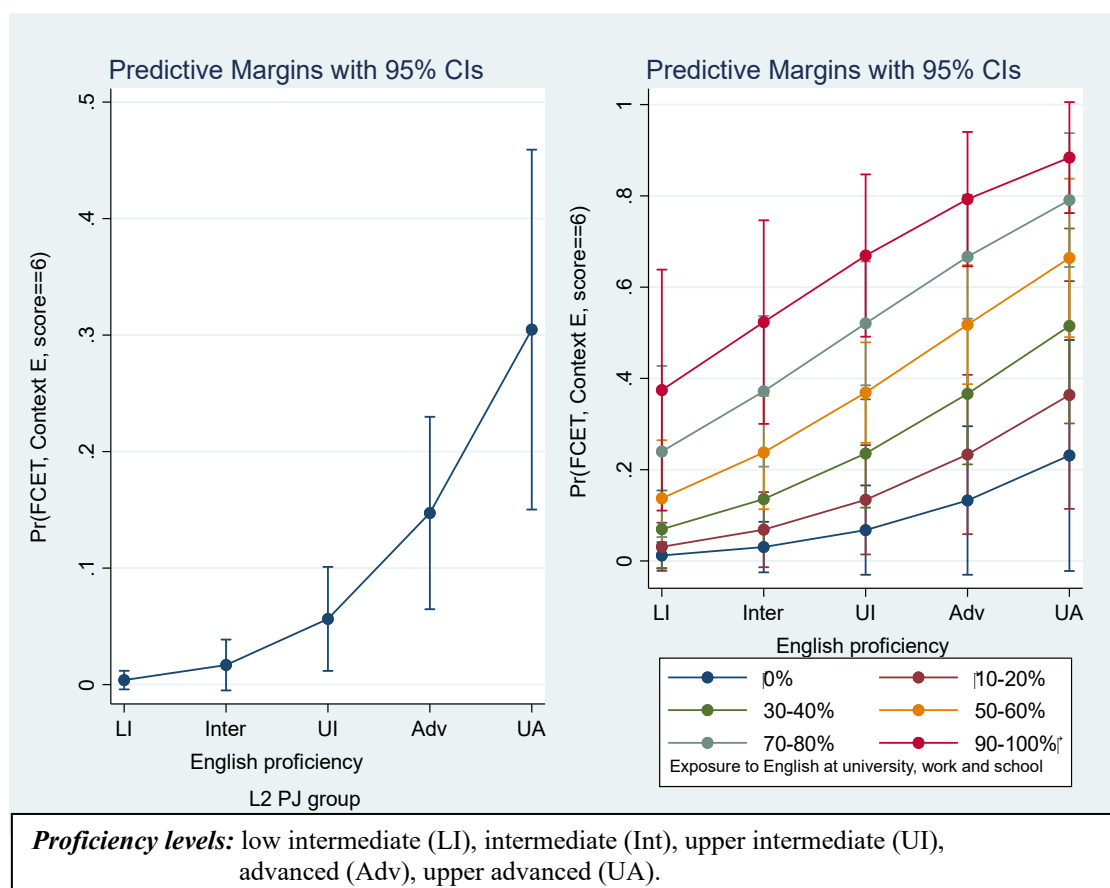
The probabilities related to the L2 CG participants' use of *a(n)* in both contexts in a native-like way are shown in Figure 4.10. Their results in context E revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 18.6% (sig at α=.001). The results of the L2 CG group in context F proved that:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 17% (sig at α=.001).

2. One year increase in the age of participants increased the probability of the correct use of the relevant article by 1% (sig at α=.001).

Figure 4.10: Relationship between the probability of converging with L2 English on the use of *a(n)* by the L2 CG group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
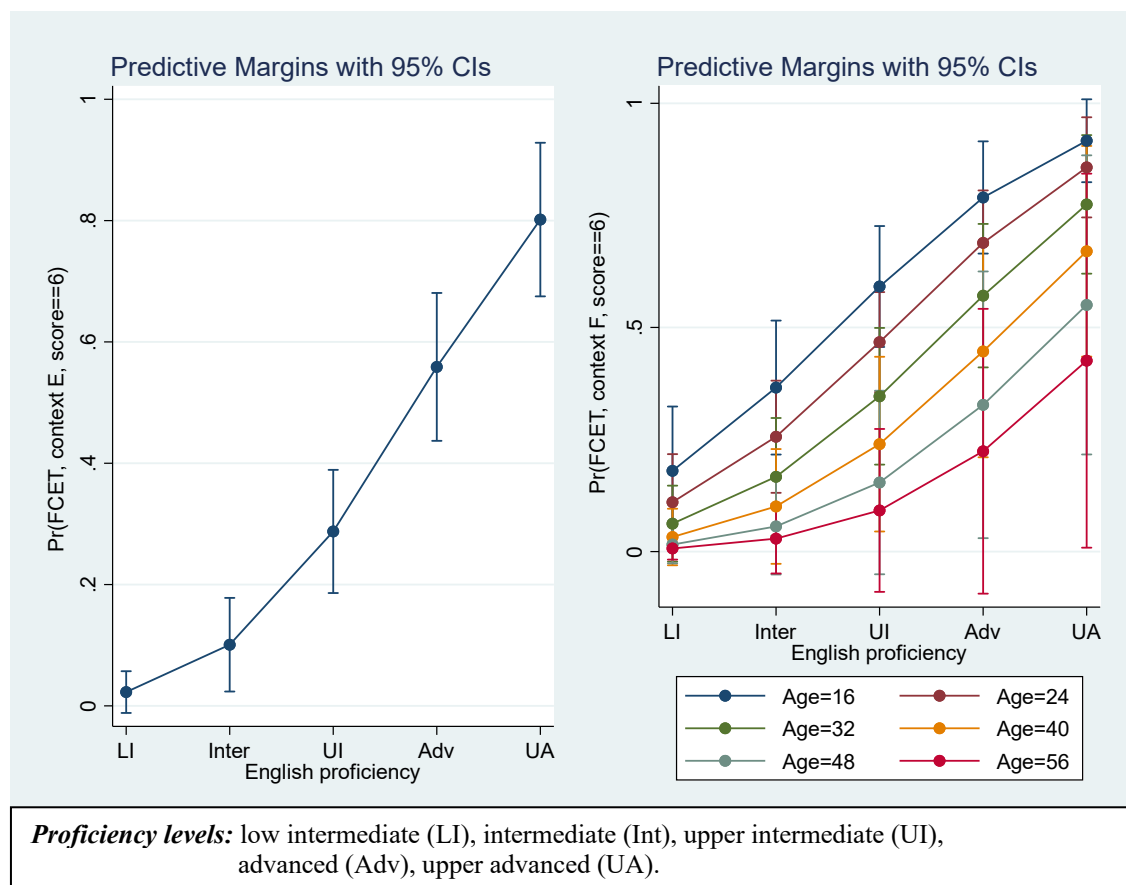
The results of the L3 PJ-CG-E participants in context E revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 18.8% (sig at α=.001). In addition, The L3 participants' results in context F showed that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 13.3% (sig at α=.001). Figure 4.11 illustrates the probability of converging with L2 English on the use of *a(n)* by the L3 PJ-CG-E participants in context E (including the Greek proficiency level) and context F.

Figure 4.11: The relationship between the probability of converging with L2 English on the use of *a(n)* by the L3 PJ-CG-E group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
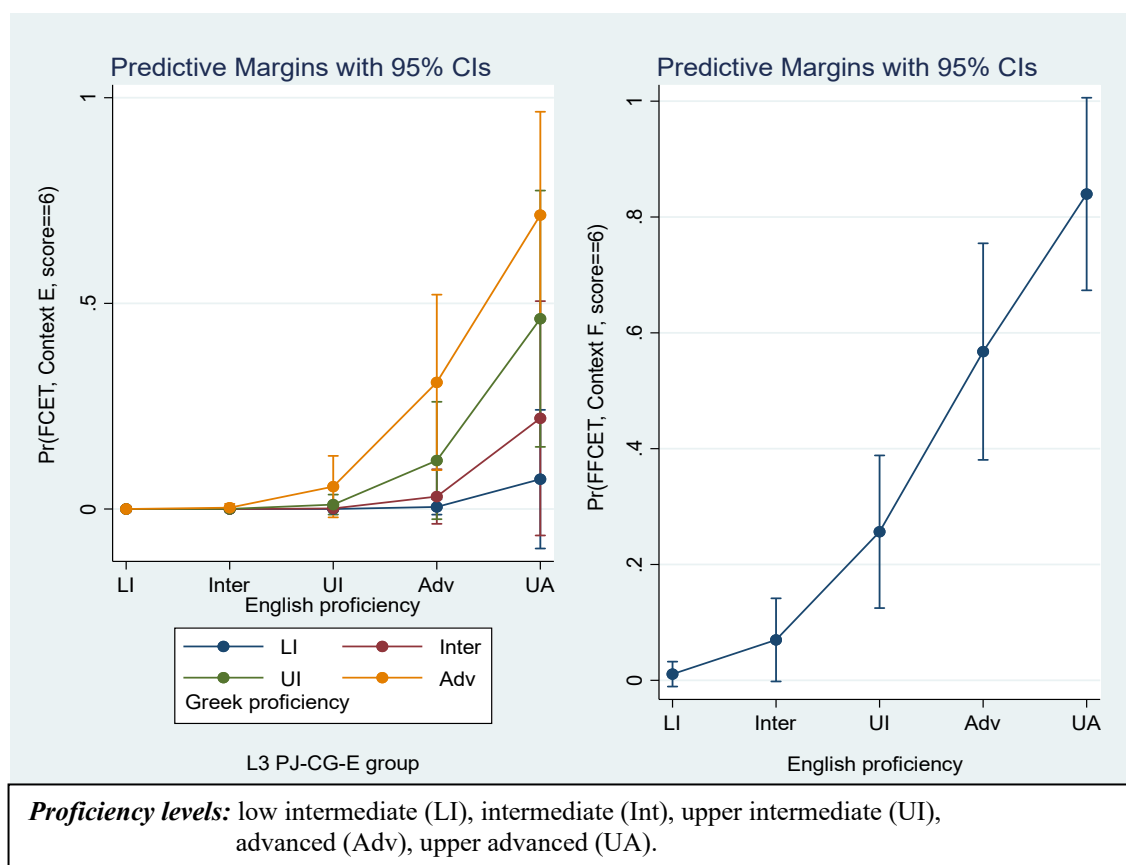
The probability of converging with L2 English on the use of *a(n)* by the L3 PJ-E-CG participants in both contexts (including the Greek proficiency level) is shown in Figure 4.12. The marginal effects in context E revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 11.5% (sig at α=.001). Similarly, the marginal effects of the L3 PJ-E-CG group in context F indicated that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 15.1% (sig at α=.001).

Figure 4.12: The relationship between the probability of converging with L2 English on the use of *a(n)* by the L3 PJ-E-CG group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
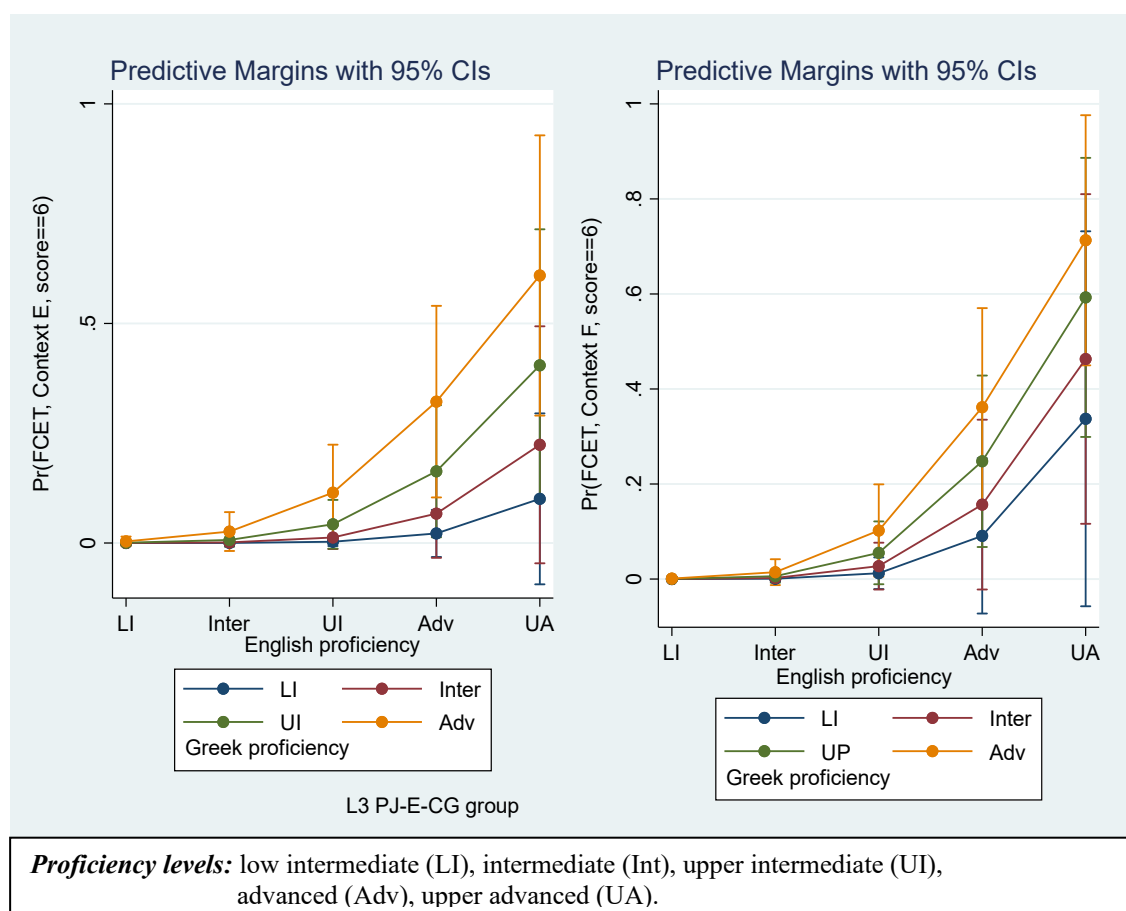
4.6.5.2. The effect of motivational factors and length of residence in Cyprus and/or Jordan on the use of *a(n)*

It was expected that motivation and the increase of length of residence in Cyprus rather than Jordan might have a positive impact on the acquisition of *a(n)*. Hence, separate linear regression models were computed to assess the relationship between the L2/L3 participants' means on the use of *a(n)* in each context and the target factors (See Table 4.3 in section 4.2). The results of the four experimental groups indicated these factors did not contribute to the acquisition of the English indefinite article (See Appendix 13).

In what follows, the data obtained from the GJT will be discussed in detail. Afterwards, the results of both tasks will be used to answer the RQs of the study.

4.7. Grammaticality judgment task (GJT): The use of *the*

4.7.1. Overall group results on the use of *the* in contexts A and C

The GJT task tested the L2/L3 groups' acceptability judgements on the use of *the* before postnominal N2s in the 'of-phrase' construction (context A) and before proper names of people or places (context C). All the predictions are provided in section 4.4. Based on the results represented in Table 4.22, it was found the L2/L3 groups' use of *the* in context A was greater than context C. Yet, none of the experimental groups appeared native-like.

Table 4.22: Per-group target-like ratings for *the* in contexts A and C

Groups	Context A			Minimum	Maximum	Context C			Minimum	Maximum
	Mean	SD	Std.E			Mean	SD	Std.E		
L2 PJ	2.86	.730	.077	1.00	4.00	2.04	.641	.067	1.00	4.00
L2 CG	2.88	.676	.070	1.50	4.00	2.64	.574	.060	1.33	4.00
L3 PJ-CG-E	2.77	.845	.117	.50	4.00	2.64	.723	.100	.67	4.00
L3 PJ-E-CG	2.83	.759	.107	1.50	4.00	2.53	.762	.108	1.33	4.00
EN Control	3.83	.257	.050	3.33	4.00	3.85	.250	.048	3.33	4.00

As an answer to RQ1, One-way ANOVA tests showed there were significant differences among groups in supplying *the* in context A at the p <.05 level ($F(4,308)$ =12.099, p= .000) and context C ($F(4,308)$ =43.670, p =.000). As represented in Table 4.23, the follow-up Scheffe post-hoc tests revealed there were clear differences between the EN groups' performance (p >0.05) and each of the four experimental groups in judging the grammaticality of *the* in contexts A and C. The post-hoc tests also revealed the performance of the L2 PJ group in context C was significantly lower than the L2 CG group and the L3 groups as well (p <.05).

Table 4.23: Scheffe post-hoc tests of mean ratings for *the* in contexts A and C

(I) Groups	(J) Groups	Context A			Context C		
		MD (I-J)	Std.E	Sig.	MD (I-J)	Std.E	Sig.
EN Control	L2 PJ	**.969**[*]	.156	*.000*	**1.810**[*]	.139	*.000*
	L2 CG	**.952**[*]	.156	*.000*	**1.214**[*]	.139	*.000*
	L3 PJ-CG-E	**1.067**[*]	.169	*.000*	**1.214**[*]	.151	*.000*
	L3 PJ-E-CG	**1.007**[*]	.170	*.000*	**1.319**[*]	.152	*.000*
L2 PJ	L2 CG	-.017	.105	1.000	**-.596**[*]	.094	*.000*
	L3 PJ-CG-E	.098	.124	.959	**-.596**[*]	.110	*.000*
	L3 PJ-E-CG	.038	.125	.999	**-.491**[*]	.112	*.001*
L2 CG	L3 PJ-CG-E	.116	.123	.927	.000	.110	1.000
	L3 PJ-E-CG	.055	.125	.996	.105	.111	.926
L3 PJ-CG-E	L3 PJ-E-CG	-.061	.141	.996	.104	.126	.952

*. The mean difference is significant at the 0.05 level.
**. The mean difference is highly significant at the 0.01 level.

4.7.2. Influence of Greek/Arabic on the performance of the L3 Groups

Ordered Probit regression analyses were computed to find whether the L3 participants' proficiency levels in L1 PJ/A and/or L2/L3 Greek had an influence on their performance in each context, and to consequently specify the source(s) of transfer for each L3 group (See Appendix 19). Answering RQ2, the results of the L3 PJ-CG-E participants in context A (See Figure 4.15, section 4.7.4.1) demonstrated that one level enhancement in Greek proficiency increased the probability of the correct use of the relevant article by 11.3% (sig at α=.001). The results in context C revealed that one level improvement in Greek proficiency increased the probability of the correct use of the relevant article by 9% (sig at α=.01).

Regarding the performance of the L3 PJ-E-CG participants in context C, it was found that one level enhancement in Greek proficiency increased the probability of the correct use of the relevant article by 8% (sig at α=.01) (See Figure 4.17, section 4.7.4.1).

4.7.3. Transfer in L2/L3 use of *the*

To specify the sources of transfer, Paired Sample t-tests were run between (i) the groups acceptability of the sentences correctly provided as definite NPs: *the+NPs* and (ii) their rejection of the sentences incorrectly provided as bare nominals: **Ø+NPs*. The results are tabulated in Table 4.24.

Table 4.24: Paired Sample t-tests of the (un)grammatical sentences

Groups	Context A *the* +NPs vs. **Ø* + NPs						Context C *the* +NPs vs. **Ø* + NPs					
	MD	SD	Std.E	t	df	Sig. *p* value	MD	SD	Std.E	t	df	Sig. *p* value
L2 PJ	.842	1.252	.131	6.417	90	*.000*	1.615	1.446	.152	10.656	90	.000
L2 CG	.667	1.376	.143	4.672	92	*.000*	1.656	1.351	.140	11.822	92	.000
L3 PJ-CG-E	.776	1.290	.179	4.337	51	*.000*	1.109	1.615	.224	4.951	51	.000
L3 PJ-E-CG	.840	1.182	.167	5.024	49	*.000*	1.347	1.515	.214	6.286	49	.000
EN Control	.086	.596	.115	.753	26	.458	.148	.565	.109	1.363	26	.185

P ** value is significant at the 0.01 level
P * value is significant at the 0.05 level (2-tailed).

Based on the Paired Samples t-tests, it was found that the L2 and L3 groups' acceptability judgements in both contexts on the definite NPs were higher than the bare NPs. This means the L2/L3 groups were less target-like with the sentences that had to be rejected than the sentences that had to be accepted. The results in both contexts implied the L2 CG participants were more positively influenced by their L1 when they were provided with the *the+NPs*, as N1 in the equivalent CG construction is definite.

The L2 PJ group and L3 group's results in each context, however, showed knowledge of grammaticality. This means their correct judgements cannot be only attributed to L1 transfer, as the grammatical English structures are different from the L1 PJ/A structures. Accordingly, the L2 PJ group were less target-like when they were provided with bare NPs because of L1 negative influence, as these structures are licit in their L1. For the L3 groups, the source of transfer was not clear; especially that they

followed a pattern similar to the L2 groups. Examples on the use of the definite article by the L2/L3 participants in this context using the five-point Likert scale are as follows:

The sentence was judged as definitely unacceptable (while it is not)*'Ø+NPs' (Context A)

       (75)   City of Amman is a highly populated city. ___0_____

The sentence was judged as definitely acceptable: 'the+proper name' (Context C)

       (76)   The New York Times is an American newspaper. _ 4_____

The sentence was judged as probably acceptable (while it is not): *'Ø+proper name' (Context C)

       (77)   Russels are a nice family but I think they are arrogant. __3_____

4.7.4. Linguistic factors that might pertain to the L2/L3 use of *the*

This section aims to provide an answer to RQ4, which was focused on the role of input factors and length of residence in Cyprus and Jordan, as well as the role of motivation in the acquisition of the English definite article.

4.7.4.1. The effect of input on the use of *the*

Marginal effects of separate Ordered Probit regression tests were computed to assess the relationship between the L2/L3 group's scores on the acceptability judgement on the use of *the* in each context and the different forms of input (See Appendix 19). Answering RQ4, the marginal effects indicated some forms of input predicted the L2/L3 participants' performance in each context.

       The marginal effects of the L2 PJ participants in context A showed that:

1. One level improvement in English proficiency increased the probability of the correct use of the relevant article by 11.8% (sig at α=.001).

2. One year increase in the length of learning English increased the probability of the correct use of the relevant article by 7% (sig at α=.01).

Furthermore, the marginal effects of the influential factors on rating *the* by the L2 PJ participants in context C revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 1% (sig at α=.01). The results of both contexts are shown in Figure 4.13.

Figure 4.13: The relationship between the probability of converging with L2 English on the use of *the* by the L2 PJ group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
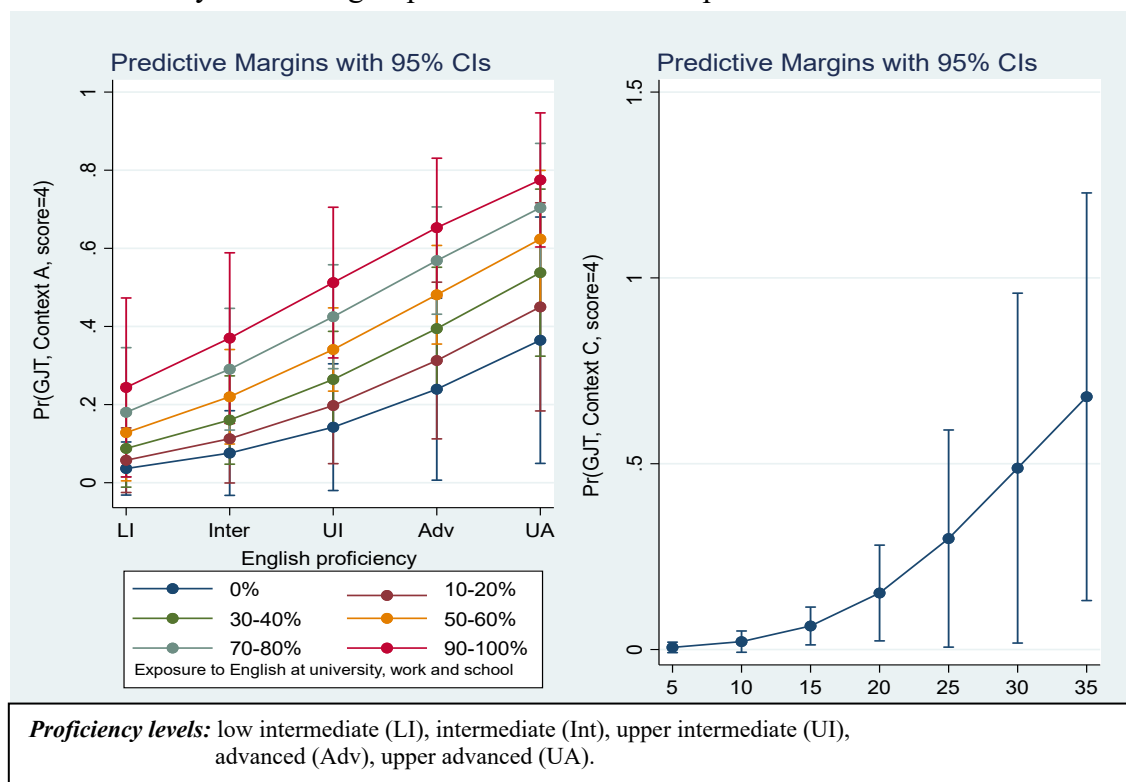
The marginal effects in relation to the L2 CG participants' performance in context A revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 12.7% (sig at α=.001). The results of the CG participants in context C showed one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 10.9% (sig at α=.001). The L2 CG group's use of *the* in a native-like way in both contexts are shown in Figure. 4.14.

Figure 4.14: Relationship between the probability of converging with L2 English on the use of *the* by the L2 CG group and English proficiency in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
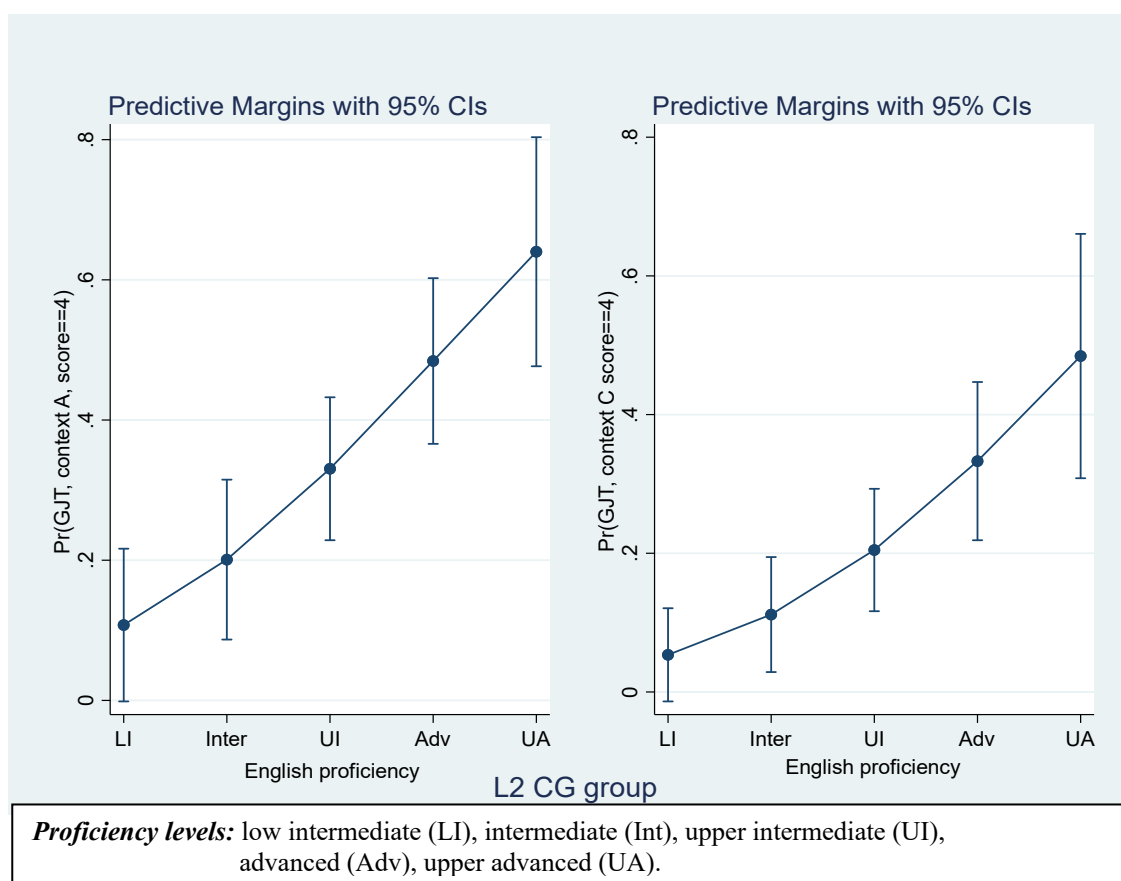
The probabilities of converging with L2 English on the use of *the* by the L3 PJ-CG-E participants in relation to the influential variables in both contexts are shown in Figure 4.15 (including the Greek proficiency level) and Figure 4.16. The marginal effects in context A showed that one level improvement in English proficiency increased the probability of the correct use of *the* by 16.2% (sig at $\alpha=.001$).

Regarding the L3 PJ-CG-E participants' results in context C, it was proven that:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 9.9% (sig at $\alpha=.01$).

2. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 3% (sig at $\alpha=.01$).

3. One year increase in the length of learning English increased the probability of the correct use of the relevant article by 2.7% (sig at $\alpha=.001$).

Figure 4.15: Relationship between the probability of converging with L2 English on the use of *the* by the L3 PJ-CG-E group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).

Figure 4.16: Relationship between the probability of converging with L2 English on the use of *the* by the L3 PJ-CG-E group and some forms of input in both contexts

The results of the L3 PJ-E-CG participants in context A showed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 20.3% (sig at α=.001). Similarly, the results of the L3 PJ-E-CG

participants in context C indicated that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 7.3% (sig at α=.01). The probability of converging with L2 English on the use of *the* in both contexts by the L3 PJ-E-CG participants is illustrated in Figure 4.17.

Figure 4.17: Relationship between the probability of converging with L2 English on the use of *the* by the L3 PJ-E-CG group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).

4.7.4.2. The effect of motivational factors and length of residence in Cyprus and/or Jordan on the use of *the*

It was expected that motivation would impact the participants' performance regarding their use of *the*. The length of residence in Cyprus and Jordan was correlated with the de facto linguistic status of English in Cyprus because of the widespread use of English in the island in comparison with the limited use of English in Jordan in which it is used a lingua franca. Thus, the participants living in Cyprus were expected to have more English input than the participants who spent less time there, or the L2 PJ participants who spent all their life in Jordan. In addition, the L2 PJ participants were expected to be less target-like than the L3 participants living in Cyprus as the participants from the

former group spent more time in Jordan than the latter group of participants. Hence, separate linear regression models were computed to assess the relationship between the L2/L3 participants' means on the use of *the* in each context and the target factors (See Table 4.3 in section 4.2).

Answering RQ4, the results of the L2/L3 groups indicated that the motivation factor did not contribute to the use of *the* (See Appendix 22). Furthermore, data analysis demonstrated that the role of length of residence in Cyprus and Jordan were not statistically verified, which is not with expectations. For example, the L2 CG and L3 participants seemed to have symmetrical performance regarding their use of *the* irrespective of their residence in Cyprus. Similarly, the L2 PJ and L3 participants had a symmetrical performance regarding their use of *the* irrespective of their length of residence in Jordan.

4.8. Grammaticality judgment task (GJT): The use of *Ø*

The GJT task tested the L2/L3 groups' acceptability judgements on the use of *Ø* before the N2s in the of-phrase construction (context B) and before proper names of people preceded by appositive titles/honorifics (context D). All the predictions regarding the participants' expected performance in contexts B and D are provided in section 4.5.

4.8.1. Overall group results on the use of *Ø*

The results provided in Table 4.25 indicated the means of the L2/L3 groups were low. They also showed the mean scores of the four experimental groups were much lower than the EN group. As an answer to RQ1, the differences were confirmed to be statistically significant by the one-way between groups ANOVA tests at the p<.05 level in context B ($F(4,308) =27.124$, p=.000) and context D ($F(4,308) =20.689$, p=.000).

Table 4.25: Per-group target-like ratings for the Ø in each context

Groups	Context B			Minimum	Maximum	Context D			Minimum	Maximum
	Mean	SD	Std.E			Mean	SD	Std.E		
L2 PJ	2.44	.759	.080	1.00	4.00	2.55	.866	.091	.50	4.00
L2 CG	2.06	.869	.090	.00	4.00	2.59	.985	.102	.00	4.00
L3 PJ-CG-E	2.13	1.041	.144	.00	3.83	2.09	.927	.129	.00	4.00
L3 PJ-E-CG	2.40	.708	.100	.67	4.00	2.70	.713	.101	1.17	4.00
EN Control	3.85	.271	.052	3.33	4.00	3.92	.283	.054	2.67	4.00

Statistical analysis comparisons using the Scheffe post-hoc tests, as provided in Table 4.26, revealed there were clear differences between the EN groups' performance and each of the four experimental groups in judging the grammaticality of Ø in both contexts. The post-hoc tests also revealed the means of the PJ group were statistically higher than the L2 CG group in context B. They also indicated the means of the L2 CG group in context D were statistically higher than the L3 PJ-CG-E group and the means of the latter group were statistically lower than the L3 PJ-E-CG group.

Table 4. 26: Scheffe post-hoc tests of the mean ratings for Ø in each context

(I) Groups	(J) Groups	Context B			Context D		
		MD (I-J)	Std.E	Sig.	MD (I-J)	Std.E	Sig.
EN Control	L2 PJ	1.410*	.178	.000	1.374*	.188	.000
	L2 CG	1.793*	.177	.000	1.328*	.188	.000
	L3 PJ-CG-E	1.717*	.193	.000	1.830*	.204	.000
	L3 PJ-E-CG	1.455*	.194	.000	1.220*	.205	.000
L2 PJ	L2 CG	.382*	.120	.039	-.046	.127	.998
	L3 PJ-CG-E	.307	.141	.319	.456	.149	.056
	L3 PJ-E-CG	.045	.143	.999	-.154	.151	.904
L2 CG	L3 PJ-CG-E	-.075	.141	.991	.502*	.149	.024
	L3 PJ-E-CG	-.338	.142	.232	-.109	.151	.971
L3 PJ-CG-E	L3 PJ-E-CG	-.262	.161	.617	-.610*	.170	.013

To provide thorough answers to the RQs of the study, the results of the experimental groups will be discussed in sub-sections 4.8.2 and 4.8.3 by specifying the source and type of transfer.

4.8.2. Influence of Greek/English on the performance of the L3 groups

To answer RQ2 in relation to the performance of the L3 groups, the marginal effects of the Ordered Probit regression analyses were computed to find whether the L3 groups' proficiency levels in L1 PJ/A and/or L2/L3 Greek had an influence on their performance in each context. The results are shown in Appendix 20.

Only the marginal effects of the Greek proficiency on rating Ø by the L3 PJ-CG-E participants in context B yielded statistically significant results. They revealed that the participants with lower Greek proficiency levels were 10.7% (sig at α=.001) more target-like on their use of *the* than the participants with higher Greek proficiency levels.

4.8.3. Transfer in L2/L3 acquisition

To check the sources of transfer, t-tests statistical analyses for the pairwise comparisons were run between the L2/L3 groups' acceptability judgement on the experimental sentences correctly provided as definite NPs and their acceptability judgements on the sentences inaccurately provided as bare NPs. The results are provided in Table: 4.27.

Table 4.27: Pairwise t-tests on the means of Ø +NPs vs. *the*+ NPs

	Context B						Context D					
	Ø +NPs vs. *the*+ N2						Ø +NPs vs. *the*+ NPs					
Groups	MD	SD	Std.E	t	df	Sig. *p* value	MD	SD	Std.E	t	df	Sig. *p* value
L2 PJ	1.498	1.422	.149	10.054	90	*.000*	.813	1.104	.116	7.029	90	*.000*
L2 CG	.821	1.379	.143	5.739	92	*.000*	.932	1.204	.125	7.462	92	*.000*
L3 PJ-CG-E	1.154	1.323	.183	6.291	51	*.000*	1.256	1.506	.209	6.015	51	*.000*
L3 PJ-E-CG	1.367	1.411	.200	6.847	49	*.000*	1.107	1.392	.197	5.620	49	*.000*
EN Control	.099	.612	.118	.839	26	.409	.160	.565	.109	1.476	26	.152

P ** value is significant at the 0.01 level.
*P** value is significant at the 0.05 level (2-tailed).

As an answer to RQ2, the means of the experimental groups on accepting the sentences correctly provided as bare NPs were significantly higher than their rejection

of the NPs incorrectly preceded with *the.* Accordingly, the results proved that the L2 groups had negative influence from their L1s when they were provided with ungrammatical NPs more than grammatical NPs. The L3 groups followed a pattern similar to both L2 groups. Accordingly, the analysis of the data suggested the L3 participants might be influenced by both PJ/A and CG. Examples of the (in)acceptability judgements by the L2/L3 participants in each context are as follows:

Inacceptable judgements on 'the +N2' (while it should be acceptable) (Context B)

      (78).   My mum can't explain the joy of *the baking* every time she makes the baguette. _____0_____

Acceptable judgements on 'the + N2'(Context B)

      (79). I found the tank of *water* empty yesterday. _____4_____

Inacceptable judgements on *'the +N2' (Context D)

      (78). *The Ms. Malala Yousafzai* confronted the Taliban when she was very young. _____0_____

Acceptable judgements on 'Ø + N2'(Context D)

      (79). *Professor Thomas* delayed the exam because of the weather. _____4_____

4.8.4. Linguistic factors that might pertain to the use of *Ø*

4.8.4.1. The effect of input factors on the use of *Ø*

Ordered Probit model tests were performed to find out if the different forms of input mentioned in RQ4 (See Appendix 23) have an impact on the accuracy scores of the L2/L3 participants in using *Ø*. As an answer to RQ4, the marginal effects indicated some forms of input predicted the L2/L3 participants' performance in each context.

      The probabilities related to the L2 PJ participants' use of *Ø* in a native-like way in both contexts are shown in Figure 4.18. The marginal effects of the target influential variables in relation to the L2 PJ participants' scores in context B revealed that:

1. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 11.3% (sig at α=.001).

2. One day increase in exposure to English in the community increased the probability of the correct use of the relevant article by 4.8% (sig at α=.01).

The results of the L2 PJ group in context D demonstrated that:

1. One level improvement in English proficiency increased the probability of the correct use of the relevant article by 10% (sig at α=.001).

2. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 7.5% (sig at α=.001).

Figure 4.18: The relationship between the probability of converging with L2 English on the use of Ø by the L2 PJ group and some forms of input in both contexts
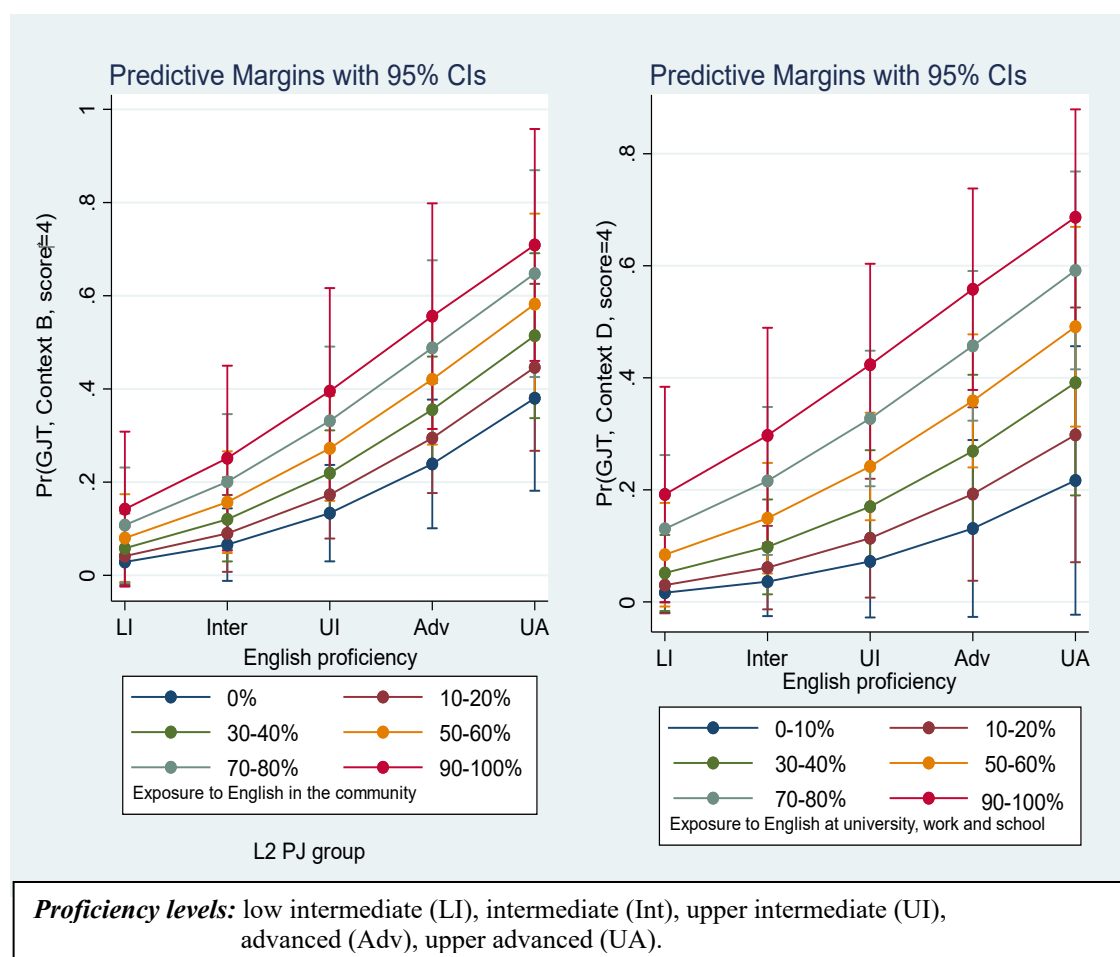
The marginal effects of the target influential variables in relation to the L2 CG participants' scores in context B revealed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 10%

(sig at α=.001). Similarly, the results of the L2 CG group in context D revealed that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 19.8% (sig at α=.001). The probabilities related to the participants' use of Ø in a native-like manner in both contexts are shown in Figure 4.19.

Figure 4.19: The relationship between the probability of converging with L2 English on the use of Ø by the L2 CG group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
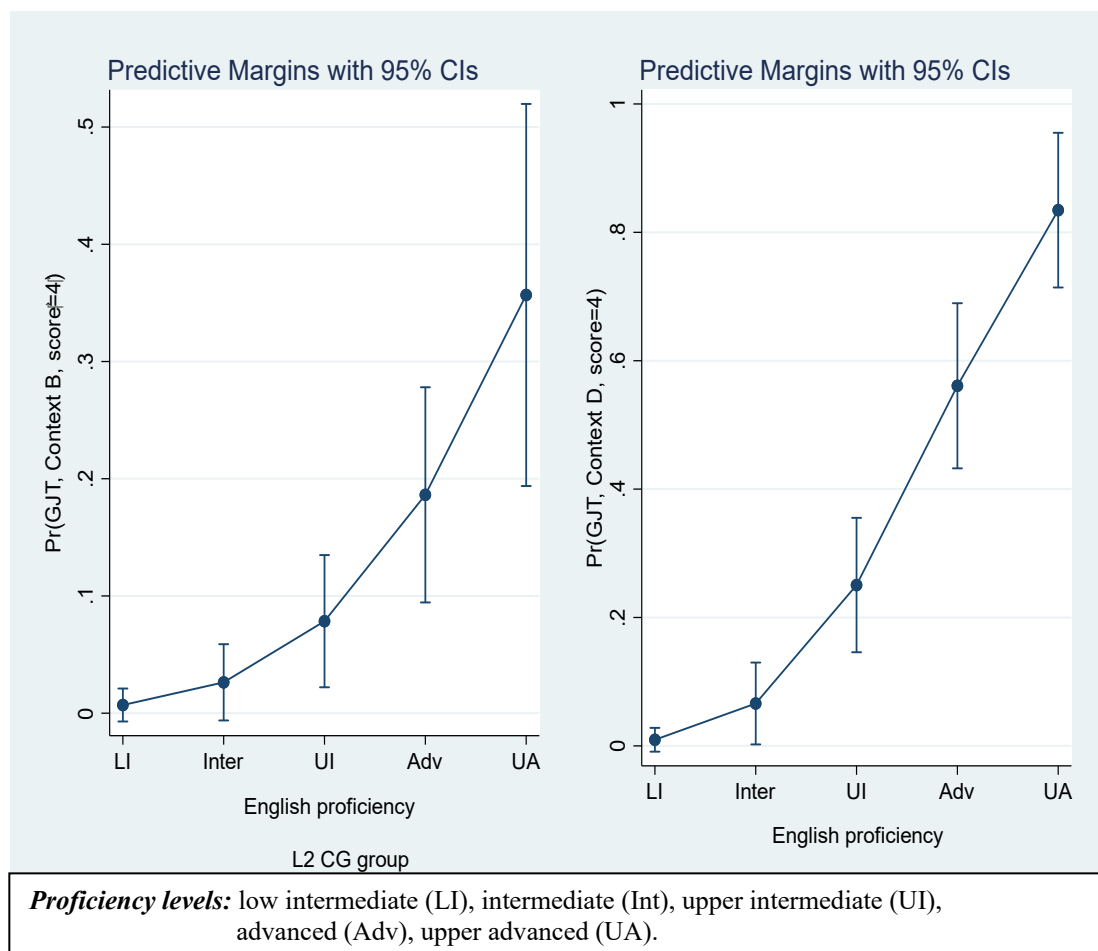
The marginal effects of the target influential variables in relation to the L3 PJ-CG-E participants' target-like performance in context D showed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 10.5% (sig at α=.001). On the other hand, the results of the L3 PJ-CG-E participants in context B demonstrated that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 10%

(sig at α=.001). Also, one year increase in the length of learning English increased the probability of the correct use of the relevant article by 1.9% (sig at α=.01). The probabilities related to the participants' use of Ø in a native-like way in both contexts are shown in Figure 4.20.

Figure 4.20: The relationship between the probability of converging with L2 English on the use of Ø by the L3 PJ-CG-E group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
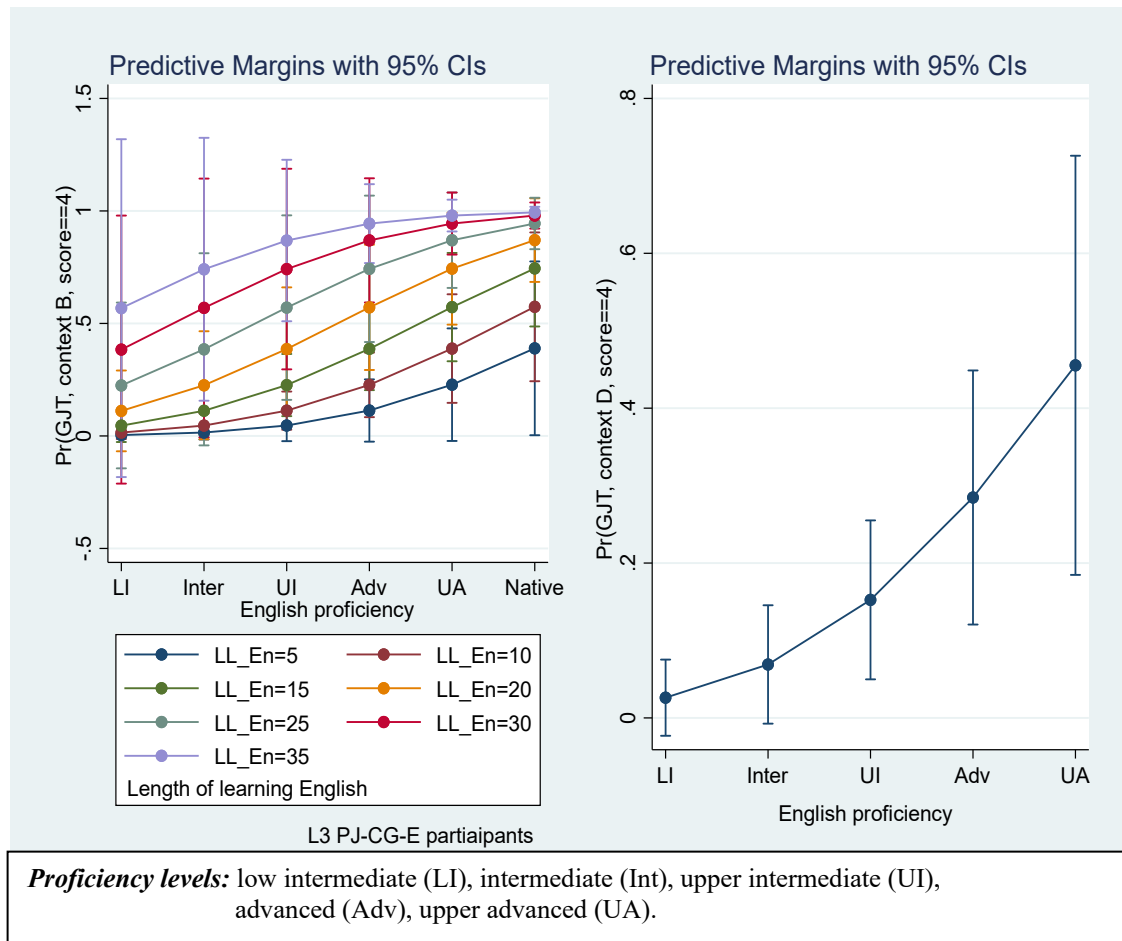
The marginal effects of the target influential variables in relation to the L3 PJ-E-CG participants' scores in context B exhibited that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 9.6% (sig at α=.001). Similarly, the results of the L3 PJ-E-CG participants in context D showed that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 19.4% (sig at α=.001). The probabilities related

to the participants' use of Ø in a native-like manner in both contexts are shown in Figure 4.21.

Figure 4.21: The relationship between the probability of converging with L2 English on the use of Ø by the L3 PJ-E-CG group and English proficiency in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
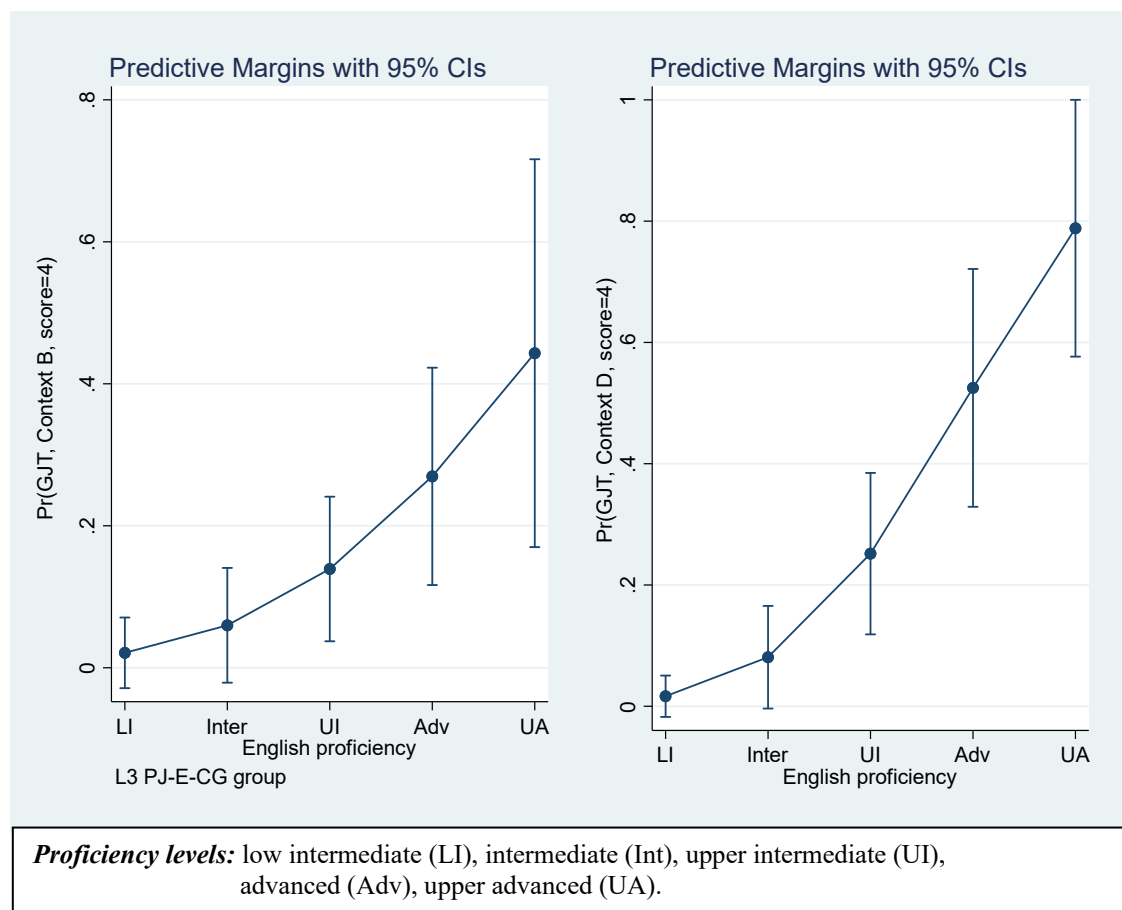
4.8.4.2. Motivational factors and length of residence in Cyprus and/or Jordan

It was expected that motivation might have a positive impact on the acquisition of *the*. It was also expected that the participants living in Cyprus would get more English input than the L2 PJ participants who spent all their life in Jordan. Hence, separate linear regression models were computed to assess the relationship between the L2/L3 participants' means on the use of *the* in each context and the target factors (See Table 4.3 in section 4.2). The regression analyses of the L2/L3 groups indicated these factors did not contribute to the use of Ø in both contexts (See Appendix 22).

4.9. Grammaticality judgment task (GJT): The use of *a(n)*

The GJT task tested the L2/L3 groups' acceptability judgements on using *a(n)* before specific and non-specific NPs on a five-point Likert scale ranging from 0 to 4 (See Chapter three, section 4.5). All the predictions regarding the participants' expected performance in contexts E and F are provided in section 4.6.

4.9.1. Overall group results on the use of *a(n)*

RQ1 aimed to find whether the experimental groups' performance was similar to or different from the EN group, and if there were any differences among the experimental groups in the use of *a(n)*. The results provided in Table 4.28 showed that the mean scores of the experimental groups were much lower than the EN group.

Table 4.28: Per-group target-like ratings for *a(n)* in the [+specific] and [–specific] contexts

Groups	Context E [–definite/+specific]			Minimum	Maximum	Context F [–definite/ –specific]			Minimum	Maximum
	Mean	SD	Std.E			Mean	SD	Std.E		
L2 PJ	2.42	.854	.089	.33	4	2.63	.763	.080	1.00	4.
L2 CG	2.89	.774	.080	1.00	4	2.96	.812	.084	.17	4
L3 PJ-CG-E	2.72	.807	.112	1.00	4	2.68	.845	.117	.83	4
L3 PJ-E-CG	2.58	.709	.100	1.33	4	2.60	.745	.105	.83	4
EN Control	3.88	.272	.052	3.17	4	3.83	.308	.059	2.83	4

One-way ANOVA tests were computed to determine whether the means of the EN group and the experimental groups were significantly different. The results demonstrated there were significant differences among groups at the p<.05 level in context E (F(4, 308) =20.227, p=.000) and context F (F(4, 308) =15.411, p=.000). Follow-up Scheffe post-hoc tests were run to determine the locus of the differences.

The Scheffe post-hoc tests provided in Table 4.29 revealed there were clear differences between the EN groups' performance and each of the experimental groups in judging the grammaticality of *a(n)* in both contexts. The post-hoc tests also showed the means of L2 CG group in context E were statistically higher than the means of the L2 PJ group. Yet, there were no statistically significant differences among groups in context F.

Table 4.29: Comparison of mean ratings for *a(n)* in contexts *E* and *F*

(I) Groups	(J) Groups	Context E [–definite/+specific]			Context F [–definite/ –specific]		
		Mean.D (I-J)	Std.E	Sig.	Mean.D (I-J)	Std.E	Sig.
EN Control	L2 PJ	**1.455***	.168	*.000*	**1.199***	.167	*.000*
	L2 CG	**.986***	.167	*.000*	**.872***	.167	*.000*
	L3 PJ-CG-E	**1.159***	.182	*.000*	**1.148***	.181	*.000*
	L3 PJ-E-CG	**1.297***	.183	*.000*	**1.227***	.182	*.000*
L2 PJ	L2 CG	**-.469***	.113	*.002*	-.327	.112	.079
	L3 PJ-CG-E	-.297	.133	.293	-.051	.133	.997
	L3 PJ-E-CG	-.159	.135	.846	.028	.134	1.000
L2 CG	L3 PJ-CG-E	.173	.133	.791	.276	.132	.361
	L3 PJ-E-CG	.311	.134	.255	.355	.134	.136
L3 PJ-CG-E	L3 PJ-E-CG	.138	.152	.934	.079	.151	.991

*. The mean difference is significant at the 0.05 level.
**. The mean difference is highly significant at the 0.01 level

To provide a thorough analysis of the L2/L3 data in relation to RQ1, the results were analysed in light of RQ2. Thus, further statistical analyses were conducted to specify the source(s) of transfer for the L2/L3 groups in subsections 4.9.2 and 4.9.3.

4.9.2. Influence of Greek/Arabic on the performance of the L3 groups

Marginal effects (See Appendix 21) were computed to find whether there was a relationship between the L3 groups' performance in each context and their proficiency levels in L1 Arabic and L2/L3 Greek. Answering RQ2, the marginal effects of the L3 PJ-CG-E participants demonstrated that one level improvement in Greek proficiency increased the probability of the correct use of the relevant article in context F by 9% (sig

at α=.01). An example of the acceptability judgements that showed a positive CLI from the L1 Greek by an L3 PJ-CG-E participant is as follows:

> (82) John had *a problem* with the manager. I still don't know what kind of
> problem he had. _____4_____   *Context F*

Regarding the L3 PJ-E-CG group's marginal effects, it was proven that the participants with lower Arabic proficiency levels were 6.7% (*sig* at α=.01) more target-like on their use of *the* than the participants with higher Arabic proficiency levels. An example of the acceptability judgements that showed a negative CLI from the L1 APJ/A by an L3 PJ-E-CG participant is as follows:

> (83) I finally got high mark in the physics exam. ___0_____ *Context E*

4.9.3. Transfer in L2 and L3 use of *a(n)*

To check the sources of transfer for the L2 groups, statistical analysis Paired Sample t-tests were run between the L2 groups' acceptability judgement on the experimental sentences correctly provided as indefinite NPs, and their acceptability judgements on the sentences inaccurately provided as bare NPs. The results are provided in Table 4.30.

The means in each context showed that the participants' acceptance to the sentences preceded with *a(n)* were significantly higher than their rejection of the sentences provided as bare indefinite NPs. Answering RQ2, the results suggested the source of negative transfer for the L2 PJ group was partial, as it was associated with the ungrammatical sentences more than the grammatical sentences. Regarding the results of the L2 CG group, the participants resorted to L1 positive transfer (existence of the indefinite article in L1 CG) more than L1 negative transfer (influence of certain types of verbs on the choice of *a(n)*). As the results of the L3 groups followed a pattern similar to the L2 groups, it was suggested the source of transfer was not clear (cf. section 4.9.2).

Table 4. 30: Paired Sample t-tests in judging *a(n)* in (un)grammatical sentences

Groups	Context E [–definite/+specific] a(n)+NPs vs. *Ø+ NPs						Context F [–definite/–specific] a(n)+NPs vs. *Ø+ NPs					
	MD	SD	Std E	t	df	Sig. *p* value	MD	SD	Std.E	t	df	Sig. *p* value
L2 PJ	1.231	1.415	.148	8.298	90	*.000*	.956	1.476	.155	6.179	90	*.000*
L2 CG	.634	1.278	.133	4.788	92	*.000*	.362	1.088	.113	3.210	92	*.002*
L3 PJ-CG-E	1.077	1.395	.193	5.567	51	*.000*	.782	1.377	.191	4.097	51	*.000*
L3 PJ-E-CG	1.133	1.375	.194	5.827	49	*.000*	1.253	1.363	.193	6.503	49	*.000*
EN Control	-.074	.534	.103	-.721	26	.477	.173	.688	.132	1.306	26	.203

P ** value is significant at the 0.01 level
P* value is significant at the 0.05 level (2-tailed).

Examples of the acceptability judgements by L2 CG and L3 PJ-CG-E participants that showed positive transfer from their L1 CG are as follows:

Acceptability *(incorrect)* judgements on bare NPs in *context E:*

(84)   My neighbour has Slavic accent. He is from Serbia. _____4_____

Acceptability *(correct)* judgements on the 'a(n) + NPs' structure *in context F:*

(85).   My young brother was wearing a helmet. It looked strange to me. _____4_____

4.9.4. Specificity effect in L2 performance

The FH (Ionin et al., 2008) assumed the performance of the L2 PJ participants from the lower English proficiency levels would provide evidence for the specificity effect, as their L1 PJ/A lacks the indefinite article. Yet, specificity was expected to decrease with the increase of English proficiency.

For the L2 CG groups, the FH predicted the L2 CG participants would not find it difficult to supply *a(n)* in the target contexts even when they were at lower English proficiency levels. Thus, the specificity effect was measured by comparing the groups' mean scores in the [–definite/+specific] context with their scores in the [–definite/–specific] context. Accordingly, Paired Sample statistical analysis t-tests were computed

regarding the overall group results and the groups' results per English proficiency levels. The findings are provided in Table 4.31.

Table 4.31: Paired Sample t-test for the groups' mean scores

Groups	Dependent variables	Paired Differences			t	df	Sig. *p* value
		MD	SD	Std.E			
L2 PJ	Means(E) vs. Means (F)	-.207	.717	.075	-2.753	90	*.007*
L2 CG		-.065	.640	.066	-.972	92	.333
L3 PJ-CG-E		.038	.544	.075	.510	51	.612
L3 PJ-E-CG		-.020	.673	.095	-.210	49	.834
EN Control		.049	.462	.089	.556	26	.583

P ** value is significant at the 0.01 level
P * value is significant at the 0.05 level (2-tailed).

Consistent with the predictions of the FH (Ionin et al., 2008), the findings showed the L2 PJ group's performance in context E was significantly higher than its performance in context F. In contrast, the results of the L2 CG and the L3 groups indicated there was no evidence for the specificity effect as there were no statistically significant differences in judging the grammaticality of *a(n)* in each context.

Table 4.32 provides the Paired Sample t-tests per English proficiency level. The results demonstrated that the L2 CG group and the L3 groups' performance at all English proficiency levels in context E was not statistically different from their performance in context F at the p >.05 level. In contrast, the t-tests of the mean scores of the L2 PJ participants from the low intermediate and intermediate levels in the [–specific] context were significantly higher than the [+specific] context. Based on the predictions of the FH (Ionin et al., 2008), the results indicated the specificity effect was only evident in the performance of the L2 PJ group at the lower English proficiency levels rather than the other experimental groups. The results also indicated the specificity feature had less effect on the performance of the L3 groups than the L2 PJ group and, therefore, suggested L2/L3 Greek might have a positive effect on the performance of the L3 groups.

Table 4.32: Paired Sample t-tests on the use of *a(n)* per English proficiency

Dependent variables	Groups	English proficiency	Paired differences			t	df	Sig. *p* value
			MD	SD	Std.E			
Means in context (E) vs. Means in context (F)	L2 PJ	Low intermediate (LI)	-.741	.508	.169	-4.377	8	*.002*
		Intermediate (Inter)	-.552	.523	.131	-4.226	15	*.001*
		Upper intermediate (UI)	-.140	.735	.147	-.952	24	.351
		Advanced (Adv)	-.060	.553	.111	-.543	24	.592
		Upper Advanced (UA)	.104	.937	.234	.445	15	.663
	L2 CG	Low intermediate (LI)	-.021	1.020	.255	-.082	15	.936
		Intermediate (Inter)	-.119	.410	.110	-1.085	13	.298
		Upper intermediate (UI)	-.212	.589	.126	-1.689	21	.106
		Advanced (Adv)	.038	.630	.134	.282	21	.781
		Upper Advanced (UA)	-.009	.436	.100	-.088	18	.931
	L3 PJ-CG-E	Low intermediate (LI)	.103	.591	.164	.625	12	.543
		Intermediate (Inter)	-.111	.667	.222	-.500	8	.631
		Upper intermediate (UI)	-.056	.404	.117	-.476	11	.643
		Advanced (Adv)	.117	.567	.179	.651	9	.531
		Upper Advanced (UA)	.146	.552	.195	.747	7	.480
	L3 PJ-E-CG	Low intermediate (LI)	-.100	.545	.172	-.580	9	.576
		Intermediate (Inter)	.037	.776	.259	.143	8	.890
		Upper intermediate (UI)	.012	.597	.160	.075	13	.942
		Advanced (Adv)	.000	.913	.304	.000	8	1.000
		Upper Advanced (UA)	-.062	.684	.242	-.258	7	.803
	EN Control	Native	.049	.462	.089	.556	26	.583

P*. The mean difference is significant at the 0.05 level.
P**. The mean difference is highly significant at the 0.01 level

4.9.5. Linguistic factors that might influence L2/L3 acquisition of *a(n)*

4.9.5.1. The effect of input factors on the use of *a(n)*

In order to answer RQ4, Ordered Probit regression analyses were computed (See Appendix 21) to assess the relationship between each input factor and the L2/L3 group's means on the use of *a(n)* in each context. Answering RQ4, the marginal effects indicated significant results of some input factors in each context.

The probability of converging with L2 English on using *a(n)* in both contexts is illustrated in Figure 4.22. The marginal effects of the target influential variables in relation to the L2 PJ participants' score of *a(n)* in context E showed that:

1. One level improvement in English proficiency increased the probability of the correct use of the relevant article by 8.9% (sig at α=.001).

2. One year increase in the length of learning English increased the probability of the correct use of the relevant article by 1.9% 4 (sig at α=.01).

The results of the L2 PJ participants in context F showed that:

1. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 8.5% (sig at α=.001).

2. One year increase in the length of learning English increased the probability of the correct use of the relevant article by 2.8% (sig at α=.01).

Figure 4.22: The relationship between the probability of converging with L2 English on the use of *a(n)* by the L2 PJ group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
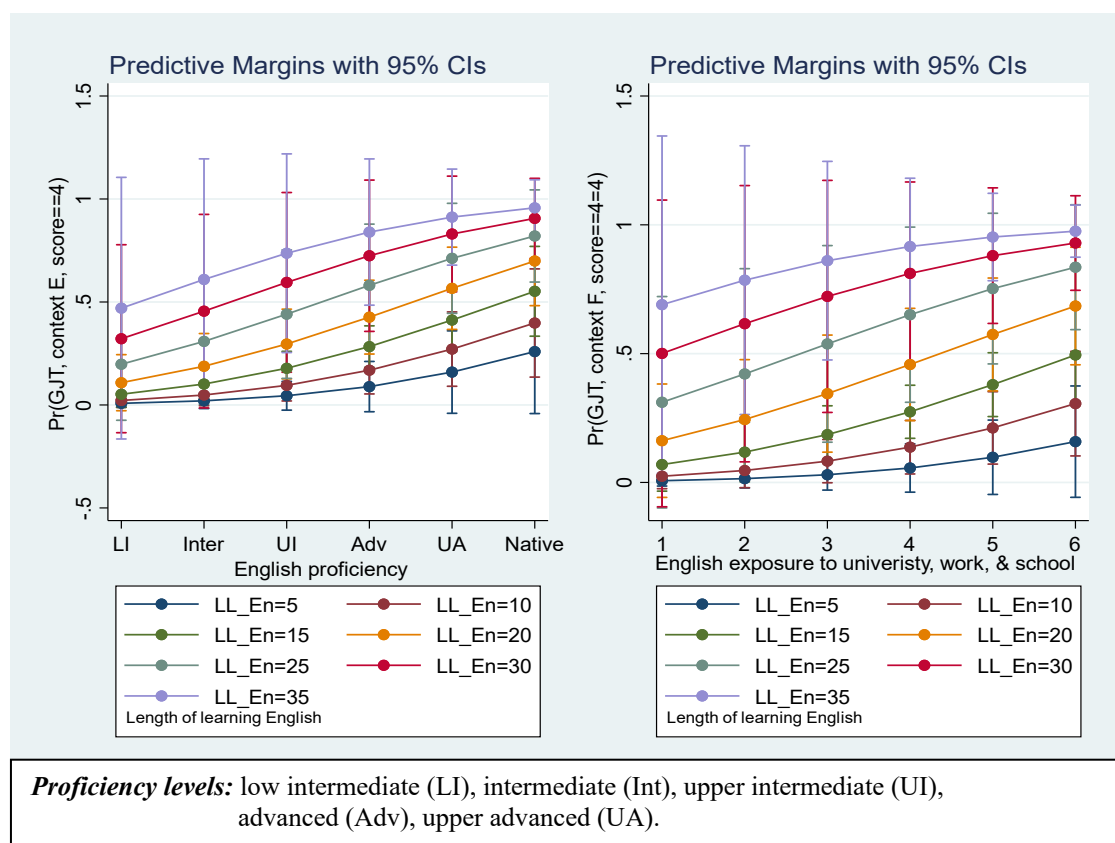
The marginal effects of the influential variables in relation to the L2 CG participants' use of *a(n)* in context E revealed that:

1. One level improvement in English proficiency increased the probability of the correct use of the relevant article by 14% (sig at α=.001).

2. One day increase in exposure to English at home increased the probability of the correct use of the relevant article by 4.9% (sig at α=.01).

The results of the L2 CG participants in context F demonstrated that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 14.8% (sig at α=.001). The probability of converging with L2 English on the use of *a(n)* by the L2 CG participants in both contexts is illustrated in Figure 4.23.

Figure 4.23: Relationship between the probability of converging with L2 English on the use of *a(n)* by the L2 CG group and some forms of input in both contexts
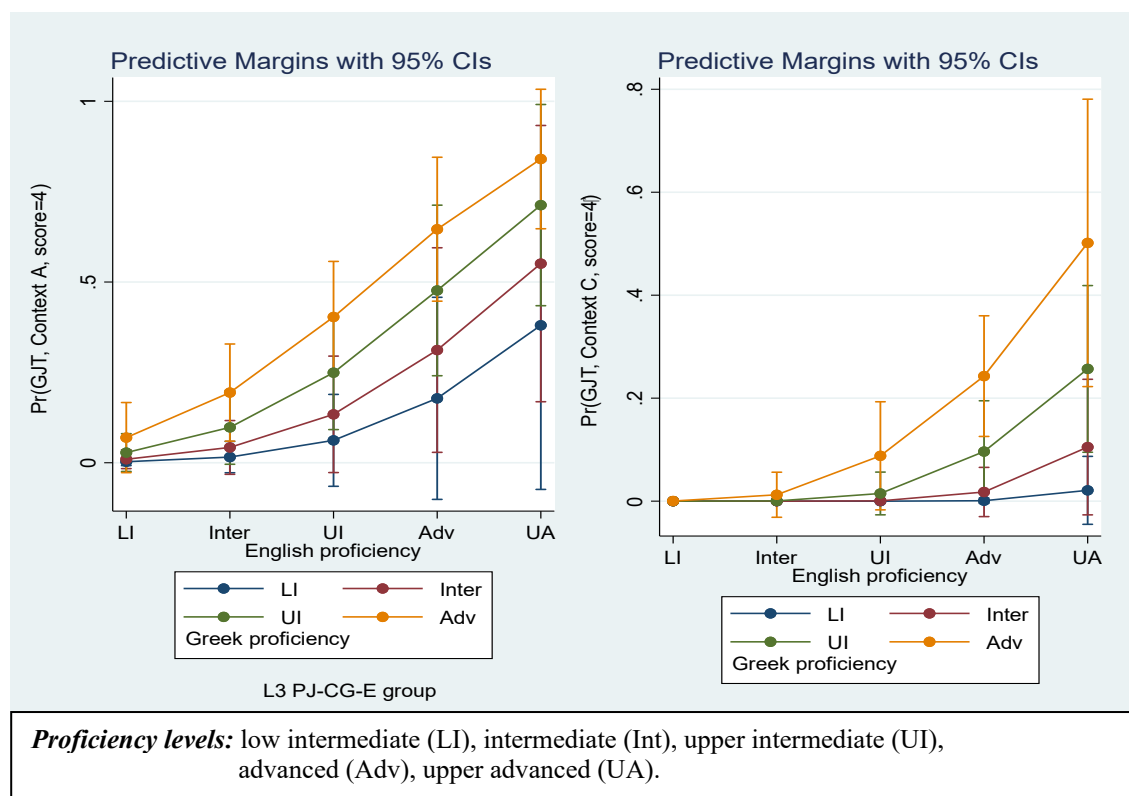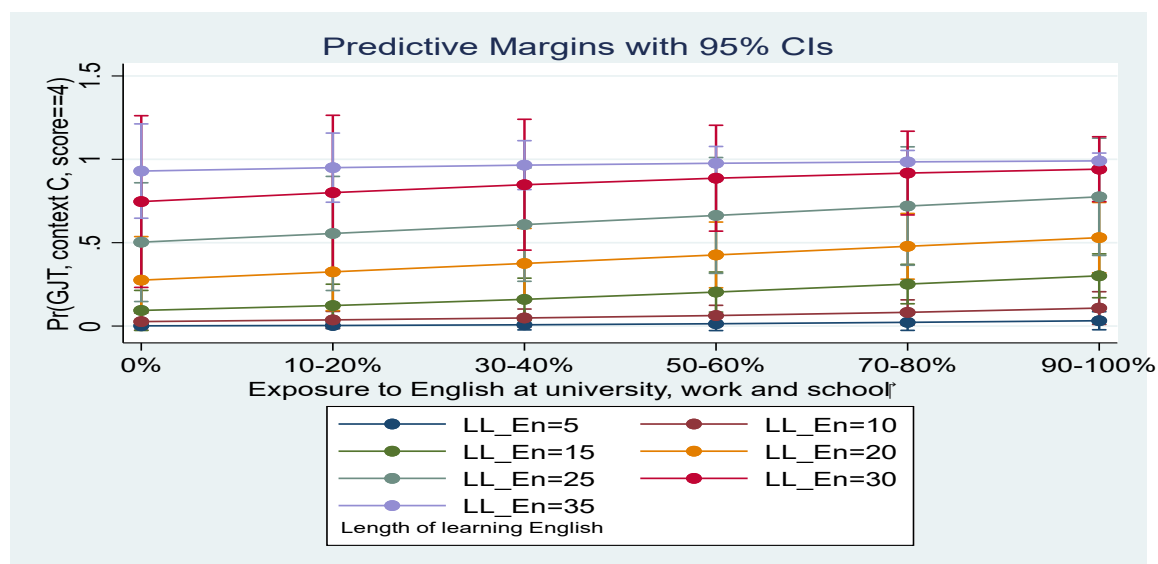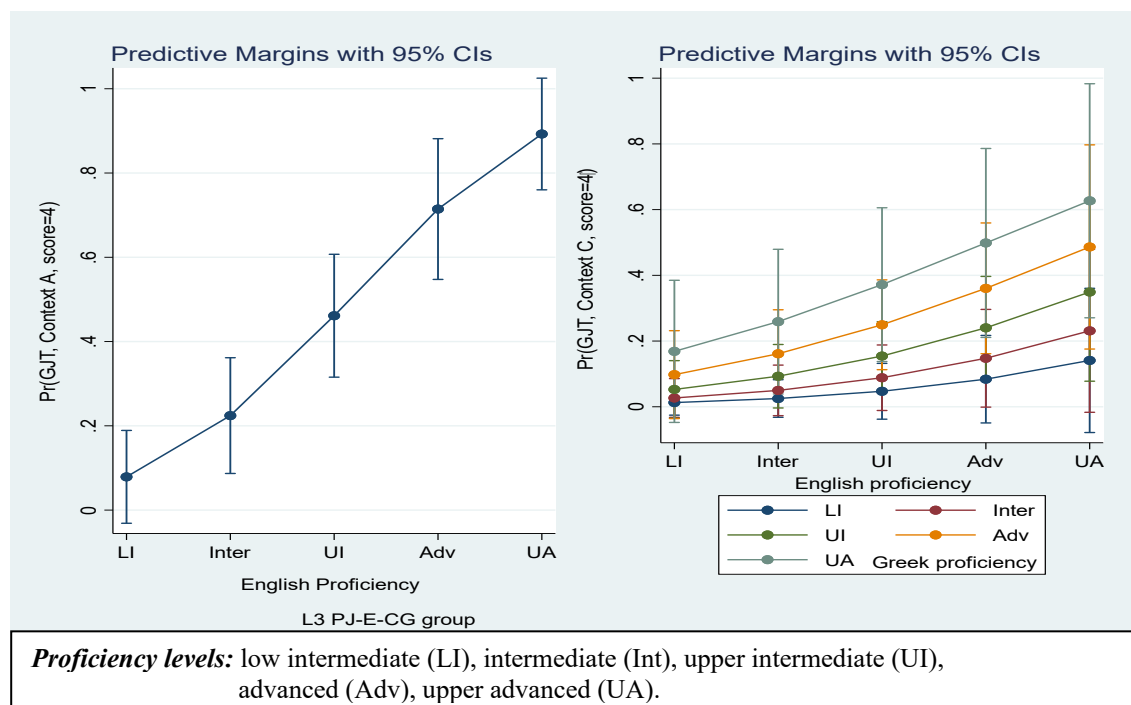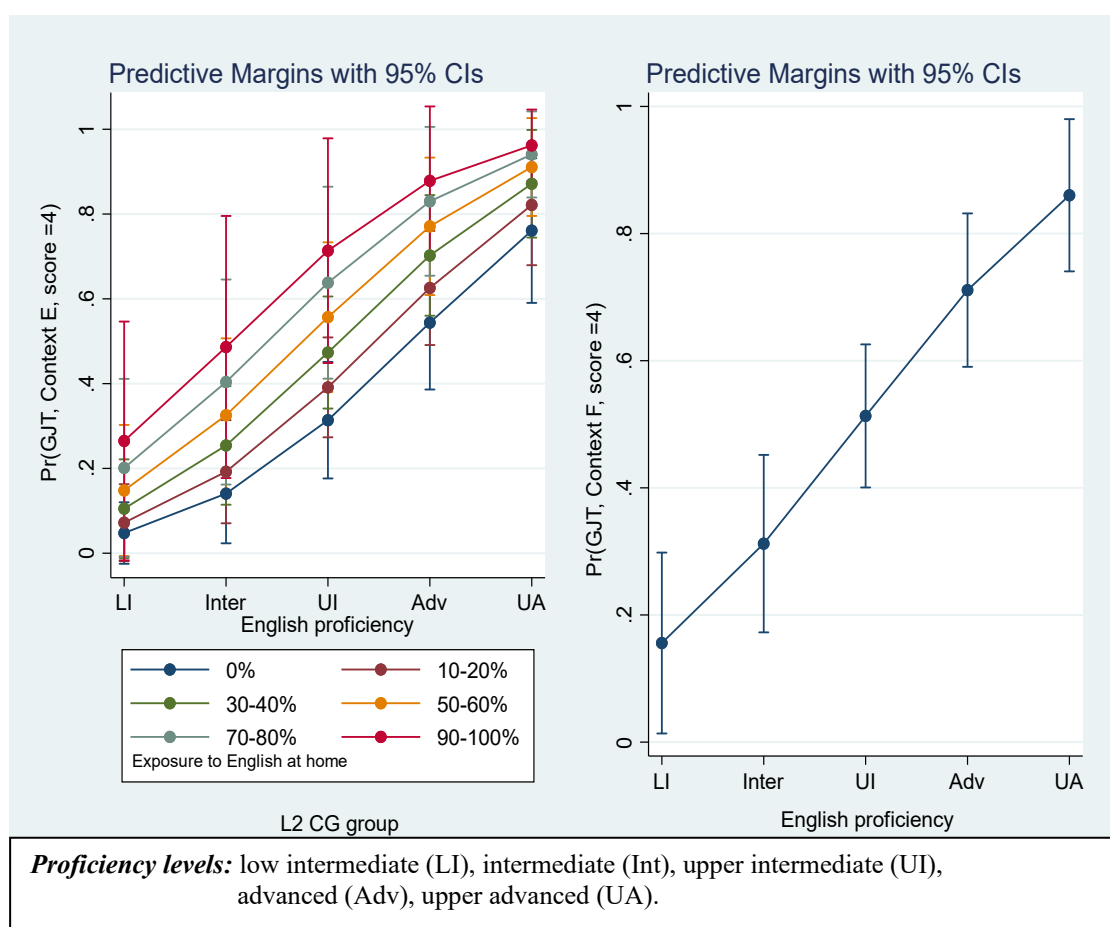
The marginal effects of the L3 PJ-CG-E participants in context E showed that one level improvement in English proficiency increased the probability of the correct use of the relevant article by 12.8% (sig at α=.001). The results of the L3 PJ-CG-E participants in context F demonstrated that one level enhancement in English proficiency increased the probability of the correct use of the relevant article by 14% (sig at α=.001). The probability of converging with L2 English on the use of *a(n)* by the PJ-CG-E group in context E and context F (including the Greek proficiency level) is illustrated in Figure 4.24.

Figure 4.24: Relationship between the probability of converging with L2 English on the use of *a(n)* by the L3 PJ-CG-E group and some forms of input in both contexts

Proficiency levels: low intermediate (LI), intermediate (Int), upper intermediate (UI), advanced (Adv), upper advanced (UA).
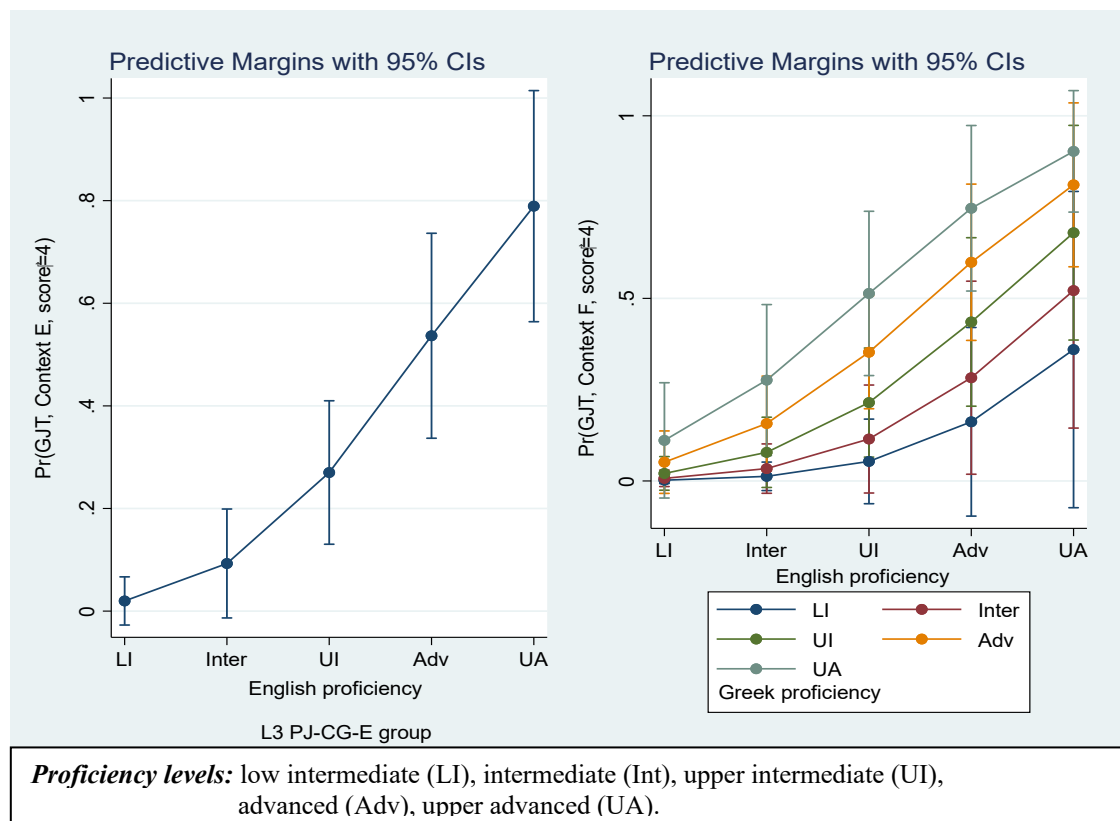
The probability of converging with L2 English by the L3 PJ-E-CG group in both contexts is illustrated in Figure 4.25. The marginal effects of the influential variables in relation to the L3 PJ-E-CG participants' use of *a(n)* in context E indicated that:

1. One year increase in the age of participants increased the probability of the correct use of the relevant article by 0.9% (sig at α=.01).

2. One level improvement in English proficiency increased the probability of the correct use of the relevant article by 10.3% (sig at α=.001).

3. One day increase in exposure to English at university/school/work increased the probability of the correct use of the relevant article by 9.7% (sig at α=.01).

The results of the L3 PJ-E-CG participants in context F showed that:

1. One year increase in the age of participants increased the probability of the correct use of the relevant article by 1% (sig at α=.001).

2. One level enhancement in English proficiency increased the probability of the correct use of the relevant article by 10% (sig at α=.001).

Figure 4.25: Relationship between the probability of converging with L2 English on the use of *a(n)* by the L3 PJ-E-CG group and some forms of input in both contexts
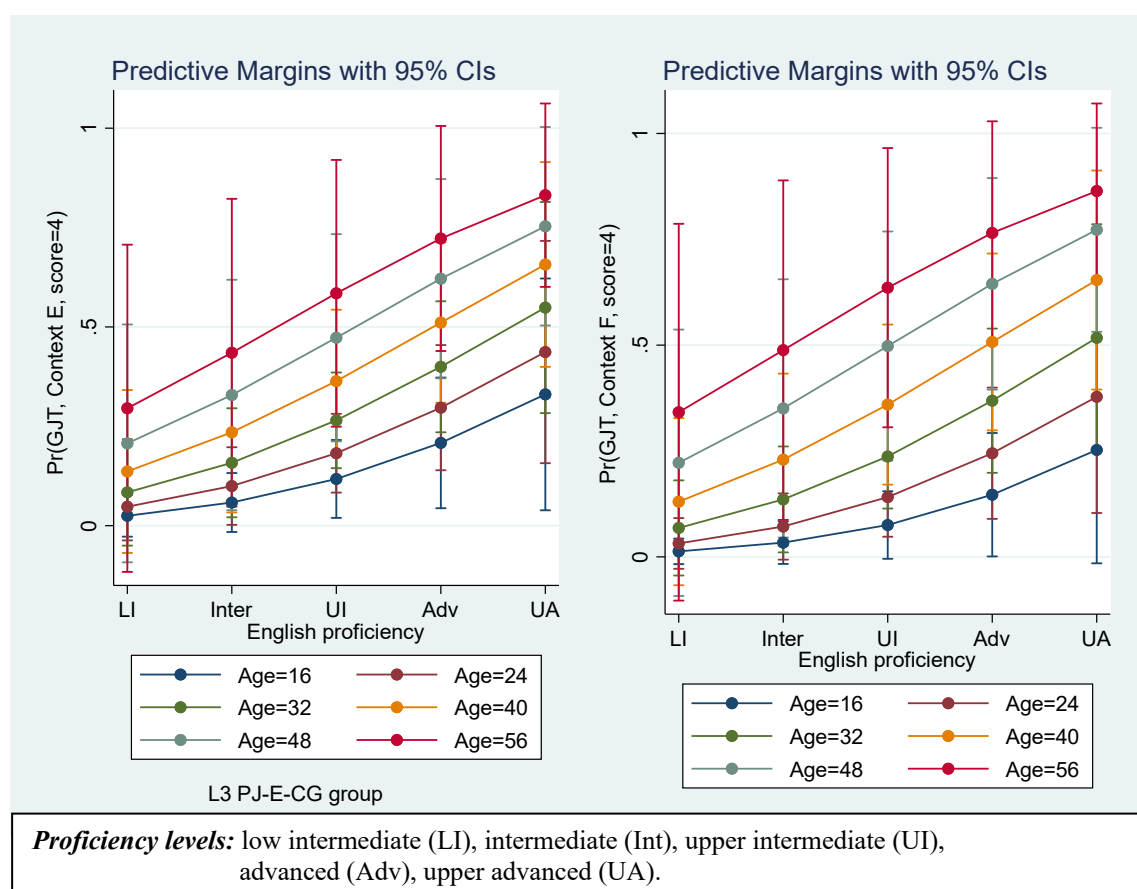
4.9.5.2. The effect of motivational factors and length of residence in Cyprus and/or Jordan on the use of *a(n)*

Separate linear regression models were computed to find whether motivation and the length of residence in Cyprus/Jordan had an influence on the L/L3 participants' use of *a(n)*. The results indicated these factors did not contribute to the L2/L3 acquisition of *a(n)* (See Appendix 22).

4.10. A comparison between the tasks of the study

This section aims to compare the results obtained from the FCET to the results obtained from the GJT by addressing the RQs of the study. As an answer to RQ1, the EN participants performed at ceiling. The ceiling performance of the EN control group was not less than 95.7% on the FCET and 3.83/4 (=95.75%) on the GJT in all the contexts[5]. The findings of both tasks demonstrated the accuracy rates of the experimental groups on using English determiners were lower than the EN group with statistically significant results. The exception was between the EN group and the L2 CG group on the use of *the* before the 'of-phrase' construction, and on the use of *a(n)* with [–specific] NPs on the FCET with no statistically significant results.

Concerning the differences among the L2/L3 groups, the results on the GJT showed more differences among these groups than the FCET. To start with, the pair of contexts designed to investigate the use of *the* were before the prenominal noun – N1 of the 'of-phrase' construction (context A) – or before the proper names of people and

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[5]Some studies like Ionin et al. (2008), Ben Abbes (2016) and Hermas (2019) reported that the ceiling performance of the native speakers in some contexts were 94.4%-100 %; 93, 96% and 98-100%, and 3.74-4 (out of 4 which is equal to 93.5%), respectively. In this study, the results of the English native group did not reach 100% in any context. Their performance was between 95%-98% which is an acceptable range of percentage and similar to the ceiling performance of the native speakers reported in the literature. It should be emphasised that the results of the English native speakers of the current study indicated there were individual variations as some of them had 100% while others did not. One explanation is that all the participants of the study were not informed that the target-phenomenon under investigation was related to English determiners. Thus, their focus might have been shifted to other aspects of the language/grammar (such as the British vs. English vs. Australian semantic choice of some words, punctuation marks and spelling, or discourse and context related factors that might be interpreted differently by them), especially in the GJT. Furthermore, the results of the EN participants in the pilot study were closer to their performance in the main study as they were between 93%-98%.

places (context C). The N1 of the 'of-phrase' construction was not only expected to confuse the L2 PJ group, but also the L2 CG group and the L3 groups, though it is close to CG and distinct from PJ/A. This is attributed to the fact the English N2 is realised as a definite nominal in Greek and Arabic. Yet, the L2 CG and L3 groups were expected to perform better than the L2 PJ group because the whole construction is definite. Contrary to predictions, the results on both tasks revealed the L2/L3 groups followed the same patterns before the 'of-phrase' construction.

Furthermore, the L2 CG and L3 groups were expected to perform better than the L2 PJ group in context C, as the CG context is structurally similar to English while the PJ/A context is not. The results of the L2 groups on the GJT were congruent with predictions, while their results on the FCET were partially in line with predictions. It was revealed that (i) the L2 groups' performance on the FCET was low, with no statistically significant differences between each of them, and (ii) both L3 groups performed better than the L2 PJ group. No differences were noticed between the L2 CG group and the L3 groups on both tasks, which was in line with predictions. The findings of the GJT, however, showed the L2 CG and each of the L3 groups performed better than the L2 PJ group, which was consistent with predictions.

The second pair of contexts demanded the use of $\emptyset$ before the postnominals in the 'of-phrase' construction (context B) and before the NPs preceded with appositive titles/honorifics (context D). It was predicted the experimental groups would have the same performance, as these two contexts are structurally distinct from CG (and SMG) and PJ/A (and MSA). The analysis of the data on both tasks bears some similarities and differences. More specifically, the results obtained from the FCET were consistent with predictions, as no statistically significant differences were detected among the experimental groups on the use of $\emptyset$ in context B. Nonetheless, the results from the GJT

demonstrated the L2 PJ group performed better than the L2 CG group. The results of the L3 groups were similar to those obtained from the former task.

The findings in context D as obtained from the FCET were also in line with predictions. The L2/L3 groups had symmetrical patterns in supplying Ø in the target context. The performance of the L2 CG group on the GJT seemed to pattern with the L2 PJ group but not the L3 groups. In other words, the performance of the L2 CG and L3 PJ-E-CG participants was better than the L3 PJ-CG-E participants.

The target experimental items relevant to the pair of contexts that investigated the use of *a(n)* were the specific context (E) and the non-specific context (F). It was expected the L2 CG would outperform the L2 PJ group, as the L1 of the latter group does not have the indefinite article. It was also expected the L3 groups would outperform the L2 PJ group, as their knowledge of L2/L3 CG would help them in the process of acquiring *a(n)*. Judging the accuracy rates of the indefinite NPs, the findings obtained from both tasks in both contexts indicated the L3 groups followed similar patterns, as there were no statistically significant differences between their performance and the performance of the other experimental groups. Consequently, the results of the L3 PJ-CG-E participants were not consistent with predictions. The results of the L3 PJ-E-CG group on the FCET were not also in line with predictions, while their results on the GJT were. Additionally, the analysis of the data relevant to both tasks demonstrated the L2 CG group's performance was not congruent with predictions. It was revealed the L2 CG group performed better than the L3 PJ-E-CG group in the [–specific] context and not the [–specific] context on the former task. Yet, there were no significant differences among the groups in both contexts as indicated by the latter task. Though the L2 CG group performed better than the L2 PJ group in context E on both tasks, no statistically significant results were yielded between both groups in context F.

Answering RQ2, the groups' results of both tasks demonstrated the high mean scores on the use of *the* by the L2 CG participants in context A and the low mean scores of the L2 PJ participants in context C were traceable to positive transfer from L1 CG and negative transfer from L1 PJ/A, respectively. However, the L2 PJ group's target-like performance in context A and the L2 CG group's low performance in context C indicated the source of transfer was not clear. Concerning the use of Ø in both contexts, the L2 groups' results revealed their low performance can be attributed to their L1s' negative transfer. With regard to the use of *a(n)* in context E and F, the results of the L2 PJ group on the FCET showed signs of non-facilitative transfer from L1 PJ/A with the specific context more than the non-specific context on both tasks. In contrast, the L2 CG participants' use of *a(n)* can be ascribed to the positive influence from their L1, because their performance was higher than the other groups as obtained from both tasks.

The Ordered Probit regression analyses on the FCET showed the accuracy scores of the L3 PJ-CG-E participants in contexts C were linked to negative transfer from their L1, while the source of transfer for both L3 groups in context A was not clear. Regression analyses indicated the L3 PJ-CG-E participants' target-like use of *the* article in the GJT was traceable to L2 CG in the form of facilitative transfer. However, the source of positive transfer for the L3 PJ-E-CG group was linked to L3 CG in context C, and it was evident in the participants' performance on both tasks. Regarding the L3 group's performance in contexts B and D, it was found the source of transfer can be attributed to L1 PJ/A and L2/L3 CG, as both L3 groups behaved like the L2 groups in their (non-)target-like performances/grammaticality judgments. Concerning the L3 groups' use of *a(n)*, it was proved their target-like performance resulted from the positive transfer from CG, as their symmetrical performance in both contexts was more similar to the L2 CG group than the L2 PJ group.

The results reported so far bear directly on testing the L2/L3 hypotheses mentioned in RQ3 in relation to the factors specified in RQ4. Assuming the FH (Ionin et al., 2008), the L2 groups' results on the use of *the* did not agree with the FH, as positive transfer did not override fluctuation. The results of the L2 CG group in both contexts and the L2 PJ group in context A demonstrated their performance was only (near) native-like because of the positive influence of some forms of input, especially English proficiency levels. However, the performance of the L2 PJ group in context C was only native-like with the increase of years of learning English as obtained from the GJT but not the FCET. Concerning the L2 PJ groups' use of *a(n)*, the results supported the FH, as fluctuation decreased with the increase of proficiency level. For the L2 CG participants, the results were not in line with the FH, as positive L1 transfer did not take place at the lower English proficiency levels.

The results of the L2 groups were congruent with the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996). The L2 PJ participants' performance in the experimental contexts showed that they were more able to reset the parameters of their L1 to be in line with the parameters of their L2. The findings revealed that the L2 group's use of English determiners was positively and significantly influenced by the increase of some forms of input, which outperformed the negative influence of the bi(dia)lectal situation in Cyprus in relation to the use of Ø and the bi(dia)lectal situation in Jordan in relation to the participants' use of the three articles. The main input factor that contributed to the performance of the L2 CG group was English proficiency. For the L2 PJ group, English proficiency and daily exposure to English at university/school/work were the most influential factors that led to improvements in the use of English determiners in response to certain contexts.

Furthermore, the results of the L3 groups did not conform with the CEM (Flynn et al., 2004), which only predicted the occurrence of positive transfer as negative

transfer from PJ/A and/or CG took place. The results of the L3 PJ-CG-E participants were partially in line with the L2 Status Factor (Falk and Bardel, 2011), which proposed the wholesale transfer would take place from L2 CG into L3 English. Data analysis revealed the L3 PJ-CG-E participants only resorted to facilitative CLI from their L2 CG on a holistic basis in the definite contexts on the GJT. In contrast, the results of both L3 groups agreed with the Scalpel Model of TLA (Slabakova, 2017), as transfer was selective. Transfer took place in relation to the L3 groups' proficiency levels in English or/and Arabic and Greek as well as the increase of certain types of input. Yet, the length of residence in Cyprus and the length of residence in Jordan before moving to Cyprus contributed significantly to the performance of the L3 PJ-E-CG participants in response to some contexts, as obtained from the FCET. The increase of residence in Cyprus with the decrease of residence in Jordan had a positive impact on their use of *a(n)* with specific NPs, whereas the decrease of residence in Jordan had a positive influence on their use of *the* with proper names.

4.11. Conclusion

This chapter began with the introduction followed by presenting the logic behind the statistical analyses that were used to answer the RQs of the study. The findings of the two tasks in relation to the information obtained from the questionnaire were, then, presented separately. The summary section outlined the findings by comparing the results of the FCET to the GJT on the basis of the universal-based account and the structural (dis)similarity between English and CG and PJ/A. In what follows, the findings will be further analysed in the discussion chapter with the aim of identifying the probabilistic causal relationships between transfer and the effect of some linguistic factors on the performance of the L2/L3 groups from the viewpoint of the L2 hypotheses and L3 Models that were tested in the current study.

Chapter 5: Discussion

5.1. Introduction

This chapter discusses the findings reported in the results chapter and provides interpretation of the results in light of existing theories. It aims to address the research questions (RQ) of the study. The written tasks/tools that were designed for the study were a forced-choice elicitation task (FCET), a grammaticality judgment task (GJT) and a questionnaire.

This chapter is organised as follows: Section 5.2. provides an answer to RQ1 by elucidating the similarities and differences among the groups of the study on using English determiners. Section 5.3 then answers RQ2, which aims to specify the source(s) of transfer in second language/third language acquisition (SLA/TLA). Section 5.4 is divided into two main parts: subsection 5.4.1 and subsection 5.4.2, which are dedicated to discussing the findings in relation to the tested second language hypotheses and third language models, respectively. After each subsection, a comparison between the findings of the target groups and previous research was held. RQ4 was answered in section 5.5 by identifying the factors that pertained to the acquisition of English determiners. This chapter concluded the summary.

5.2. Similarities and differences among the four experimental groups in the patterns of acquiring the (in)definite articles

To provide a plausible answer to RQ1, this section compares the performance of the English native (EN) group with each L2/L3 group. Then, it demonstrates how the experimental groups were similar/different in the pattern of acquiring English determiners. For convenience, RQ1 is repeated here:

What are the similarities and differences among the four experimental groups with respect to the determiner acquisition in L2/L3 English?

Cypriot-Greek (CG) has a determiner category (it has (in)definite articles). Palestinian/Jordanian-Arabic (PJ/A) has a determiner category that partially overlaps with English (cf. Jiang, 2012), as PJ/A only has the definite article. Thus, the L2 CG participants were expected to reach native-like attainment in the use of English determiners, while the L2 PJ participants were expected to be native-like with their use of *the*. The L3 groups were expected to be also native-like, as their knowledge of L2/L3 CG would provide them with positive transfer.

In comparison with the EN control group, the accuracy rates of the L2/L3 groups on both tasks did not approach native-like or even get near native-like. Still, the L2/L3 participants with greater English proficiency were similar in their performance to the EN participants. The exception was related to (i) the use of *the* by the L2 PJ participants with definite proper names on both tasks and their use of *a(n)* in the non-specific context on the GJT, and (ii) the use of *the* by the L2 CG and L3 PJ-CG-E participants with definite proper names on the FCET. Data analysis did not support the findings by Ionin et al. (2008) that the L2 learners of L1 article languages were supposed to use English determiners in a native-like manner even if they were at lower proficiency levels in L2 English, as their L1 has the determiner category. It is worth pointing out that other factors accounted for the target-like use of *the* by the L2/L3 participants (See table 5.6 and Table 5.7). These factors are discussed in section 5.5 as they are part of RQ4.

Concerning the differences among the L2/L3 groups, it was revealed that the non-target-like performance of these groups cannot be only explained in terms of parameter-settings, but also in terms of the configuration of the article system in PJ/A and CG in comparison with English. Thus, the structural similarity between CG and English, regarding the use of the definite article, as well as the structural dissimilarity between CG and English, and PJ/A and English, on the use of the indefinite and zero

articles, best account for the variability in performance among the L2/L3 groups. In this respect, further discussion will be provided to continue addressing RQ1.

5.3. Sources(s) of transfer in L2/L3 acquisition

Based on the cross-linguistic variations among the three languages discussed in chapter two (See section 2.7), this section will identify the source of cross-linguistic influence (CLI), which is the aim behind RQ2. RQ2 is repeated here for convenience:

RQ2: Do L2/L3 learners of English transfer from their L1 PJ/A, L1 CG or L2/L3 CG into L2/L3 English with respect to the determiners acquisition?

5.3.1. The use of *the*

Concerning the results of the L2 groups, Table 5.1 summarises the patterns of acquiring *the* in relation to L1 transfer before the N1 in the 'of-phrase' construction and the proper names of people and places. First, the findings of the L2 PJ participants showed their interlanguage grammar was constrained by UG, but it was still subject to L1 negative transfer with different degrees. In other words, the negative influence from the L1 PJ/A in the form of omission errors before N1s in the 'of-phrase' construction did not cause a difficulty for the L2 PJ participants, as they constituted a small proportion of errors, while it did with the proper names, as the omission errors were high. The results are consistent with the assumption given by White (2003) that although the interlanguage grammar of L2 learners is driven by UG, it is susceptible to CLI from the learners' L1. Awad (2011) reported that the L2 Arab participants seemed to substitute Ø for *the* before proper names of cities because of negative CLI from L1 Arabic. The performance of the L2 PJ group before the 'of-phrase' construction was consistent with the study conducted by El Werfalli (2013), who found omission errors before the definite 'of-phrase' construction were not problematic for her L2 participants with L1 Arabic background.

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The performance of the L2 CG participants before the 'of-phrase' construction was high on both tasks indicating positive L1 CLI. However, this construction was confusing for them as the N2 in this construction was bare while it should be definite in L1 CG. This explains why their performances in both contexts were not native-like. It also explains why their acceptability of the ungrammatical NPs: '*Ø+of-phrase construction', that were different from their L1, was significantly lower than their acceptability of the grammatical NPs: the+of-phrase construction', that reflected their L1 structure. In other words, the positive influence of the learners' L1 was more evident in the participants' judgment of the NPs that were provided in the correct form.

Table 5.1: Sources of knowledge available to the L2 groups

Groups	L2 PJ group		L2 CG group	
Context	'Of-phrase' construction	Proper names	'Of-phrase' construction	Proper names
FCET	L2 interlanguage grammar was subject to L1 negative (structural) transfer at the initial state of L2 acquisition. The increase of English proficiency helped them reach the native-like attainment.	Serious L1 negative (structural) transfer indicating a learning difficulty even at higher English proficiency levels.	More L1 positive transfer (structural transfer because N1 is definite) than L1 negative transfer (structural transfer because N2 is bare). The increase of English proficiency helped them reach the native-like attainment.	Overgeneralisation errors indicating a learning difficulty even at higher English proficiency levels.
GJT				L1 positive (structural) transfer was only noticed with grammatical sentences. The increase of English proficiency helped them reach the native-like attainment.

The low performance of the L2 CG group before proper names on both tasks was beyond expectations, as this context is similar to English. Nevertheless, their performance on the GJT rather than the FCET showed evidence of positive CLI from L1 CG. Unlike the results of the FCET, the L2 CG group's accuracy scores on the GJT were significantly higher than the L2 PJ group. This part of experimental data provided evidence for the positive transfer from L1 CG. Furthermore, the findings implied the L1

positive transfer was more dominant when the participants were provided with grammatical items. Buschfeld's results (2013) were congruent with the results obtained from the FCET of the current study. She found that the L2 Cypriot-Greek participants substituted Ø for *the* before proper names of places (e.g. *USA* and *UK*).

The findings of the L3 groups in relation to their performance in the 'of-phrase' and proper names contexts bear some similarities and differences. The results of the L3 groups regarding the source of transfer are summarised in Table 5.2. The L3 groups seemed to have more positive influence from their L2/L3 CG than negative influence from their L1 PJ/A on using *the* before proper names. One piece of evidence that was in favour of the positive role of L2/L3 Greek with the definite proper names was that the L3 groups' accuracy scores on both tasks were significantly greater than the L2 PJ group but not the L2 CG group. Moreover, the probability of scoring higher in L3 English by the L3 PJ-CG-E participants was associated with their low proficiency level in L1 Arabic as obtained from the FCET. In addition, the target-like performance of both L3 groups on the GJT was associated with their higher proficiency levels in Greek.

In contrast, the source of transfer in relation to the L3 groups' use of *the* before the 'of-phrase' construction was not clear, as they followed a pattern similar to the L2 groups either in their substitution or omission errors on the FCET. Their performance on the GJT indicated that the source of positive transfer for the L3 PJ-CG-E participants was attributed to L2 CG. However, the source of transfer for the L3 PJ-E-CG participants was not clear, as they followed the same pattern on judging the grammaticality of the (un)grammatical sentences.

Table 5.2: Sources and types of transfer in using *the* by the L3 groups

L3 groups	Transfer	FCET (production)		GJT (comprehension)	
		'Of-phrase' construction	Proper names of people/places	'Of-phrase' construction	Proper names of people/places
L3 PJ-CG-E participants	Source/ Type	The source of transfer was not clear; especially that the participants followed a pattern similar to the L2 groups in their target and non-target-like performance.	More L2 positive transfer than L1 negative CLI.	More L2 CG positive transfer than L1 PJ/A negative transfer.	More L2 CG positive transfer than L1 negative transfer.
	Condition/ Evidence	Omission errors from L1 did not lead to a learning problem (less than 14%). Their accuracy scores (attributed to L2 CG) were high.	Their accuracy scores were statistically > the L2 PJ group but = the L2 CG group. Their omission errors were lower than the L2 PJ group. Their accuracy scores increased with the decrease of their proficiency in L1.	Accuracy scores were attributed to L2 CG. Their accuracy scores increased with the increase of their proficiency levels in Greek.	Their accuracy scores were statistically > the L2 PJ group but = the L2 CG group. Their accuracy scores increased with the increase of their proficiency levels in Greek.
L3 PJ-E-CG participants	Source/ Type	More L3 CG positive transfer than L1 PJ/A negative transfer.	More L3 CG positive transfer than L1 negative transfer.	The source of transfer was not clear; the participants followed a pattern similar to the L2 groups.	More L3 CG positive transfer than L1 negative transfer.
	Condition/ Evidence	Omission errors from L1 or L3 did not lead to a learning problem (less than 17%). Accuracy scores were attributed to L3 CG.	Their accuracy scores were statistically > the L2 PJ group but = the L2 CG group. Their omission errors were lower than the L2 PJ group.	The pattern of judging the (un)grammatical sentences were similar to the L2 groups.	Their accuracy scores were statistically > the L2 PJ group but = the L2 CG group. Their accuracy scores increased with the increase of their proficiency levels in Greek.

5.3.2. The use of Ø

The L2/L3 groups' findings were similar on both tasks, as their target-like performance was low. The L2 groups' low accuracy scores in both contexts and their article substitution of *the* can be attributed to the negative influence from their L1s because of the structural dissimilarity between English and PJ/A and CG. The results of the L3 groups on both tasks indicated the source of transfer can be traced to L1 PJ/A and L2/L3 CG. However, the statistical analyses obtained from the GJT proved the negative influence from L2 CG on the performance of the L3 PJ-CG-E group before the N2 items was more than the negative transfer from L1 PJ/A.

Data analyses of this study bear some similarities and differences to L2/L3 previous research by Awad (2011), Avgerinou (2007) and Ouertani (2013). For example, the results of the current study related to the use of Ø agreed with the findings of Awad (2011) on L2 learners of English with L1 Arabic. Awad's study (2011) and this study indicated that the use of *the* for Ø constituted a high proportion of errors by the L2 learners because of L1 negative influence. On the other hand, the findings of the L2 CG participants of the current study were not consistent with Avgerinou's results (2007). Avgerinou (2007) demonstrated that the L2 Greek learners of English, who were at the beginner level of English proficiency, did not find it hard to supply Ø in the contexts that mismatched with their L1. The current study, by contrast, revealed that the L2 CG participants (as well as the other L2/L3 groups of the study), who were at the low intermediate and intermediate levels of English proficiency, found it difficult to use Ø with bare NPs. Likewise, the tendency to overuse *the* before place nouns because of the negative influence of the previously acquired languages was confirmed by this study and by the findings of an L3 study by Ouertani (2013). Ouertani (2013) indicated that the L3 learners' errors occurred because English is cross-linguistically different from L1 Tunisian and L2 French.

5.3.3. The use of *a(n)*

As stated previously in section 5.2, PJ/A does not mark the indefinite article morphologically. Unlike PJ/A, English and CG have overt exponents of indefiniteness. However, in CG, the indefinite article is more commonly omitted with the presence of verbs of accomplishment and light verbs (See Chapter two, section 2.9.4). For example, the experimental data suggested the L2 PJ participants' omission errors resulted from L1 negative transfer. The L2 PJ group's performance was in line with the findings reached by Abudalbuh (2016), El Werfalli (2013), Sadek (2016) and Alzamil (2019) which showed instances of negative CLI from L1 Arabic.

In contrast, the findings of the L2 CG participants on both tasks showed the negative influence of the semantic choice of some verbs did not have an impeding role in the acquisition of *a(n)*. Accordingly, more L1 positive CLI than negative CLI took place as the means of omission transfer errors were low; they were less than 10%.

The findings of the L3 groups on both tasks revealed that they were influenced by the morpho-syntactic characteristics of the singular indefinite NPs in relation to the lexical choice of some verbs at the lower levels of English or/and Greek proficiency. More specifically, the results of the L3 PJ-CG-E participants demonstrated that the positive transfer from their L2 Greek was detected in the specific context on the FCET, and in the non-specific context on the GJT. In addition, the findings of the L3 PJ-E-CG participants on the FCET in both contexts showed that positive transfer from L3 CG resulted from the improvements in the L3 participants' proficiency in L3 Greek. However, the negative transfer from L1 PJ/A did not affect the participants' use of *a(n)* before specific NPs on the GJT. One explanation is that the L3 participants were more influenced by their L3 CG than their L1 PJ/A; the L2 CG and L3 participants had symmetrical performances regarding their use of the target article. Another piece of evidence in support of the positive role of L2/L3 CG was that the L3 groups'

symmetrical performances were similar to the L2 CG group, indicating more positive influence from L2/L3 CG than negative influence from L1 PJ/A. The results of the L3 PJ-CG-E group and the L3 PJ-E-CG group regarding the source of transfer on both tasks are summarised in Table 5.3 and Table 5.4, respectively.

Table 5.3: Sources/types of transfer on the use of *a(n)* by the L3 PJ-E-CG group

		FCET		GJT	
		[+/–specific]		[+specific]	[–specific]
		Negative	Positive	Negative and positive	
Type/Source of transfer		L2 CG (influenced by the morpho-syntactic characteristics of the indefinite NPs in relation to the lexical choice of some verbs).	L2 CG (transfer the knowledge of definiteness feature regardless of verb types).	More positive transfer from L3 CG than negative transfer from L1.	
Condition/Evidence		The L3 participants who were at lower English proficiency levels had more negative transfer from their L1 than the participants who were at higher English proficiency levels.	The participants' target-like performance was similar to the L2 CG participants', as there was no evidence of fluctuation at each English proficiency level. In addition, positive transfer at the higher proficiency levels in English and Greek was more than the negative transfer at the lower proficiency levels in the target languages.	Their accuracy scores in both contexts were similar to the L2 CG (no evidence of fluctuation at each English proficiency level).	

Similar to the results of the L2 CG and L3 groups in the current study, Buschfeld (2013) and Karpava (2016) confirmed the role of L1 negative transfer from L1 Cypriot-Greek into L2 English in using Ø instead of *a(n)* with direct objects before the light verb 'have'. In contrast, the L3 findings were not in line with Hermas' (2018), which indicated the L3 Arab Moroccan learners found it difficult to rely on positive transfer from their L2 French which has the indefinite article into L3 English on the use of *a(n)* before [−definite, +specific].

Table 5.4: Sources/types of transfer on the use of *a(n)* by the L3 PJ-CG-E group

	FCET			GJT		
	[+specific]		[–specific]	[+specific]	[–specific]	
Type of transfer	Negative	Positive	Negative and positive	Negative and positive	Negative	Positive
Source	L2 CG (influence of the morpho-syntactic characteristics of the indefinite NPs in relation to the lexical choice of some verbs).	L2 CG (transfer the knowledge of the definiteness feature regardless of verb types).	More positive transfer from L2 Greek than negative transfer from L1 Arabic and L2 CG.	More positive transfer from L2 Greek than negative transfer from L1 Arabic and L2 CG.	L2 CG (influence of the morpho-syntactic characteristics of the NP in relation to the lexical choice of some verbs).	L2 CG (transfer the knowledge of the definiteness feature regardless of verb types).
Condition/Evidence	The participants who were at lower English proficiency levels had more negative transfer from their L2 than the participants who were at higher English proficiency levels.	Their target-like performance was similar to the L2 CG, as there was no evidence of fluctuation at each English proficiency level. Positive transfer was evident in the performance of the participants who were at higher English and Greek proficiency levels, whereas negative transfer was more evident in the performance of the participants who were at lower proficiency levels in English and Greek.	Their target-like performance was similar to the L2 CG participants as they were not fluctuating between the definiteness setting and the specificity setting at all English proficiency levels. Positive transfer was evident in the performance of the participants who were at higher English proficiency levels, whereas negative transfer was more evident in the performance of the participants who were at lower proficiency levels in English.	Their target-like performance was similar to the L2 CG participants as they were not fluctuating between the definiteness setting and the specificity setting at all English proficiency levels. Positive transfer was evident in the performance of the participants who were at higher English proficiency levels, whereas negative transfer was more evident in the performance of the participants who were at lower proficiency levels in English.	Positive transfer was evident in the performance of the participants who were at higher English proficiency levels, whereas negative transfer was more evident in the performance of the participants who were at lower proficiency levels in English.	Their target-like performance was similar to the L2 CG participants, as there was no evidence of fluctuation at each English proficiency level. Positive transfer was evident in the performance of the participants who were at higher English and Greek proficiency levels, whereas negative transfer was more evident in the performance of the participants who were at lower proficiency levels in English and Greek.

5.4. Discussion of the results in light of the L2/L3 hypotheses

This section is dedicated to interpreting the results from the viewpoint of the tested L2 hypotheses and the L3 models. The predictions of the L2 hypotheses and the L3 models are provided in chapter four, section 4.3. RQ3 is as follows:

RQ3: Can the patterns of acquisition of the PJ learners of L2/L3 English and CG learners of L2 English be explained/supported by the relevant second language acquisition (SLA) and third language acquisition (TLA) hypotheses namely:

> *SLA:* Full Transfer/Full Access (FT/FA) Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) and Fluctuation Hypothesis (FH) (Ionin et al., 2008), and

> *TLA:* the L2 Status Factor (Falk and Bardel, 2011), the Cumulative Enhancement Model (CEM) (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017)?

5.4.1. Discussion of the L2 group's results in light of L2 hypotheses

5.4.1.1. The use of *the* in light of the L2 hypotheses

In line with the FH (Ionin et al., 2008) and the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996), the EN control group used *the* and *a(n)* based on the definiteness setting, as English encodes the definiteness feature. These findings are compatible with the results reached by many studies (e.g. Ionin et al., 2004, Ko et al., 2008; Ionin et al., 2008, Jiang, 2012; Kargar, 2019). To prove whether the results of the L2 groups were consistent with the FT/FA Hypothesis and the FH, three factors were investigated as they were relevant to these hypotheses. They were input, knowledge of universal principles, and L1 CLI in the form of facilitative transfer for the FH and both facilitative and non-facilitative transfer for the FT/FA Hypothesis.

Based on the predictions of the FH (Ionin et al., 2008), English proficiency was not expected to play a role in the acquisition of *the,* as the L2 groups' L1s have the

determiner category and encode the definiteness feature. Thus, their performance was expected to be native-like. Inconsistent with the FH, the results of both L2 groups at the initial state of L2 acquisition on both tasks were not native/close to native-like, as the positive role of L1 PJ/A and CG did not surpass the low English proficiency of the L2 CG and PJ participants. Instead of transferring the determiner category from their L1 into L2, the L2 groups negatively transferred the L1 structure of the definite article into their L2.

Contrary to the predictions of the FH, the L2 PJ and L2 CG participants in this study behaved like the L2 learners whose L1s are article-less languages such as the L2 Russian and Korean participants in Ionin et al.'s study (2004), the L2 Russian participants in Ionin et al.'s (2008) and the L2 Persian participants in Kargar's (2019). Interestingly, the finding of the present study in relation to the use of *the* before the 'of-phrase' construction showed the L2 participants' behaviour was similar to the performance of the L2 Spanish learners of English in Ionin and her colleagues' study (2008). The L2 Spanish participants had the definite article in their L1s, but they omitted it before a NP similar to the tested 'of-phrase' construction as it was found to be different from the English structure. Though the authors' prediction, which was based on the FH, was that positive transfer would take place from L1 Spanish, the L2 Spanish participants, just like the L2 PJ/A and CG participants of the current study, negatively transferred the knowledge of their L1s structure rather than the knowledge of the semantic universal feature of definiteness in their L1s. As the FH does not account for the negative transfer from the L1 resulting from structural differences, the results of the current study are more in line with the FT/FA Hypothesis.

Drawing on the FT/FA Hypothesis, it was predicted that the L2 PJ and CG participants would not find it difficult to use *the* in the target contexts if they were provided with adequate input so that parameter-setting would take place, especially that

their L1s have the determiner system. Yet, as the configuration of the definite article in both CG and PJ/A is different from English, the L2 participants' interlanguage grammars at the initial state of L2 acquisition were expected to reflect the grammatical representations of their L1s. It was noticed the L2 groups' non-target-like use of *the* because of structural dissimilarity was initially based on their L1 grammars. Nevertheless, they were more target-like in using *the* before the 'of-phrase' construction than before definite proper names.

Schwartz and Sprouse (1994, 1996) propose that the restructuring process may take time because of the complexity of input or L1 influence. Compatible with Schwartz and Sprouse's proposal (1994, 1996), it was statistically revealed the impact of certain forms of input had a positive effect on the acquisition of *the* before the 'of-phrase' construction more than with proper names context. The improvements in the L2 CG participants' proficiency levels in English, and the daily exposure to English at university/school/work increased the likelihood of converging with the L2 grammar in using *the* before the 'of-phrase' construction as obtained from the FCET. However, only the latter factor had a positive and significant influence on the performance of the L2 CG participants in using *the* before the proper names of people and places. The results of the GJT proved that English proficiency had a significant positive effect on the acquisition of *the* in both contexts. Still, L1 positive influence had a stronger role in their performances before the 'of-phrase' construction than proper names, as obtained from both tasks.

English proficiency and daily exposure to English at university/school/work accounted for restructuring the subsequent interlanguage grammar of the L2 PJ participants before the 'of-phrase' construction. In contrast, the length of learning English led to significant improvements in using *the* with proper names as only obtained from the GJT.

It was revealed that the performance of the L2 PJ group was almost similar to the performance of the L2 CG group in the 'of-phrase' construction, though L1 PJ/A is different from CG and English on the basis of structural complexity. More specifically, the L2 PJ participants seemed to have more input relevant to the 'of-phrase' construction than the proper names on both tasks. In addition, the L2 CG participants seemed to have more input relevant to the 'of-phrase' construction than the proper names as obtained from the FCET, and they had more L1 positive influence with the former context than the latter context (See Table 5.6, section 5.7). This, in turn, explained why the performance of the L2 PJ and L2 CG participants in the proper names context was less than their performance in the 'of-phrase' context.

Consistent with the predictions of the FT/FA Hypothesis on both tasks, the analysis of the data revealed the differences between L1 CG and L1 PJ/A led the L2 PJ participants and the L2 CG participants to go through different developmental stages. The findings of the L2 PJ participants indicated, as mentioned in section 5.3, that they exerted more negative transfer from their L1 on the use of *the* before the proper nouns context than the 'of-phrase' construction.

In contrast, the L2 CG participants exerted an L1 positive influence on the use of *the* before the 'of-phrase' construction more than the proper nouns context, though they are structurally and semantically similar to L2 English. The L2 CG group's low performance in the latter context on both tasks, and the high percentages of the omission errors in the latter context on the FCET, exceeded the predictions. Article omission by the L2 CG participants in this context represented a type of overgeneralisation or developmental errors in which the participants seemed to misuse *the* in the target context by extending the 'target language rules to inappropriate context[s]' (Richard et al, 2002: 185). Similar instances of overgeneralisation errors by omitting *the* before proper names of places were recorded from the oral production of the L2 CG

participants in Buschfeld's study (2013) and in the written production of the L3 Arab Moroccan participants with L2 French and L3 English in Ouertani's study (2013). Buschfeld (2013) found the L2 Cypriot-Greek participants overgeneralised the unmarked inherent definiteness feature of English proper nouns into all instances of proper names regardless of the English morph-syntactic and semantic environments. The L2 CG participants' overgeneralisation error in this study was also similar to the L2 learners of English with a Saudi Arabic background in Abumlhah's study (2016). Abumlhah (2016) concluded the L2 participants overgeneralised the use of Ø before indefinite generic plural NPs into definite non-generic plural contexts instead of *the* because the L2 Arab participants went through a certain developmental stage of linguistic experience. Abumlhah (2016) argued this stage might be the result of inadequate input in the form of unstructured treatment which was part of the L2 restructuring process and which, in turn, did not refute the FT/FA.

In conclusion, the results of the current study revealed the L2 group's performance was linked to the structural complexity related to the linear genitive construction in PJ/A and CG; syntactic-semantic realisation of the definiteness feature of the PJ/A proper nouns that mismatch with the English definite proper names, or to overgeneralisation errors in omitting *the* before the English definite proper names by the L2 CG participants. Yet, the degree of negative/positive transfer decreased/increased in response to certain types of input. Therefore, the results of the L2 groups provided evidence in support of the FT/FA Hypothesis.

5.4.1.2. The use of Ø in light of the L2 hypotheses

Consistent with the FT/FA Hypothesis, the L2 PJ and L2 CG participants' interlanguage grammars at the initial state of L2 acquisition reflected the grammatical representations of the L2 groups' L1s which were different from L2 English. However, the L2 participants from both L2 groups with greater linguistic experience of English (e.g.

English proficiency, exposure to English, length of learning English or age) seemed to receive adequate input to help them reset the parameters of their L1 PJ/A or L1 CG to match the parameter settings of L2 English (See Table 5.6 in section 5.5).

5.4.1.3. The use of *a(n)* in light of the L2 hypotheses

The FH (Ionin et al., 2008) and the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) assumed that transfer would override fluctuation regardless of English proficiency in the case of the L2 CG participants, as it has a determiner category. In contrast, this hypothesis assumed that fluctuation would override transfer in the case of the L2 PJ group's use of *a(n),* as it only has the definite article. Yet, the FT/FA Hypothesis predicted that both positive and negative transfer might take place at the initial state of L2 acquisition.

The results of the L2 PJ participants provided partial support to the FH, while the results of the L2 CG group were not in line with this hypothesis. In contrast, the results of both L2 groups supported the FT/FA Hypothesis. For the results of the L2 CG group, three pieces of evidence based on statistical analyses were found not to be in line with the FH. Firstly, the overall target-like results obtained from both tasks indicated the L2 CG group's performance at the initial state of L2 acquisition was not native-like or near native-like. The results also showed the L2 participants resorted to negative transfer from their L1 CG in the form of omission errors on the FCET, but the proportion of errors were small. Secondly, the participants' performance on the GJT revealed they had less negative transfer with the grammatical sentences than the ungrammatical sentences while no significant results were expected. Thirdly, the L2 CG participants' performance improved with the increase of English proficiency levels.

The findings of the L2 PJ group supported the FH for two reasons. Firstly, the findings on both tasks showed evidence of the specificity effect and fluctuation. The results, which were statistically significant, demonstrated that the L2 PJ group had (i)

higher accuracy scores of *a(n)* in the [–specific] context than the [+specific] context on both tasks, and (ii) higher non-target rate of *the* in the [+specific] context than the [–specific] context on the FCET (the GJT was not designed to test this effect). Secondly, the L2 PJ participants showed a proficiency effect as fluctuation decreased with the improvement of their English proficiency level. The results of the FCET revealed the participants from the low intermediate, upper intermediate and even advanced English proficiency levels were fluctuating (See Table 4.19) between the definiteness feature and the feature specificity. In contrast, this was not the case for the upper advanced participants, as they had no sign of fluctuation or specificity effect. It was reported the L2 PJ participants exhibited less fluctuation on the GJT (See Table 4.32) as it was only evident in the performance of the low intermediate and intermediate participants.

In accordance with the FT/FA Hypothesis, the initial state of L2 acquisition by the L2 PJ participants showed features of L1 grammar, as it does not have the indefinite article. Thus, unlike the FH, the FT/FA Hypothesis assumed the occurrence of omission errors or non-target-like performance can be an indication of L1 influence. It also assumed the fluctuation between the semantic features of the Article Choice Parameter would be part of the developmental process in L2 acquisition. According to Jiang (2012), the determiner category in Arabic partially overlaps with English determiners. Therefore, the L2 PJ participants, just like the L2 learners with L1 Syrian Arabic in Jiang's study (2012), found it difficult to reset their L1 grammar to converge with the L2 grammar at the initial state of L2 acquisition. Still, the only option they had was to reset the semantic features of the Article Choice Parameter with the help of input so that the parameter-setting would take place, which was consistent with the *full access* prediction of the FT/FA Hypothesis.

The results of both tasks regarding the performance of the L2 CG participants in the indefinite contexts agreed with the FT/FA Hypothesis. They indicated the

interlanguage grammar of the L2 CG participants showed evidence of facilitative CLI as their L1 has the determiner category. Yet, the negative influence of the semantic choice of the light verbs and verbs of accomplishments was not problematic. Still, the negative influence of these verbs that was in the form of omission transfer errors, along with substitution errors, accounted for the non-native-like performance of the L2 CG group. The latter type of error can be a sign of a developmental error at the initial state of L2 acquisition. Still, the L2 CG participants (and the L2 PJ participants) switched from the L1 structure to the L2 setting with the help of certain forms of input and they, consequently, became more able to acquire the abstract features associated with the L2 indefinite article.

The result of the L2 groups discussed so far provided an answer to RQ3. In what follows, the results will be compared with L2 studies that tested the L2 hypotheses.

5.4.1.4. L2 results and previous research under the tested L2 hypotheses

The findings of the L2 groups agreed with the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) on the acquisition of English articles. However, the results of the L2 PJ participants on the use of the indefinite article supported the FH (Ionin et al., 2008), while their experimental data on the use of *the* did not. The findings of the L2 CG group were not congruent with the FH. This section aims to compare the results of the current study with some previous L2 research that tested the validity of the theoretical perspectives of the FT/FA Hypothesis and the FH.

The analysis of the data did not conform with the findings obtained from Ionin et al.'s study (2008) that L1 positive CLI had a significant role in the acquisition of English determiners by L2 participants whose L1 had determiners. In addition, the results of the L2 CG participants did not replicate the studies conducted by Thomas (1989) and Hawkins et al. (2006) on the L2 Greek participants' native-like use of *the* and *a(n)*. Instead, Thomas (1989) and Hawkins et al.'s (2006) studies were more in line

with Ionin et al.'s (2008), as both of them considered only the role of positive transfer of L1. Unlike Thomas' findings (1989) but consistent with Hawkins et al.'s (2006), the current study proved the L2 CG participants' use of *the* correlated with the definiteness feature, whereas the L2 participants (one L2 Greek participant was among the L2 participants) in Thomas's study (1989) correlated it with the specificity feature.

The findings of this study were partially in line with Karpava's study (2016) that investigated the L2 Cypriot-Greek learners' acquisition of English determiners. Though the results of the L2 Cypriot-Greek learners on the use of *a(n)* in Karpava's study (2016) did not provide evidence in support of the FH like the current study, her findings were found to be different, as the L2 CG participants in this study did not fluctuate between the two settings of the ACP. However, just like the current study, which attributed the non-target-like performance of the L2 CG participants to the cross-linguistic differences between English and CG, Karpava (2016) reported that the L2 learners' use of the (in)definite articles was not native-like because the tested linguistic environments mismatched with the L1 CG environments.

The L2 PJ participants' findings agreed with the findings in previous research on Arab learners of English by Abudalbuh (2016); both studies lent support to the L1 transfer of the abstract knowledge of the definite article under the FT/FA Hypothesis, and to accessing the Article Choice Parameter to restructure the use of *a(n)* under both the FH and the FT/FA Hypothesis, as fluctuation overrode transfer. In addition, Abudalbuh's findings (2016) revealed that the L2 Jordanian participants, just like the L2 groups in the current study, did not use *the* in a native or near native-like manner at the initial state of L2 acquisition, though their L1 has the definite article.

The results of the L2 PJ participants, who were at lower levels of English proficiency, were also in line with Alzamil's findings (2019) on L2 Saudi participants, who were at the elementary and lower intermediate levels of English proficiency. The

non-target like use of *a(n)* by the participants in both studies can be explained in light of the universal-based account suggested by the FH, as fluctuation overrode transfer. In contrast, the participants' non-target like use of *the* can be explained on the basis of the structural dissimilarity between English and the learners' L1s rather than the universal-based account, which was not congruent with the FH.

The analysis of the data of the L2 PJ group also supported a study conducted by Awad (2011), whose findings agreed with the FT/FA Hypothesis, as the L1 negative CLI was found to impact the initial state of L2 English article acquisition. Awad (2011) confirmed the positive role of L2 English proficiency in overcoming the negative transfer from L1 Arabic. This study found that English proficiency had a partial influence on the acquisition of *the* and *a(n),* and it confirmed the positive role of other input factors such as the length of learning English and exposure to English at university/school/work in certain contexts. Inconsistent with this study, Awad's results (2011) on the use of *a(n)* by the L2 participants from the lower English proficiency levels did not agree with the FH, as fluctuation did not override transfer.

The findings of the L2 PJ group provided partial support to Sabir's study (2015) that tested the FH, but it agreed with her results related to the FT/FA Hypothesis. Unlike the current study, the participants in Sabir's study (2015) proved transfer overrode fluctuation in using *the*. However, the participants in her study and the current study had the same results regarding the use of *a(n),* as fluctuation overrode transfer.

5.4.2. Results of the L3 groups in light of the tested L3 models

This section aims to continue answering RQ3 in relation to the relevant L3 models.

5.4.2.1. Discussion of the results under the Cumulative Enhancement Model

Assuming the Cumulative Enhancement Model (CEM) (Flynn et al., 2004), it was predicted the learning of L3 was only facilitated by transfer from L3 CG for the L3 PJ-

E-CG participants and from L2 CG for the L3 PJ-CG-E participants. The results of both L3 groups were not in agreement with that prediction, as both positive and negative transfer took place either from L1 PJ/A or L2/L3 CG. Also, the results of the two tasks, in relevance to the use of *Ø,* were not substantiated under the CEM (Flynn et al., 2004) as the source languages offered negative transfer.

5.4.2.2. Discussion of the results under the L2 Status Factor Model

The L2 Status Factor (Falk and Bardel, 2011) was only suitable for testing the performance of the L3 PJ-CG-E group, but not the L3 PJ-E-CG group because the direction of acquisition of the latter group was from L2 CG into L3 English. The findings of the L3 PJ-CG-E group provided partial support to the L2 Status Factor Model (See Table 5.2, section 5.3.1). For example, the L3 participants' use of *the* before the experimental contexts on the GJT supported this model as L2 CG had the privileged role in L3 acquisition. In contrast, the results of the FCET on the use of *the* in both contexts and on the use of *a(n)* with [–specific] NPs, and the results of the GJT on the use of *a(n)* with [+specific] NPs, were not in line with this model as the L2 Greek proficiency was not proven to have the privileged role on the acquisition of the target articles. Moreover, though the L2 positive transfer was identified in the latter contexts, there was no proof on the 'wholesale transfer'. For example, the L3 group's performance in the latter contexts was similar to the L2 CG group, suggesting that although L2 CG was a potential source of knowledge, the amount of positive transfer did not help them reach L3 native-like attainment. Furthermore, the results of the GJT indicated the wholesale negative transfer from L2 CG into L3 English on the use of *Ø* was only evident before the postnominals of the 'of-phrase' construction.

5.4.2.3. Acquisition of English determiners in light of the Scalpel Model of TLA

The results of the L3 PJ-CG-E group supported the Scalpel Model of TLA (Slabakova, 2017) for three reasons. First, it was found that structural (dis)similarity influenced the acquisition of English determiners. For example, the influence of L2/L3 CG surpassed the influence of L1 when the English environments matched with L2/L3 CG, as was the case with the L3 groups' performance with the indefinite NPs and the definite proper names. However, both L1 PJ/A and L2/L3 CG were found to negatively influence the L3 groups' performance when the English environments did not match with both PJ/A and CG, which was the case with the contexts that demanded the use of Ø. Second, the L3 groups' use of *the* before the 'of-phrase' construction revealed that structural complexity was the reason behind the L3 group's non-target-like performance on both tasks, as this context was not completely similar to L2 CG and it was different from L1 PJ/A. This context was confusing because the postnominal constituent in both CG and PJ/A is definite. However, the N1 in CG is definite, like English, while it is bare noun in PJ/A, unlike English. Third, the results were congruent with the prediction that the L3 participants' performance increased when they got adequate input in different forms (See Table 5.6).

5.4.2.4. A comparison between the L3 findings of this study and previous research

So far, the findings provided evidence for the negative role of the native language and/or both the positive and negative roles of the non-native language in the L2/L3 acquisition of English determiners. Data analysis was not empirically in line with the results of the L1 Spanish- L2 English- L3 French participants (L3 Spanish group, whose L1 is an article language), nor with the results of the L1 Turkish- L2 English- L3 French participants (L3 Turkish group whose L1 is an article-less language) in Ben Abbes' study (2016). Though the negative influence of L1 Turkish on the L3 Turkish participants was reduced with the enhancement of their L2 English proficiency levels,

Ben Abbes (2016) considered the results did not support the L2 Status Factor Model (Falk and Bardel, 2011). She argued that L2 English was the source of positive CLI for the L3 Turkish group while the target-like performance of the L3 Spanish group was attributed to their L1 Spanish. In contrast, the results of the L3 PJ-CG-E group in the current study on the use of *the* in the experimental contexts (on the GJT) were partially in line with the L2 Status Factor; the negative transfer from L1 PJ/A was associated with the participants' lower proficiency levels in Greek proficiency (See Table 5.5).

In addition, the L3 Spanish participants from the low intermediate L2 English proficiency in Ben Abbes' study (2016) were near native-like regarding their use of the definite article, unlike the L3 groups in this study although L1 PJ/A and L2/L3 CG have the determiner category like L1 Spanish. The source of transfer for the L3 Spanish group was ascribed to L1 Spanish on a holistic basis regardless of the participants' L2 proficiency levels in English, which was also not the case in this study. The current study found that the source and degree of positive or negative transfer for the L3 groups did not occur on a holistic basis, and it was not related to typological distance (existence of determiner category) or linguistic typological proximity (between L1 and L2 because of the influence of L2 proficiency level) but rather to structural difficulty as transfer took place from L1 PJ/A and L2/L3 CG or from both of them.

Though this study agreed with Ben Abbes' findings (2016) that the structural similarity between L2 English and L3 French was perceived on a property-by-property basis in relation to the L3 Turkish group, the concept of structural similarity in the current study was more related to the structural complexity associated with the forms of determiners at the syntax-semantic interface in the native and non-native languages, even when these languages have the determiner category. The L3 participants in the current study were more target-like in using the definite article in one context over the other, though both contexts encode the features [+definite, +specific], which means

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their article choice was not based on linguistic distance or perceived typological distance on a holistic basis. At the initial state of L3 acquisition, the L3 groups were more influenced by the inherent definiteness feature of proper names of people and places. They also had more omission errors in the indefinite contexts because of the influence of certain verbs in L2/L3 CG or because of the lack of the indefinite article in L1 PJ/A. However, the increase of certain forms of input and their knowledge of L2/L3 Greek helped them figure out how the semantic composition of *the* with proper names, *a(n)* with indefinite NPs and Ø with bare NPs should be realised in L2/L3 English.

The analysis of the data relevant to this study was found to be similar to the study conducted by Angelovska and Hahn (2012) on L3 English learners with L2 German and different L1 article and article-less languages, as the predictions of the CEM were not corroborated in their study. The results of the L3 groups in Angelovska and Hahn's study (2012), just like the results of the L3 groups in the current study, showed evidence of negative transfer from the (non-)native languages. The participants in their study had more negative transfer at the lower levels of L2 proficiency in comparison with those who were at higher proficiency levels in the L2. Inconsistent with the current study that was not fully in agreement with the L2 Status Factor, Angelovska and Hahn's results (2012) were in line with this model as they confirmed the role of L2 proficiency.

The findings of the current study provided partial support to the L2 CG status factor in relation to the performance of the L3 PJ-CG-E participants. These findings were not in line with Avgerinou's (2007), as the latter study provided positive evidence in favour of the L2 Greek status factor on the acquisition of English determiners by L1 Turkish and L2 Greek learners of L3 English. Unlike the current study, which proved that the L2 CG and L3 PJ participants had symmetrical performances regarding their use of *a(n)* though only Greek has the indefinite article, Avgerinou (2007) found that

the L2 Greek group performed better than the L3 Turkish group (whose L1 lacks the indefinite article like PJ/A) in using *a(n)*. Furthermore, Avgerinou (2007) revealed that the L2 Greek participants (all were at the beginner level of L3 English proficiency) did not find it difficult to use Ø in obligatory contexts though these contexts were different from the contexts of their L1. The reverse happened in the current study because the difficulty faced by the L3 groups on the use of Ø was linked to the negative role of CG in which the equivalent CG contexts should be preceded with the definite article.

The findings of the L3 groups in this study were partially consistent with Hermas' paper (2018). Hermas (2018) examined the role of the L2 proficiency level, and the roles of L1 and L2 as potential sources of transfer for L1 Moroccan Arabic with L2 French and L3 English, which all have the determiner category. Hermas' study (2018) indicated that the results did not support the L2 Status Factor (Falk and Bardel, 2011); the L3 Moroccan participants did not transfer the abstract features of the (in)definite articles from their L2 French into L3 English at the initial stages of L3 acquisition. The current study, by contrast, showed that the role of L2 CG was substantiated by the findings of the L3 PJ-CG-E participants in relation to their use of the definite article rather than the indefinite article. Nevertheless, two findings in Hermas' study (2018) were similar to the findings of this study. First, both studies revealed that the L3 participants did not transfer the determiner category which was present in the representation of their L1 into L3 English at the lower English proficiency levels. Second, Hermas' results (2018) and the results of the current study proved that the role of input had a positive influence on the L3 acquisition of English determiners in spite of the complexity of the article system in the three languages. Though Hermas (2018) suggested that the non-native setting might cause a difficulty in the acquisition of English determiners, the current study came with the conclusion that this factor did not seem to play a triggering role in this matter.

5.5. Factors that pertained to the L2/L3 acquisition of English determiners

One of the aims of this study was to identify the causal relationship between the participants' outcome and what might influence this outcome in order to reach a logical explanation regarding the learnability problem faced by the L2/L3 participants in using English determiners. Accordingly, a set of factors were investigated as mentioned in RQ4. The results related to the influence of these factors are illustrated in Table 5.5 for the L2 groups and Table 5.6 for the L3 groups. RQ4 is repeated here:

RQ4: What is the role of such factors/variables as age of participants, length of learning English, length of exposure to English, proficiency level in English, length of residence in Jordan or/and Cyprus, motivation, length of learning L2/L3 Greek, order of acquisition, and the bi(dia)lectal setting with respect to the L2/L3 acquisition of English determiners by L1 PJ and L1 CG speakers?

Table 5.5: Factors that pertained to the L2 acquisition of English determiners

		L2 PJ		L2 CG	
		FCET	GJT	FCET	GJT
the	1			(+)Rate of daily exposure to English at university/school/work.	(+)English proficiency.
	2	(+)English proficiency and (+)rate of daily exposure to English at university/school/work (Context A).	(+)English proficiency and rate of daily exposure to English at university/ school/ work (Context A). (+) Length of learning English (Context C).	(+)English proficiency (Context A).	
Ø	1	(+)English proficiency.		(+)English proficiency.	
	2	(+)Age of participants (Context B). (+)Rate of daily exposure to English at university/school/work (Context D).	(+)Rate of daily exposure to English in the community (only in Context B). (+)Rate of daily exposure to English at university/school/work (Context D).		
a(n)	1	(+)English proficiency.			(+) English proficiency.
	2	(+)Rate of daily exposure to English at university/school/work (Context F).	(+)English proficiency and length of learning English (Context E). (+)Rate of daily exposure to English at university/school/work and (+)length of learning L2 English (Context F).	(+)Age of participants (Context F).	(+)Rate of daily exposure to English at home (Context E).

1= Influential in both contexts (A & C; B &D or E & F)

2= Partial influence (in one context only)

(+) = Positive influence

(−)= Negative influence

Table 5.6: Factors that pertained to the L3 acquisition of English determiners

	n	L3 PJ-CG-E		L3 PJ-E-CG	
		FCET	GJT	FCET	GJT
the	1		[+]English proficiency. [+]Greek proficiency.	[+]English proficiency.	
the	2	[+]English proficiency and [+]rate of daily exposure to English in the community (Context A). [−]Arabic proficiency (Context C).	[+]Rate of daily exposure to English at university/school/work; [+]rate of daily exposure to English in the community, and [+]length of learning English (Context C).	[−]Length of learning English and [−]length of residence in Jordan (Context C).	[+]Greek proficiency (Context C).
∅	1	[+]English proficiency.		[+]English proficiency.	
∅	2	[+]Rate of daily exposure to English at home (Context B).	[+]length of learning English; [−]length of learning Greek and [−]Greek proficiency (Context B).	[+]Age of participants (Context B).	
a(n)	1	[+]English proficiency.		[+]English proficiency; and [+]Greek proficiency.	[+]English proficiency and [+]age of participants.
a(n)	2	[+]Greek proficiency and [−]length of learning Greek (Context E).	[+]Greek proficiency (Context F).	[−]Length of residence in Jordan and [+]length of residence in Cyprus (Context E).	[+]Length of learning English; [+]rate of daily exposure to English at university/school/work, and [−]Arabic proficiency (Context E).

1= Influential in both contexts (A & C; B &D or E & F)
2= Partial influence (in one context only)
[+] = Positive influence
[−]= Negative influence

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5.5.1. The bi(dia)lectal situation in Jordan and Cyprus

The situation of Arabic in Jordan and the situation of Greek in Cyprus was characterised in this study as diglossic and bi(dia)lectal. The Arabic varieties which are used in Jordan are the low (non-standard) Jordanian-Palestinian dialects (PJ/A) in addition to the high (standard) variety: Modern Standard Arabic (MSA). In Cyprus, the low (non-standard) Cypriot-Greek (CG) variety is also used with the high (standard) variety: Standard Modern Greek (SMG). The cross-linguistic variations discussed in chapter two showed that the low and high Greek varieties are structurally closer to the English article system than the low and high Arabic varieties.

The bi(dia)lectal situation in Jordan and Cyprus seemed to have an influence on the L2/L3 groups regarding the acquisition of English determiners to various degrees. Data analysis indicated that the L2 PJ participants had a learnability problem regarding their use of *the* before the proper names context even at higher English proficiency levels. However, it was not clear whether the negative influence from PJ/A was more or less than the negative influence from MSA because of the complexity of this structure in MSA and the asymmetrical uses of the definite article with plural nouns in PJ/A (See Chapter 2, section 2.8.2.2). More specifically, the use of the definite article with proper names in PJ/A is random (possible with certain proper names like عمر/ʕomar/: 'Omar' that can be pluralised into العمرات /def-ʕomara:t/ 'the Omars', but not مالك /malik/: 'Malek' that cannot be pluralised) or impossible (with names of some countries as in: مصر /maSir/ 'Egypt'). The use of the definite article before some proper names in MSA should undergo specific morphological changes on the basis of certain criteria (related to phonotactics or morpho-syntactic features). Thus, the proper name معاوية Moʕawiyaḥ/: 'Mo'awiyah' can be pluralised into المعاويات /def-moʕawiya:t/: 'the Mo'aweyyas' (A–Naderi, 2006: 48). In contrast, pluralising the proper name عبلة /ʔabla/: 'Ablah' and attaching the definite article to it is impossible (AL–Afaghani

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2003: 128). The use of the definite article is also impossible in MSA with country names as in مصر /miSr/: 'Egypt', unless it is an integral part of it.

Likewise, it was not clear whether the L2 PJ participants were influenced by MSA or PJ/A regarding their non-target use of the zero article before bare proper names of people preceded with appositive titles and the postnominals in the 'of-phrase' construction; the equivalent Arabic NPs should be preceded with the definite article in both Arabic varieties. In contrast, the L2 PJ participants were more influenced by PJ/A (that lacks the indefinite article) than MSA (that has a morphological case marker for indefiniteness). Therefore, if MSA had an influence on the L2 PJ participants' use of the indefinite article, they would not have fluctuated between using *a(n)* and *the* with indefinite specific NPs.

Regarding the findings of the L3 participants from both groups, the bi(dia)lectal situation in Jordan seemed to have less impact on their performance than the L2 PJ participants. The L2 PJ participants had more linguistic experience with regard to the direct exposure to MSA and PJ/A than the L3 participants as the L2 PJ participants learnt MSA at school for 12-14 years (means=13), and they were directly exposed to PJ/A all their lives (means of age=26). In contrast, the L3 groups were more influenced by L2/L3 CG than L1 PJ/A, especially on the use of the indefinite and definite articles. However, it was not apparent why the role of the length of learning Greek yielded contradictory results regarding the performance of the L3 PJ-CG-E participants. It was statistically proven that the negative role of the length of learning Greek was only limited to the use of Ø by the L3 PJ-CG-E participants before the postnominals in the 'of-phrase' construction on the GJT. The results were within expectations because the English and Greek contexts are structurally similar. However, the length of learning Greek had a negative influence on the performance of the L3 PJ-CG-E participants before [–definite, +specific] NPs on the FCET which was contrary to predictions, as the

L3 participants' proficiency levels in Greek had a positive impact on their use of *a(n)* in both contexts. On the other hand, the findings revealed the length of learning Greek did not contribute to the performance of the L3 PJ-E-CG group. Although this factor was not a strong predictor in the acquisition of English determiners. One explanation regarding the differences between the results of both L3 groups is that the former group spent 5-30 years learning Greek (mean=13.4) while the latter group spent 3-16 years (mean=7.5) learning it.

Concerning the L2 CG participants' results, it was found that the bi(dia)lectal setting might have caused difficulties in the process of acquisition as the L2 CG participants were exposed to CG and then to SMG for 12-14 years (means=13) and English for 7-35 years (means=11.99) in a complex acquisition environment. As the CG article system is not different from SMG (Buschfeld, 2013), it remained unclear whether the negative influence from CG was more or less than the negative influence from SMG. It is suggested that the complexity resulted from the bi(dia)lectal setting was not the primary factor that affected the L2 CG participants' acquisition of English determiners, but rather their low English proficiency levels at the initial state of L2 acquisition, especially that the role of English proficiency was proven to have more influence on the L2 CG participants than the L2 PJ participants.

5.5.2. The role of length of residence in Cyprus and/or Jordan

The length of residence in Jordan by the L2 PJ and L3 participants and in Cyprus by the L2 CG and L3 participants was linked to the status of English in Cyprus and/or Jordan. English is used in Jordan as a means of communication in the academic/government/ international institutions (Alomoush, 2015, Alomoush and Al-Na'imat, 2018). As stated previously, the use of English in Cyprus has *de facto* status in that it is used in a semi-official way in formal settings and daily life because of the huge presence of the British and the non-native Greek speakers in the country (Buschfeld, 2013). It was expected the

L2 CG and L3 groups would surpass the L2 PJ group in the acquisition of English determiners. It was also expected the L3 PJ-CG-E group of participants would benefit from their residence in Cyprus (mean=23) more than the L3 PJ-E-CG group of participants (mean=11.3) as the former group spent more years there than the latter group.

The analysis of the data did not all concur with the predictions. It was found that the length of residence in Cyprus had no positive influence on the performance of the L2 CG and L3 PJ-CG-E groups. Furthermore, the positive influence of this factor on the L3 PJ-E-CG group was limited to the use of *a(n)* with specific NPs, as obtained from the FCET. However, the increase of length of residence in Jordan had a negative influence on using *the* and *a(n)* by the L3 PJ-E-CG group before proper names and specific NPs, respectively. In contrast, the length of residence in Jordan did not indicate any negative influence on the acquisition of English determiners by the L2 PJ and L3 PJ-CG-E groups, which was not in line with predictions. Accordingly, the findings were partially in line with the Scalpel Model (Slabakova, 2017) and the L2 Status Factor (Falk and Bardel, 2011), which considered the negative role of learning English in non-English-speaking countries.

5.5.3. The influence of the different forms of input on the use of English articles

The results indicated that the performance of the L2/L3 participants improved in response to certain forms of input. The factors that reflected the learners' linguistic experiences were related to English proficiency, length of learning L2 English, rate of daily exposure to English in different settings and age of participants. English proficiency was found to be the most influencing factor that predicted the participants' performance. This positive influence of this factor helped the participants overcome the negative influence of PJ/A and/or CG resulted from (i) the structural dissimilarity between CG and English on the use of the zero article in the relevant contexts and the

use of the definite article before the 'of-phrase' construction, and (ii) the structural dissimilarity between PJ/A and English on the use of the three articles. It also helped in accelerating the positive role of CG regarding the use of the definite article and the indefinite article before proper names and (non-)specific NPs, respectively.

However, the role of this factor had more positive influence on the performance of the L2 CG group and the L3 groups than the L2 PJ group. To be more specific, this factor played a significant and positive role in using the three articles by the L3 PJ-E-CG participants on both tasks. It also played a significant and positive role in supplying Ø and *a(n)* by the L2 CG group and the L3 PJ-CG-E group on both tasks. Nonetheless, the results of the FCET indicated this factor had a partial influence on the use of *the* by the L2 CG and L3 PJ-CG-E groups, as it only predicted their performance before the 'of-phrase' construction but not the definite proper names, whereas the results of the GJT task proved that English proficiency contributed significantly and positively to the performance of the participants in both contexts.

The results of both tasks proved English proficiency predicted the L2 PJ participants' use of Ø. Still, it had a partial influence on their use of *the* and *a(n)*. For example, the L2 PJ participants with greater English proficiency were more likely to converge with the grammatical values of the L2 'of-phrase' construction but not the definite proper names as obtained from both tasks. In addition, the results of the FCET revealed the improvements in the use of *a(n)* in both contexts resulted from the enhancements of the L2 PJ participants' proficiency level; yet this factor led to improvements in the use of *a(n)* in the specific context rather than the non-specific context on the GJT.

The role of daily exposure to English was investigated in three different settings: community, home and university/school/work. It was predicted that this factor would have more positive influence on the L2 CG and the L3 groups than the L2 PJ group

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because of the *de facto* status of English in Cyprus in comparison with the linguistic status of English in Jordan, in which it is used as a lingua franca (See section 5.5.2).

The findings demonstrated that the daily exposure to English at university/school/work contributed to the performance of the L2 PJ group more than the other groups and helped in overcoming the negative influence of the bi(dia)lectal situation in Jordan, which was contrary to predictions. Moreover, the daily exposure to English at university/school/work had more impact on the performance of the L2/L3 groups than the other settings. The results of the L2 PJ participants on both tasks also showed the increase in the rate of daily exposure to English at university/school/work was one of the key factors that led to higher ratings of *the* before the 'of-phrase' construction and *Ø* before proper names preceded by titles/honorifics. Furthermore, the results of the FCET confirmed that this factor had a partial positive influence on the L2 PJ participants' use of *a(n)* in the non-specific context. In contrast, the positive role of this factor was limited to the use of (i) *the* in both contexts by the L2 CG group as on the FCET; (ii) *the* by the L3 PJ-CG-E participants before definite proper names of places and people on the GJT, and (iii) *a(n)* by the L3 PJ-E-CG participants in the specific context on the GJT.

It was also found that the positive effect of the daily exposure to English at home and in the community was partial, and it was only verified in relation to the performance of some groups. The type of input that the learners were exposed to at home facilitated the use of *a(n)* by the L2 CG group in the specific context, and the use of *Ø* by the L3 PJ-CG-E group before the N2s in the 'of-phrase' construction, as obtained from the FCET. Furthermore, the positive effect of input in the form of daily exposure to English in the community was only substantiated in relation to the use of *Ø* before the N2s in the 'of-phrase' construction by the L2 PJ group as obtained from the GJT, and the use of *the* before the N1s in the 'of-phrase' construction.

The length of learning English (in years) had a positive impact on the L2 PJ group (mean=14.3), L3 PJ-CG-E group (mean=12.7) and L3-E-CG group (mean=12.9) but not the L2 CG group (mean=12). Nonetheless, the positive influence of this factor on the former groups was limited to a few contexts as obtained from the GJT. This can be attributed to the fact that the L2 PJ, L3 PJ-CG-E and L3-E-CG groups had more linguistic experience than the L2 CG group concerning the length of learning English at school/university/language centres. The findings on the GJT showed this factor led to increases in (i) utilising *a(n)* by the L2 PJ group in the (non-)specific contexts, (ii) using *the* by the L3 PJ-CG-E participants before definite proper names and *a(n)* before the postnominals in the 'of-phrase' construction and (iii) using *a(n)* by the L3 PJ-E-CG participants in the specific context. Contrary to predictions, the role of the length of learning English had a negative impact on the performance of the L3 PJ-E-CG participants in using *the* before proper names of people and places on the FCET.

Concerning the role of the age of participants, it was found that this factor did not contribute to the acquisition of English determiners by the L3 PJ-CG-E participants (though this group and the other L3 group had the same mean of age (=26)). In contrast, it was shown the increase of the age of the L2 PJ participants (mean=26) and the L3 PJ-E-CG participants (mean=30) provided them with more linguistic experience regarding the use of *Ø* before the N2s in the 'of-phrase' construction as obtained from the FCET. The analysis of the data also showed this factor played a positive role in using *a(n)* by the L3 PJ-E-CG participants in obligatory contexts as on the GJT, and in using *a(n)* in the non-specific context by the L2 CG participants on the FCET. This factor provided the L2 CG participants with fewer years of linguistic experience of English (mean of age=23) in comparison with the former groups of participants.

5.5.3.1. The role of the different forms of input in the L2/L3 acquisition of English determiners and previous research

English proficiency was the most influential factor found to lead to improvements in the acquisition of English determiners and/or to reduce the effect of the non-facilitative transfer from the (non-)native language(s). Similar conclusions were reached by L2 studies conducted by Jiang (2012), Momenzadea and Youhanaeeb (2014), and Kargar (2019), and by L3 studies conducted by Ouertani (2013) and Hermas (2019). Momenzadea and Youhanaeeb (2014) and Kargar (2019) attributed the non-target-like performance of the L2 participants to the cross-linguistic differences between L1 Persian and L2 English as Persian is an article-less language, but the L2 participants with greater English proficiency had less negative CLI from their L1.

Jiang (2012) investigated the acquisition of English determiners by L2 learners with *L1 article languages*: Spanish and French, an *L1 article-less language*: Turkish, and an *L1 article system that partially overlaps with English determiners*: Syrian Arabic. The performance of the L2 PJ participants in the current study was similar to the performance of the L2 Syrian and L2 Turkish participants in Jiang's study (2012) as the incorrect use of the (in)definite articles by the participants in both studies was attributed to the cross-linguistic variations between the learners' L1s and English. Furthermore, the performances of the L2 Spanish/French participants in Jiang's study (2012) were comparable to the performances of the L2 CG participants as their L1s are structurally similar to L2 English. Consistent with the FT/FA Hypothesis, this study and Jiang's study (2012) concluded that structural dissimilarities between English and the (non-)native language(s) can be reduced once the learners of English get enough evidence in the L2 input to help them restructure their interlanguage grammar.

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The claim that English proficiency was not supposed to have an effect on the performance of L2 learners whose L1 has the determiner category, as proposed by Ionin et al. (2004) and Hawkins et al. (2006), was not substantiated in the current study. According to these authors, the L1 positive influence was predicted to account for the target-like attainment of the L2 learners. The results of the current study proved L2 (and even L3) English proficiency did not contribute to the acquisition of *the* by the L1 PJ group before proper names on both tasks and by the L2 CG and L3 PJ-CG-E groups before proper names on the FCET, or to the acquisition of *a(n)* by the L2 PJ group in the non-specific context on the GJT. In addition, the performance of the former L2 (and L3) groups was not native-like in the contexts that match with their L1s. Similarly, the prediction that the enhancement of L3 proficiency was supposed to reduce the negative influence of L1 was not borne out in Hermas' study (2019) with regard to some semantic contexts. Hermas (2018) found that the negative transfer from L1 into L3 English was noticed in the performance of the L3 participants at the advanced level regarding (i) their interpretation of generic definite plural NPs, and (ii) their use of the indefinite article with singulars NPs.

Karpava (2016) found that English proficiency did not predict the acquisition of the (in)definite articles by L2 CG participants, while age did. In contrast, this study reported English proficiency was a stronger predictor for the production of English determiners than age. Kwame (2018), however, examined the relation between the L2 participants' English proficiency levels and their age, length of learning English and practising English with a friend. The author demonstrated that there were significant correlations between English proficiency and these factors. In comparison, this study focused on examining the role of these factors in relation to the L2/L3 participants' accuracy scores, and its results emphasised the positive role of these factors in response to certain contexts.

Buschfeld (2013) compared the patterns of acquisition of English determiners by three L2 CG groups of participants who were of different generations: older generation, middle-aged generation, and younger generation. She aimed to find whether the older generation, who had more exposure to English during the British colonisation to Cyprus, were better than the middle-aged generation, who had, in turn, more exposure to natural English than the younger generation. Similar to the symmetrical performance of the L2 CG and L3 groups of the current study, Buschfeld (2013) found the performance of the three groups in using English determiners was almost identical, indicating that having more natural exposure to English by the first group did not contribute to the acquisition of English determiners.

5.5.4. Order of acquisition

The L3 models tested in the current study were of different perspectives with regard to the role of the native language, in this case Arabic, and the non-native languages which are Greek and English. The L2 Status Factor (Falk and Bardel, 2011) gave a privileged role to the L2 and consequently; considered the order of acquisition as a triggering factor in L3 acquisition. The Scalpel Model of TLA (Slabakova, 2017) did not give any weight to the role of one language over the other and, consequently, did not consider the order of acquisition as a factor. Consistent with the latter model but not the former one, the results demonstrated that transfer took place regardless of order of acquisition. In the case of using Ø, the source of transfer was from both L1 PJ/A and L2 CG and it was non-facilitative. Regarding the use of *the* and *a(n)*, the positive transfer from L2/L3 CG was more than the negative transfer from L1 PJ/A. The results are consistent with Ben Abbes' results (2016). They concluded that the order of acquisition did not play a role in the acquisition of English determiners as the L3 groups almost resorted to the same sources of transfer, either positive or negative.

5.5.5. The role of motivation factor

Two types of motivation were specified by the L2/L3 groups and they were extrinsic/instrumental and intrinsic/integrative (See Table 4.1, chapter four). The L2/L3 participants who were extrinsically/instrumentally motivated learnt/were learning English for functional reasons such as job prospects, education and earning money. Those who were intrinsically/integratively motivated showed their desire and willingness to learn English. Similar constructs of both types of motivation were reported in L2 studies by Carrió-Pastor and Mestre-Mestre (2014) on L2 Spanish participants; Bilal et al. (2014) on L2 Pakistani participants; Bekai and Harkouss (2018) on Lebanese participants, who were all L2 learners of English.

Gardner (1985) considered integrative motivation would display a stronger role than instrumental motivation in the process of L2 learning and in the degree of success. In contrast with Gardner's proposal (1985), the L2/L3 participants showed more extrinsic/instrumental motivations than intrinsic/integrative motivations to study English, which is consistent with the findings reached by Carrió-Pastor and Mestre-Mestre (2014) and Bilal et al. (2014). However, data analysis demonstrated both types of motivation did not contribute significantly to the acquisition of English determiners, which is in line with the study conducted by Al-Sohbani (2015) on Yamani secondary school students whose desire to learn English did not predict their school marks.

The results are also not in line with the Scalpel Model (Slabakova, 2017) or the L2 Status Factor (Falk and Bardel, 2011) which assumed that this factor might have a positive role in TLA. However, these L3 models did not identify the theoretical perspectives behind the importance of this factor in TLA.

5.6. Conclusion

This chapter has discussed the findings of the study. Answering RQ1 and RQ2, it was found the structural similarity between CG and English before the definite proper names

and indefinite NPs had a facilitative role in the performance of the L2 CG and L3 groups. However, structural dissimilarity between English and Arabic and Greek explains why the L2/L3 groups overused *the* with bare NPs in obligatory contexts.

Regarding RQ3, the experimental data related to the L2 groups can be explained by the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996). The findings of the L2 CG group rejected the predictions of the FH (Ionin et al., 2008). The results of the L2 PJ group were in line with the FH regarding the acquisition of the indefinite article. The results of the L3 groups were not congruent with the CEM (Flynn et al., 2004), but they were in line with the Scalpel Model of TLA (Slabakova, 2017). Additionally, the findings of the L3 PJ-CG-E group were partially in line with the L2 Status Factor (Falk and Bardel, 2011).

Answering RQ4, the study reported that what the L2/L3 participants needed was to get enough input to reset the parameters of their interlanguage grammars in accordance with the English semantic parameters even if the (non-)native language(s) had the determiner category.

In the conclusion chapter, contributions, implications, and limitations will be set out. It will also provide suggestions for further research.

Chapter 6: Conclusion, limitations and recommendations

6.1. Introduction

This chapter is divided into the following sections. Section 6.2 provides an outline of the major findings in second language acquisition (SLA) and third language acquisition (TLA) vis-à-vis each research question (RQ). Contributions of the study are presented in section 6.3, followed by implications and recommendations in section 6.4. Thereafter, limitations, future research directions, and summary are presented in sections 6.5, 6.6, and 6.7 respectively.

6.2. Outline of the results relating to the research questions

This study provided a detailed investigation on how second language/third language (L2/L3) learners used English articles, and if the cross-linguistic influence based on structural (dis)similarity or language distance between Palestinian/Jordanian-Arabic (PJ/A) and Cypriot-Greek (CG) and English was influenced by other linguistic factors. Thus, each of *the*, *a(n)* and *Ø* was investigated in two different environments by means of a forced-choice elicitation task (FCET) and a grammaticality judgment task (GJT) that were of the written mode by correlating the findings of these tasks with the information extracted from the Language History and Experience Questionnaire (Dörnyei, 2003; Li et al., 2006; Mackey and Gass, 2005; Marian et al., 2007; Otwinowska-Kasztelanic and Karpava, 2015).

6.2.1. RQ1 and RQ2 on the patterns of SLA/TLA and the source of transfer

RQ1 was focused on identifying the patterns of acquisition of English determiners by the L2 and L3 groups, and if they were similar to or different from each other or from the English native (EN) control group. RQ2, however, aimed to identify the source(s) of transfer, and if it was from PJ/A and/or CG.

One of the unique and significant findings to emerge from this study was the effect of structural difficulty on the acquisition of English determiners, even if the determiner category is present in the representation of the learners' (non-)native language(s). It was concluded that structural difficulty was important in understanding the role and degree of transfer in SLA and TLA. In spite of the fact that Arabic, including PJ/A and Modern Standard Arabic (MSA), and Greek, including CG and Standard Modern Greek (SMG), have the definite article and are considered article-based languages (cross-linguistic similarity between CG and JA and English), the L2 CG participants and the L3 participants found it less difficult than the L2 PJ participants to use *the* with proper names of people and places. Furthermore, the L2/L3 groups' symmetrical performance with bare NPs at the initial states of L2/L3 English acquisition indicated they mistakenly used *the* for Ø because the functions of determiners at the syntax-semantic interface in Arabic and Greek are different from English in relation to the tested bare NPs. The results of the L2 PJ and L3 groups also revealed that though Greek has the indefinite article while Arabic does not, the participants at the initial states of L2/L3 English acquisition faced a difficulty related to the learnability of the morpho-syntactic and semantic properties of the English indefinite NPs.

It was also revealed the L2/L3 groups were not consistent in their use of each article in each pair of contexts, and the negative or positive influence from Arabic and/or Greek was more evident in some contexts over others. The L2 PJ group, for example, were more accurate in using *the* before the 'of-phrase' construction than proper names, though Arabic is different from English in both contexts. They were also more accurate in using *a(n)* before [–specific] NPs than [+specific] NPs, though PJ/A lacks the morphological realisation of the indefinite article. The results also demonstrated that the L2 CG participants resorted to negative transfer in the contexts

related to the bare postnominals in the 'of-phrase' construction and the bare NPs preceded by appositive titles/honorifics (overuse of *the*) more than the indefinite contexts (article omission because of using certain types of verbs in Greek). They also exerted L1 positive influence on the use of *the* before the 'of-phrase' construction more than the definite proper names.

Moreover, the L3 groups' negative transfer from L1 PJ/A with definite proper names was more than the negative transfer from L1 PJ/A in the definite 'of-phrase' construction. The L3 groups had symmetrical patterns in using Ø with bare N2s in the 'of-phrase construction and bare NPs preceded by appositive titles/honorifics. Their low performance in these contexts suggested they might be negatively influenced by both L2/L3 CG and L1 PJ/A. However, the degree of transfer from the source languages was only identified with regard to the L3 PJ-CG-E group's use of Ø with bare N2 in the 'of-phrase construction on the GJT in which L2 CG was the source of negative transfer. Additionally, the L3 groups' performance in the indefinite contexts was almost identical as they had more positive transfer from L3 CG than negative influence from L1 PJ/A.

6.2.2. RQ3: Testing the L2 hypotheses and L3 models

RQ3 addressed the learnability problem from the theoretical perspective of two L2 hypotheses with regard to the performance of the L2 groups and some L3 models concerning the performance of the L3 groups. They were as follows:

SLA: Full Transfer/Full Access (FT/FA) Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996) and Fluctuation Hypothesis (FH) (Ionin et al., 2008), and

TLA: the L2 Status Factor (Falk and Bardel, 2011), the Cumulative Enhancement Model (Flynn et al., 2004) and the Scalpel Model of TLA (Slabakova, 2017)?

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Overall, the findings of the L2 PJ participants concerning their use of the indefinite article supported the predictions of the FH (Ionin et al., 2008). It was apparent that the L2 PJ participants were fluctuating between the semantic settings of the Article Choice Parameter, which means fluctuation overrode transfer. In contrast, the results of the L2 PJ participants with regard to their use of the definite article and the results of the L2 CG participants on the use of the (in)definite articles were not congruent with the FH. It was found the positive transfer related to transferring the determiner category from L1 CG into L2 English did not take place at the initial state of L2 acquisition.

On the other hand, the findings were in accordance with the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996). At the initial state of acquisition, the L2 PJ groups transferred the L1 grammatical features into L2 English that constituted the learners' interlanguage grammar with the definite proper names and indefinite specific NPs more than the definite 'of-phrase' construction and the indefinite non-specific NPs. The L2 CG groups positively transferred the L1 grammatical features into L2 English that constituted their interlanguage grammar with the indefinite contexts and the definite 'of-phrase' construction more than the definite proper names of people and places. This asymmetrical performance by each group was related to having more quality and quantity of input with the former contexts than the latter contexts.

It was also reported the inadequate input might cause a learnability problem, even by L2/L3 participants with greater English proficiency levels, as was the case with the high rate of omission errors before the definite proper names by the L2 PJ group and the L3 PJ-CG-E group and the high rate of overgeneralisation errors by the L2 CG group in the same context. Eventually, the L2 participants seemed to reset the parameters associated with the English articles by accessing UG with the increase of

certain forms of input that helped in (i) overcoming the non-facilitative transfer from L1 PJ/A or L1 CG or (ii) realising how to conform their article use to L2 English even if their L1s have the target articles. Accordingly, this study provided an empirical explanation on why one aspect of acquisition might be more difficult than the other under the FT/FA Hypothesis in comparison with previous research focused on the role of English proficiency alone (e.g. Awad, 2011; Jiang, 2012; Sabir, 2015; Abumlhah, 2016; Kwame, 2018; Alzamil, 2019; inter alia) and left this issue unresolved.

The findings of the L3 groups supported the positive role of L2/L3 CG on the acquisition of English determiners. Still, the degree of positive transfer was not clear in some contexts. Consequently, the result of the FCET did not substantiate the 'wholesale transfer' from L2 CG into L3 CG for the L3 PJ-CG-E group, as predicted by the L2 Status Factor Model (Falk and Bardel, 2011) as it was only identified with indefinite specific NPs. In contrast, the results of the L3 PJ-CG-E on the GJT provided partial support to the L2 Status Factor (Falk and Bardel, 2011) as the 'wholesale transfer' from L2 CG into L3 CG was apparent in the use of the definite article in the relevant experimental contexts. However, the use of the indefinite article and the zero article did not support the prediction of this model, as the 'wholesale transfer' from L2 CG into L3 CG took place in certain contexts which are the bare nominals in the 'of-phrase' construction and the indefinite non-specific NPs.

The analysis of the data also did not corroborate the wholesale positive transfer from L2 CG into L3 CG for the L3 PJ-CG-E group and from L3 CG into L2 English for the L3 PJ-E-CG group, as predicted by the Cumulative Enhancement Model (Flynn et al., 2004). In contrast, the findings of the L3 groups on the use of English determiners can be best explained in light of the Scalpel Model of TLA (Slabakova, 2017). Though the results of the L3 PJ-CG-E group provided evidence in favour of the wholesale transfer in some contexts, they did not necessarily disagree with the Scalpel Model of

TLA, as the role of L2/L3 CG was expected to be stronger, especially that English and CG are similar with regard to the definite and indefinite experimental contexts. The results of both L3 groups were also consistent with the Scalpel Model of TLA as they proved that what accounted for L3 acquisition was a group of factors that went beyond transfer from PJ/A and/or CG (ibid). These factors were related to (i) structural complexity; (ii) increase of English input, and (iv) degree of transfer in relation to the participants' proficiency level in Arabic and Greek; facilitative transfer from the L2/L3 CG or non-facilitative transfer from L1 PJ/A or L2/L3 CG was based on how the L3 participants judged the psychotypology or linguistic proximity between English and CG, as opposed to the structural (dis)similarity between English and PJ/A or/and CG.

According to this study, the length of residence in Cyprus with its *de facto* status was found to have a partial positive influence on the performance of the L3 PJ-E-CG group only in response to certain contexts rather than the other experimental groups. Still, the role of motivation did not seem to have a significant and positive influence on the performance of the L3 groups though they were clearly motivated to learn English. In spite of the fact the L2 Status Factor (Falk and Bardel, 2011) and the Scalpel Model of TLA (Slabakova, 2017) considered the positive role of motivation and the negative role of the non-native setting, they did not specify the degree of importance of these factors.

6.2.3. RQ4 on the role of some factors in the acquisition of English determiners

In addition to the role of structural difficulty resulting from the influence of L1 PJ/A or L1 CG for the L2 groups and the influence of L1 PJ/A and L2/L3 CG for the L3 groups, it was also concluded the experimental groups' performance was influenced by other factors. These factors were found to have a positive effect on the performance of the L2 groups, but they had a positive or negative effect on the performance of the L3 groups. Moreover, some of these factors were found to be more prevalent than others.

The factors with the negative influence on the performance of the L3 PJ-E-CG participants on the FCET were length of residence in Jordan and length of learning L2 English in relation to the use of *the* before proper names, as well as the length of residence in Jordan in relation to the use of *a(n)* with indefinite specific NPs. The factor with the negative influence on the performance of the L3 PJ-CG-E participants was related to their proficiency levels in Arabic in relation to the use of *the* in the proper names context as obtained from the FCET, and on the use of Ø before the postnominals in the 'of-phrase' construction as obtained from the GJT, respectively.

The factors with the positive influence were related to the different reflections of input. These factors are ordered in a descending order from the most dominant to the least dominant in each group, as follows:

L2 PJ group: English proficiency > rate of daily exposure to English at university/school/work > length of learning L2 English > rate of daily exposure to English in the community and age.

L2 CG group: English proficiency > rate of daily exposure to English at university/school/work > rate of daily exposure to English at home and age.

L3 PJ-CG-E group: English proficiency > L2 Greek proficiency > length of learning L3 English, length of learning L2 Greek > rate of daily exposure to English at home, university/school/work and in the community as well as Arabic proficiency level.

L3 PJ-E-CG group: English proficiency > Greek proficiency and age > length of learning L2 English, rate of daily exposure to English at university/school/work, length of residence in Cyprus and Arabic proficiency level.

6.3. Contribution of the study

This study contributed to our knowledge as it tested the theoretical perspectives of the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1994, 1996), the FH

(Ionin et al. 2008), the CEM (Flynn et al., 2004), the L2 Status Factor (Falk and Bardel, 2011) and the Scalpel Model of TLA (Slabakova, 2017). Overall, this study explained the (un)learnability problems by correlating the structural (dis)similarity between CG or PJ/A and L2/L3 English with the different kinds of linguistic experiences that the L2/L3 participants had in the process of L2/L3 learning. It was reported that inadequate input might cause a learnability problem even by L2/L3 participants with greater English proficiency levels, as was the case with the high rate of omission errors before the definite proper names by the L2 PJ and the L3 PJ-CG-E groups, and the high rate of overgeneralisation errors by the L2 CG group in the same context.

In addition, data analysis has focused on the role of a set of factors that have never been investigated before on the acquisition of English determiners or in relation to the theoretical perspectives of the tested L2 hypotheses and the L3 models. Thus, the findings from this study made several contributions to the current literature on the role of these factors as follows:

- this study is the first to inspect the role of motivation and non-native setting from the perspective of the L2 Status Factor by Falk and Bardel (2011) and the Scalpel Model of TLA by Slabakova (2017). These two L3 models propose that age, motivation and non-native setting are triggering factors in L3 acquisition, but no research so far has tested their influence in the process of L3 acquisition, namely in the field of English determiner acquisition.

- The role of input in this study exceeded the notion of the linguistic experience that was only based on English proficiency as found in previous research in *SLA* (Ionin et al., 2008; Awad, 2011; Jiang, 2012; Momenzadea and Youhanaeeb, 2014; Sabir, 2015; Abudalbuh, 2016; Kwame, 2018; Kargar, 2019; Alzamil, 2019; inter alia) and *TLA* (Avgerinou, 2007; Ouertani, 2013; Hermas, 2018, 2019; inter alia). Thus, input was investigated in different forms, such as English

proficiency level; age of participant; length of learning L2/L3 English, and daily exposure to English in the community, at home and university/school/work. The role of the former factors offered more explanations to unveil the learnability problem faced by the L2/L3 learners.

- This study is the first to look into the L2/L3 acquisition of English determiners in relation to the bi(dia)lectal situations in Cyprus and Jordan. It was found that the influence of this complex linguistic situation in each country correlated with other factors such as the linguistic status of English and linguistic experience of the L2/L3 participants (See Chapter 5, section 5.5.1).

- This study has gone some way towards enhancing our understanding of the role of the non-native settings (cf. Buschfeld, 2013) which was investigated in a way that was different from previous research (cf. Saito, 2015, Hermas, 2018). The role of the non-native setting in this study was correlated with the de facto status of English in Cyprus in comparison with the lingua franca use of English in Jordan (See Chapter 5, section 5.5.2), and the daily exposure to English at home, university/school/work and in the community (See Chapter 5, section 5.5.3).

Another contribution of this research is related to its unique methodology. First, this research included a comparative study that did not only aim to compare the patterns of acquisition of one L2 group with another L2 group or the L3 groups with the L2 groups, but also the patterns of acquisition of the L3 groups that were different in the order of acquiring English and CG. Furthermore, this study started with a cross-linguistic study that identified the cross-linguistic variations in relation to the article system in English and how it is similar or different from PJ/A and MSA, on one hand, and CG and SMA, on the other hand. This cross-linguistic analysis paved the way for the second phase of the study as it was necessary for constructing the tasks.

Finally, this study fills a gap in the literature as it examined the acquisition of English determiners in six contexts at the syntax-semantics and syntax-discourse interfaces. To the best of the author's knowledge, bare proper names preceded by appositive titles/honorifics have never been investigated before. Though the acquisition of the English indefinite article was explored by many researchers on speakers of Arabic (e.g. Kharma, 1981; Kharma and Hajjaj, 1997; 1999; Bataineh, 2005; Alenizi, 2009; Crompton, 2011; Al-Badawi, 2012; Sabra, 2014; Shalaby, 2014; Sadek, 2016) and by a few researchers on speakers of SMG (e.g. Thomas, 1989, Hawkins et al., 2006) or CG (Buschfeld, 2013; Karpava, 2016), the indefinite contexts prepared for the purpose of this study are unique; they provided evidence for the cross-linguistic influence from Greek that reflected on the L2 CG and L3 groups' use of the target article. These contexts focused on the use of the indefinite article with (non-)specific NPs after certain verbs, as in CG the indefinite article is omitted with the presence of verbs of accomplishments and light verbs. This study also explored how the definite article and the zero article were used in argument positions before the 'of-phrase construction and before the second bare nominal in this phrase, respectively. This way of investigating the use of the definite and zero articles in this construction was different from the asymmetric way of investigating this construction by Arab researchers. The L2 studies on Arab learners of English examined how determiners are realised with the first constituent of this construction and/or the second constituent regardless of the type of the second constituent (singular or plural and definite or indefinite) or the position of the NP in the sentence (argument position or non-argument position) (cf. Awad, 2011; El Werfalli, 2013).

6.4. Implications and recommendations

It was found that the task type led to variations in the performance of the L2 and L3 participants. These variations were expected, as each type of task measured different

types of behaviour that reflected the L2/L3 learners' knowledge (Leung, 2005; Ganta, 2015; Schütze, 2016). Thus, the use of a variation of tasks is recommended in order not to judge the L2/L3 learners' competence on the basis of one task type alone, because language outcome based on production activities might be different from language outcome based on comprehension. The FCET, for example, tested the participants' explicit and conscious metalinguistic awareness (Leung, 2005), while the GJT provided information about the participants' competence (Schütze, 2016).

This study also has pedagogical implications. It is recommended the results presented here may help in enhancing the educational field by taking into consideration how the article system is recognised in the learners' L1s, and how it is different from their L2/L3. Language learning and linguistic programmes can be prepared to provide English teachers with the training they need to help them recognise these differences during the process of SLA and TLA, and to train them to prepare the target activities that might help second and third language learners in the learning process. These improvements can be more effective if English language teachers/educators acknowledge the importance of input factors and motivation. Though input in the form of direct exposure to English is difficult and even impossible in non-native English-speaking countries, students and L2/L3 learners of English can be motivated to perform certain assignments by contacting native speakers of English online. Teachers and educators can also join online foreign-language forums on the internet and invite their students to participate in them. Alyami (2018: 431) suggests 'teachers could arrange for interactions to take place between students and universities [and] native English speakers as this help learners to talk with their lecturers in English at all times'.

6.5. Limitations of the study and methodological considerations

The generalisability of the results is subject to three main limitations. However, these limitations did not harm the validity and reliability of the study. They are as follows:

1. All the tasks used in this study were of the written mode. The exclusion of the oral data was related to place and time limitation; the researcher travelled many times between Jordan and Cyprus. Accordingly, collecting written data was related to time management. Written tasks/tools provided the researcher with the opportunity to collect more data from the L2/L3 learners per session (Mackey and Gass, 2005).

2. Some of the data the researcher found hard to analyse were related to information given by the L2/L3 participants on the bi(dia)lectal situation in Cyprus and Jordan. For example, some participants provided confusing information as they considered the high varieties – MSA and SMG – to be similar to the low varieties of PJ/A and CG. For example, when the participants were asked to give the number of years they spent in learning the standard varieties, their answers were 'all my life', while they were supposed to state how long it took them to learn it at school/university. In addition, some of the L2/L3 participants' responses in relation to the motivation factor were not clear and some of the participants did not respond at all (See section 4.2, chapter four).

3. The results of the L2 CG group and the L3 groups regarding the use of *the* indicated that the FCET provided evidence of transfer from PJ/A and CG, while the results of the GJT provided evidence in favour of the role of PJ/A more than the role of CG. This is due to the design of the tasks. The FCET, for example, had more options related to the proper use of the definite article and the alternative options that made it possible to identify the negative transfer errors from both PJ/A and CG. In the GJT, this was not the case, as the experimental items of the sentences that tested for the (un)grammatical NPs in relation to the 'of-phrase' construction were either provided as ungrammatical bare NPs or grammatical definite NPs. In addition, both tasks tested the prediction of the FH

as they examined the L2 participants' target-like use of *a(n)* in the specific context and in the non-specific context as well as their omission errors. However, the design of the FCET had an option concerning the substitution error with *the* which provided further evidence for fluctuation. It should be emphasised that both tasks tested the role of transfer from the previously acquired languages into English to various degrees (the FCET provided more evidence with regard to transfer or fluctuation than the GJT). Thus, the exclusion of the former contexts from the GJT did not influence data collection or data analysis. However, their inclusion might provide more information if the task is amended for future research[6].

4. The participants from each L3 group were classified into different proficiency levels in Arabic and Greek. These classifications were based on the *A Level/IGCSE/GCSE* examinations or school examinations. However, the participants, who did not have a certificate based on the former exams as a proof of their proficiency level in Greek, were asked to provide their scores of the Apolytirion/Lyceum exams. These scores were classified into different language levels specified by the Cypriot-Greek Ministry of Education and Culture. Likewise, the participants, who did not have a certificate as a proof of their proficiency level in Arabic, were asked to complete an Arabic proficiency exam prepared on the basis of the *A Level* and *GCSE* examinations. To ensure the reliability of the study, the exam was reviewed by two university professors in Education and Psychology/Arabic literature and by an Arabic teacher in Jordan.

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[6] The difference between the designs of the two tasks was more related to the type of data that this study aimed to collect: *production data via the FCET* and *comprehension data via the GJT*. Furthermore, the experimental items in each task were constructed in terms of certain criteria. Thus, the six contexts in the two tasks were of the same type. They were also similar in terms of the simplicity and complexity of the experimental sentences (equal number of simple and complex sentences were constructed in each context), and in terms of using equal instances of experiment items in subject position and object position (except for the indefinite (non-)specific NPs as they were all in the object position after certain types of verbs).

5. The number of the L2 participants in each group was almost double the size of each L3 group. For that reason, the researcher consulted a statistician from Jordan to analyse some of the statistics. The statistician suggested the use of the Ordered Probit regression analyses and the multiple regression analyses utilising a STATA/MP 14.0 (Stata Corp, Texas, USA) software.

6. Age of onset to English and length of learning English in public/private and international schools were within the factors this study aimed to investigate, along with the factors mentioned in RQ4. However, the former factors were eliminated from the statistical models as they were found to increase multicollinearity. To make sure all the other factors mentioned in RQ4 were included in the statistical analyses, different statistical techniques such as Ordered Probit model and multiple regression models were used to maximise the chance of testing the influence of these factors and to avoid multicollinearity (Yow and Li, 2015).

6.6. Future research

This study investigated the acquisition of an L2 group with a determiner category (CG) and another L2 group with a determiner system (PJ/A) that has only the definite article, and two L3 groups with an L1 whose determiner system (PJ/A) partially overlaps with L2/L3 English and L2/L3 Greek. The comparison between the L2 PJ group and the L3 PJ groups helped in identifying the source of transfer and the extent to which L2 acquisition was different from L3 acquisition, as the L2 group and L3 groups were of the same L1 backgrounds. Further investigation and experimentation into the L3 acquisition of English by learners who are native speakers of CG with an L2 article-less language are strongly recommended to find whether their performance is comparable to the L2/L3 PJ participants of the current study. A future study investigating other L2 groups with and without a determiner system and equivalent L3 groups of the same and

different article systems would also be fascinating. More information regarding the performance of such groups would help to find whether the issues of cross-linguistic influence can be explained on the basis of the complexity of the article system between the native tongue and the non-native language(s) in relation to typological distance, typological proximity and contrastive analysis.

A bidirectional research design is suggested to investigate the relationship between bilingual L1 Arabic/Greek with L2 English and L1 English with L2 Arabic/Greek and different language pairs as well on the L2 acquisition of English determiners and L2 acquisition of Arabic/Greek determiners in comparison with the acquisition of monolingual learners of both Arabic/Greek and English.

The results of the study indicated the source of transfer regarding the use of the definite article before the 'of-phrase' construction concerning the performance of the L2 CG and L3 groups was clearer on the FCET than the GJT, as the design of the former task was different from the latter task. For future research and further exploration, it is recommended to refine the GJT by adding another set of ungrammatical sentences (in addition to the grammatical set and the ungrammatical set with bare NPs) with the indefinite NPs to test for the negative transfer from CG and to be equal to the alternative answers provided in the FCET. It is also recommended to add another set of ungrammatical sentences to the indefinite contexts including definite NPs to provide further evidence for fluctuation on the GJT.

In addition, this study used an embedded mixed-methods design that employed more quantitative than qualitative methods. Using a mixed-methods approach that employs more qualitative data than the qualitative data used in the current study, especially oral tasks by means of semi-structured interviews, is recommended. This type of data is expected to provide more information by comparing the written data to the oral data and by asking further questions to elaborate on the written information.

6.7. Summary

This chapter has provided a summary of the findings of the study by trying to identify (i) the patterns of acquisition of English determiners by the L2/L3 groups of the study; (ii) the source of transfer in SLA and TLA, and (iii) the factors that pertained to the acquisition of English determiners.

Interestingly, structural difficulty was revealed to be an impeding factor in L2/L3 acquisition because of the cross-linguistic variations between English and Greek, and English and Arabic. However, this factor seemed to have less influence on the L2 CG and L3 participants than the L2 PJ participants as CG (and SMG) is closer to English than PJ/A (and MSA). It was reported that the degree of negative transfer from the source language(s) was based on English proficiency and structural (dis)similarity between English and CG or PJ/A for the L2/L3 groups and/or Greek proficiency for the L3 groups.

It was also argued that the results of the L2 groups supported the FT/FA Hypothesis (White, 1990/1991; Schwartz and Sprouse, 1996), while the results of the L3 groups were in line with the Scalpel Model of TLA (Slabakova, 2017). Drawing on these hypotheses, it was revealed that the L2/L3 participants needed to get enough input to reset the parameters of their interlanguage grammars in accordance with the English semantic parameters even if the (non-)native language(s) have the determiner category.

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Appendix 1: UCLan Research Ethics Committee and Cyprus National Bioethics Committee

13 September 2017

Sviatlana Karpava / Asma AL-Hawi
School of Language and Global Studies
University of Central Lancashire

Dear Sviatlana / Asma

Re: BAHSS Ethics Committee Application
Unique Reference Number: BAHSS 458

The BAHSS ethics committee has granted approval of your proposal application 'L2/L3 Acquisition of English by L1 P/J Arab and Cypriot Greek learners in the bi(dia)lectal setting of Cyprus and Jordan'. Approval is granted up to the end of project date.

It is your responsibility to ensure that

- the project is carried out in line with the information provided in the forms you have submitted
- you regularly re-consider the ethical issues that may be raised in generating and analysing your data
- any proposed amendments/changes to the project are raised with, and approved, by Committee
- you notify roffice@uclan.ac.uk if the end date changes or the project does not start
- serious adverse events that occur from the project are reported to Committee
- a closure report is submitted to complete the ethics governance procedures (Existing paperwork can be used for this purposes e.g. funder's end of grant report; abstract for student award or NRES final report. If none of these are available use e-Ethics Closure Report Proforma).

Yours sincerely

Peter Lucas
Chair
BAHSS Ethics Committee

* for research degree students this will be the final lapse date

NB - Ethical approval is contingent on any health and safety checklists having been completed, and necessary approvals as a result of gained.
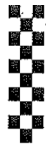
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REPUBLIC OF CYPRUS

CYPRUS NATIONAL BIOETHICS COMMITTEE

Ref.: EEBK EΠ 2018.01.51
Tel.:22809038/039
Fax: 22353878

21st of March, 2018

Mrs Asma Al-Hawi
University of Central Lancashire (UClan)
Cyprus
University Ave 12-14
Pyla 7080
Larnaca

Subject: «Acquisition of English by Arab and Cypriot Greek learners in the bi(dia)lectal setting of Cyprus and Jordan»

Further to your letter dated 14th of March 2018 for the above subject, we would like to inform you that from the review of the documents you have submitted, we have the opinion that the above research does not fall within the competence of Cyprus National Bioethics Committee (CNBC) for full bioethical review.

2. We would like to wish you every success in the conduct of your research, and kindly ask you to inform us about any amendments in the research design that may occur after the issuance of the current opinion.

Appendix 2: Information sheets (English, Arabic and Greek version)

Information sheet
University of Central Lancashire (UCLan), UK/Cyprus
School of Language and Global Studies

L2/L3 Acquisition of English by L1 Arab and Cypriot-Greek learners in the bi(dia)lectal setting of Cyprus and Jordan

Researcher name: Asma AL–Hawi   **Email:** aal–hawi@uclan.ac.uk
Cyprus number: +35799988862/   **Jordan number:** +962777878700
Director of Studies: Dr. Sviatlana Karpava (E–mail: SKarpava@uclan.ac.uk).
Members of the supervisory team: Dr. Summer Mouallem (SMouallem@uclan.ac.uk)
                                    Dr. Petra Bagley (PMBagley@uclan.ac.uk)
                                    Dr. Michael Thomas (MThomas4@uclan.ac.uk)

Introduction
Dear participant:
You are invited to voluntarily take part in this study. This leaflet will give you an overview about my research.
        This study is supported by the University of Central Lancashire (UCLan), School of Language and Global Studies, and approved by the Ethics Committee for Business, Arts, Humanities, and Social Science (BAHSS), number: 458, on 13th September 2017.

What is the purpose of the study?

This research is being conducted in order to examine learning of English as a second or third language by speakers of Arabic and Cypriot-Greek who live in Cyprus and/or Jordan.
        The aim behind this study is to find out the extent to which the first language: Arabic and Cypriot Greek, influences the participants' learning of L2/L3 English. It also aims to find out the factors that might help explaining how the learners learn the English language. Another important objective of the study is to examine the dialects in both Jordan and Cyprus and whether/how they are related to the learning of English as a second or third language.

Why have I been invited to participate?
 In order to be eligible for this study you must:
   • be speakers of Palestinian or/and Jordanian Arabic/ Cypriot-Greek (CG)

   • be aged at least 16 years old

   • have one of the following English proficiency tests: TOEFL/IELTS/IGCSE

What procedures are involved?
If you agree to take part in this research study, you would be asked to do the following:
– fill in the questionnaire of the study.
–perform one hour and 40 minute task that will be distributed in two sessions. The first session will take one hour. The second session, on the other hand, will take 40 minutes.
–participate in a recorded interview in the English language. The interview is supposed to take 20–30 minutes.

What are the possible benefits of taking part in the research?

Your participation will provide the researcher with the opportunity to collect the necessary data, which will be used in order to find out the factors that might help in explaining how the Arab and Cypriot-Greek speakers acquire the English language.

What are the possible risks of taking part in the research?
It should be noted that there are no risks of taking part in this research.

What are the participants' rights
If you accept to take part in this research study, the researcher will ask you to sign a consent form and give you a copy to keep. You will have the right to ask questions. Thus, please feel free to contact the researcher on the mail address and the mobile number provided above.

If you agree to take part in the study, you will have the right to tell the researcher if you want to take a break, or to quit, and you will not be asked to provide any reason for that.

In case you decided to withdraw from the study, you would need to inform the researcher by sending her an email or by calling her on her mobile number.

It should be noted that debriefing is possible but feedback will not be given. In case you ask for debriefing, please put a tick in the box down and you will receive debriefing by emails or in the form of a written report submitted to my institution:

☐I would like to receive debriefing
☐I do not want to receive debriefing

Will what I say in this study be kept confidential?
The researcher would like to confirm that:
–The findings of the tasks/interview will be only used for the purpose of this research study and possibly for future research.

–No one will have an access to the data obtained from the participants except the researcher herself and her director of studies at UCLan, who is in this case Dr. Sviatlana Karpava as well as the members of the supervisory team: Dr. Summer Mouallem, Dr. Petra Bagley and Dr. Thomas Michael.

–The researcher will keep the recordings and the written tasks that you will perform in safe lockable places, and you can tell her if any words should be changed or taken out.
–The researcher will make sure your name or identity will be kept anonymous.

How do I make a complaint?
If you have any concerns about the research that you wish to raise with somebody who is independent of the research team, you should raise this with the University Officer for Ethics (officerforethics@uclan.ac.uk).

Who is organising and funding the research?
This research has been organised by Asma AL–Hawi, a Ph.D. student at UCLan, UK and Cyprus. No special funding has been received for doing this research.

What should I do if I want to take part?
If you would like to take part, please use one of the following procedures according to your convenience:
–send an email to the researcher of the study on the following email: aal–hawi@uclan.ac.uk
– call the researcher on her mobile number: Cyprus number: +35799988862/ Jordan number: +962777878700.

What will happen to the results of the research study?
The results of this study will be used for research purposes such as a dissertation for getting an MPhil/PhD degree, conference and academic presentations, and finally they may be published in a peer–reviewed journal.

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University of Central Lancashire

نموذج لتقديم معلومات عن الدراسة البحثية
جامعة سنترال لانكشاير (يوكلان),بريطانيا, قبرص
كلية اللغات والدراسات العالمية

اكتساب اللغة الانكليزية كلغة ثانية او ثالثة من قبل العرب والقبارصة اليونانيين المقيمين في قبرص والأردن

التاريخ:_____
اسم الباحثة: أسماء الحاوي
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اعضاء فريق الاشراف: الدكتورة سمر المعلم: (SMouallem@uclan.ac.uk)
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الدكتور مايكل توماس   [MThomas4@uclan.ac.uk)

المقدمة
عزيزي المشارك:
أنت مدعو للمشاركة طوعا في هذه الدراسة. هذه النشرة ستزودك بعض المعلومات الأساسية عن بحثي.
سيتم عمل هذه الدراسة بدعم من جامعة وسط لانكشاير، كلية اللغة والدراسات العالمية، والتي وافقت عليها لجنة سلوك الممارسة، مشروع رقم (458) الموافق 13, ايلول,2017.

الى ما يهدف هذا البحث؟
سيتم اجراء هذا البحث بهدف دراسة اكتساب المتحدثين باللغة اﻹنجليزية كلغة ثانية أو ثالثة من قبل العرب والقبارصة اليونانيين المقيمين في قبرص و الاردن او كليهما معا.
الهدف من هذه الدراسة هو معرفة مدى تأثير اللغة الأولى: اللغة العربية اوالقبرصية اليونانية، على اكتساب اللغة الإنجليزية كلغة ثانية أو ثالثة. كما تهدف هذه الدراسة إلى معرفة العوامل التي قد تؤثر على ذلك. ومن الأهداف المهمة الأخرى دراسة اثر اللهجات في كل من الأردن وقبرص على تعلم اللغة الإنجليزية.

لم انت مدعو للمشاركة في هذه الدراسة؟
انت مدعو للمشاركة في هذه الدراسة اذا كنت:
– من المتحدثين باللغة العربية الفلسطينية / أو الأردنية
–تبلغ من العمر 16 سنة على الاقل
–ان تكون قد تقدمت لاحدى اختبارات الكفاءة الإنجليزية التالية:
TOEFL / IELTS / IGCSE

ما هي الإجراءات التي تنطوي عليها هذه الدراسة؟
إذا وافقت على المشاركة في هذه الدراسة البحثية، سيطلب منك القيام بالأمور التالية:
–ملء استمارة الدراسة
– القيام بمهام البحث الكتابية التي ستتطلب ساعة و اربعين دقيقة حيث سيتم تقسيمها الى جلستين. وستستغرق الجلسة الأولى ساعة واحدة. أما الجلسة الثانية فستستغرق 40 دقيقة.
–الاشتراك في مقابلة مسجلة باللغة الإنجليزية. ومن المفترض أن تستغرق المقابلة 20 دقيقة.

ما هي الفوائد المحتملة للمشاركة في هذ الدراسة؟
ستتيح مشاركتك في هذا البحث الفرصة لتزويد الباحثة بالبيانات اللازمة التي سيتم استخدامها في هذا البحث لمعرفة العوامل التي قد تساعد على شرح كيفية اكتساب العرب والقبارصة اليونانيين للغة الإنجليزية.

ما هي المخاطر المحتملة للمشاركة؟
لا توجد مخاطر للمشاركة في هذا البحث.

ما هي حقوقي كمشارك في هذا البحث
إذا قبلت المشاركة في هذه الدراسة البحثية، سوف أطلب منك التوقيع على نموذج الموافقة وسيتم اعطاؤك نسخة للحفاظ عليها. كما سيكون لديك الحق في طرح الأسئلة. لذلك، لا تتردد في الاتصال بي على بريدي الإلكتروني او على هاتفي النقال.

كذلك إذا قبلت المشاركة في هذه الدراسة ، سيكون لديك الحق في إخبار الباحثة إذا كنت ترغب في ان تأخذ استراحة أو اذا اردت الإنسحاب من الدراسة.و لن يطلب منك تقديم أي سبب لذلك.

في حال قررت الانسحاب من الدراسة، ارجو منك اعلام الباحثة عن طريق إرسال بريد إلكتروني لها أو عن طريق الاتصال بها على رقم هاتفها المحمول.

وتجدر الإشارة إلى أنه يمكنك الحصول على تقرير مختصر لنتائج البحث لكن لن يتم تقديم اي تقييم او تغذية راجعة. اذا اردت الحصول على تقرير مختصر لنتائج البحث ، يرجى وضع علامة في المربع أدناه وسوف تحصل عليه عن طريق البريد الإلكتروني أوعلى شكل تقرير مكتوب سيتم ارساله لاحقا إلى المؤسسة التي تلتحق بها:

☐ أود الحصول على تقرير مختصر لنتائج البحث
☐ لا أريد الحصول على تقرير مختصر لنتائج البحث

هل ستحافظ هذه الدراسة على خصوصيتي؟

أود أن أؤكد ما يلي:

ـ ستستخدم فقط لغرض هذه ـبعد تحليل المعلومات المستقاة من مهام البحث و المقابلةـ النتائج التي ستتوصل لها الدراسة الدراسة البحثية ولأبحاث مستقبلية محتملة

ـمديره ـ لن يسمح لاي شخص الحصول على البيانات التي تم الحصول عليها من المشاركين باستثناء الباحثة نفسها ومشرفتها الدراسات في الجامعة، الدكتور سفياتلانا كاربافا بالاضافة الى اعضاء فريق الاشراف الذي يشمل الدكتورة سمر المعلم و الدكتورة بيترا بيجلي و الدكتور مايكل توماس.

ـ سيتم الحفاظ على التسجيلات والمهام المكتوبة التي قمت بها في أماكن آمنة مغلقة، ويمكنك أن تقول لي إذا كنت تريد ان تغيراو ان تلغي أي كلمة.

ـ أود ان أؤكد أن اسمك أو هويتك سوف يبقيان مجهولي الهوية .

كيف يمكنني تقديم شكوى ان استدعى الامر؟

اذا كان لديك اي مخاوف بشأن هذا البحث يمكنك مشاركة مخاوفك مع شخص مستقل عن فريق البحث و ذلك بارسال بريد الكتروني الى مسؤؤل لجنة سلوك الممارسة على الرابط الاتي:

officerforethics@uclan.ac.uk

من سيقوم بتنظيم وتمويل البحث؟

سيتم تنظيم هذا البحث من قبل أسماء الحاوي و هي، طالبة دكتوراه. في يوكلان. ولم يتم تلقي أي تمويل خاص للقيام بهذا البحث.

ماذا أفعل إذا أردت المشاركة؟

إذا كنت ترغب في المشاركة، يرجى اتّباع أحد الإجراءات التالية:
ـ إرسال بريد إلكتروني إلى الباحثة ف على البريد الإلكتروني المرفق في الاعلى
ـ الاتصال بالباحثة على رقم هاتفها

ماذا سيحدث لنتائج الدراسة البحثية؟

سوف تستخدم نتائج هذه الدراسة لأغراض البحث العلمي حيث ستستخدم لإعداد أطروحة للحصول على درجة الدكتوراه وستستخدم ايضا للمشارك في المؤتمرات والعروض الأكاديمية، كما أنها قد تنشر في مجلات اكايمية.

University of Central Lancashire UCLAN
School of Language and Global Studies

Γ2/Γ3 **Εκμάθηση τηςαγγλικήςγλώσσας από L1 Άραβες και Ελληνοκύπ ριους μαθητές στο περιβάλλον Κύπρου και Ιορδανίας όπου ομιλούνται δύο διάλεκτοι.**

Όνομα ερευνητή: AsmaAL–Hawi   **Ηλεκτρονικό ταχυδρομείο:** AAl–hawi@uclan.ac.uk
Αριθμός τηλεφώνου (Κύπρος): 99988862   **Αριθμός τηλεφώνου (Ιορδανία):** 0777878700
Διευθυντής σπουδών: Dr. Sviatlana Karpava (E–mail: SKarpava@uclan.ac.uk).
Μέλη εποπτικής ομάδας: Dr. Summer Mouallem (E–mail: SMouallem@uclan.ac.uk)
                και Dr. Petra Bagley (E–mail: PMBagley@uclan.ac.uk)**.**
                και Dr. Michael Thomas (MThomas4@uclan.ac.uk)

Εισαγωγή
Αγαπητέ συμμετέχοντα:
Καλείστε να συμμετάσχετε εθελοντικά σε αυτή τη μελέτη. Αυτό το φυλλάδιο θα σας παρέχει μία επισκόπηση της έρευνάς μου.
        Αυτή η έρευνα υποστηρίζεται από University of Central Lancashire (UCLAN), School of Language and Global Studies, και εγκρίθηκεαπό [the Ethics Committee for Business, Arts, Humanities, and Social Science (BAHSS), number: 458, on 13ᵗʰ September 2017].

Γιατί διεξάγετ αιαυτή η έρευνα;
Αυτή η έρευνα διεξάγεται για να εξετάσει την εκμάθηση της αγγλικής από τους μαθητές ως δεύτερη ή τρίτη γλώσσα από ομιλητές της αραβικής και της ελληνικής γλώσσας, που κατοικούν στην Κύπρο και/ή στην Ιορδανία.
        Ο στόχος πίσω από αυτή τη μελέτη είναι να μάθουμε το βαθμό στον οποίο η πρώτη γλώσσα: αραβική και ελληνική, επηρεάζει την εκμάθηση της αγγλικής γλώσσας από τους μαθητές. Επίσης, επιδιώκει να ανακαλύψει τους παράγοντες που θα μπορούσαν να βοηθήσουν να εξηγηθεί το πώς οι μαθητές μαθαίνουν την αγγλική γλώσσα. Ένας άλλος σημαντικός στόχος της μελέτης είναι να εξετάσει το περιβάλλον στην Ιορδανία και στην Κύπρο όπου ομιλούνται δύο διάλεκτοι και εάν/πώς σχετίζονται με την εκμάθηση της αγγλικής ως δεύτερης ή τρίτης γλώσσας.

Γιατί μου ζητήθηκε να συμμετάσχω;
Για να είστε επιλέξιμοι για αυτή τη μελέτη ΠΡΕΠΕΙ:
- να είστε ομιλητές της Παλαιστινιακής και/ή Ιορδανικής Αραβικής/Ελληνοκυπριακής διαλέκτου
- να είστε τουλάχιστον 16 ετών
- να έχετε μία από τις παρακάτω εξετάσεις επάρκειας της αγγλικής γλώσσας: TOEFL, IELTS, IGCSE

Ποιες διαδικασίες εμπλέκονται;
Εάν συμφωνήσετε να συμμετάσχετε σε αυτή τη μελέτη, θα σας ζητηθεί να κάνετε τα ακόλουθα:
– Να συμπληρώσετε το ερωτηματολόγιο της μελέτης.
–Να κάνετε μια εργασία διάρκειας μίας ώρας και 40 λεπτών που θα διανεμηθεί σε δύο συνεδρίες. Η πρώτη συνεδρία θα διαρκέσει μία ώρα. Η δεύ τερη συνεδρία θα διαρκέσει 40 λεπτά.
–Να συμμετάσχετε σε μια συνέντευξη στην αγγλική γλώσσα. Η συνέντευξη πρέπει να διαρκέσει 20–30 λεπτά.
Ποια είναι τα πιθανά οφέλη από τη συμμετοχή στην έρευνα;
Η συμμετοχή σας θα δώσει στον ερευνητή την ευκαιρία να συλλέξει τα απαραίτητα δεδομένα,τα οποία θα χρησιμοποιηθούν για να βρεθούν οι παράγοντες που θα μπορούσαν να βοηθήσουν να εξηγηθεί το πώς οι Άραβες και οι Ελληνοκύπριοι ομιλητές μαθαίνουν την αγγλική γλώσσα.

Ποιοι είναι οι πιθανοί κίνδυνοι από τη συμμετοχή στην έρευνα;
Πρέπει να σημειωθεί ότι δεν υπάρχει κανένας κίνδυνος από τη συμμετοχή στην έρευνα.

Δικαιώματα συμμετέχοντα
Αν δεχτείτε να συμμετάσχετε σε αυτή τη μελέτη, θα σας ζητήσω να υπογράψετε ένα έντυπο συγκατάθεσης και θα σας δώσω ένα αντίγραφο για να το κρατήσετε. Θα έχετε το δικαίωμα να κάνετε ερωτήσεις.

Εάν συμφωνείτε να λάβετε μέρος στη μελέτη, θα έχετε το δικαίωμα να πείτε στον ερευνητή αν θέλετε να σταματήσετε ή να κάνετε ένα διάλειμμα. Δεν θα σας ζητηθεί να δώσετε κάποιο λόγο γι' αυτό.

Σε περίπτωση που αποφασίσετε να αποχωρήσετε από τη μελέτη, θα πρέπει να ενημερώσετε τον ερευνητή στέλνοντας ένα μήνυμα ηλεκτρονικού ταχυδρομείου (e–mail) ή τηλεφωνώνταςτου στο κινητό του.

Θα πρέπει να παρατηρήσουμε ότι η ενημέρωση είναι δυνατή, αλλά δεν θα δοθεί ανατροφοδότηση. Σε περίπτωση που θα ζητήσετε ανασκόπηση, παρακαλώ σημειώστε ένα κουτάκι στο κουτί κάτω και θα λάβετε απολογισμό μέσω μηνυμάτων ηλεκτρονικού ταχυδρομείου ή με τη μορφή γραπτής αναφοράς που υποβλήθηκε στο ίδρυμά μου:
　□Θα ήθελα να λάβω ενημέρωση
　□Δεν θέλω να λαμβάνω ενημέρωση

Όσα πω κατά τη διάρκεια της μελέτης θα παραμείνουν εμπιστευτικά;
Ο ερευνητής θα ήθελε να επιβεβαιώσει ότι:
–Τα πορίσματα των εργασιών/συνέντευξης θα χρησιμοποιηθούν μόνο για τους σκοπούς αυτής της ερευνητικής μελέτης και ενδεχόμενης μελλοντικής έρευνας.
– Κανείς δεν θα έχει πρόσβαση στα δεδομένα που προέρχονται από τους συμμετέχοντες, εκτός από τον ίδιο τον ερευνητή και τον διευθυντή σπουδών στο UCLan, ο οποίος είναι στην προκειμένη περίπτωση η Dr. Sviatlana Karpava, καθώς και τα μέλη της εποπτικής ομάδας: Dr. Summer Mouallem και Dr. Petra Bagley.
–Ο ερευνητής θα κρατήσει τις ηχογραφήσεις και τις γραπτές εργασίες που εκτελέσατε σε ασφαλείς κλειδωμένους χώρουςκαι μπορείτε να πείτε εάν θέλετε οποιεσδήποτε λέξεις να αλλάξουν ή να αφαιρεθούν.
–Ο ερευνητής θα βεβαιωθεί ότι το όνομά σας ή η ταυτότητά σας θα διατηρηθούν ανώνυμα.

Πώς μπορώ να υποβάλω παράπονο;
Αν έχετε κάποιες ανησυχίες σχετικά με την έρευνα που επιθυμείτε να εγείρετε σε κάποιον ανεξάρτητο από την ερευνητική ομάδα, θα πρέπει να το αναφέρετε στον Υπεύθυνο Δεοντολογίαςτου Πανεπιστημίου (officerforethics@uclan.ac.uk).

Ποιος διοργανώνει και χρηματοδοτεί την έρευνα;
Η έρευνα αυτή οργανώθηκε από την Asma AL–Hawi, Ph.D. φοιτήτρια στο UCLan, Ηνωμένου Βασιλείου και Κύπρου. Δεν έχει ληφθεί ειδική χρηματοδότηση για την πραγματοποίηση αυτής της έρευνας.

Τι πρέπει να κάνω αν θέλω να λάβω μέρος;
Εάν επιθυμείτε να συμμετάσχετε, χρησιμοποιήστε μία από τις παρακάτω διαδικασίες ανάλογα με την επιθυμία σας:
- Στείλτε ένα μήνυμα ηλεκτρονικού ταχυδρομείου στον ερευνητή της μελέτης στην ακόλουθη ηλεκτρονική διεύθυνση: aal–hawi@uclan.ac.uk
- Καλέστε τον ερευνητή στο κινητό του τηλέφωνο: Κυπριακός αριθμός: +35799988862, Ιορδανικός αριθμός: +962777878700.

Τι θα συμβεί στα αποτελέσματα της ερευνητικής μελέτης;
Τα αποτελέσματα αυτής της μελέτης θα χρησιμοποιηθούν για ερευνητικούς σκοπούς, όπως μια διατριβή για την απόκτηση πτυχίου MPhil/PhD, σε συνέδρια και ακαδημαϊκές παρουσιάσεις, και τέλος μπορούν να δημοσιευθούν σε επιστημονικά περιοδικά.

Appendix 3: Parental consent form in English, Arabic and Greek

Parental Consent Form

Title of the Research Project: *L2/L3 Acquisition of English by L1 Arab and Cypriot-Greek learners in the bi(dia)lectal setting of Cyprus and Jordan.*
Name of the researcher: Asma AL–Hawi
Position: Ph.D student at University of Central Lancashire, UK and Cyprus.

Please read the following statements and initial the boxes to indicate your agreement to the participation of your son/daughter:
  If you agree please put a tick in front of the following:

☐ I confirm that I have read and understood the information sheet, dated ——/——/2017 for the above study and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily

☐ I understand that the participation of my son or daughter in the current study is voluntary and that they are free to withdraw at any time, without giving a reason

☐ I agree to give the researcher the consent to meet my son or daughter in case they accept to take part in the study

☐ I agree to let my son or daughter take part in the written tasks of the current study

☐ I agree to let my son or daughter take part in the audio recorded interview with the researcher of the study

☐ I understand that it will not be possible to withdraw my son or daughter's data from the study after the final analysis has been undertaken.

☐ I agree that the data gathered in this study, from my son or daughter may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.

☐ I understand that the identity of my son or daughter will be anonymous

Parent's name_____   **Parent's signature**_____ **Date**_____
Name of Researcher: <u>Asma AL–Hawi</u> **Signature** _____ **Date**_____

Contacts:
Name of the researcher: Asma AL–Hawi
Researcher's e–mail: aal–hawi@uclan.ac.uk
The researcher's Mobile Number in Jordan +962777878700   Mobile
          Number in Cyprus: +35799988862

Director of Studies: Dr. Sviatlana Karpava (E–mail: SKarpava@uclan.ac.uk).
Members of the supervisory team: Dr. Summer Mouallem (E–mail: SMouallem@uclan.ac.uk)
Dr. Petra Bagley (E–mail: PMBagley@uclan.ac.uk)
Dr. Michael Thomas (MThomas4@uclan.ac.uk)

نموذج موافقة لولي الامر

عنوان مشروع البحث: اكتساب اللغة الانكليزية كلغة ثانية او ثالثة من قبل العرب والقبارصة اليونانيين المقيمين في قبرص والأردن

اسم الباحثة: أسماء الحاوي

المؤهل:طالبة دكتوراه في جامعة وسط لانكشاير

يرجى قراءة العبارات الاتية للاشارة الى موافقتك للسماح لابنك او ابنتك على المشاركة في هذه الدراسة التي ستجريها الباحثة.

إذا كنت موافقا يرجى وضع علامة في المربع:

.ـ أقر بأنني قد قرأت وفهمت ورقة المعلومات، الموثقة بتاريخ ـ / 2017/07 للدراسة المذكورة أعلاه، و انه قد أتيحت لي الفرصة للنظر في المعلومات المرفقة، وطرح الأسئلة، وكان قد تم الرد عليها بشكل مرض☐.

ـ أعي أن مشاركة ابني او ابنتي في هذه الدراسة تطوعي وأن ايا منهم يستطيع الانسحاب في أي وقت دون إبداء اي سبب لذلك ☐

ـ أوافق على منح باحثة هذه الدراسة الموافقة لمقابلة ابني او ابنتي بهدف المشاركة في هذه الدراسة في حال قبوله او قبولها للمشاركة فيها☐.

ـ أوافق على مشاركة ابني او ابنتي باجراء المهام الكتابية الخاصة بهذه الدراسة ☐.

ـ أوافق على مشاركة ابني او ابنتي في المقابلة المسجلة الخاصة بهذه الدراسة☐.

ـ أعي تماما أنه لن يكون من الممكن سحب البيانات التي تم الحصول عليها نتيجة مشاركة ابني او ابنتي في هذه الدراسة خاصة بعد إجراء التحليل النهائي للدراسة☐

ـ أوافق على ان يتم تخزين البيانات التي سيتم جمعها من مشاركة ابني او ابنتي في مركز بيانات متخصص ،وانه من الممكن ان يتم استخدامها في. بحوث مستقبلية ☐

ـ أعي أن هوية ابني او ابنتي في هذه الدراسة ستكون مجهولة ☐.

اسم ولي الامر: _____	**التوقيع** _____	**التاريخ:** _____
اسم الباحثة: أسماء الحاوي	**التوقيع** _____	**التاريخ:** _____

جهات الاتصال:

اسم الباحثة: أسماء الحاوي   البريد الالكتروني : aal-hawi@uclan.ac.uk

المؤهل:طالبة دكتوراه في جامعة وسط لانكشاير

رقم الجوال في الأردن : 962777878700 +   رقم الجوال في قبرص: 35799988862 +

مديرة الدراسات: .الدكتورة سفياتلانا كاربافا (SKarpava@uclan.ac.uk)

اعضاء فريق الاشراف: الدكتورة سمر المعلم: (SMouallem@uclan.ac.uk)

الدكتورة بيترا بيجلي:(PMBagley@uclan.ac.uk)

الدكتور مايكل توماس   [(MThomas4@uclan.ac.uk)

Γονική Συγκατάθεση

Parental consent form

Τίτλος ερευνητικού προγράμματος: *Γ2/Γ3 Εκμάθηση Αγγλικής γλώσσας από Γ1 Άραβες και Ελληνοκύπριους μαθητές στο περιβάλλον Ιορδανίας και Κύπρου όπου ομιλούνται δύο διάλεκτοι..*
Όνομα ερευνητή: Asma AL–Hawi
Θέση: Ph.D φοιτήτρια στο University of Central Lancashire, Ηνωμένου Βασιλείου και Κύπρου.

Διαβάστε τα παρακάτω σημεία και επιλέξτε με ✓ τα κουτάκια για να δηλώσετε τη συγκατάθεσή σας σχετικά με τη συμμετοχή του γιου ή της κόρης σας:
Αν συμφωνείτε, παρακαλώ, σημειώστε τα εξής:

☐ Επιβεβαιώνω ότι έχω διαβάσει και έχω κατανοήσει το έντυπο πληροφοριών, ημερομηνίας —/–/2017–2018, για την παραπάνω μελέτη και είχα την ευκαιρία να εξετάσω τις πληροφορίες και να κάνω ερωτήσεις, οι οποίες έχουν απαντηθεί ικανοποιητικά.

–☐ Κατανοώ ότι η συμμετοχή του γιου ή της κόρης μου στην παρούσα μελέτη είναι εθελοντική και είναι ελεύθερος/η να αποσυρθεί ανά πάσα στιγμή χωρίς να δώσει ουδεμία εξήγηση.

–☐ Δίνω την συγκατάθεση μου στον ερευνητή να γνωρίσει τον γιο ή την κόρη μου σε περίπτωση που θα δεχτεί να λάβει μέρος στη μελέτη.

–☐ Συμφωνώ να αφήσω τον γιο ή την κόρη μου να συμμετάσχει στη γραπτή διαδικασία της παρούσας μελέτης.

–☐ Συμφωνώ να αφήσω τον γιο ή την κόρη μου να συμμετάσχει στην ηχογραφημένη συνέντευξη με τον ερευνητή της συγκεκριμένης μελέτης.

–☐ Κατανοώ ότιείναι αδυνατό να αποσυρθούν τα δεδομένα του γιου ή της κόρης μου, τα οποία συλλέχθηκαν από τη παρούσα μελέτη, μετά την πραγματοποίηση της τελικής ανάλυσης.

–☐ Συμφωνώ ότι τα δεδομένα που συλλέχθηκαν σ´ αυτή τη μελέτη από τον γιο ή την κόρη μου μπορούν να αποθηκευτούν ανώνυμα σε ειδικό κέντρο δεδομένων και να χρησιμοποιηθούν για μελλοντική έρευνα.

–☐ Κατανοώ ότι η ταυτότητα του γιου ή της κόρης μου θα παραμείνει ανώνυμη.

Όνομα του γονέα _____ Υπογραφή του γονέα _____ Ημερομηνία_____

Όνομα του Ερευνητή: <u>Asma AL–Hawi</u> Υπογραφή του ερευνητή_____ Ημερομηνία_____

Επαφές:
Όνομα ερευνητή: Asma AL–Hawi
Ηλεκτρονικό ταχυδρομείο ερευνητή:aal–hawi@uclan.ac.uk
Θέση: Ph.D φοιτήτριαστο University of Central Lancashire, Η νωμένου Βασιλείου και Κύπρου.
Αριθμός τηλεφώνου στην Ιορδανία: +962777878700
Αριθμός τηλεφώνου στην Κύπρο: +35799988862

Διευθυντής σπουδών: Dr.SviatlanaKarpava (E–mail: SKarpava@uclan.ac.uk).
Μέλη εποπτικής ομάδας: Dr. Summer Mouallem (E–mail: SMouallem@uclan.ac.uk)
                    και Dr. Petra Bagley (E–mail: PMBagley@uclan.ac.uk)**.**
                    και Dr. Michael Thomas (MThomas4@uclan.ac.uk).

Appendix 4: Personal consent form in English, Arabic and Greek

Personal Consent Form

Title of the Research Project: *L2/L3 Acquisition of English by L1 Arab and Cypriot-Greek learners in the bi(dia)lectal setting of Cyprus and Jordan.*
Name the researcher: Asma AL–Hawi
Position: Ph.D student at University of Central Lancashire, UK and Cyprus.

Please read the following statements and initial the boxes to indicate your agreement:
    If you agree please put a tick in front of the following:

☐I confirm that I have read and understood the information sheet, dated —/—/2017/18 for the above study and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

☐I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason

☐I agree to take part in the above study

☐ I agree to take part in the written tasks of the study

☐ I agree to the interview being audio recorded

☐I understand that it will not be possible to withdraw my data from the study after final analysis has been undertaken.

☐I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.

☐ I understand that my identity will be anonymous'

Name of Participant _____Signature_____Date_____
Name of Researcher _____Researcher's signature   Date_____

Contacts:
Name of the researcher: Asma AL–Hawi
Researcher's e–mail: aal–hawi@uclan.ac.uk
The researcher's Mobile Number in Jordan +962777878700   Mobile
        Number in Cyprus: +35799988862

Director of Studies: Dr. Sviatlana Karpava (E–mail: SKarpava@uclan.ac.uk).
Members of the supervisory team: Dr. Summer Mouallem (E–mail: SMouallem@uclan.ac.uk)
Dr. Petra Bagley (E–mail: PMBagley@uclan.ac.uk)
Dr. Michael Thomas (MThomas4@uclan.ac.uk)

نموذج الموافقة الشخصية

عنوان مشروع البحث: اكتساب اللغة الانكليزية كلغة ثانية او ثالثة من قبل العرب والقبارصة اليونانيين المقيمين في قبرص والأردن
اسم الباحثة: أسماء الحاوي
المؤهل:طالبة دكتوراه في جامعة وسط لانكشاير

يرجى قراءة العبارات التالية للإشارة إلى موافقتك على المشاركة في هذه الدراسة البحثية التي ستجريها الباحثة.
إذا كنت موافقا يرجى وضع علامة في المربع:
:
2018 للدراسة المذكورة أعلاه، و انه قد أتيحت لي ‬–/2017‬——/ ‬——أقر بأنني قد قرأت وفهمت ورقة المعلومات، الموثقة بتاريخ –
الفرصة للنظر في المعلومات، وطرح الأسئلة، وكان قد تم الرد عليها بشكل مرض☐.
أعي أن مشاركتي تطوعية وأنني أستطيع الانسحاب في أي وقت دون إبداء اي سبب‬– ☐.
أوافق على المشاركة في هذه الدراسة ‬– ☐.
أوافق على المشاركة في المهام الكتابية للدراسة‬– ☐.
أوافق على المشاركة في المقابلة المسجلة‬– ☐.
أعي تماما أنه لن يكون من الممكن سحب بياناتي من الدراسة بعد إجراء التحليل النهائي‬– ☐
بحوث مستقبلية ☐ أوافق على أن البيانات التي سيتم جمعها في هذه الدراسة قد يتم تخزينها في مركز بيانات متخصص ويمكن استخدامها في.‬–
أعي أن هويتي ستكون مجهولة ‬–☐.

اسم المشارك		**التوقيع**		**التاريخ**:
‬———————		‬———————		‬———————
اسم الباحثة		**التوقيع**		**التاريخ**:
‬———————		‬———————		‬———————

جهات الاتصال:
اسم الباحثة: أسماء الحاوي   البريد الالكتروني : aal‬–hawi@uclan.ac.uk
المؤهل:طالبة دكتوراه في جامعة وسط لانكشاير
رقم الجوال في الأردن :962777878700 +   رقم الجوال في قبرص :35799988862 +

الدكتورة سفياتلانا كاريافا مديرة الدراسات: (SKarpava@uclan.ac.uk)
اعضاء فريق الاشراف: الدكتورة سمر المعلم: (SMouallem@uclan.ac.uk)
الدكتورة بيترا بيجلي:(PMBagley@uclan.ac.uk)
الدكتور مايكل توماس   [MThomas4@uclan.ac.uk)

Έντυπο προσωπικής συναίνεσης
(Personal Consent Form)

Τίτλος ερευνητικού προγράμματος: *Γ2/Γ3 Εκμάθηση Αγγλικής γλώσσας από Γ1 Άραβες και Ελληνοκύπριους μαθητές στο περιβάλλον Ιορδανίας και Κύπρου όπου ομιλούνται δύο διάλεκτοι..*
Όνομα ερευνητή: Asma AL–Hawi
Θέση: Ph.D φοιτήτρια στο University of Central Lancashire, Ηνωμένου Βασιλείου και Κύπρου.

Παρακαλώ διαβάστε τις παρακάτω δηλώσεις και αν συμφωνείτε βάλτε ✓ στα κουτιά:

☐ Επιβεβαιώνω ότι έχω διαβάσει και έχω κατανοήσει το έντυπο πληροφοριών, ημερομηνίας
—/—/2017–2018, για την παραπάνω μελέτη και είχα την ευκαιρία να εξετάσω τις πληροφορίες και να κάνω ερωτήσεις, οι οποίες έχουν απαντηθεί ικανοποιητικά.

☐ Κατανοώ ότι η συμμετοχή μου είναι εθελοντική και ότι είμαι ελεύθερος να αποσυρθώ ανά πάσα στιγμή, χωρίς να δώσω κάποιο λόγο.

☐ Συμφωνώ να συμμετάσχω στην παραπάνω μελέτη.

☐ Συμφωνώ να συμμετάσχω στις γραπτές εργασίες της μελέτης.

☐ Συμφωνώ να γίνει ηχογράφηση της συνέντευξης.

☐ Κατανοώ ότι δεν θα είναι δυνατή η απόσυρση των δεδομένων μου από τη μελέτη μετά την ολοκλήρωση της τελικής ανάλυσης.

☐ Συμφωνώ ότι τα δεδομένα μου που θα συγκεντρωθούν σε αυτή τη μελέτη μπορούν να αποθηκευτούν (αφού έχουν συγκεντρωθεί ανώνυμα) σε ένα ειδικό χώρο δεδομένων και μπορούν να χρησιμοποιηθούν για μελλοντική έρευνα.

☐ Κατανοώ ότι η ταυτότητά μου θα παραμείνει ανώνυμη.

Όνομα Συμμετέχοντα_____Υπογραφή_____Ημερομηνία _____
Όνομα Ερευνητή _____Υπογραφή ερευνητή_____Ημερομηνία _____

Επαφές:
Όνομα ερευνητή: AsmaAL–Hawi
Ηλεκτρονικό ταχυδρομείο ερευνητή:aal–hawi@uclan.ac.uk
Θέση: Ph.D φοιτήτριαστο University of Central Lancashire, Η νωμένου Βασιλείου και Κύπρου.
Αριθμός τηλεφώνου στην Ιορδανία: +962777878700
Αριθμός τηλεφώνου στην Κύπρο: +35799988862

Διευθυντής σπουδών: Dr.Sviatlana Karpava (E–mail: SKarpava@uclan.ac.uk).
Μέλη εποπτικής ομάδας: Dr. Summer Mouallem (E–mail: SMouallem@uclan.ac.uk)
                         και Dr. Petra Bagley (E–mail: PMBagley@uclan.ac.uk)**.**
                         και Dr. Michael Thomas (MThomas4@uclan.ac.uk)

Appendix 5: Institutional consent form in English, Arabic and Greek

Consent Form for the institutions/Organizations/Schools

Title of the Research Project: *L2/L3 Acquisition of English by L1 Arab and Cypriot-Greek learners in the bi(dia)lectal setting of Cyprus and Jordan.*
Name of the researcher: Asma AL–Hawi
Position: Ph.D student at University of Central Lancashire, UK and Cyprus.
Name of School/Institution/Organization_____
Name of principal/manager _____

Please read the following statements and initial the boxes to indicate your agreement:

If you agree please put a tick in front of the following:

☐ I confirm that I have read and understood the information sheet, dated —/—/2017/18 for the above study and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily

☐ I understand that the participation of the subjects of the current school/institution/organization is voluntary and that they are free to withdraw at any time, without giving a reason

☐ I agree to give the researcher the consent to meet the candidate subjects who attend this school/institution/organization in case they accept to take part in the study

☐ I agree to let the researcher conduct the written tasks of her study in this school/institution/organization after getting a written consent from each of the participants who attend this school/institution/organization

☐ I agree to let the researcher have an audio recorded interview with the candidate subjects of this school/institution/organization after getting a written consent from each of them

☐ I understand that it will not be possible to withdraw the participants' data from the study after final analysis has been undertaken.

☐ I agree that the data gathered in this study, from the participants who attend this school/institution/organization, may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.

☐ I understand that the identity of the participants who attend this school/institution/organization will be anonymous'

Name of Principle _____ **Signature_____** **Date_____**

Name of Researcher: Asma AL–Hawi **Signature _____** **Date_____**

Contacts:
Name of the researcher: Asma AL–Hawi
Researcher's e–mail: aal–hawi@uclan.ac.uk
The researcher's Mobile Number in Jordan +962777878700   Mobile
            Number in Cyprus: +35799988862
Director of Studies: Dr. Sviatlana Karpava (E–mail: SKarpava@uclan.ac.uk).
Members of the supervisory team: Dr. Summer Mouallem (E–mail: SMouallem@uclan.ac.uk)
                Dr. Petra Bagley (E–mail: PMBagley@uclan.ac.uk)
                Dr. Michael Thomas (MThomas4@uclan.ac.uk)

نموذج الموافقة الخاص بالمؤسسات و المدارس

عنوان مشروع البحث: اكتساب اللغة الانكليزية كلغة ثانية او ثالثة من قبل العرب والقبارصة اليونانيين المقيمين في قبرص والأردن

اسم الباحثة: أسماء الحاوي

المؤهل:طالبة دكتوراه في جامعة وسط لانكشاير

اسم المؤسسة او المدرسة: _____

يرجى قراءة العبارات التالية للإشارة إلى موافقتك على المشاركة في هذه الدراسة البحثية التي ستجريها الباحثة.
إذا كنت موافقا يرجى وضع علامة في المربع:

/ 2017/07 للدراسة المذكورة أعلاه، و انه قد أتيحت لي — أقر بأنني قد قرأت وفهمت ورقة المعلومات، الموثقة بتاريخ — الفرصة للنظر في المعلومات المرفقة، وطرح الأسئلة، وكان قد تم الرد عليها بشكل مرض□.

أعي أن مشاركة الاشخاص، العاملين في هذه المؤسسة، في هذه الدراسة تطوعي وأنهم يستطيعون الانسحاب في أي وقت — إبداء اي سبب لذلك

أوافق على منح هذه الدراسة باحثة لمقابلة الملتحقين في هذه المؤسسة بهدف مشاركتهم فيها في حال قبولهم للمشاركة في — الدراسة □

أوافق على ان تقوم باحثة هذه الدراسة باجراء المهام الكتابية الخاصة ببحثها على العاملين في هذه المؤسسة —□.

أوافق على ان تقوم باحثة هذه الدراسة باجراء المقابلة المسجلة— الخاصة ببحثها على العاملين في هذه المؤسسة□.

أعي تماما أنه لن يكون من الممكن سحب البيانات التي تم الحصول عليها من العاملين في هذه المؤسسة بعد إجراء التحليل — النهائي للدراسة

أوافق على ان يتم تخزين البيانات□التي سيتم جمعها من هذه الدراسة في مركز بيانات متخصص ،وانه من الممكن ان يتم — استخدامها في. بحوث مستقبلية

أعي أن هوية العاملين المشاركين هذه الدراسة ستكون مجهولة —□.

اسم مدير المؤسسة او الادارة: _____ التوقيع _____ التاريخ: _____
اسم الباحثة: _____ التوقيع _____ التاريخ: _____

جهات الاتصال:
اسم الباحثة: أسماء الحاوي   البريد الالكتروني : aal–hawi@uclan.ac.uk

المؤهل:طالبة دكتوراه في جامعة وسط لانكشاير
رقم الجوال في الأردن :962777878700 +   رقم الجوال في قبرص :35799988862 +
مديرة الدراسات: .الدكتورة سفياتلانا كاربافا (SKarpava@uclan.ac.uk)
اعضاء فريق الاشراف: الدكتورة سمر المعلم: (SMouallem@uclan.ac.uk)
الدكتورة بيترا بيجلي:(PMBagley@uclan.ac.uk)
الدكتور مايكل توماس   (MThomas4@uclan.ac.uk]

Έντυπο συναίνεσης για Ιδρύματα / Οργανισμούς / Σχολεία

Τίτλος ερευνητικού προγράμματος: *Γ2/Γ3 Εκμάθηση Αγγλικής γλώσσας από Γ1 Άραβες και Ελληνοκύπριους μαθητές στο περιβάλλον Ιορδανίας και Κύπρου όπου ομιλούνται δύο διάλεκτοι.*
Όνομα ερευνητή: Asma AL–Hawi

Όνομα Σχολείου/Ιδρύματος/Οργανισμού_____
Όνομα Διευθυντή_____

Παρακαλώ διαβάστε τις παρακάτω δηλώσεις και αν συμφωνείτε βάλτε ✓ στα κουτιά:

☐Επιβεβαιώνω ότι έχω διαβάσει και έχω κατανοήσει το έντυπο πληροφοριών, ημερομηνίας –/08/2017, για την παραπάνω μελέτη και είχα την ευκαιρία να εξετάσω τις πληροφορίες και να κάνω ερωτήσεις, οι οποίες έχουν απαντηθεί ικανοποιητικά.

☐Κατανοώ ότι η συμμετοχή των μελών του παρόντος Σχολείου/Ιδρύματος/Οργανισμού είναι εθελοντικήκαι ότι είναι ελεύθερα να αποσυρθούν ανά πάσα στιγμή, χωρίς να δώσουν κάποιο λόγο.

☐Συμφωνώ να δώσω στον ερευνητή τη συγκατάθεσή να συναντηθεί με τα υποψήφια μέληπου φοιτούν/εργάζονται σ' αυτό τοΣχολείο/Ίδρυμα/Οργανισμό.

☐Συμφωνώ να δώσω στον ερευνητή τη συγκατάθεσή του να συναντήσει τα υποψήφια άτομα που παρευρίσκονται σε αυτό το σχολείο / ίδρυμα / οργανισμό σε περίπτωση που δεχτούν να λάβουν μέρος στη μελέτη

I agree to give the researcher the consent to meet the candidate subjects who attend this school/institution/organization in case they accept to take part in the study

☐Συμφωνώ να αφήσω τον ερευνητή να διεκπεραιώσει τα γραπτές εργασίες της μελέτης τουσ' αυτό το Σχολείο/Ίδρυμα/Οργανισμό, αφού πάρω τη γραπτή συγκατάθεση εκάστου των συμμετεχόντων που φοιτούν/εργάζονται σ' αυτό το Σχολείο/Ίδρυμα/Οργανισμό.

☐Συμφωνώ να αφήσω τον ερευνητή να έχει μία ηχογραφημένη συνέντευξη με τα υποψήφια μέλη αυτούτου Σχολείου/Ιδρύματος/Οργανισμού αφού πάρω τη γραπτή συγκατάθεση εκάστου εξ αυτών.

☐Κατανοώ ότι δεν θα είναι δυνατή η απόσυρση των δεδομένων των συμμετεχόντων από τη μελέτη μετά την ολοκλήρωση της τελικής ανάλυσης.

☐Συμφωνώ ότι τα δεδομένα που θα συγκεντρωθούν σε αυτή τη μελέτη, απότους συμμετέχοντες που φοιτούν/εργάζονται σ' αυτό το Σχολείο/Ίδρυμα/Οργανισμό, μπορούν να αποθηκευτούν (αφού έχουν συγκεντρωθεί ανώνυμα) σε ένα ειδικό χώρο δεδομένων και μπορούν να χρησιμοποιηθούν για μελλοντική έρευνα.

☐Κατανοώ ότι η ταυτότητά των συμμετεχόντων που φοιτούν/εργάζονται σ' αυτό το Σχολείο/Ίδρυμα/Οργανισμό θα παραμείνει ανώνυμη.

Όνομα Διευθυντή _____**Υπογραφή**_____**Ημερομηνία** _____
Όνομα Ερευνητή_____**Υπογραφή ερευνητή**_____**Ημερομηνία**_____
Επαφές:
Όνομα ερευνητή: AsmaAL–Hawi
Ηλεκτρονικό ταχυδρομείο ερευνητή:aal–hawi@uclan.ac.uk
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                και Dr Petra Bagley (E–mail: PMBagley@uclan.ac.uk)
                και Dr Michael Thomas (MThomas4@uclan.ac.uk)

Appendix 6: Language History and Experience Questionnaire (English, Arabic and Greek versions)

Language History and Experience Questionnaire

Date: _____   Country (circle):   ☐Jordan   ☐Cyprus

Sex: ☐Male   ☐Female   Age: _____

Date of Birth: _____   Place of Birth: _____

Nationality: _____   Country of Origin: _____

Class Grade/job _____   Country of Residence_____

Education: ☐Primary Education   ☐Secondary Education ☐BA Degree
            ☐MA/PhD Degree   ☐Others_____

Part (I)

1. Please answer the following questions in the table below:

Please note that L1 is your standard language

Language	L1 language	L2 language	L3 language	Others
What is your L1/L2/L3/Ln?				
Where did you learn L1/L2/L3/Ln? (e.g., *school/community in* your country*, new country*)				
Please provide the number of years of residence in the country where you learnt L1/L2/L3/Ln.				
How old were you when you were first exposed to L1/L2/L3/Ln?				
How many years have you been learning L1/L2/L3/Ln?				
Do you normally use L1/L2/L3/Ln in *Reading/?*				
Do you normally use L1/L2/L3/Ln in *Writing?*				
What motivated you to learn L1/L2/L3/Ln?				

2. Please estimate how often you use English per day in any of the following settings:

English % per day	0%	10–20%	30–40%	50–60%	70–80%	90–100%
At school/university/work						
At home						
In the community with your friends and with foreigners						

Part (II)

3. Please provide in the table below the number of years that you spent in one or more than one of the following schools:

Question	Years
How many years did you study in a public school?	
How many years did you study in a private national school?	
How many years did you study in a private international school?	

4. Did you sit for any proficiency test or a high school language exam? (Arabic and English Tawjeehi Exams, Greek and English Apolytirion/Lyceum Exams, IELTS/TOEFL, others)
    ☐ YES   ☐ NO

5. If YES, please specify the language and the name of the test with your score in each one in the table below:

Language	Type of test	Score

6. What is the dialectal form of your standard language which is associated with your family?
_____

7. What is the most popular dialect in your community? _____

8. Did you learn the standard language: ☐ at home from your family?
           ☐ at school?
           ☐ none of the above.

9. Is the dialect of your family different from the dialect of the community?
    ☐ YES   ☐ NO

10. Where do you speak the family dialect?   ☐ At home with family only.
           ☐ At school/college/University/work.
           ☐Others: _____

11. Where do you speak the community dialect?   ☐ At home with family because
              it is my first dialect
           ☐ At school/college/University/work.
           ☐Others:_____

12. If you do not use your family dialect all the time, please explain why you speak the community dialect instead of your family dialect? _____

_____

13. Do you think that you can read the dialectal form(s) of your language?
☐ YES   ☐ NO

14. Do you think that the dialectal script written below is easily understood by you? (Choose the relevant script)

بناتي بيروحو عا الجامعة تلات مرات في الاسبوع

Οι κόρες μου πάσιν στο πανεπιστήμιο τρεις φορές την εφτομά.

☐ YES   ☐ NO

15. If you are asked to translate the dialectal form above to English, do you think that you could do it?
☐ YES   ☐ NO

16. Please read the statement below and choose the reason that is more applicable to you *(Tick more than one box if applicable):*

I prefer to use the dialect of my language...

☐because I cannot concentrate when I use the standard language
☐because my dialect is the same as the standard language
☐because I am not good at the standard language

17. Do you mind if we contacted with you to have an interview for research purposes?
☐ YES   ☐ NO

18. If you accept to take part in the study, please provide your name:_____

Your phone/mobile number_____

and you email: _____

Thank you

استبيان تاريخ اللغة و الخبرة

التاريخ_____ البلد: □الاردن □ قبرص

الجنس: □ ذكر □ انثى   العمر: _____

مكان الولادة _____ تاريخ الولادة: _____

الجنسية: _____ البلد الاصلي: _____

الصف / الوظيفة: _____ بلد الإقامة: _____

التحصيل العلمي: □ تعليم اساسي □ بكالوريوس □تعليم ثانوي

□ درجة الدكتوراه اوالماجستير □مستوى تعليمي اخر

الجزء الاول:

1. يرجى الإجابة على الأسئلة التالية في الجدول أدناه: يرجى الانتباه الى ان المقصود باللغة الاولى اللغة الفصحى

لغة اخرى	اللغة الثالثة	اللغة الثانية	اللغة الاولى	اللغة
				ما هي لغتك الاولى/الثانية/الثالثة/الخ؟
				أين تعلمت لغتك الاولى/الثانية/الثالثة/الخ ؟ (مثال: في المدرسة / المجتمع المحلي، في بلد جديد)
				كم عدد سنوات الإقامة في البلد الذي تعلمت فيه لغتك الاولى/الثانية/الثالثة/الخ؟
				كم كان عمرك عندما تعرضت لأول مرة للغتك الاولى/الثانية/الثالثة/الخ؟
				كم سنة استغرق منك تعلم لغتك الاولى/الثانية/الثالثة/الخ؟
				هل تستخدم عادة لغتك الاولى/الثانية/الثالثة/الخ في القراءة؟
				هل تستخدم عادة لغتك الاولى/الثانية/الثالثة/الخ في الكتابة؟
				ما الذي دفعك لتعلم اللغة الاولى/الثانية/الثالثة/الخ؟

2. يرجى تحديد النسبة المئوية لاستخدامك اليومي للغة الإنجليزية في كل مما يلي:

90–100%	70–80%	50–60%	30–40%	10–20%	0%	المعدل اليومي لاستخدام اللغة الانكليزية
						في المدرسة / الجامعة / العمل
						فى المنزل
						في المجتمع مع أصدقائك والأجانب

الجزء الثاني:

3 . يرجى أن تحدد في الجدول التالي عدد السنوات التي قضيتها في واحدة أو أكثر من المدارس التالية:

عدد السنوات	السؤال
	كم سنة دراسية قضيت في مدرسة عامة؟
	كم سنة دراسية قضيت في في مدرسة خاصة حسب النظام الوطني؟
	كم سنة دراسية قضيت في مدرسة دولية خاصة؟

4. هل تقدمت لاختبار الكفاءة أو لامتحان اللغة الثانوية؟ (امتحان توجيهي باللغتين العربية والإنجليزية، امتحان البوليتيريون اليوناني, امتحان لغة إنجليزية مثل إيلتس / توفل، آمتحانات اخرى)

نعم ☐   لا ☐

5. إذا كانت الإجابة بنعم، يرجى تحديد اللغة واسم الاختبار و العلامة التي حصلت عليها في الجدول أدناه.

العلامة	نوع الامتحان	اللغة

6 . ما هي اللهجة العامية العربية الخاصة بعائلتك ؟ _____

7. ما هي اللهجة العامية العربية الاكثر رواجا في مجتمعك؟_____

8. هل تعلمت اللغة العربية الفصحى :   ☐في المنزل من عائلتك؟   ☐ في المدرسة؟   ☐ لا شيء مما سبق.

9. هل تختلف لهجة عائلتك عن لهجة المجتمع المحلي الذي تعيش فيه؟   نعم☐   لا ☐

10. أين تتكلم لهجة العائلة؟
☐ في المنزل مع الأسرة فقط
☐في المدرسة / الكلية / الجامعة/ العمل
☐ لا شيء مما سبق

11. أين تتكلم لهجة المجتمع المحلي؟
☐ في المنزل مع الأسرة لإنها لهجتي الأولى
☐ في المدرسة / الكلية / الجامعة/ العمل
☐في مكان آخر (الرجاء تحديد الاجابة) _____

12. إذا كنت لا تستخدم لهجة عائلتك في معظم الاحيان، يرجى شرح الاسباب التي تدفعك لان تتكلم لهجة المجتمع بدلا من لهجة عائلتك؟
_____

_____

13. هل تعتقد أنه يمكنك قراءة اللهجة العامية لغتك؟   نعم ☐   لا ☐

14. هل تعتقد أنك قادر على فهم النص العامي المكتوب أدناه بسهولة؟
بناتي بيروحو عا الجامعة تلات مرات في الاسبوع.

نعم ☐   لا ☐

15. إذا طلب منك ترجمة المثال اعلاه (النص العامي) إلى اللغة الإنجليزية، هل تعتقد أنه يمكنك القيام بذلك؟ لماذا ؟
16. يرجى قراءة العبارة أدناه واختيار السبب الذي ينطبق عليك أكثر (ضع علامة على أكثر من مربع إذا امكن):
أفضل استخدام احدى لهجات لغتي......
☐لأنني لا أستطيع التركيز عند استخدام اللغة الفصحى
☐ لأن لهجتي هي نفس اللغة الفصحى
☐لأنني لست جيدا في اللغة الفصحى

17. هل تمانع إذا اتصلنا بك لإجراء مقابلة لأغراض البحث؟   نعم ☐   لا ☐
18. إذا كانت لا تمانع، يرجى كتابة اسمك:_____ و رقم الهاتف /الجوال_____
والايميل الخاص بك:_____
شكرا للمشاركة

Ερωτηματολόγιο Γλωσσικής επάρκειας και εμπειρίας

Ημερομηνία: _____   Χώρα (κυκλώστε): ☐ Ιορδανία ☐ Κύπρος

Φύλο: ☐ Άρρεν   ☐ Θήλυ   Ηλικία: _____

Ημερομηνία γεννήσεως: _____   Τόπος γεννήσεως: _____

Εθνικότητα:_____   Χώρα καταγωγής:_____

Τάξη/Εργασία: _____   Χώρα διαμονής:_____

Εκπαίδευση: ☐ Πρωτοβάθμια εκπαίδευση   ☐ Δευτεροβάθμια εκπαίδευση
☐ Πτυχίο   ☐ Μεταπτυχιακό/Διδακτορικό
              ☐ Άλλο_____

Μέρος (Ι)

1. **Παρακαλώ απαντήστε τις ακόλουθες ερωτήσεις στον παρακάτω πίνακα:**

   Παρακαλώ λάβετε υπόψη ότι η γλώσσα L1 είναι η βασική σας γλώσσα:

Γλώσσα	Γ1 γλώσσα	Γ2 γλώσσα	L3 γλώσσα	Άλλη
Ποια είναι η Γ1/Γ2/Γ3/Άλ;				
Πού μάθατε Γ1/Γ2/Γ3/Άλ; (π.χ.: *σχολείο/κοινότητα,νέα χώρα*)				
Θα παρέχετε τον αριθμό των ετών διαμονής στη χώρα όπου μάθατε Γ1/Γ2/Γ3/Άλ;				
Πόσων χρονών ήσασταν όταν για πρώτη φορά ήρθατε σε επαφή με την Γ1/Γ2/Γ3/Άλ;				
Πόσα χρόνια μαθαίνετε την Γ1/Γ2/Γ3/Άλ;				
Συνήθως χρησιμοποιείτε την Γ1/Γ2/Γ3/Άλ. στο *διάβασμα*;				
Συνήθως χρησιμοποιείτε την Γ1/Γ2/Γ3/Άλ. στο *γράψιμο*;				
Τι σας ώθησε να μάθετε L1/L2/L3/Ln;				

2. Υπολογίστε πόσο συχνά χρησιμοποιείτε τα αγγλικά ανά ημέρα σε οποιαδήποτε από τις ακόλουθες ρυθμίσεις:

Χρήση Αγγλικών% ανά ημέρα	0%	10–20%	30–40%	50–60%	70–80%	90–100%
Στο σχολείο/ πανεπιστήμιο/ στην εργασία						
Στο σπίτι						
Στην κοινότητα με τους φίλους και τους ξένους						

Μέρος (ΙΙ)

3. Παρακαλείσθε να αναφέρετε στον παρακάτω πίνακα τον αριθμό των ετών που περάσατε σε ένα ή περισσότερα από τα ακόλουθα σχολεία:

Ερώτηση	Χρόνια
Πόσα χρόνια φοιτήσατε σε δημόσιο σχολείο;	
Πόσα χρόνια φοιτήσατε σε ιδιωτικό ελληνικό σχολείο;	
Πόσα χρόνια φοιτήσατε σε ιδιωτικό διεθνές σχολείο;	

4. Παρακαθίσατε σε κάποια εξέταση επάρκειας ή σε κάποια εξέταση γλώσσας στο σχολείο; (Απολυτήριες εξετάσεις, Παγκύπριες εξετάσεις, IELTS/TOEFL, άλλη)
    ☐ ΝΑΙ   ☐ ΟΧΙ

5. Αν ΝΑΙ, παρακαλώ διευκρινίστε τη γλώσσα και το όνομα της εξέτασης μαζί με το βαθμό σας σε καθεμία εξέταση στον παρακάτω πίνακα:

Γλώσσα	Τύπος εξέτασης	Βαθμός

6. Ποια είναι η διαλεκτική μορφή της βασικής γλώσσας που συνδέεται με την οικογένειά σας;
_____

7. Ποια είναι η πιο δημοφιλής διάλεκτος στην κοινότητά σας; _____

8. Μάθατε τη βασική γλώσσα: ☐ Στο σπίτι από την οικογένειά σας;
                            ☐ Στο σχολείο;
                            ☐ Σε κανένα από τα παραπάνω

9. Είναι η διάλεκτος της οικογένειάς σας διαφορετική από τη διάλεκτο της κοινότητας;
    ☐ ΝΑΙ   ☐ ΟΧΙ

10. Πού μιλάτε την οικογενειακή διάλεκτο;   ☐ Στο σπίτι μόνο με την οικογένεια
                                                   ☐ Στο σχολείο/κολλέγιο/Πανεπιστήμιο/ στη δουλειά
                                                         ☐ Αλλού: _____

11. Πού μιλάτε τη διάλεκτο της κοινότητας; ☐ Στο σπίτι με την οικογένεια επειδή είναι η πρώτη μου διάλεκτος.
☐ Στο σχολείο/κολλέγιο /Πανεπιστήμιο/ στη δουλειά
☐ Αλλού: _____

12. Αν δεν χρησιμοποιείτε την οικογενειακή σας διάλεκτο όλη την ώρα, παρακαλώ εξηγήστε γιατί μιλάτε τη διάλεκτο της κοινότητάς σας αντί της οικογενειακής σας διαλέκτου.
_____

_____

13. Πιστεύετε ότι μπορείτε να διαβάσετε τη διαλεκτική μορφή/ές της γλώσσας σας;
☐ Αν ΝΑΙ, γιατί; _____

☐ Αν ΟΧΙ, γιατί όχι;_____

14. Πιστεύετε ότι το κείμενο σε διάλεκτο που είναι γραμμένο πιο κάτω, είναι εύκολα κατανοητό σε εσάς;
–Ελληνο–κυπριακό κείμενο:
Οι κόρες μου πάσιν στο πανεπιστήμιο τρεις φορές την εφτομά.

     ☐ ΝΑΙ   ☐ ΟΧΙ

15. Αν σας ζητηθεί να μεταφράσετε την πιο πάνω γραπτή διάλεκτο στα αγγλικά, νομίζετε ότι μπορείτε να το κάνετε;   ☐ ΝΑΙ   ☐ ΟΧΙ

16. Παρακαλώ διαβάστε την παρακάτω δήλωση και επιλέξτε τον λόγο που ισχύει περισσότερο για εσάς (επιλέξτε περισσότερα από ένα τετράγωνα αν χρειάζεται):

Προτιμώ να χρησιμοποιώ τη διάλεκτο της γλώσσας μου ...
☐ επειδή δεν μπορώ να συγκεντρωθώ όταν χρησιμοποιώ την βασική γλώσσα
☐ επειδή η διάλεκτός μου είναι ίδια με την βασική γλώσσα
☐ επειδή δεν είμαι καλός στην βασική γλώσσα

17. Σας ενοχλεί αν επικοινωνήσουμε μαζί σας για μια συνέντευξη για ερευνητικούς σκοπούς;
      ☐ ΝΑΙ   ☐ ΟΧΙ

18. Αν δέχεστε, παρακαλώ γράψτε το όνομά σας:_____
το τηλέφωνο/κινητό τηλέφωνο σας: _____
και το ηλεκτρονικό ταχυδρομείο (email): _____

<div align="center">Σας ευχαρισ</div>

Appendix 7: The grammaticality judgment task (GJT)

Date: _____   Sex: ☐Male   ☐Female

Email address: _____

Please read the 54 sentences below and judge the grammaticality of each of them. You need to specify in the space after each sentence how the sentence sounds to you by choosing one of the values with their numbers below:

Definitely correct   Probably correct   Don't know   Probably incorrect   Definitely incorrect

       4   3   2   1   0

Example:

–Sam **did** never **been** to France. _____0_____

The above example is *Definitely incorrect* that is why it is given the numeral (0) because the correct sentence should be:

–Sam **has** never **been** to France

The sentences of the task

G (1).   1. I learn about the effective strategies for the chess competition right now. _____

H (1).   2. Our teacher always shouts at us if we come to class late. _____

F.(II).   3. The teacher was making effort to help her students. _____

I.(I).   4. This food tastes yummy! You should try it. _____

E.(1I).   5. I finally got high mark in the physics exam. _____

A.(II).   6. City of Amman is a highly populated city. _____

D.(1I).   7. The President Obama was the first black president in the history of the United States of America.   _____

B.(II).   8. The Pursuit of Happiness is a good movie but I don't like it. _____

C.(1I).   9. The New York Times is an American newspaper. _____

H (1).   10. I am usually swimming three times a week but I have to do it more._____

I.(I).   11. This ring is belonging to my aunt._____

G (1).   12. My dad is sleeping at the moment; can you call him later? _____

Definitely correct	Probably correct	Don't know	Probably incorrect	Definitely incorrect
4	3	2	1	0

A.(II). 13. The rules of business have changed because of the financial crisis. _____

F.(II). 14. Suzan has got driving license after moving to Europe. Do you think it's international? _____

B.(II). 15. Science proved that the influence of the genes can be negative or positive. _____

E.(1I). 16. My daughter has a heart tattoo on her shoulder! _____

C.(1I). 17. Russels are a nice family but I think they are arrogant. _____

D.(1I). 18. Professor Thomas delayed the exam because of the weather. _____

I.(I).   19. These two projects sound promising. _____

A.(II). 20. Role of social media outperforms the TV news because it raises the political awareness of the current situation among people. _____

H (1). 21. My young son makes his bed before going to school, but my daughter doesn't_____

B.(II). 22. The origin of diamonds is still unknown, but they were found millions of years ago._____

G (1). 23. John and Maggie are working hard on their new project at the moment because it should be finished by the end of this month. _____

C.(1I). 24. One of Taylors is going to Harvard while the other one is going to Oxford! _____

F.(II). 25. John had a problem with the manager. I still don't know what kind of problem he had. _____

D.(1I). 26. The Ms. Malala Yousafzai confronted the Taliban when she was very young. _____

E.(1I). 27. My neighbour has Slavic accent. He is from Serbia. _____

F.(II). 28. Max wrote an SMS to David. I think there is something going on between both of them. _____

E.(1I). 29. We had a birthday party for Nadia last week. _____

G (1). 30. The company's sales increase currently because of its use of the most up–to–date computer applications. _____

D.(1I). 31. The lawyer was talking to Judge Thomas about the convict who was sentenced to a five year–jail term. _____

Definitely correct	Probably correct	Don't know	Probably incorrect	Definitely incorrect
4	3	2	1	0

H.(1). 32. I am making pizza when my cousins come to visit us. I think it's a habit. _____

C.(1I). 33. When I went to Amsterdam, I visited Van Gogh Museum. _____

I.(I). 34. I am wishing I could help you, but I have nothing to do at the moment. _____

B.(II). 35. My mum can't explain the joy of the baking every time she makes the baguette. _____

A.(II). 36. He sent his paper to The London Review of Books, but he hasn't got an answer yet.____

G (1). 37. We gain weight at present because we eat junk food all the time._____

F.(II). 38. She made attempt to improve herself. I wish I knew how she did it! _____

H (1). 39. I normally drink fresh juice but today I had slush. _____

E.(1I). 40. Barbara has nice smile. Everyone loves her smile. _____

I.(I). 41. My little sister hopes that I could help her right now but I'm really busy._____

D.(1I). 42. Would you call the Principal Brown, please? _____

A.(II). 43. John does not respect the opinions of others in his class. _____

C.(1I). 44. We visited the Harry Potter Studio. _____

B.(II). 45. Philosophy is the science of the logic. _____

H (1). 46. Joan is following a healthy lifestyle. That's why she always looks slim and thin. _____

G (1). 47. Mary is having a good time. _____

I.(I). 48. This recipe is consisting of six ingredients and they are all available. _____

F.(II). 49. My young brother was wearing a helmet. It looked strange to me. _____

A.(II). 50. My children cannot resist feeling of hunger. _____

E.(1I). 51. Joan had a new haircut. I asked for the address of her hairdresser. _____

B.(II). 52. I found the tank of water empty yesterday. _____

D.(1I). 53. Everyone loved Princess Diana. _____

C.(1I). 54. No one in the class is as clever as the Johanssons. _____

Appendix 8: The forced-choice elicitation task (FCET)

Date: _____   Sex: ☐Male   ☐Female

Email address: _____

Please circle the right item in parentheses

A.(I)   1. ____ (The, A/An, Zero) Sultanate of Oman is a beautiful country.

B.(I)   2. 'The Death of____ (the, a/an, zero) Humanity' is written by Richard Weikart.

I.(I)   3. This house _____ (costs, is costing, has been costing) a lot of money now.

C.(1)   4. ____ (The, A/An, Zero) Netherlands is not the same as Holland.

H (1).   5. My daughter ____ (plays, is playing, has been playing) the piano very well but she doesn't like to participate in musical concerts.

D.(I).   6. ____ (The, A/An, Zero) Pope Francis made a visit to the holy land in Jordan and Palestine.

G (1).   7. I ____ (study, am studying, have been studying) now because the exam is in two days.

E.(I).   8. He made ___ (the, a/an, zero) fortune by raising sheep.

F.(I).   9. The students elected ____ (the, a/an, zero) new leader for the sports club but the committee has not announced his name yet.

B.(I).   10. The Isle of ____ (the, a/an, zero) Man is an island in the Irish Sea.

C.(1).   11. ____ (The, A/An, Zero) Smiths in my class are Americans.

A.(I).   12. ____ (The, A/An, Zero) increase of population in China causes lots of economic problems.

D.(I).   13. ____ (The, A/An, Zero) Saint Ambrose was a Bishop of Milan during the 4th century.

I.(I).   14. I ____ (want, am wanting, have been wanting) to go with you now but I have a lot of things to do.

E.(I).   15. My husband ran ____ (the, a/an, zero) hundred kilometres in the last two weeks.

H (1).   16. My father ___ (eats, is eating, has been eating) fish once a week because it is   healthy.

F.(I).   17. My aunt bought ____ (the, a/an, zero) house but I don't know where exactly.

G (1). 18. Her children ____ (cry, are crying, have been crying) because of this horrible noise.

C.(1). 19. ____ (The, A/An, Zero) Elizabeth Tower is the new name for Big Ben. The name was changed in 2012.

D.(I). 20. ____ (The, A/An, Zero) Senator Smith is a respected person, but he is not qualified for his position

B.(I). 21. The aspects of ____ (the, a/an, zero) reality that you are referring to should be mentioned in the report.

E.(I). 22. Julia got____ (the, a/an, zero) divorce after 15 years of marriage.

A.(I). 23. ____ (The, A/An, Zero) Principle of equality between the poor and the rich should be based on respect, and it should reject discrimination.

F.(I). 24. My friend has ____ (the, a/an, zero) new job but I know nothing about it.

I.(I). 25. Look! Sally ____ (looks, is looking, has been looking) exactly like her older sister.

G (1). 26. My brother ____ (sets, is setting, has been setting) the table for dinner at the moment.

H (I). 27. I frequently____ (wake up, am waking up, have been waking up) at night because of my allergy.

D.(I). 28. No one supported ____ (the, a/an, zero) King Louis XVI during the French revolution.

E.(I). 29. She made ____ (the, a/an, zero) difference to her society by helping the poor women.

C.(1). 30. Sam will take me to ____ (the, a/an, zero) New York State Theatre.

F.(I). 31. My professor wrote ___ (the, a/an, zero) book. I wish I knew what it is about.

B.(I). 32. I watched 'The Kingdom of ____ (the, a/an, zero) Heavens' three times so far.

G (I). 33. My husband ____ (cooks, is cooking, has been cooking) special Mexican fried rice now.

A.(I). 34. Some people argue against ____ (the, a/an, zero) domination of machines.

H (1). 35 My children ____ (do, are doing, have been doing) taekwondo three times a week.

I.(I). 36. We ____ (prefer, are preferring, have been preferring) to leave right now to get

home earlier.

E.(I).   37. I attended ____ (the, a/an, zero) workshop. It was about statistics.

F.(I).   38. A client sent ____ (the, a/an, zero) email to me but I have received nothing.

D.(I).   39. Someone informed ____ (the, a/an, zero) Lieutenant Kevin that he would be in charge for the rest of the week.

G (1).   40. We ____ (learn, are learning, have been learning) the Greek language now but it is very difficult.

C. (I).   41. I went to ____ (the, a/an, zero) Johnsons yesterday. They had a huge party.

H (1).   42. We normally ____ (have, are having, have been having) lunch together, but today we couldn't make it.

B.(I).   43. I read a book which explains the consequences of ____ (the, a/an, zero) war on human beings.

I.(I).   44. Do you know that she ____ (hates, is hating, has been hating) you now more than ever?

A.(I).   45. The modern political situation affects ____ (the, a/an, zero) position of women not only in our society but also all over the world.

F.(I).   46. She booked ____ (the, a/an, zero) ticket to travel. I wonder where she is travelling to.

G (1).   47. Suzie and Maggie ____ (make, have been making, are making) pancakes for us. We can't wait to eat them.

E.(I).   48. Monica made ____ (the, a/an, zero) mistake by discussing her children's custody with her ex–husband.

H (1).   49. My mum always____ (makes, is making, has been making) lemon juice with mint when the weather is very hot.

D.(I).   50. Everyone used to respect ____ (the, a/an, zero) Mother Teresa because she was a charitable nun.

I.(I).   51. My dad ____ (owes, is owing, has been owing) the bank a lot of money!

C.(1).   52. Lisa wants to go to ____ (the, a/an, zero) Atlanta University Centre but she doesn't know the address.

A.(I).   53. I can't believe that you visited Paris and didn't visit ____ (the, a/an, zero) Palace of Versailles.

B.(I).   54. Don't be like those who don't understand the goal of ____ (the, a/an, zero) life.

Appendix 9: The Arabic proficiency exam

الرجاء قراءة الأسئلة جميعها وعددها <u>16</u> ومن ثم نقل الإجابات إلى المكان المخصص لها :

اقرأ النص التالي ثم أجب عن الأسئلة (1-6) التي تليه:

(الصداقة ثروة عظيمة للإنسان، وهي ذخيرة يجابه بها الحياة ، لذلك على المرء إحسان اختيار أصدقائه، فليس كل من
نخالطه يكون لنا صديقًا، ولا كل من نجالسه يصبح خلًا وفيًا، ولا يحصل الفرد على الصداقة بيسر وسهولة، إنما الصداقة
كنز ثمين. والصديق الحق هو الذي يراعي مصالح صديقه، ويحفظ سره، <u>ويهب</u> لنجدته، ويخلص له النصيحة.
وقد قيل <u>*</u> حدثني عمن تصاحب أخبرك من أنت.)

1- الفكرة الرئيسة في النص السابق هي:

أ- صفات الصديق الحسن   ب- الصديق المهتم

ج- الوفاء للصديق   د- خيانة الأصدقاء

2- واحدة من الآتية <u>ليست</u> من صفات (الصديق الحق) الواردة في النص:

أ- يحفظ سره   ب- يدعوه إلى الطعام

ج- يرعى مصالحه   د- يهب لنجدته

3- العبارة التي تتضمن صورة فنية من عبارات النص هي:

أ- الصداقة كنز ثمين   ب- الصديق يحفظ السر

ج- الصديق يراعي المصلحة   د- على المرء إحسان اختيار الصديق

4- دلالة عبارة (حدثني عمن تصاحب أخبرك من أنت) الواردة في النص هي:

أ- الصديق يخبر صديقه بكل ما يحدث   ب- الصديق يكتسب صفات صديقه

ج- الصديق يعرف صفات صديقه   د- الصديق يتحدث عن صفات صديقه

5- معنى كلمة (يهب) المخطوط تحتها في النص:

أ- يهمل   ب- يبطئ   ج- يسرع   د- يبدأ

6- علامة الترقيم المناسبة مكان النجمة في النص هي:

أ- ،   ب- .   ج- :   د- ؟

7- المبتدأ في جملة (طولُ التجاربِ زيادةً في العقلِ) هو:

أ- طول   ب- التجارب   ج- زيادة   د- في العقل

الرجاء قراءة الأسئلة جميعها وعددها <u>16</u> ومن ثم نقل الإجابات إلى المكان المخصص لها :

اقرأ النص التالي ثم أجب عن الأسئلة (1-6) التي تليه:

(الصداقة ثروة عظيمة للإنسان، وهي ذخيرة يجابه بها الحياة ، لذلك على المرء إحسان اختيار أصدقائه، فليس كل من نخالطه يكون لنا صديقًا،ولا كل من نجالسه يصبح خلًّا وفيًّا ولا يحصل الفرد على الصداقة بيسر وسهولة، إنما الصداقة كنز ثمين. والصديق الحق هو الذي يراعي مصالح صديقه، ويحفظ سره، و<u>يهب</u> لنجدته، ويخلص له النصيحة.

وقد <u>قيل</u> * حدثني عمن تصاحب أخبرك من أنت.)

1- الفكرة الرئيسة في النص السابق هي:

أ- صفات الصديق الحسن   ب- الصديق المهتم

ج- الوفاء للصديق   د- خيانة الأصدقاء

2- واحدة من الآتية <u>ليست</u> من صفات (الصديق الحق) الواردة في النص:

أ- يحفظ سره   ب- يدعوه إلى الطعام

ج- يرعى مصالحه   د- يهب لنجدته

3- العبارة التي تتضمن صورة فنية من عبارات النص هي:

أ- الصداقة كنز ثمين   ب- الصديق يحفظ السر

ج- الصديق يراعي المصلحة   د- على المرء إحسان اختيار الصديق

4- دلالة عبارة (حدثني عمن تصاحب أخبرك من أنت) الواردة في النص هي:

أ- الصديق يخبر صديقه بكل ما يحدث   ب- الصديق يكتسب صفات صديقه

ج- الصديق يعرف صفات صديقه   د- الصديق يتحدث عن صفات صديقه

5- معنى كلمة (يهب) المخطوط تحتها في النص:

أ- يهمل   ب- يبطئ   ج- يسرع   د- يبدأ

6- علامة الترقيم المناسبة مكان النجمة في النص هي:

أ- ،   ب- .   ج- :   د- ؟

7- المبتدأ في جملة (طولُ التجاربِ زيادةً في العقلِ) هو:

أ- طول   ب- التجارب   ج- زيادة   د- في العقل

Appendix 10: Comparable criteria that classify the L2/L3 participants into different English proficiency levels

Table 1 (TOEFL Equivalency Table, 2015) provides the equivalent test scores, schemes or level classifications of different English global examinations. These English examinations are IELTS, TOEFL Paper Based Test, TOEFL Computer Based Test (TOEFL CBT) and TOEFL Internet Based Test (TOEFL IBT). Regarding the different types of the TOEFL examinations, the range of scores of these exams were converted to be comparable to the IELTS bands: 3.5–4.5 and 5.5–6. The bands 6.5–7 and 7.5–9 were adopted from the *TOEFL Equivalency Table–TOEIC, IELTS Score Comparison* (2015).

In table 1, the grades of the Cambridge Assessment English exams of the GCSE/A Level English are mapped to the Common European Framework of Reference (CEFR) for foreign Languages. The CEFR (see Table 2) provides four categorisations of proficiency based on the language ability of learners. The lowest category is *A1* which is equivalent to the beginner level and the highest is *C2* for the upper advanced level (*Cambridge Assessment English, CEFR, 2018*).

Table 1: A comparison between the global English proficiency examinations (TOEFL Equivalency Table, 2015)

		Low intermediate	Intermediate		Upper Intermediate	Advanced	Upper advanced
International Exams	IELTS	4	4.5–5		5.5–6	6.5–7	7.5–9
	TOEFL Paper	437–473	477–510		513–547	550–587	590–677
	TOEFL CBT	123–150	153–180		183–210	213–240	243–300
	TOEFL IBT	41–52	53 –64		65–78	79–95	96–120
CEFR		B1	B1 IELTS=4.5	B2 IELTS=5	B2	C1	C2

Based on table 1, the participants' levels of the different English global examinations were classified in this study into two different B1 and B2 CEFR levels as presented in Table 2.

Table 2: The Common European Framework of Reference for Languages (CEFR) *(Cambridge Assessment English, CEFR, 2018)*

IELTS CEFR (Common European Framework: understanding language levels. https://www.britishcouncil.English level overview. https://www.embassyenglish.com/resources/english–levels; ***Common European Framework of Reference for Languages: Learning, Teaching, Assessment*, 2011)**	
CEFR	Proficiency level
B1	Threshold or Intermediate
B2	Upper–intermediate
C1	Advanced
C2	Upper advanced

As the *B1: low intermediate* and *B1: upper intermediate* levels of the CEFR have two different IELTS scores, e.g. the *B1* (IELTS=4) and *B1* (IELTS=4.5) were considered in this study as one level: low intermediate. This level was equivalent to the IELTS range of scores = 4-4.5. In addition, the global scores: TOEFL IBT, TOEFL CBT and TOEFL Paper were reclassified to be comparable to the CEFR classifications as follows. First, the difference between the range of numbers was calculated and divided by two. Then, the last number was added to each number in the range of numbers as illustrated in Table 3. The scores that were considered to be within the low intermediate level were classified as follows:

–any score =437 and less than 494 of the TOEFL paper was considered equivalent to the IELTS scores =4 and 4.5 and within the *B1: low intermediate level*. Also, the scores between 494 and 510 were considered equivalent to the IELTS score =5 and they were classified under the *B2 intermediate level*.

–Any score =123 and less than 167 of the TOEFL computer was considered equivalent to the IELTS scores =4 and 4.5 and within the *B1: low intermediate level*. Furthermore,

any score between 167 and 180 was considered equivalent to the IELTS score =5 and within the *B2: intermediate level*.

–Any score =41 and less than 59 of the TOEFL IBT was considered equivalent to the IELTS scores =4 and 4.5 and within the *B1: low intermediate level*. Furthermore, any score between 59 and 64 was considered equivalent to the IELTS score =5 and within the *B2: intermediate level*. The final scores that were used in this study are presented in Table 3.8 in section 3.5.2.2 in the Methodology Chapter.

Table 3: A comparison between the global English proficiency examinations (TOEFL Equivalency Table, 2015)

		Levels					
		Low intermediate	Intermediate		Upper Intermediate	Advanced	Upper advanced
International Exams	IELTS	4	4.5–5		5.5–6	6.5–7	7.5–9
	TOEFL Paper	437–473	477–510 (DIFFERNCE: 510-477=33 33%2=16.5 477+16.5=493.5) (494.5-510)		513–547	550–587	590–677
	TOEFL CBT	123–150	153–180 (DIFFERNCE=27/ 27%2=13.5 153+13.5=166.5) (167.5-180)		183–210	213–240	243–300
	TOEFL IBT	41–52	53 –64 (DIFFERNCE=11/ 11%2=5.5 53+5.5=58.5) (59.5-64)		65–78	79–95	96–120
CEFR		B1	B1 IELTS=4.5	B2 IELTS=5	B2	C1	C2

Based on the Cambridge Assessment English exams (e.g., GCSE/A–Level), some of the grades were classified into two different CEFR scales (this means that if the student had a *C* grade, his/her comparable level might be classified into two CEFR scales: both *B*1 and *B2* which is equal to the IELTS bands 6 and 6.5, respectively.

As some of the classifications of the Cambridge Assessment English exams are not directly specified in terms of the IELTS and TOEFL exams and the CEFR scales,

they were excluded from the study. For example, he cells in Table 4, highlighted in grey, were excluded from the classification for consistency as they refer to two different IELTS classifications. Regarding the grades that are not specified in Table 4, the researcher considered the minimal IELTS scores as equivalent to the Cambridge English grades. For example, any grade below *C* was within the pre–intermediate level with an equivalent B1 CEFR scale. Also, the grades above B (in that case grade A) were classified within the upper–advanced level. Table 4 provides a comparison of the GCSE and A Level exams to the IELTS and TOEFL (IBT) exams (*English Language Equivalencies— University of Nottingham. n.d. 2016; Equivalent qualifications and tests — University of Leicester,n.d*)

Table 4: A comparison of the GCSE and A Level exams to the IELT and TOEFL (IBT)
(English Language Equivalencies— University of Nottingham. 2016; Equivalent qualifications and tests — University of Leicester, n.d)

Qualification	*Equivalent Level*			
IELTS	6.0	6.5	7	7.5
TOEFL (IBT)	79	87	100	——
GCE A Level English Language or English Literature	C	C	B	B
GCE AS Level English Language or English Literature	C	C	B	B
GCSE/O–Level English (as a first or second language)	C	C	B	B
IGCSE First Language English	C	C	B	B
IGCSE Second Language English (all exam boards)	B	B	A	A
GCSE/IGCSE English Literature	C	C	B	B

The columns highlighted in grey were excluded from classifications

The institutional examinations and course levels in Jordan and Cyprus were based on comparable criterion that classifies students into different proficiency levels. More specifically, the institutional Jordanian exam (Table 5) is based on a document paper issued by the Ministry of University Study (Higher Education) and Scientific Research and agreed on by the Higher Educational Council on the 22nd of February 2017. The document declared a decision to adopt a general framework for admission of postgraduate students at Jordanian universities. The criterion for admission stipulated that postgraduate students should have a minimum level of the IELTS or TOEFL

band/score as required by the target faculty or a test score on the Jordanian National examination. The scores of the national examination are directly compared to the IELTS or TOEFL bands/scores. However, no proficiency examination is required for bachelor's students to attend the university. Therefore, the researcher recruited those who had English proficiency levels from language centres or those who had the IGCSE/ A Level English Exam (first year student), IELTS or TOEFL exams. Table (5) compares the Institutional/National Jordanian Exam to the IELTS or TOEFL exams (*A declaration document by the Ministry of University Study and Scientific Research, 5th session, 2017*).

Table 5: A compression between the Institutional Jordanian Exam and the IELTS or TOEFL *(A declaration document by the Ministry of Higher Education and Scientific Research, 5th session, 2017)*

The Jordanian Institutional examination score	IELTS equivalent band	TOEFL IBT equivalent score
50%	5	59
65%	5.5	69
75%	6.5	90

The researcher grouped undergraduate student participants living in Cyprus according to the levels they had within their universities in Cyprus, or on the basis of the IELTS, TOEFL (Paper Based) or CEFR levels.

Appendix 11: Comparable criteria that classify the L3 participants into different proficiency levels in Arabic

Arabic proficiency exam:

Mark schemes of the Arabic proficiency test

Accuracy of grammar and structure			Use of figurative language	Relevance to the topic	Supportive evidence	Punctuation marks
Spelling	Syntax and morphology of the language	Correct lexical expressions and collocational patters				
8 marks			2 marks	2 marks	2 marks	2 marks

Levels based on the mark scheme

Low intermediate	Intermediate	Upper intermediate	Advanced	Upper advanced	Native
0–2	3–5	6–8	9–11	12–14	15–16

Arabic proficiency levels Comparable to the Common European Framework of Reference for Languages (CEFR)

The table below classifies the L3 PJ participants into different Arabic proficiency levels (based on the IGCSE/ A Level exams, and the proficiency Arabic exam that was based on the former exams). These classifications were, then, compared to the CEFR. All the relevant and comparable classifications, provided in the table below, are based on the classifications/information provided by the following references:

-Cambridge Assessment English, CEFR (2018).
-CEFR Levels: A1, A2, B1, B2, C1 and C2 (2020: Online) which indicates that the CEFR is used 'to describe achievements of learners of foreign languages across Europe and, increasingly, in other countries'.
-Common European Framework: Understanding language levels (2020-2021: Online) which 'describes what a learner is supposed to be able to do in a foreign language'.
**-*Common European Framework of Reference for Languages: Learning, Teaching, Assessment*, 2011) which states that the classifications are applicable to any foreign language.
-TOEFL Equivalency Table (2015).

The Common European Framework of Reference for Languages (CEFR) comparable to Arabic language levels

CEFR	Proficiency level
B1	Basic (low intermediate) (*No L3 participant was within this category*)
B2	Intermediate or Upper–intermediate
C1	Advanced
C2	Upper advanced

Appendix 12: Comparable criteria for classifying the L3 participants into different

Greek proficiency levels

CG student's records in Unified Lyceum are tabulated in the table below. The results were converted into the target proficiency levels in Greek.

CG student's record in Unified Lyceum.

Scores out of 12	Level	Greek proficiency
1 to 9	Poor	Inapplicable to the study
_____	_____	Low intermediate
10 to 12	Satisfactory	Intermediate
13 to 15	Good	Upper intermediate (C)
16 to 18	Very well	Advanced B
19 to 20	Excellent	Upper advanced A

Comparable criterion for classifying the Greek Apolytirion results into qualifications equivalent to the UK criteria below (*University of Brighton, Greece: academic equivalencies*. (n.d). Available at: brighton.ac.uk):

A-level	Panhellenic overall offer	Panhellenic individual subject grades	Apolytirion overall for comparison	Network Foundation exams offer
AAA	18.5	18 = A	20	75%
AAB	18		19	70%
ABB	17.5		18.5	65%
BBB	16	16 = B	18	60%
BBC	15.5		17	60%
BCC	15		16	55%
CCC	15	14 = C	15	50%

Based on the *CEFR, Teaching, Assessment* (2011), the Greek levels were classified as follows:

CEFR	A level	Proficiency level
B1	----	Intermediate
B2	C	Upper intermediate
C1	B	Advanced
C2	A	Upper advanced

The Greek proficiency levels in the table below are based on the above classifications:

Scores out of 12	Greek proficiency	A level	CEFR
1 to 9	Inapplicable to the study		
————————	Low intermediate		B1
10 to 12	Intermediate		
13 to 15	Upper intermediate	C (BCC)	B2
16 to 18	Advanced	A (AAB)	C1
19 to 20	Upper advanced	A+ (AAA)	C2

Appendix 13: Forced-choice elicitation task (FCET): Multiple regression analyses

Context A and C

The results of the L2 PJ group in context A indicated that *Model 1.(i)* was not significant: (F(3, 74) =.137, p=.938, R^2=.006, $R^2_{Adjusted}$ =-.035). Their results also in context C revealed that *Model 1.(iii)* was not significant: (F(3, 74) =.767, p =.516, R^2 =.030, $R^2_{Adjusted}$ =-.009). The results of the L2 CG group in context A showed that *Model 2.(i)* was not significant: (F(3, 68) =1.354, p =.264, R^2 =.056, $R^2_{Adjusted}$ =.0148). Similarly, their results in context C demonstrated that *Model 2.(iii)* was not significant: (F(3, 68) =1.738, p =.167, R^2=.071, $R^2_{Adjusted}$ =.030). The results of the L3 PJ–CG–E participants in context A revealed that *Model 3.(i)* was not significant: (F(4, 42) =2.122, p =.095, R^2=.168, $R^2_{Adjusted}$ =.0889). Their results in context C were not different as *Model 3.(iii)* was not significant: (F(4, 42) =.981, p =.428, R^2 =.085, $R^2_{Adjusted}$ =-.00165). The results of the L3 PJ–E–CG participants demonstrated that *Model 4.(i):* Context A was not significant: (F(4, 45) =1.542, p =.206, R^2 =.121, $R^2_{Adjusted}$ =-.042).

Contexts B and D

The results of the L2 PJ group in context B indicated that *Model 1.(ii)* was not significant: (F(3, 74) =.915, p =.438, R^2=.036, $R^2_{Adjusted}$ =-.0033). Their results in context D revealed that *Model 1.(vi)* was not significant: (F(3, 74) =.996, p =.400, R^2=.039, $R^2_{Adjusted}$ =-.001). The results of the L2 CG group in context B showed that *Model 2.(ii)* was not significant: (F(3, 68) =.751, p =.525, R^2=.032, $R^2_{Adjusted}$ = -.011). Their results in context D revealed that *Model 2.(iv)* was not significant as well: (F(3, 68) =.852, p =.470, R^2=.036, $R^2_{Adjusted}$ =-.006). The results of the L3 PJ–CG–E group in context B proved that *Model 3.(ii)* was not significant: (F(4, 42) =.769, p =.552,

R^2=.068, $R^2_{Adjusted}$ =-020). Their results in context D revealed that *Model 3.(iv)* was not significant: ($F(4, 42)$ =.840, p =.508, R^2=. 074, $R^2_{Adjusted}$ =-.014).

Contexts E and F

The results of the L2 PJ group in context E revealed that *Model 1.(v)* was not significant: ($F(3, 74)$ =.523, p=.668, R^2=.021, $R^2_{Adjusted}$ =-0.018). Their results in context F revealed that *Model 1.(vi)* was not significant: ($F(3, 74)$ =.170, p=.917, R^2=.007, $R^2_{Adjusted}$ =-.0334). The results of the L2 CG participants in context E revealed that *Model 2.(v)* was not significant: ($F(3, 68)$ =.127, p =.944, R^2=.006, $R^2_{Adjusted}$ =-.038). Their results in context F revealed that *Model 2.(vi)* was not significant as well: ($F(3, 68)$ =.074, p=.974, R^2=.003, $R^2_{Adjusted}$ =-.040). The results of the L3 PJ–CG–E participants in context E demonstrated that *Model 3.(v)* was not significant: ($F(4, 42)$ =1.244, p =.307, R^2=.106, $R^2_{Adjusted}$ =.021). Similarly, their results in context F proved that *Model 3.(vi)* was not significant: ($F(4, 42)$ =.911, p =.466, R^2=.080, $R^2_{Adjusted}$=-.007).

Appendix 14: Forced-choice elicitation task (FCET): Ordered Probit regression results for the L2/L3 groups

FCET context A

		L2 PJ Coefficient (St.E)	L2 CG Coefficient (St.E)
	Standard Error		
Age		0.004	0.025
		(0.016)	(0.021)
English proficiency		0.519***	0.404***
		(0.119)	(0.110)
English exposure at work/University/school		0.379***	0.386**
		(0.113)	(0.118)
English exposure in community		0.115	–0.108
		(0.088)	(0.095)
English exposure at home		–0.205	0.030
		(0.110)	(0.082)
Length of learning English		0.004	0.001
		(0.040)	(0.034)
	Chi–square	46.377	41.889
	P–Value	0.000	0.000
	N	91.0	93.0

FCET context B

		L2 PJ Coefficient (St.E)	L2 CG Coefficient (St.E)
Age		0.036*	0.020
		(0.014)	(0.017)
English proficiency		0.588***	0.707***
		(0.111)	(0.111)
English exposure at work/University/school		0.137	0.046
		(0.097)	(0.105)
English exposure in community		0.048	0.153
		(0.079)	(0.089)
English exposure at home		0.099	–0.085
		0.092)	(0.072)
Length of learning English		0.018	–0.005
		(0.036)	(0.028)
	Chi–square	55.681	69.796
	P–Value	0.000	0.000
	N	91.0	93.0

FCET context C

		L2 PJ	L2 CG
	Standard Error (St.E)	Coefficient	Coefficient (St.E)
Age		0.017	0.004
		(0.014)	(0.016)
English proficiency		0.136	0.174
		(0.100)	(0.095)
English exposure at work/University/school		−0.058	0.214*
		(0.095)	(0.107)
English exposure in community		0.021	0.014
		(0.078)	(0.089)
English exposure at home		0.007	−0.086
		(0.090)	(0.072)
Length of learning English		0.037	0.010
		(0.036)	(0.027)
	Chi–square	5.852	11.628
	P–Value	0.440	0.071
	N	91.0	93.0

FCET context D

		L2 PJ	L2 CG
		Coefficient (St.E)	Coefficient (St.E)
Age		0.002	−0.009
		(0.014)	(0.018)
English proficiency		0.597***	0.868***
		(0.113)	(0.126)
English exposure at work/University/school		0.304**	−0.013
		(0.103)	(0.117)
English exposure in community		−0.019	−0.036
		(0.081)	(0.096)
English exposure at home		0.013	0.031
		(0.096)	(0.082)
Length of learning English		0.056	−0.012
		(0.038)	(0.032)
	Chi–square	59.426	66.243
	P–Value	0.000	0.000
	N	91.0	9

FCET context E

		L2 PJ	L2 CG
	Standard Error (Std.E)	Coefficient	Coefficient (Std.E)
Age		–0.017	–0.024
		(0.014)	(0.018)
English proficiency		0.576***	0.773***
		(0.111)	(0.121)
English exposure at work/University/school		0.070	0.197
		(0.096)	(0.113)
English exposure in community		0.031	0.096
		(0.080)	(0.097)
English exposure at home		0.127	0.042
		(0.092)	(0.079)
Length of learning English		0.034	0.007
		(0.036)	(0.032)
	Chi–square	49.698	74.829
	P–Value	0.000	0.000
	N	91.0	93.0

FCET Context F

		L2 PJ	L2 CG
	Standard Error	Coefficient (Std.E)	Coefficient (Std.E)
Age		–0.017	–0.041*
		(0.016)	(0.018)
English proficiency		0.392***	0.599***
		(0.115)	(0.116)
English exposure at work/University/school		0.399***	0.185
		(0.109)	(0.117)
English exposure in community		0.087	0.006
		(0.088)	(0.099)
English exposure at home		–0.032	–0.024
		(0.104)	(0.086)
Length of learning English		0.049	0.050
		(0.042)	(0.035)
	Chi–square	50.553	44.343
	P–Value	0.000	0.000
	N	91.0	93.0

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FCET context A

	L3 PJ–CG–E group	L3 PJ–E–CG group
	Coefficient Standard Error (Std.E)	Coefficient (Std.E)
Age	–0.030	–0.006
	(0.020)	(0.022)
English proficiency	0.617***	1.067***
	(0.165)	(0.220)
English exposure at work/University/school	–0.131	0.100
	(0.169)	(0.219)
English exposure in community	0.401*	–0.149
	(0.164)	(0.206)
English exposure at home	–0.082	0.005
	(0.110)	(0.125)
Length of learning English	0.034	0.120
	(0.051)	(0.073)
Arabic proficiency	–0.068	0.200
	(0.146)	(0.163)
Length of learning Greek	0.064	–0.044
	(0.050)	(0.061)
Greek proficiency	0.141	–0.041
	(0.168)	(0.181)
Chi–square	40.748	46.784
P–Value	0.000	0.000
N	52.0	50.0

FCET context B

	L3 PJ–CG–E	L3 PJ–E–CG
	Coefficient (Std.E)	Coefficient (Std.E)
Age	–0.013	0.053*
	(0.020)	(0.021)
English proficiency	0.747***	0.716***
	(0.162)	(0.184)
English exposure at work/University/school	–0.045	0.308
	(0.147)	(0.202)
English exposure in community	–0.080	–0.315
	(0.146)	(0.180)
English exposure at home	0.258*	0.159
	(0.109)	(0.117)
Length of learning English	0.043	0.019
	(0.048)	(0.054)
Arabic	0.017	–0.254
	(0.139)	(0.141)
Length of learning Greek	0.017	–0.006
	(0.046)	(0.056)
Greek proficiency	–0.219	–0.281
	(0.159)	(0.169)
Chi–square	46.413	51.073
P–Value	0.000	0.000
N	52.0	50.0

FCET context C

		L3 PJ–CG–E	L3 PJ–E–C
		Coefficient	Coefficient
		Standard Error (Std.E)	(Std.E)
Age		0.030	–0.036
		(0.021)	(0.019)
English proficiency		–0.058	0.419*
		(0.149)	(0.167)
English exposure at work/University/school		–0.162	–0.285
		(0.153)	(0.195)
English exposure in community		0.200	0.178
		(0.153)	(0.185)
English exposure at home		0.065	–0.145
		(0.106)	(0.113)
Length of learning English		–0.078	–0.133*
		(0.049)	(0.056)
Arabic		–0.291	–0.125
		(0.150)	(0.135)
Length of learning Greek		0.006	0.037
		(0.047)	(0.052)
Greek proficiency		0.150	0.240
		(0.164)	(0.161)
	Chi–square	9.225	25.792
	P–Value	0.417	0.002
	N	52.0	50.0

FCET context D

		L3 PJ–CG–E	L3 PJ–E–CG
		Standard Error (Std.E)	(Std.E)
		(Std.E)	(Std.E)
Age		–0.007	0.027
		(0.019)	(0.019)
English proficiency		0.614***	0.550**
		(0.160)	(0.174)
English exposure at work/University/school		–0.074	0.120
		(0.153)	(0.185)
English exposure in community		0.293*	0.066
		(0.149)	(0.168)
English exposure at home		–0.033	–0.073
		(0.103)	(0.115)
Length of learning English		–0.047	0.067
		(0.050)	(0.061)
Arabic		–0.022	–0.169
		(0.139)	(0.143)
Length of learning Greek		0.091	0.040
		(0.049)	(0.056)
Greek proficiency		–0.167	–0.285
		(0.162)	(0.168)
	Chi–square	39.596	32.836
	P–Value	0.000	0.000
	N	52.0	50.

FCET context E

		L3 PJ–CG–E	L3 PJ–E–CG
		Coefficient	Coefficient
	Standard Error (Std.E)		(Std.E)
Age		–0.027	0.004
		(0.021)	(0.020)
English proficiency		1.218***	0.746***
		(0.228)	(0.183)
English exposure at work/University/school		0.104	–0.035
		(0.155)	(0.189)
English exposure in community		–0.144	0.080
		(0.163)	(0.173)
English exposure at home		–0.045	0.014
		(0.111)	(0.115)
Length of learning English		0.077	–0.002
		(0.055)	(0.053)
Arabic		–0.116	0.002
		(0.158)	(0.135)
Length of learning Greek		–0.137*	0.016
		(0.059)	(0.054)
Greek proficiency		0.759***	0.523**
		(0.198)	(0.171)
	Chi–square	68.852	39.739
	P–Value	0.000	0.000
	N	52.0	50.0

FCET context F

		L3 PJ–CG–E	L3 PJ–E–C
		Coefficient	Coefficient
	Standard Error (Std.E)		(Std.E)
Age		0.008	0.003
		(0.020)	(0.019)
English proficiency		0.887***	0.929***
		(0.181)	(0.198)
English exposure at work/University/school		–0.008	–0.118
		(0.163)	(0.189)
English exposure in community		–0.159	0.008
		(0.157)	(0.170)
English exposure at home		0.101	–0.004
		(0.109)	(0.116)
Length of learning English		–0.009	0.025
		(0.051)	(0.054)
Arabic		0.088	–0.061
		(0.148)	(0.138)
Length of learning Greek		–0.016	0.015
		(0.051)	(0.054)
Greek proficiency		0.306	0.332*
		(0.169)	(0.166)
	Chi–square	40.239	42.730
	P–Value	0.000	0.000
	N	52.0	50.

Appendix 15: Forced-choice elicitation task (FCET): L2/L3 groups' marginal effects computed from the Ordered Probit Model in contexts A and C

Only results related to score 6 were reported in the study.

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--------------------------------------------------------------------------------------------
L2 PJ group: Model 1.(i): Context A
                         (1)          (2)          (3)          (4)          (5)          (6)
--------------------------------------------------------------------------------------------
Age                   0.000843    -0.000241    -0.000154    -0.000518    -0.000218     0.00113
                        (1.05)      (-0.25)      (-0.25)      (-0.26)      (-0.25)      (0.26)
English              -0.0293*     -0.0313*     -0.0200      -0.0673***   -0.0284*      0.147***
Proficiency            (-2.11)      (-2.29)      (-1.82)      (-3.96)      (-2.37)      (5.35)
Exposure at          -0.00354     -0.0229*     -0.0146      -0.0491**    -0.0207*      0.107***
 University            (-0.68)      (-2.14)      (-1.71)      (-3.01)      (-2.24)      (3.75)
Exposure in          -0.00157     -0.00697     -0.00444     -0.0150      -0.00631      0.0327
the   community        (-0.38)      (-1.20)      (-1.10)      (-1.26)      (-1.20)      (1.33)
Exposure in          -0.00647      0.0124       0.00791      0.0267       0.0112      -0.0582
 home                  (-1.19)      (1.58)       (1.37)       (1.74)       (1.68)      (-1.94)
Length of            -0.00174     -0.000259    -0.000165    -0.000556    -0.000235     0.00121
learning English       (-0.90)      (-0.11)      (-0.11)      (-0.11)      (-0.11)      (0.11)
--------------------------------------------------------------------------------------------
L2 PJ group: Model 1.(iii): Context C
--------------------------------------------------------------------------------------------
Age                  -0.000990    -0.00282     -0.00177     -0.000503     0.00244      0.00411
                       (-1.03)      (-1.18)      (-1.19)      (-0.88)      (1.21)       (1.21)
ENProf               -0.00781     -0.0222      -0.0140      -0.00397      0.0192       0.0324
                       (-1.14)      (-1.32)      (-1.28)      (-0.90)      (1.34)       (1.34)
EnExUni               0.00332      0.00946      0.00595      0.00169     -0.00819     -0.0138
                        (0.59)      (0.60)       (0.60)       (0.55)       (-0.61)      (-0.61)
EnExComm             -0.00120     -0.00342     -0.00215     -0.000611     0.00296      0.00499
                       (-0.26)      (-0.27)      (-0.27)      (-0.26)      (0.27)       (0.27)
EnExHome             -0.000376    -0.00107     -0.000673    -0.000191     0.000926     0.00156
                       (-0.07)      (-0.07)      (-0.07)      (-0.07)      (0.07)       (0.07)
LL_En                -0.00211     -0.00600     -0.00378     -0.00107      0.00520      0.00876
                       (-0.91)      (-1.00)      (-1.01)      (-0.80)      (1.01)       (1.03)
--------------------------------------------------------------------------------------------
N                        91           91           91           91           91           91
--------------------------------------------------------------------------------------------
z statistics in parentheses     * p<0.05, ** p<0.01, *** p<0.001
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	(1)	(2)	(3)	(4)	(5)	(6)

L2 CG group : Model 2.(i): Context A

Age	0.000451	−0.000837	−0.00190	−0.00226	−0.00199	0.00756
	(0.92)	(−0.96)	(−1.09)	(−1.14)	(−1.24)	(1.22)
ENProf	−0.0142	−0.0135	−0.0308*	−0.0365**	−0.0323**	0.122***
	(−1.26)	(−1.51)	(−2.48)	(−2.99)	(−2.74)	(4.26)
EnExUni	−0.00364	−0.0129	−0.0294*	−0.0349**	−0.0308*	0.117***
	(−0.98)	(−1.49)	(−2.53)	(−2.72)	(−2.24)	(3.48)
EnExComm	−0.00177	0.00363	0.00824	0.00979	0.00865	−0.0328
	(−0.82)	(0.95)	(1.09)	(1.09)	(1.08)	(−1.15)
EnExHome	−0.000765	−0.00101	−0.00229	−0.00272	−0.00240	0.00910
	(−0.49)	(−0.36)	(−0.36)	(−0.37)	(−0.37)	(0.37)
LL_En	−0.000130	−0.0000492	−0.000112	−0.000133	−0.000117	0.000445
	(−0.22)	(−0.04)	(−0.04)	(−0.04)	(−0.04)	(0.04)

L2 CG group: Model 2.(iii): Context C

Age	−0.000360	−0.000238	−0.000422	−0.000139	0.000272	0.00107
	(−0.22)	(−0.22)	(−0.22)	(−0.22)	(0.22)	(0.22)
ENProf	−0.0172	−0.0114	−0.0202	−0.00667	0.0130	0.0514
	(−1.58)	(−1.58)	(−1.76)	(−1.44)	(1.55)	(1.85)
EnExUni	−0.0211	−0.0140	−0.0248	−0.00818	0.0160	0.0630*
	(−1.66)	(−1.67)	(−1.93)	(−1.52)	(1.66)	(2.03)
EnExComm	−0.00140	−0.000927	−0.00164	−0.000542	0.00106	0.00417
	(−0.16)	(−0.16)	(−0.16)	(−0.16)	(0.16)	(0.16)
EnExHome	0.00850	0.00563	0.00997	0.00329	−0.00644	−0.0253
	(1.12)	(1.09)	(1.17)	(1.09)	(−1.08)	(−1.20)
LL_En	−0.00104	−0.000686	−0.00121	−0.000401	0.000784	0.00309
	(−0.38)	(−0.38)	(−0.38)	(−0.38)	(0.38)	(0.39)

N	93	93	93	93	93	93

z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.00

L2 PJ–CG–E group: Model 3.(i): Context A

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.00111	0.000710	0.00294	0.00217	-0.000524	-0.00641
	(0.99)	(0.88)	(1.42)	(1.33)	(-0.72)	(-1.49)
ENProf	-0.0226	-0.0145	-0.0601*	-0.0444**	0.0107	0.131***
	(-1.31)	(-1.00)	(-2.49)	(-3.20)	(0.76)	(4.54)
EnExUni	0.00480	0.00308	0.0128	0.00943	-0.00227	-0.0278
	(0.66)	(0.64)	(0.76)	(0.74)	(-0.48)	(-0.79)
EnExComm	-0.0147	-0.00943	-0.0390*	-0.0288	0.00696	0.0850*
	(-1.14)	(-1.02)	(-2.26)	(-1.85)	(0.76)	(2.52)
EnExHome	0.00300	0.00193	0.00797	0.00589	-0.00142	-0.0174
	(0.66)	(0.60)	(0.73)	(0.73)	(-0.57)	(-0.74)
LL_En	-0.00124	-0.000797	-0.00330	-0.00244	0.000588	0.00719
	(-0.59)	(-0.58)	(-0.65)	(-0.65)	(0.42)	(0.68)
Arabic	0.00249	0.00160	0.00662	0.00489	-0.00118	-0.0144
	(0.44)	(0.44)	(0.46)	(0.45)	(-0.34)	(-0.47)
LL_Gr	0.00234	0.00150	0.00623	0.00460	-0.00111	-0.0136
	(1.00)	(0.80)	(1.14)	(1.21)	(-0.55)	(-1.37)
GRProf	-0.00518	-0.00333	-0.0138	-0.0102	0.00245	0.0300
	(-0.70)	(-0.66)	(-0.83)	(-0.80)	(0.55)	(0.85)

L3 PJ–CG–E: Model 3.(iii): Context C
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	(1)	(2)	(3)	(4)	(5)	(6)
Age	-0.00537	-0.000577	-0.000990	-0.00362	0.000312	0.0102
	(-1.37)	(-0.85)	(-1.05)	(-1.35)	(0.35)	(1.47)
ENProf	0.0103	0.00111	0.00191	0.00698	-0.000601	-0.0197
	(0.39)	(0.36)	(0.37)	(0.39)	(-0.25)	(-0.39)
EnExUni	0.0288	0.00310	0.00532	0.0195	-0.00168	-0.0550
	(1.02)	(0.74)	(0.87)	(1.04)	(-0.35)	(-1.07)
EnExComm	-0.0357	-0.00384	-0.00659	-0.0241	0.00208	0.0682
	(-1.27)	(-0.82)	(-0.99)	(-1.26)	(0.35)	(1.35)
EnExHome	-0.0117	-0.00125	-0.00215	-0.00788	0.000679	0.0223
	(-0.61)	(-0.53)	(-0.58)	(-0.62)	(0.32)	(0.62)
LL_En	0.0139	0.00149	0.00256	0.00938	-0.000809	-0.0265
	(1.49)	(0.87)	(1.10)	(1.52)	(-0.36)	(-1.63)
Arabic	0.0518	0.00557	0.00956	0.0350	-0.00302	-0.0989*
	(1.79)	(0.92)	(1.21)	(1.82)	(-0.36)	(-2.07)
LL_Gr	-0.00114	-0.000123	-0.000210	-0.000770	0.0000663	0.00218
	(-0.13)	(-0.13)	(-0.13)	(-0.13)	(0.13)	(0.13)
GRProf	-0.0268	-0.00288	-0.00495	-0.0181	0.00156	0.0512
	(-0.89)	(-0.70)	(-0.81)	(-0.91)	(0.34)	(0.93)

| N | 52 | 52 | 52 | 52 | 52 | 52 |

z statistics in parentheses   * p<0.05, ** p<0.01 p<0.001, ***

L2 PJ–E–CG group: Model 4.(i): Context A

	(1)	(2)	(3)	(4)	(5)	(6)
Age	−0.00141	−0.000213	0.000643	0.000534	−0.0000926	−0.00108
	(−1.10)	(−0.14)	(0.26)	(0.25)	(−0.28)	(−0.25)
ENProf	−0.0288	−0.0772*	−0.120***	−0.0993***	0.0172	0.202***
	(−1.41)	(−2.36)	(−3.52)	(−3.30)	(0.77)	(6.02)
EnExUni	−0.00630	0.00977	−0.0113	−0.00935	0.00162	0.0190
	(−0.60)	(0.60)	(−0.46)	(−0.46)	(0.45)	(0.46)
EnExComm	−0.00345	−0.000698	0.0167	0.0138	−0.00240	−0.0281
	(−0.38)	(−0.05)	(0.72)	(0.71)	(−0.52)	(−0.73)
EnExHome	0.00385	0.000294	−0.000576	−0.000478	0.0000829	0.000971
	(0.60)	(0.03)	(−0.04)	(−0.04)	(0.04)	(0.04)
LL_En	−0.00353	−0.00212	−0.0135	−0.0112	0.00194	0.0227
	(−0.95)	(−0.46)	(−1.55)	(−1.49)	(0.60)	(1.78)
Arabic	0.00887	0.00506	−0.0224	−0.0186	0.00323	0.0379
	(0.98)	(0.44)	(−1.25)	(−1.17)	(0.92)	(1.18)
LL_Gr	−0.00212	−0.00122	0.00488	0.00405	−0.000703	−0.00823
	(−0.65)	(−0.27)	(0.70)	(0.71)	(−0.43)	(−0.74)
GRProf	0.0149	−0.0276	0.00464	0.00385	−0.000668	−0.00782
	(1.16)	(−1.65)	(0.23)	(0.23)	(−0.21)	(−0.23)

L2 PJ–E–CG group: Model 4.(iii): Context C

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.00550	0.000548	0.00219	0.00226	−0.00228	−0.00822
	(1.75)	(0.89)	(1.54)	(1.75)	(−1.47)	(−1.92)
ENProf	−0.0646*	−0.00644	−0.0258	−0.0265	0.0267	0.0966**
	(−2.22)	(−0.98)	(−1.95)	(−1.95)	(1.69)	(2.64)
EnExUni	0.0441	0.00439	0.0176	0.0181	−0.0182	−0.0659
	(1.41)	(0.85)	(1.31)	(1.34)	(−1.24)	(−1.49)
EnExComm	−0.0275	−0.00274	−0.0110	−0.0113	0.0114	0.0411
	(−0.96)	(−0.70)	(−0.89)	(−0.91)	(0.88)	(0.97)
EnExHome	0.0224	0.00223	0.00893	0.00918	−0.00927	−0.0335
	(1.26)	(0.80)	(1.14)	(1.20)	(−1.11)	(−1.30)
LL_En	0.0206*	0.00205	0.00821	0.00844	−0.00852	−0.0308*
	(2.57)	(0.94)	(1.65)	(1.53)	(−1.73)	(−2.28)
Arabic	0.0193	0.00192	0.00770	0.00791	−0.00799	−0.0289
	(0.91)	(0.70)	(0.89)	(0.86)	(−0.86)	(−0.92)
LL_Gr	−0.00573	−0.000571	−0.00228	−0.00235	0.00237	0.00856
	(−0.70)	(−0.58)	(−0.71)	(−0.70)	(0.72)	(0.71)
GRProf	−0.0371	−0.00370	−0.0148	−0.0152	0.0153	0.0554
	(−1.48)	(−0.88)	(−1.32)	(−1.23)	(1.25)	(1.50)

	(1)	(2)	(3)	(4)	(5)	(6)
N	50	50	50	50	50	50

z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

Appendix 16: Forced-choice elicitation task (FCET): L2/L3 groups' marginal effects computed from the Ordered Probit Model in contexts B and D

Only results related to score 6 were reported in the study.

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                     (1)            (2)            (3)            (4)            (5)            (6)
L2 PJ group: Model 1.(ii): Context B
------------------------------------------------------------------------------------------------
Age             -0.00237       -0.00456*      -0.00199*       0.000931       0.00320*       0.00561*
                (-1.88)        (-2.28)        (-2.28)         (1.27)         (2.21)         (2.38)
ENProf          -0.0392*       -0.0754***     -0.0329***      0.0154         0.0529***      0.0928***
                (-2.54)        (-4.48)        (-3.53)         (1.62)         (3.84)         (4.05)
EnExUni         -0.00916       -0.0176        -0.00768        0.00360        0.0124         0.0217
                (-1.31)        (-1.39)        (-1.30)         (1.07)         (1.36)         (1.37)
EnExComm        -0.00321       -0.00617       -0.00269        0.00126        0.00434        0.00760
                (-0.60)        (-0.61)        (-0.60)         (0.57)         (0.60)         (0.61)
EnExHome        -0.00659       -0.0127        -0.00553        0.00259        0.00889        0.0156
                (-1.00)        (-1.06)        (-1.04)         (0.87)         (1.03)         (1.07)
LL_En           -0.00120       -0.00231       -0.00101        0.000472       0.00162        0.00284
                (-0.49)        (-0.49)        (-0.49)         (0.46)         (0.49)         (0.50)
------------------------------------------------------------------------------------------------

L2 PJ group: Model 1.(iv): Context D
------------------------------------------------------------------------------------------------
Age             -0.0000693     -0.0000719     -0.000161      -0.0000515      0.0000615      0.000354
                (-0.11)        (-0.11)        (-0.11)        (-0.11)         (0.11)         (0.11)
ENProf          -0.0270*       -0.0280*       -0.0624***     -0.0200*        0.0239**       0.138***
                (-2.12)        (-2.54)        (-4.49)        (-2.07)         (2.62)         (5.92)
EnExUni         -0.0137        -0.0142*       -0.0318**      -0.0102         0.0122*        0.0702**
                (-1.90)        (-2.13)        (-2.70)        (-1.73)         (2.15)         (3.01)
EnExComm         0.000856       0.000888       0.00198        0.000637      -0.000759      -0.00438
                (0.23)         (0.23)         (0.23)         (0.23)         (-0.23)        (-0.23)
EnExHome        -0.000596      -0.000618      -0.00138       -0.000443       0.000529       0.00305
                (-0.14)        (-0.14)        (-0.14)        (-0.14)         (0.14)         (0.14)
LL_En           -0.00252       -0.00262       -0.00585       -0.00188        0.00224        0.0129
                (-1.28)        (-1.31)        (-1.40)        (-1.26)         (1.27)         (1.49)
------------------------------------------------------------------------------------------------
N                     91             91             91             91             91             91
------------------------------------------------------------------------------------------------
z statistics in parentheses          * p<0.05, ** p<0.01, *** p<0.001
```

	(1)	(2)	(3)	(4)	(5)	(6)
L2 CG group: Model 2.(ii): Context B						
Age	−0.00194	−0.00112	−0.000433	0.000681	0.00238	0.00202
	(−1.15)	(−1.20)	(−1.19)	(1.04)	(1.18)	(1.19)
ENProf	−0.0682***	−0.0394***	−0.0152	0.0239*	0.0835***	0.0711***
	(−4.23)	(−4.14)	(−1.93)	(2.33)	(4.49)	(3.32)
EnExUni	−0.00441	−0.00255	−0.000985	0.00155	0.00541	0.00460
	(−0.44)	(−0.43)	(−0.40)	(0.43)	(0.43)	(0.43)
EnExComm	−0.0147	−0.00852	−0.00329	0.00517	0.0180	0.0154
	(−1.62)	(−1.53)	(−1.32)	(1.41)	(1.62)	(1.57)
EnExHome	0.00820	0.00474	0.00183	−0.00288	−0.0100	−0.00855
	(1.16)	(1.16)	(0.96)	(−1.12)	(−1.14)	(−1.13)
LL_En	0.000519	0.000301	0.000116	−0.000182	−0.000636	−0.000542
	(0.19)	(0.19)	(0.19)	(−0.19)	(−0.19)	(−0.19)

L2 CG group: Model 2.(iv): Context D

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.000550	0.000297	0.000505	0.000216	0.0000777	−0.00208
	(0.46)	(0.46)	(0.47)	(0.46)	(0.37)	(−0.46)
ENProf	−0.0556**	−0.0300*	−0.0510***	−0.0218**	−0.00786	0.210***
	(−3.03)	(−2.37)	(−3.71)	(−2.91)	(−0.84)	(12.64)
EnExUni	0.000847	0.000457	0.000777	0.000332	0.000120	−0.00320
	(0.11)	(0.11)	(0.11)	(0.11)	(0.12)	(−0.11)
EnExComm	0.00232	0.00125	0.00213	0.000911	0.000328	−0.00878
	(0.38)	(0.37)	(0.38)	(0.38)	(0.38)	(−0.38)
EnExHome	−0.00200	−0.00108	−0.00183	−0.000783	−0.000282	0.00754
	(−0.38)	(−0.37)	(−0.37)	(−0.39)	(−0.43)	(0.38)
LL_En	0.000788	0.000425	0.000723	0.000309	0.000111	−0.00298
	(0.38)	(0.38)	(0.38)	(0.38)	(0.36)	(−0.39)
N	93	93	93	93	93	93

z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

L2 PJ–CG–E group: Model 3.(ii): Context B

FCET	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.000967	0.000419	0.000244	−0.000312	−0.00128	−0.00126
	(0.65)	(0.59)	(0.55)	(−0.52)	(−0.65)	(−0.65)
ENProf	−0.0557*	−0.0241	−0.0141	0.0180	0.0735**	0.0724**
	(−2.40)	(−1.86)	(−1.88)	(1.01)	(3.23)	(2.70)
EnExUni	0.00335	0.00145	0.000846	−0.00108	−0.00442	−0.00435
	(0.30)	(0.30)	(0.30)	(−0.28)	(−0.30)	(−0.31)
EnExComm	0.00599	0.00259	0.00151	−0.00193	−0.00791	−0.00778
	(0.54)	(0.51)	(0.54)	(−0.47)	(−0.55)	(−0.54)
EnExHome	−0.0193*	−0.00834	−0.00486	0.00622	0.0254*	0.0250
	(−2.03)	(−1.50)	(−1.33)	(0.94)	(2.12)	(1.93)
LL_En	−0.00324	−0.00140	−0.000817	0.00105	0.00427	0.00421
	(−0.86)	(−0.79)	(−0.79)	(0.63)	(0.86)	(0.90)
Arabic	−0.00124	−0.000538	−0.000314	0.000401	0.00164	0.00161
	(−0.12)	(−0.12)	(−0.12)	(0.12)	(0.12)	(0.12)
LL_Gr	−0.00124	−0.000535	−0.000312	0.000399	0.00163	0.00161
	(−0.36)	(−0.37)	(−0.37)	(0.38)	(0.36)	(0.35)
GRProf	0.0163	0.00707	0.00412	−0.00527	−0.0215	−0.0212
	(1.27)	(1.09)	(0.99)	(−0.77)	(−1.33)	(−1.27)

L2 PJ–CG–E group: Model 3.(iv): Context D

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.000351	0.000392	0.000275	0.000148	−0.000460	−0.00139
	(0.38)	(0.39)	(0.38)	(0.37)	(−0.39)	(−0.39)
ENProf	−0.0289	−0.0322*	−0.0226*	−0.0122	0.0378*	0.114***
	(−1.75)	(−2.23)	(−2.33)	(−1.46)	(2.13)	(4.05)
EnExUni	0.00347	0.00387	0.00271	0.00146	−0.00454	−0.0137
	(0.47)	(0.47)	(0.47)	(0.45)	(−0.46)	(−0.48)
EnExComm	−0.0138	−0.0154	−0.0108	−0.00581	0.0181	0.0546
	(−1.44)	(−1.56)	(−1.42)	(−1.01)	(1.48)	(1.91)
EnExHome	0.00158	0.00176	0.00123	0.000664	−0.00206	−0.00625
	(0.32)	(0.32)	(0.32)	(0.32)	(−0.32)	(−0.32)
LL_En	0.00220	0.00245	0.00172	0.000927	−0.00288	−0.00873
	(0.83)	(0.85)	(0.84)	(0.80)	(−0.83)	(−0.94)
Arabic	0.00104	0.00116	0.000811	0.000437	−0.00136	−0.00411
	(0.16)	(0.16)	(0.16)	(0.16)	(−0.16)	(−0.16)
LL_Gr	−0.00427	−0.00477	−0.00334	−0.00180	0.00560	0.0169
	(−1.34)	(−1.46)	(−1.41)	(−1.21)	(1.37)	(1.94)
GRProf	0.00788	0.00878	0.00616	0.00332	−0.0103	−0.0312
	(0.89)	(0.95)	(0.98)	(0.90)	(−0.95)	(−1.03)

| N | 52 | 52 | 52 | 52 | 52 | 52 |

Z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

L2 PJ–E–CG group: Model 4.(ii): Context B

	(1)	(2)	(3)	(4)	(5)	(6)
Age	−0.00142	−0.00834*	−0.00112	0.000670	0.00362*	0.00659*
	(−1.08)	(−2.40)	(−1.08)	(0.88)	(2.00)	(2.40)
ENProf	−0.0193	−0.113***	−0.0152	0.00910	0.0491*	0.0895***
	(−1.11)	(−3.60)	(−1.13)	(0.94)	(2.43)	(3.33)
EnExUni	−0.00830	−0.0487	−0.00656	0.00392	0.0211	0.0385
	(−0.99)	(−1.54)	(−0.78)	(0.99)	(1.20)	(1.51)
EnExComm	0.00847	0.0497	0.00670	−0.00400	−0.0216	−0.0393
	(1.02)	(1.69)	(0.90)	(−0.94)	(−1.34)	(−1.74)
EnExHome	−0.00429	−0.0252	−0.00339	0.00202	0.0109	0.0199
	(−0.92)	(−1.33)	(−0.87)	(0.90)	(1.15)	(1.35)
LL_En	−0.000513	−0.00301	−0.000406	0.000242	0.00131	0.00238
	(−0.33)	(−0.35)	(−0.34)	(0.29)	(0.34)	(0.36)
Arabic	0.00683	0.0401	0.00540	−0.00322	−0.0174	−0.0317
	(0.98)	(1.76)	(0.99)	(−0.86)	(−1.60)	(−1.70)
LL_Gr	0.000173	0.00102	0.000137	−0.0000818	−0.000441	−0.000804
	(0.11)	(0.11)	(0.12)	(−0.11)	(−0.12)	(−0.11)
GRProf	0.00756	0.0444	0.00597	−0.00357	−0.0193	−0.0351
	(1.00)	(1.67)	(0.89)	(−1.01)	(−1.40)	(−1.58)

L2 PJ–E–CG group: Model 4.(iv): Context D

	(1)	(2)	(3)	(4)	(5)	(6)
Age	−0.00141	−0.00165	−0.00269	−0.00120	0.000465	0.00648
	(−1.10)	(−1.14)	(−1.28)	(−1.31)	(0.73)	(1.47)
ENProf	−0.0288	−0.0337	−0.0551**	−0.0245*	0.00950	0.133***
	(−1.41)	(−1.73)	(−2.63)	(−2.02)	(0.89)	(3.83)
EnExUni	−0.00630	−0.00739	−0.0121	−0.00537	0.00208	0.0290
	(−0.60)	(−0.64)	(−0.65)	(−0.57)	(0.64)	(0.64)
EnExComm	−0.00345	−0.00404	−0.00660	−0.00294	0.00114	0.0159
	(−0.38)	(−0.38)	(−0.39)	(−0.39)	(0.34)	(0.39)
EnExHome	0.00385	0.00451	0.00736	0.00327	−0.00127	−0.0177
	(0.60)	(0.61)	(0.63)	(0.62)	(−0.55)	(−0.64)
LL_En	−0.00353	−0.00413	−0.00675	−0.00300	0.00116	0.0162
	(−0.95)	(−0.91)	(−1.05)	(−1.10)	(0.63)	(1.15)
Arabic	0.00887	0.0104	0.0170	0.00755	−0.00293	−0.0408
	(0.98)	(1.01)	(1.11)	(1.11)	(−0.69)	(−1.22)
LL_Gr	−0.00212	−0.00248	−0.00405	−0.00180	0.000699	0.00975
	(−0.65)	(−0.70)	(−0.73)	(−0.64)	(0.79)	(0.70)
GRProf	0.0149	0.0175	0.0286	0.0127	−0.00493	−0.0688
	(1.16)	(1.39)	(1.58)	(1.24)	(−0.85)	(−1.72)
N	50	50	50	50	50	50

Z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

Appendix 17: Forced-choice elicitation task (FCET): L2/L3 groups' marginal effects computed from the Ordered Probit Model in contexts E and F

Only results related to score 6 were reported in the study.

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                      (1)             (2)             (3)             (4)             (5)             (6)
FCET    L2 PJ group: Model 1.(v): Context E
------------------------------------------------------------------------------------------------
Age               0.000843        0.00158         0.00198         0.000281       -0.00208        -0.00260
                   (1.05)          (1.09)          (1.14)          (0.81)         (-1.15)         (-1.17)
ENProf            -0.0293*        -0.0549**       -0.0689***      -0.00978         0.0724***       0.0904***
                  (-2.11)         (-3.11)         (-4.30)         (-0.89)          (4.49)          (4.09)
EnExUni           -0.00354        -0.00664        -0.00833        -0.00118         0.00876         0.0109
                  (-0.68)         (-0.73)         (-0.73)         (-0.52)          (0.73)          (0.72)
EnExComm          -0.00157        -0.00294        -0.00368        -0.000523        0.00387         0.00484
                  (-0.38)         (-0.38)         (-0.38)         (-0.35)          (0.38)          (0.38)
EnExHome          -0.00647        -0.0121         -0.0152         -0.00216         0.0160          0.0200
                  (-1.19)         (-1.31)         (-1.34)         (-0.79)          (1.34)          (1.38)
LL_En             -0.00174        -0.00327        -0.00410        -0.000582        0.00431         0.00538
                  (-0.90)         (-0.93)         (-0.93)         (-0.66)          (0.94)          (0.95)
------------------------------------------------------------------------------------------------

L2 PJ group: Model 1.(vi): Context F
------------------------------------------------------------------------------------------------
Age               0.000843        0.00106         0.00169         0.00150         0.000649       -0.00490
                   (1.05)          (1.04)          (1.02)          (1.04)          (1.11)         (-1.10)
ENProf            -0.0293*        -0.0238*        -0.0378**       -0.0336**       -0.0145*         0.110***
                  (-2.11)         (-2.19)         (-2.66)         (-2.90)         (-2.12)          (3.85)
EnExUni           -0.00354        -0.0242*        -0.0385**       -0.0342**       -0.0148          0.112***
                  (-0.68)         (-2.17)         (-3.00)         (-3.16)         (-1.92)          (4.11)
EnExComm          -0.00157        -0.00527        -0.00839        -0.00746        -0.00322         0.0243
                  (-0.38)         (-0.95)         (-0.95)         (-0.96)         (-0.98)          (1.00)
EnExHome          -0.00647         0.00197         0.00313         0.00279         0.00120        -0.00910
                  (-1.19)          (0.31)          (0.31)          (0.31)          (0.31)         (-0.31)
LL_En             -0.00174        -0.00297        -0.00473        -0.00420        -0.00182         0.0137
                  (-0.90)         (-1.11)         (-1.12)         (-1.11)         (-1.03)          (1.17)
------------------------------------------------------------------------------------------------
N                       91              91              91              91              91              91
Z statistics in parentheses         * p<0.05, ** p<0.01, *** p<0.001
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                    (1)             (2)             (3)             (4)             (5)             (6)
FCET  L2 CG group: Model 2.(v): Context E
---------------------------------------------------------------------------------------------------
Age            0.000451         0.00114         0.00191         0.00154        0.000842        -0.00588
                (0.92)          (1.17)          (1.32)          (1.38)          (1.11)          (-1.36)
ENProf         -0.0142         -0.0360*        -0.0604***      -0.0487***      -0.0266*          0.186***
               (-1.26)         (-2.35)         (-3.82)         (-4.41)         (-2.49)          (9.83)
EnExUni        -0.00364        -0.00918        -0.0154         -0.0124         -0.00679          0.0475
               (-0.98)         (-1.53)         (-1.73)         (-1.55)         (-1.32)          (1.74)
EnExComm       -0.00177        -0.00448        -0.00753        -0.00606        -0.00331          0.0232
               (-0.82)         (-0.90)         (-0.97)         (-0.99)         (-0.93)          (1.00)
EnExHome       -0.000765       -0.00193        -0.00325        -0.00261        -0.00143          0.00998
               (-0.49)         (-0.52)         (-0.51)         (-0.52)         (-0.53)          (0.52)
LL_En          -0.000130       -0.000329       -0.000552       -0.000445       -0.000243         0.00170
               (-0.22)         (-0.22)         (-0.22)         (-0.22)         (-0.22)          (0.22)
---------------------------------------------------------------------------------------------------
L2 CG group: Model 2.(vi): Context F
---------------------------------------------------------------------------------------------------
Age            0.000451         0.00105         0.00262         0.00297*        0.00289*        -0.0116*
                (0.92)          (1.29)          (1.92)          (2.06)          (2.08)          (-2.46)
ENProf         -0.0142         -0.0153         -0.0384**       -0.0435**       -0.0424***        0.170***
               (-1.26)         (-1.47)         (-2.61)         (-3.26)         (-3.93)          (7.67)
EnExUni        -0.00364        -0.00474        -0.0119         -0.0134         -0.0131           0.0526
               (-0.98)         (-1.14)         (-1.44)         (-1.47)         (-1.44)          (1.60)
EnExComm       -0.00177        -0.000149       -0.000374       -0.000423       -0.000412         0.00166
               (-0.82)         (-0.06)         (-0.06)         (-0.06)         (-0.06)          (0.06)
EnExHome       -0.000765        0.000615        0.00154         0.00174         0.00170         -0.00683
               (-0.49)         (0.27)          (0.28)          (0.28)          (0.28)           (-0.28)
LL_En          -0.000130       -0.00128        -0.00321        -0.00363        -0.00354          0.0142
               (-0.22)         (-1.04)         (-1.30)         (-1.38)         (-1.44)          (1.49)
---------------------------------------------------------------------------------------------------
N                  93              93              93              93              93              93
Z statistics in parentheses        * p<0.05, ** p<0.01, *** p<0.001
```

FCET **L2 PJ–CG–E group: Model 3.(v): Context E**

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.000918	0.00181	0.000670	0.000415	-0.00162	-0.00292
	(1.03)	(1.22)	(1.00)	(0.73)	(-1.13)	(-1.25)
ENProf	-0.0418	-0.0825**	-0.0305*	-0.0189	0.0737***	0.133***
	(-1.62)	(-2.88)	(-2.01)	(-1.34)	(3.71)	(6.51)
EnExUni	-0.00356	-0.00703	-0.00260	-0.00161	0.00628	0.0113
	(-0.60)	(-0.68)	(-0.69)	(-0.61)	(0.71)	(0.66)
EnExComm	0.00494	0.00977	0.00361	0.00223	-0.00872	-0.0157
	(0.74)	(0.88)	(0.94)	(0.76)	(-0.93)	(-0.88)
EnExHome	0.00155	0.00306	0.00113	0.000700	-0.00273	-0.00492
	(0.39)	(0.40)	(0.40)	(0.41)	(-0.41)	(-0.41)
LL_En	-0.00262	-0.00519	-0.00192	-0.00119	0.00463	0.00834
	(-1.07)	(-1.32)	(-1.10)	(-0.83)	(1.11)	(1.53)
Arabic	0.00399	0.00788	0.00291	0.00180	-0.00704	-0.0127
	(0.72)	(0.70)	(0.61)	(0.66)	(-0.66)	(-0.76)
LL_Gr	0.00469	0.00928	0.00343	0.00212	-0.00828	-0.0149**
	(1.46)	(1.95)	(1.34)	(1.01)	(-1.58)	(-2.83)
GRProf	-0.0260	-0.0514*	-0.0190	-0.0117	0.0459**	0.0826***
	(-1.59)	(-2.55)	(-1.72)	(-1.23)	(2.84)	(4.09)

L2 PJ–CG–E group: Model 3.(vi): Context F

	(1)	(2)	(3)	(4)	(5)	(6)
Age	0.000918	-0.000890	-0.000531	-0.000314	0.000129	0.00161
	(1.03)	(-0.38)	(-0.38)	(-0.38)	(0.35)	(0.38)
ENProf	-0.0418	-0.104**	-0.0622*	-0.0368	0.0151	0.188***
	(-1.62)	(-3.15)	(-2.54)	(-1.90)	(0.91)	(6.90)
EnExUni	-0.00356	0.000945	0.000563	0.000333	-0.000136	-0.00170
	(-0.60)	(0.05)	(0.05)	(0.05)	(-0.05)	(-0.05)
EnExComm	0.00494	0.0188	0.0112	0.00662	-0.00271	-0.0339
	(0.74)	(0.98)	(0.98)	(0.92)	(-0.73)	(-1.02)
EnExHome	0.00155	-0.0119	-0.00709	-0.00419	0.00172	0.0214
	(0.39)	(-0.90)	(-0.92)	(-0.84)	(0.74)	(0.92)
LL_En	-0.00262	0.00104	0.000618	0.000366	-0.000150	-0.00187
	(-1.07)	(0.17)	(0.17)	(0.17)	(-0.18)	(-0.17)
Arabic	0.00399	-0.0104	-0.00619	-0.00366	0.00150	0.0187
	(0.72)	(-0.59)	(-0.60)	(-0.58)	(0.65)	(0.59)
LL_Gr	0.00469	0.00185	0.00111	0.000654	-0.000268	-0.00335
	(1.46)	(0.31)	(0.30)	(0.30)	(-0.26)	(-0.31)
GRProf	-0.0260	-0.0360	-0.0214	-0.0127	0.00519	0.0649
	(-1.59)	(-1.64)	(-1.53)	(-1.36)	(0.79)	(1.89)
N	52	52	52	52	52	52

z statistics in parentheses   * $p<0.05$, ** $p<0.01$, *** $p<0.001$

L2 PJ–E–CG group: Model 4.(v): Context E

FCET	(1)	(2)	(3)	(4)	(5)	(6)
Age	−0.00141	−0.000499	−0.000290	−0.000144	0.000340	0.000593
	(−1.10)	(−0.19)	(−0.19)	(−0.20)	(0.19)	(0.19)
ENProf	−0.0288	−0.0967***	−0.0561**	−0.0279	0.0659**	0.115***
	(−1.41)	(−3.40)	(−2.85)	(−1.28)	(2.85)	(3.45)
EnExUni	−0.00630	0.00454	0.00263	0.00131	−0.00309	−0.00539
	(−0.60)	(0.18)	(0.19)	(0.19)	(−0.19)	(−0.19)
EnExComm	−0.00345	−0.0103	−0.00599	−0.00298	0.00703	0.0123
	(−0.38)	(−0.45)	(−0.46)	(−0.50)	(0.46)	(0.46)
EnExHome	0.00385	−0.00179	−0.00104	−0.000517	0.00122	0.00213
	(0.60)	(−0.12)	(−0.12)	(−0.12)	(0.12)	(0.12)
LL_En	−0.00353	0.000304	0.000176	0.0000876	−0.000207	−0.000361
	(−0.95)	(0.04)	(0.04)	(0.04)	(−0.04)	(−0.04)
Arabic	0.00887	−0.000274	−0.000159	−0.0000790	0.000186	0.000325
	(0.98)	(−0.02)	(−0.02)	(−0.02)	(0.02)	(0.02)
LL_Gr	−0.00212	−0.00209	−0.00121	−0.000603	0.00142	0.00248
	(−0.65)	(−0.30)	(−0.30)	(−0.27)	(0.29)	(0.29)
GRProf	0.0149	−0.0678**	−0.0394*	−0.0196	0.0462*	0.0806**
	(1.16)	(−2.89)	(−2.10)	(−1.25)	(2.13)	(2.96)

L2 PJ–E–CG group: Model 4.(vi): Context F

	(1)	(2)	(3)	(4)	(5)	(6)
Age	−0.00141	−0.000213	−0.000247	−0.000127	0.000171	0.000416
	(−1.10)	(−0.14)	(−0.13)	(−0.14)	(0.14)	(0.14)
ENProf	−0.0288	−0.0772*	−0.0894**	−0.0460*	0.0619**	0.151***
	(−1.41)	(−2.36)	(−3.08)	(−1.97)	(2.92)	(4.73)
EnExUni	−0.00630	0.00977	0.0113	0.00582	−0.00783	−0.0191
	(−0.60)	(0.60)	(0.61)	(0.65)	(−0.62)	(−0.63)
EnExComm	−0.00345	−0.000698	−0.000809	−0.000416	0.000560	0.00136
	(−0.38)	(−0.05)	(−0.05)	(−0.05)	(0.05)	(0.05)
EnExHome	0.00385	0.000294	0.000341	0.000176	−0.000236	−0.000575
	(0.60)	(0.03)	(0.03)	(0.03)	(−0.03)	(−0.03)
LL_En	−0.00353	−0.00212	−0.00245	−0.00126	0.00170	0.00414
	(−0.95)	(−0.46)	(−0.46)	(−0.49)	(0.46)	(0.48)
Arabic	0.00887	0.00506	0.00586	0.00302	−0.00406	−0.00988
	(0.98)	(0.44)	(0.43)	(0.46)	(−0.45)	(−0.44)
LL_Gr	−0.00212	−0.00122	−0.00141	−0.000727	0.000978	0.00238
	(−0.65)	(−0.27)	(−0.27)	(−0.25)	(0.27)	(0.27)
GRProf	0.0149	−0.0276	−0.0320	−0.0164	0.0221	0.0539*
	(1.16)	(−1.65)	(−1.81)	(−1.30)	(1.60)	(2.01)

| N | 50 | 50 | 50 | 50 | 50 | 50 |

z statistics in parentheses   p<0.05*,   p<0.01**,   p<0.0***

Appendix 18: Grammaticality judgment task (GJT): Ordered Probit regression results for the L2/L3 groups

	GJT Context A	
	L2 PJ	**L2 CG**
	Coefficient	Coefficient
Standard Error (Std.E)		(Std.E)
Age	0.004	−0.020
	(0.016)	(0.019)
English proficiency	0.365**	0.435***
	(0.114)	(0.115)
English exposure at work/University/school	0.222*	0.186
	(0.107)	(0.121)
English exposure in community	−0.040	−0.026
	(0.087)	(0.101)
English exposure at home	0.090	0.124
	(0.101)	(0.083)
Length of learning English	0.014	0.039
	(0.040)	(0.033)
Chi–square	26.389	37.760
P–Value	0.000	0.000
N	91.0	93.0

GJT Context B

	L2 PJ	**L2 CG**
	Coefficient	Coefficient
Standard Error (Std.E)		(Std.E)
Age	0.026	0.023
	(0.016)	(0.018)
English proficiency	0.431***	0.545***
(0.118)	(0.112)	
English exposure at work/University/school	−0.012	0.106
	(0.106)	(0.115)
English exposure in community	0.181*	0.031
	(0.090)	(0.094)
English exposure at home	0.100	0.023
	(0.103)	(0.077)
Length of learning English	0.074	0.003
	(0.045)	(0.030)
Chi–square	39.365	47.342
P–Value	0.000	0.000
N	91.0	93.0

GJT Context C

		L2 PJ	L2 CG
		Coefficient	Coefficient
	Standard Error (Std.E)	(Std.E)	
Age		0.010	–0.004
		(0.015)	(0.018)
English proficiency		–0.120	0.411***
		(0.111)	(0.112)
English exposure at work/University/school		0.157	–0.033
		(0.107)	(0.118)
English exposure in community		–0.012	0.078
		(0.087)	(0.099)
English exposure at home		0.074	0.109
		(0.101)	(0.081)
Length of learning English		0.104**	–0.023
		(0.039)	(0.030)
	Chi–square	13.157	29.209
	P–Value	0.041	0.000
	N	91.0	93.0

GJT Context D

		L2 PJ	L2 CG
		Coefficient	Coefficient
	Standard Error (Std.E)	(Std.E)	
Age		–0.008	–0.015
		(0.015)	(0.020)
English proficiency		0.355**	0.889***
		(0.113)	(0.136)
English exposure at work/University/school		0.266*	0.118
		(0.106)	(0.119)
English exposure in community		0.133	0.130
		(0.087)	(0.099)
English exposure at home		–0.127	0.040
		(0.103)	(0.083)
Length of learning English		0.067	–0.015
		(0.042)	(0.033)
	Chi–square	37.724	80.343
	P–Value	0.000	0.000
	N	91.0	93.0

GJT Context E

		L2 PJ	L2 CG
		Coefficient	Coefficient
	Standard Error (Std.E)	(Std.E)	
		(0.015)	(0.023)
English proficiency		0.417***	0.665***
		(0.115)	(0.132)
English exposure at work/University/school		0.147	0.097
		(0.105)	(0.128)
English exposure in community		0.125	0.182
		(0.086)(	0.109)
English exposure at home		0.150	0.234*
		(0.102)	(0.102)
Length of learning English		0.092*	0.018
		(0.042)	(0.040)
	Chi–square	53.672	76.904
	P–Value	0.000	0.000
	N	91.0	93.0

GJT Context F

		L2 PJ	L2 CG
		Coefficient	Coefficient
	Standard Error (Std.E)	(Std.E)	
Age		0.020	0.019
		(0.016)	(0.023)
English proficiency		0.113	0.574***
		(0.108)	(0.124)
English exposure at work/University/school		0.301**	0.099
		(0.107)	(0.127)
English exposure in community		0.017	0.079
		(0.084)	(0.108)
English exposure at home		0.025	0.128
		(0.100)	(0.098)
Length of learning English		0.101*	–0.006
		(0.042)	(0.038)
	Chi–square	30.880	51.376
	P–Value	0.000	0.000
	N	91.0	93.0

GJT Context A

		L3 PJ–CG–E	L3 PJ–E–CG
		Coefficient	Coefficient
	Standard Error (Std.E)	(Std.E)	(Std.E)
Age		0.005	0.040
		(0.021)	(0.026)
English proficiency		0.642***	0.841***
		(0.177)	(0.218)
English exposure at work/University/school		–0.174	–0.090
		(0.184)	(0.214)
English exposure in community		0.174	0.160
		(0.169)	(0.207)
English exposure at home		–0.047	–0.006
		(0.117)	(0.132)
Length of learning English		–0.037	0.079
		(0.054)	(0.075)
Arabic proficiency		–0.050	0.277
		(0.151)	(0.166)
Length of learning Greek		0.032	–0.091
		(0.057)	(0.064
Greek proficiency		0.449*	0.055
		(0.183)	(0.194)
	Chi–square	29.483	32.316
	P–Value	0.001	0.000
	N	52.0	50.0

GJT Context B

		L3 PJ–CG–E	L3 PJ–E–CG
		Coefficient	Coefficient
	Standard Error (Std.E)	(Std.E)	
Age		0.005	0.028
		(0.021)	(0.021)
English proficiency		0.619***	0.557**
		(0.169)	(0.192)
English exposure at work/University/school		0.018	–0.046
		(0.156)	(0.215)
English exposure in community		–0.064	0.077
		(0.158)	(0.186)
English exposure at home		0.157	0.182
		(0.112)	(0.129)
Length of learning English		0.123*	–0.064
		(0.055)	(0.055)
Arabic proficiency		–0.162	–0.270
		(0.153)	(0.152)
Length of learning Greek		–0.125*	–0.101
		(0.052)	(0.060)
Greek proficiency		–0.659***	–0.166
		(0.199)	(0.177)
	Chi–square	41.442	33.272
	P–Value	0.000	0.000
	N	52.0	50.0

GJT Context C

		L3 PJ–CG–E	L3 PJ–E–CG
		Coefficient	Coefficient
	Standard Error	(Std.E)	(Std.E)
Age		−0.027	0.009
		(0.038)	(0.021)
English proficiency		1.617**	0.361*
		(0.514)	(0.181)
English exposure at work/University/school		0.486	−0.096
		(0.255)	(0.203)
English exposure in community		−0.532	0.140
		(0.293)	(0.185)
English exposure at home		0.202	0.135
		(0.199)	(0.126)
Length of learning English		0.435*	0.092
		(0.176)	(0.065)
Arabic proficiency		−0.492	0.084
		(0.283)	(0.148)
Length of learning Greek		−0.207	−0.003
		(0.109)	(0.058)
Greek proficiency		1.505***	0.395*
		(0.454)	(0.180)
	Chi–square	83.929	23.009
	P–Value	0.000	0.006
	N	52.0	50.0

GJT Context D

		L3 PJ–CG–E	L3 PJ–E–CG
		Coefficient	Coefficient
	(Standard Error)	(Std.E)	(Std.E)
Age		−0.014	0.001
		(0.021)	(0.021)
English proficiency		0.487**	0.833***
		(0.160)	(0.214)
English exposure at work/University/school		0.182	−0.053
		(0.154)	(0.213)
English exposure in community		0.055	0.172
		(0.152)	(0.192)
English exposure at home		−0.079	−0.111
		(0.109)	(0.131)
Length of learning English		−0.001	−0.033
		(0.050)	(0.060)
Arabic proficiency		0.211	0.177
		(0.150)	(0.154)
Length of learning Greek		0.036	−0.072
		(0.047)	(0.062)
Greek proficiency		−0.016	−0.221
		(0.165)	(0.184)
	Chi–square	23.734	30.301
	P–Value	0.005	0.000
	N	52.0	50.0

GJT Context E

		L3 PJ–CG–E	L3 PJ–E–CG
		Coefficient	Coefficient
	Standard Error	(Std.E)	(Std.E)
Age		0.037	0.048*
		(0.023)	(0.023)
English proficiency		0.884***	0.516**
		(0.209)	(0.197)
English exposure at work/University/school		0.228	0.487*
		(0.177)	(0.235)
English exposure in community		–0.176	–0.147
		(0.180)	(0.206)
English exposure at home		0.001	–0.029
		(0.124)	(0.134)
Length of learning English		0.066	–0.129*
		(0.061)	(0.061)
Arabic proficiency		–0.268	–0.338*
		(0.168)	(0.158)
Length of learning Greek		–0.025	–0.068
		(0.065)	(0.063)
Greek proficiency		0.154	0.355
		(0.194)	(0.201)
	Chi–square	53.108	38.011
	P–Value	0.000	0.000
	N	52.0	50.0

GJT Context F

		L3 PJ–CG–E	L3 PJ–E–CG
		Coefficient	Coefficient
		(Std.E)	(Std.E)
Age		0.008	0.053*
		(0.021)	(0.022)
English proficiency		0.664***	0.457*
		(0.179)	(0.181)
English exposure at work/University/school		–0.029	0.135
		(0.172)	(0.198)
English exposure in community		0.061	0.148
		(0.164)	(0.179)
English exposure at home		–0.006	–0.217
		(0.117)	(0.126)
Length of learning English		0.066	–0.053
		(0.055)	(0.053)
Arabic proficiency		0.025	–0.229
		(0.153)	(0.146)
Length of learning Greek		–0.020	–0.044
		(0.057)	(0.058)
Greek proficiency		0.436*	0.147
		(0.184)	(0.167)
	Chi–square	37.735	25.754
	P–Value	0.000	0.002
	N	52.0	5

Appendix 19: Grammaticality judgment task (GJT): L2/L3 groups' marginal effects computed from the Ordered Probit Model in contexts A and C

Only results related to score 4 were reported in the study.

```
-----------------------------------------------------------------------------
                      (1)             (2)             (3)             (4)
GJT   L2 PJ group  Model 5.(i): Context A
-----------------------------------------------------------------------------
Age             -0.000119       -0.000733       -0.000516        0.00137
                 (-0.26)         (-0.27)         (-0.26)          (0.27)
ENProf           -0.0102         -0.0631**       -0.0444**        0.118***
                 (-1.23)         (-2.97)         (-2.81)          (3.66)
EnExUni          -0.00623        -0.0384*        -0.0270          0.0716*
                 (-1.08)         (-2.07)         (-1.90)          (2.17)
EnExComm          0.00113         0.00698         0.00491        -0.0130
                  (0.44)          (0.46)          (0.46)         (-0.46)
EnExHome         -0.00252        -0.0155         -0.0109          0.0290
                 (-0.73)         (-0.88)         (-0.88)          (0.89)
LL_En             0.000390        0.00241         0.00169        -0.00449
                  (0.34)          (0.34)          (0.35)         (-0.35)
-----------------------------------------------------------------------------

GJT   L2 PJ group   Model 5.(iii): Context C
-----------------------------------------------------------------------------
Age             -0.000666        -0.00277         0.00232         0.00111
                 (-0.60)         (-0.64)          (0.63)          (0.63)
ENProf            0.00821         0.0341          -0.0286         -0.0137
                  (0.97)          (1.10)          (-1.10)         (-1.04)
EnExUni          -0.0107         -0.0445           0.0374          0.0179
                 (-1.21)         (-1.50)           (1.50)          (1.35)
EnExComm          0.000796        0.00330         -0.00277        -0.00133
                  (0.13)          (0.13)          (-0.13)         (-0.13)
EnExHome         -0.00508        -0.0211           0.0177          0.00847
                 (-0.70)         (-0.74)           (0.74)          (0.72)
LL_En            -0.00707        -0.0294**          0.0246**        0.0118*
                 (-1.71)         (-2.74)           (2.73)          (2.13)
-----------------------------------------------------------------------------
N                 91              91              91              91
-----------------------------------------------------------------------------
z statistics in parentheses          * p<0.05, ** p<0.01, *** p<0.001
```

```
--------------------------------------------------------------------------------
L2 CG group  Model 6.(i): Context A
--------------------------------------------------------------------------------
Age                   -0.00137          0.00321           0.00251          -0.00572
                      (-0.80)           (1.04)            (1.03)           (-1.05)
ENProf                -0.0406**         -0.0714***        -0.0558***        0.127***
                      (-2.62)           (-3.74)           (-3.32)           (4.49)
EnExUni               -0.00699          -0.0305           -0.0239           0.0544
                      (-0.77)           (-1.57)           (-1.42)           (1.55)
EnExComm              -0.00557          0.00435           0.00340          -0.00774
                      (-0.71)           (0.26)            (0.26)           (-0.26)
EnExHome              -0.00903          -0.0203           -0.0159           0.0362
                      (-1.18)           (-1.46)           (-1.50)           (1.53)
LL_En                 0.000448          -0.00645          -0.00504          0.0115
                      (0.17)            (-1.19)           (-1.20)           (1.22)
--------------------------------------------------------------------------------
L2 CG group Model 6.(iii): Context C
--------------------------------------------------------------------------------
Age                   -0.00318          0.000885          0.000207         -0.00109
                      (-1.26)           (0.22)            (0.22)           (-0.22)
ENProf                -0.0750***        -0.0883***        -0.0207           0.109***
                      (-4.07)           (-3.83)           (-1.31)           (3.99)
EnExUni               -0.0146           0.00700           0.00164          -0.00864
                      (-0.92)           (0.28)            (0.28)           (-0.28)
EnExComm              -0.00422          -0.0167           -0.00391          0.0206
                      (-0.32)           (-0.79)           (-0.68)           (0.79)
EnExHome              -0.00321          -0.0235           -0.00549          0.0289
                      (-0.30)           (-1.33)           (-1.09)           (1.39)
LL_En                 -0.000422         0.00498           0.00117          -0.00614
                      (-0.10)           (0.76)            (0.69)           (-0.76)
--------------------------------------------------------------------------------
N                     93                93                93               93
--------------------------------------------------------------------------------
z statistics in parentheses            * p<0.05, ** p<0.01, *** p<0.001
```

```
------------------------------------------------------------------------
                    (1)            (2)            (3)            (4)
```
GJT L3 PJ−CG−E Model 7.(i): Context A
```
------------------------------------------------------------------------
Age            -0.000398      -0.000551      -0.000269       0.00122
                (-0.23)        (-0.23)        (-0.23)         (0.23)
ENProf          -0.0530*       -0.0734**      -0.0358         0.162***
                (-1.99)        (-2.81)        (-1.69)         (5.19)
EnExUni          0.0144         0.0199         0.00972       -0.0440
                 (0.89)         (0.92)         (0.82)        (-0.95)
EnExComm        -0.0144        -0.0199        -0.00972        0.0440
                (-0.98)        (-1.01)        (-0.79)         (1.02)
EnExHome         0.00385        0.00533        0.00260       -0.0118
                 (0.39)         (0.40)         (0.39)        (-0.40)
LL_En            0.00310        0.00429        0.00209       -0.00948
                 (0.67)         (0.70)         (0.60)        (-0.69)
Arabic           0.00414        0.00572        0.00279       -0.0127
                 (0.33)         (0.33)         (0.33)        (-0.33)
LL_Gr           -0.00260       -0.00360       -0.00176        0.00797
                (-0.54)        (-0.55)        (-0.52)         (0.56)
GRProf          -0.0371        -0.0513*       -0.0250         0.113**
                (-1.79)        (-2.11)        (-1.38)         (2.67)
------------------------------------------------------------------------
```
L3 PJ−CG−E Model 7.(iii): Context C
```
------------------------------------------------------------------------
Age             0.000628       0.00130       -0.000237      -0.00169
                 (0.79)         (0.62)        (-0.31)        (-0.73)
ENProf          -0.0370        -0.0766*        0.0139         0.0997***
                (-1.67)        (-2.00)         (0.37)         (6.56)
EnExUni         -0.0111        -0.0230         0.00420        0.0300*
                (-1.29)        (-1.66)         (0.38)         (2.00)
EnExComm         0.0122         0.0252*       -0.00459       -0.0328*
                 (1.12)         (2.23)        (-0.39)        (-2.04)
EnExHome        -0.00462       -0.00957        0.00174        0.0124
                (-0.90)        (-1.18)         (0.50)         (0.93)
LL_En           -0.00997       -0.0206         0.00376        0.0268***
                (-1.77)        (-1.47)         (0.35)         (3.76)
Arabic           0.0113         0.0233        -0.00425       -0.0304
                 (1.77)         (1.18)        (-0.36)        (-1.79)
LL_Gr            0.00473        0.00979       -0.00178       -0.0127*
                 (1.43)         (1.37)        (-0.35)        (-2.36)
GRProf          -0.0345        -0.0713         0.0130         0.0928***
                (-1.93)        (-1.83)         (0.37)         (4.94)
------------------------------------------------------------------------
N                  52             52             52             52
z statistics in parentheses         * p<0.05, ** p<0.01, *** p<0.001
------------------------------------------------------------------------
                    (1)            (2)            (3)            (4)
```

GJT   Model 8.(i): Context A   L3 PJ-E-CG

Age	−0.00141	−0.00793	−0.00172	0.00965
	(−1.10)	(−1.55)	(−1.17)	(1.62)
ENProf	−0.0288	−0.167***	−0.0361	0.203***
	(−1.41)	(−4.67)	(−1.39)	(5.33)
EnExUni	−0.00630	0.0179	0.00387	−0.0217
	(−0.60)	(0.42)	(0.42)	(−0.42)
EnExComm	−0.00345	−0.0318	−0.00689	0.0387
	(−0.38)	(−0.78)	(−0.69)	(0.78)
EnExHome	0.00385	0.00112	0.000243	−0.00136
	(0.60)	(0.04)	(0.04)	(−0.04)
LL_En	−0.00353	−0.0156	−0.00339	0.0190
	(−0.95)	(−1.05)	(−0.90)	(1.07)
Arabic	0.00887	−0.0550	−0.0119	0.0669
	(0.98)	(−1.79)	(−0.98)	(1.69)
LL_Gr	−0.00212	0.0180	0.00389	−0.0218
	(−0.65)	(1.44)	(1.05)	(−1.47)
GRProf	0.0149	−0.0109	−0.00237	0.0133
	(1.16)	(−0.28)	(−0.28)	(0.29)

L3 PJ-E-CG Model 8.(iii): Context C

Age	−0.000991	−0.00238	0.000587	0.00179
	(−0.89)	(−0.42)	(0.38)	(0.43)
ENProf	−0.0195	−0.0977*	0.0241	0.0736*
	(−1.09)	(−2.14)	(1.24)	(2.00)
EnExUni	0.00161	0.0259	−0.00640	−0.0195
	(0.21)	(0.47)	(−0.46)	(−0.47)
EnExComm	−0.00268	−0.0379	0.00935	0.0285
	(−0.38)	(−0.76)	(0.65)	(0.76)
EnExHome	−0.00638	−0.0365	0.00900	0.0275
	(−0.92)	(−1.11)	(0.94)	(1.06)
LL_En	0.00223	−0.0249	0.00616	0.0188
	(0.84)	(−1.44)	(0.99)	(1.44)
Arabic	0.00945	−0.0226	0.00559	0.0171
	(0.98)	(−0.57)	(0.52)	(0.57)
LL_Gr	0.00352	0.000859	−0.000212	−0.000647
	(0.94)	(0.05)	(−0.05)	(−0.05)
GRProf	0.00581	−0.107*	0.0264	0.0805*
	(0.74)	(−2.32)	(1.22)	(2.24)
N	50	50	50	50

z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

Appendix 20: Grammaticality judgment task (GJT): L2/L3 groups' marginal effects computed from the Ordered Probit Model in contexts B and D

Only results related to score 4 were reported in the study.

```
--------------------------------------------------------------------------
                        (1)             (2)             (3)             (4)
L2 PJ       Model 5.(ii): Context B
--------------------------------------------------------------------------
Age                -0.000674       -0.00682        0.000668         0.00683
                     (-1.02)        (-1.67)          (0.96)          (1.67)
ENProf              -0.0112        -0.113***         0.0111         0.113***
                     (-1.26)        (-4.30)          (1.23)          (3.96)
EnExUni            0.000315        0.00319        -0.000312        -0.00320
                      (0.11)         (0.11)         (-0.11)         (-0.11)
EnExComm           -0.00468        -0.0474*         0.00464         0.0475*
                     (-1.12)        (-2.09)          (1.08)          (2.06)
EnExHome           -0.00259        -0.0262          0.00256         0.0262
                     (-0.76)        (-0.98)          (0.75)          (0.98)
LL_En              -0.00192        -0.0194          0.00190         0.0194
                     (-1.06)        (-1.67)          (0.90)          (1.72)
--------------------------------------------------------------------------

Model 5.(iv): Context D
--------------------------------------------------------------------------
Age                0.000468        0.00176       -0.0000357        -0.00219
                      (0.51)         (0.52)         (-0.18)         (-0.52)
ENProf              -0.0214        -0.0805***        0.00163        0.100***
                     (-1.93)        (-3.37)          (0.19)          (3.41)
EnExUni             -0.0160        -0.0602**         0.00122        0.0750**
                     (-1.76)        (-2.61)          (0.19)          (2.61)
EnExComm           -0.00803        -0.0302          0.000614        0.0376
                     (-1.32)        (-1.53)          (0.19)          (1.57)
EnExHome           0.00764         0.0287         -0.000583        -0.0358
                      (1.12)         (1.22)         (-0.19)         (-1.25)
LL_En              -0.00402        -0.0151          0.000307        0.0188
                     (-1.37)        (-1.58)          (0.19)          (1.62)
--------------------------------------------------------------------------
N                        91             91              91              91
--------------------------------------------------------------------------
z statistics in parentheses        * p<0.05, ** p<0.01, *** p<0.001
```

GJT L2 CG Model 6.(ii): Context B

Age	−0.00318	−0.00341	0.00234	0.00424
	(−1.26)	(−1.34)	(1.23)	(1.33)
ENProf	−0.0750***	−0.0803***	0.0553***	0.100***
	(−4.07)	(−4.89)	(3.97)	(4.41)
EnExUni	−0.0146	−0.0156	0.0107	0.0194
	(−0.92)	(−0.90)	(0.91)	(0.91)
EnExComm	−0.00422	−0.00451	0.00311	0.00562
	(−0.32)	(−0.32)	(0.32)	(0.32)
EnExHome	−0.00321	−0.00344	0.00237	0.00428
	(−0.30)	(−0.30)	(0.30)	(0.30)
LL_En	−0.000422	−0.000451	0.000311	0.000563
	(−0.10)	(−0.10)	(0.10)	(0.10)
N	93	93	93	93

z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

| | (1) | (2) | (3) | (4) |

Model 6.(iv): Context D

Age	0.00155	0.00131	0.000456	−0.00331
	(0.75)	(0.78)	(0.66)	(−0.75)
ENProf	−0.0929***	−0.0781***	−0.0273*	0.198***
	(−5.55)	(−5.37)	(−2.30)	(11.28)
EnExUni	−0.0123	−0.0103	−0.00361	0.0263
	(−1.01)	(−0.98)	(−0.81)	(0.98)
EnExComm	−0.0136	−0.0114	−0.00399	0.0290
	(−1.31)	(−1.28)	(−1.16)	(1.32)
EnExHome	−0.00420	−0.00353	−0.00123	0.00896
	(−0.49)	(−0.48)	(−0.51)	(0.49)
LL_En	0.00157	0.00132	0.000462	−0.00336
	(0.46)	(0.45)	(0.46)	(−0.46)
N	93	93	93	93

z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

```
--------------------------------------------------------------------------------
                      (1)              (2)              (3)              (4)
GJT  L3 PJ-CG-E Model 7.(ii): Context B
--------------------------------------------------------------------------------
Age              -0.000721        -0.000419         0.000389         0.000751
                   (-0.22)          (-0.23)           (0.22)           (0.22)
ENProf           -0.0959***       -0.0558**          0.0517**         0.100***
                   (-3.43)          (-2.85)           (3.06)           (3.56)
EnExUni          -0.00271         -0.00158           0.00146          0.00283
                   (-0.11)          (-0.11)           (0.11)           (0.11)
EnExComm          0.00993          0.00578          -0.00535         -0.0104
                    (0.41)           (0.40)          (-0.40)          (-0.40)
EnExHome         -0.0243          -0.0142            0.0131           0.0254
                   (-1.38)          (-1.32)           (1.27)           (1.43)
LL_En            -0.0191*         -0.0111            0.0103           0.0199*
                   (-2.23)          (-1.77)           (1.72)           (2.36)
Arabic            0.0251           0.0146           -0.0135          -0.0262
                    (1.03)           (1.04)          (-0.92)          (-1.11)
LL_Gr             0.0194*          0.0113*          -0.0104          -0.0202**
                    (2.31)           (1.97)          (-1.78)          (-2.64)
GRProf            0.102***         0.0594*          -0.0551*         -0.107**
                    (3.30)           (2.37)          (-2.58)          (-3.28)
--------------------------------------------------------------------------------
Model 7.(iv): Context D
--------------------------------------------------------------------------------
Age               0.00275          0.00131          -0.00103         -0.00304
                    (0.67)           (0.65)          (-0.67)          (-0.67)
ENProf           -0.0949**        -0.0453*           0.0353*          0.105**
                   (-3.02)          (-2.50)           (2.11)           (3.08)
EnExUni          -0.0355          -0.0169            0.0132           0.0392
                   (-1.19)          (-1.15)           (1.12)           (1.19)
EnExComm         -0.0108          -0.00514           0.00402          0.0119
                   (-0.37)          (-0.35)           (0.36)           (0.36)
EnExHome          0.0155           0.00737          -0.00575         -0.0171
                    (0.73)           (0.71)          (-0.70)          (-0.73)
LL_En             0.000197         0.0000940        -0.0000734       -0.000218
                    (0.02)           (0.02)          (-0.02)          (-0.02)
Arabic           -0.0411          -0.0196            0.0153           0.0454
                   (-1.43)          (-1.29)           (1.31)           (1.39)
LL_Gr            -0.00700         -0.00334           0.00261          0.00773
                   (-0.76)          (-0.74)           (0.73)           (0.76)
GRProf            0.00311          0.00148          -0.00116         -0.00343
                    (0.10)           (0.10)          (-0.10)          (-0.10)
--------------------------------------------------------------------------------
N                      52               52               52               52
Z statistics in parentheses          * p<0.05, ** p<0.01, *** p<0.001
--------------------------------------------------------------------------------
                      (1)              (2)              (3)              (4)
```

L3 PJ−E−CG **Model 8.(ii): Context B**
```
-------------------------------------------------------------------------
Age               -0.000991      -0.00588        0.00194        0.00492
                  (-0.89)        (-1.41)         (1.28)         (1.35)
ENProf            -0.0195        -0.116**         0.0382         0.0969**
                  (-1.09)        (-2.97)         (1.62)         (3.24)
EnExUni            0.00161        0.00957        -0.00316       -0.00802
                  (0.21)         (0.21)          (-0.21)        (-0.22)
EnExComm          -0.00268       -0.0159          0.00525        0.0133
                  (-0.38)        (-0.41)         (0.41)         (0.41)
EnExHome          -0.00638       -0.0378          0.0125         0.0317
                  (-0.92)        (-1.42)         (1.18)         (1.43)
LL_En              0.00223        0.0132         -0.00436       -0.0111
                  (0.84)         (1.18)          (-1.09)        (-1.15)
Arabic             0.00945        0.0560         -0.0185        -0.0469
                  (0.98)         (1.76)          (-1.23)        (-1.92)
LL_Gr              0.00352        0.0208         -0.00689       -0.0175
                  (0.94)         (1.71)          (-1.29)        (-1.72)
GRProf             0.00581        0.0345         -0.0114        -0.0289
                  (0.74)         (0.94)          (-0.84)        (-0.95)
-------------------------------------------------------------------------
```

Model 8.(iv): Context D
```
-------------------------------------------------------------------------
Age               -0.000991      -0.000136       -0.0000394      0.000176
                  (-0.89)        (-0.04)         (-0.04)        (0.04)
ENProf            -0.0195        -0.151***       -0.0436         0.194***
                  (-1.09)        (-4.26)         (-1.52)        (5.37)
EnExUni            0.00161        0.00959         0.00277       -0.0124
                  (0.21)         (0.25)          (0.26)         (-0.25)
EnExComm          -0.00268       -0.0311         -0.00899        0.0401
                  (-0.38)        (-0.89)         (-0.82)        (0.91)
EnExHome          -0.00638        0.0202          0.00583       -0.0260
                  (-0.92)        (0.87)          (0.68)         (-0.85)
LL_En              0.00223        0.00606         0.00175       -0.00781
                  (0.84)         (0.57)          (0.50)         (-0.56)
Arabic             0.00945       -0.0321         -0.00928        0.0414
                  (0.98)         (-1.20)         (-0.82)        (1.14)
LL_Gr              0.00352        0.0131          0.00379       -0.0169
                  (0.94)         (1.18)          (0.96)         (-1.20)
GRProf             0.00581        0.0400          0.0116        -0.0516
                  (0.74)         (1.22)          (1.01)         (-1.25)
-------------------------------------------------------------------------
N                  50             50              50             50
Z statistics in parentheses        * p<0.05, ** p<0.01, *** p<0.001
```

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Appendix 21: Grammaticality judgment task (GJT): L2/L3 groups' marginal effects computed from the Ordered Probit Model in contexts E and F

Only results related to score 4 were reported in the study.

	(1)	(2)	(3)	(4)
GJT L2 PJ Model 5.(v): Context E				
Age	0.00166	0.00390	−0.00103	−0.00453
	(1.29)	(1.34)	(−1.06)	(−1.39)
ENProf	−0.0329**	−0.0774***	0.0204	0.0898***
	(−2.60)	(−3.77)	(1.88)	(3.75)
EnExUni	−0.0116	−0.0273	0.00719	0.0317
	(−1.30)	(−1.43)	(1.29)	(1.39)
EnExComm	−0.00988	−0.0233	0.00613	0.0270
	(−1.36)	(−1.43)	(1.13)	(1.48)
EnExHome	−0.0118	−0.0279	0.00734	0.0324
	(−1.34)	(−1.49)	(1.16)	(1.50)
LL_En	−0.00726*	−0.0171*	0.00450	0.0198*
	(−1.96)	(−2.14)	(1.48)	(2.24)
Model 5.(vi): Context F				
Age	−0.000977	−0.00440	−0.000259	0.00563
	(−1.03)	(−1.26)	(−0.41)	(1.29)
ENProf	−0.00555	−0.0250	−0.00147	0.0320
	(−0.93)	(−1.04)	(−0.38)	(1.04)
EnExUni	−0.0148	−0.0666**	−0.00391	0.0853**
	(−1.54)	(−3.00)	(−0.40)	(2.94)
EnExComm	−0.000844	−0.00380	−0.000223	0.00487
	(−0.20)	(−0.20)	(−0.19)	(0.20)
EnExHome	−0.00120	−0.00542	−0.000318	0.00694
	(−0.24)	(−0.25)	(−0.21)	(0.25)
LL_En	−0.00498	−0.0224*	−0.00132	0.0287*
	(−1.47)	(−2.40)	(−0.42)	(2.53)
N	91	91	91	91

z statistics in parentheses   * p<0.05, ** p<0.01, *** p<0.001

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--------------------------------------------------------------------------
                     (1)            (2)            (3)            (4)
GJT L2 CG    Model 6.(v): Context E
--------------------------------------------------------------------------
Age               -0.00109       -0.00315       -0.00232        0.00657
                  (-1.13)        (-1.29)        (-1.38)         (1.38)
ENProf            -0.0233        -0.0673***     -0.0497***      0.140***
                  (-1.84)        (-4.12)        (-4.06)         (6.84)
EnExUni           -0.00339       -0.00983       -0.00725        0.0205
                  (-0.69)        (-0.78)        (-0.71)         (0.75)
EnExComm          -0.00638       -0.0185        -0.0136         0.0385
                  (-1.28)        (-1.65)        (-1.60)         (1.72)
EnExHome          -0.00818       -0.0237*       -0.0175**       0.0493*
                  (-1.52)        (-2.03)        (-2.68)         (2.50)

LL_En             -0.000620      -0.00180       -0.00132        0.00374
                  (-0.43)        (-0.44)        (-0.45)         (0.44)
--------------------------------------------------------------------------
Model 6.(vi): Context F
--------------------------------------------------------------------------
Age               -0.00137       -0.000800      -0.00283        0.00500
                  (-0.80)        (-0.79)        (-0.85)         (0.85)
ENProf            -0.0406**      -0.0237*       -0.0840***      0.148***
                  (-2.62)        (-2.06)        (-5.03)         (6.50)
EnExUni           -0.00699       -0.00409       -0.0145         0.0256
                  (-0.77)        (-0.77)        (-0.76)         (0.78)
EnExComm          -0.00557       -0.00326       -0.0115         0.0203
                  (-0.71)        (-0.69)        (-0.73)         (0.73)
EnExHome          -0.00903       -0.00529       -0.0187         0.0330
                  (-1.18)        (-1.12)        (-1.33)         (1.33)
LL_En             0.000448       0.000262       0.000927       -0.00164
                  (0.17)         (0.16)         (0.16)         (-0.16)
--------------------------------------------------------------------------
N                    93             93             93             93
--------------------------------------------------------------------------
z statistics in parentheses        * p<0.05, ** p<0.01, *** p<0.001
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                        (1)             (2)             (3)             (4)
GJT  L3 PJ-CG-E    Model 7.(v): Context E
--------------------------------------------------------------------------------
Age                   -0.00116        -0.00586         0.00167         0.00535
                      (-1.03)         (-1.55)          (1.06)          (1.62)
ENProf                -0.0278         -0.140***        0.0399          0.128***
                      (-1.22)         (-3.64)          (1.25)          (6.43)
EnExUni               -0.00715        -0.0360          0.0103          0.0329
                      (-0.89)         (-1.38)          (1.32)          (1.23)
EnExComm               0.00552         0.0278         -0.00793        -0.0254
                       (0.77)          (0.97)         (-0.80)         (-0.99)
EnExHome              -0.0000313      -0.000158        0.0000450       0.000144
                      (-0.01)         (-0.01)          (0.01)          (0.01)
LL_En                 -0.00208        -0.0105          0.00298         0.00955
                      (-0.82)         (-1.06)          (0.76)          (1.15)
Arabic                 0.00843         0.0425         -0.0121         -0.0388
                       (0.99)          (1.54)         (-0.99)         (-1.66)
LL_Gr                  0.000775        0.00391        -0.00111        -0.00357
                       (0.37)          (0.38)         (-0.36)         (-0.38)
GRProf                -0.00484        -0.0244          0.00696         0.0223
                      (-0.68)         (-0.78)          (0.67)          (0.80)
--------------------------------------------------------------------------------
Model 7.(vi): Context F
--------------------------------------------------------------------------------
Age                   -0.000454       -0.00128         0.0000237       0.00171
                      (-0.37)         (-0.37)          (0.10)          (0.38)
ENProf                -0.0376         -0.106***        0.00197         0.142***
                      (-1.63)         (-3.46)          (0.10)          (5.43)
EnExUni                0.00166         0.00468        -0.0000868      -0.00625
                       (0.17)          (0.17)         (-0.08)         (-0.17)
EnExComm              -0.00345        -0.00972         0.000180        0.0130
                      (-0.37)         (-0.37)          (0.11)          (0.37)
EnExHome               0.000335        0.000944       -0.0000175      -0.00126
                       (0.05)          (0.05)         (-0.04)         (-0.05)
LL_En                 -0.00377        -0.0106          0.000197        0.0142
                      (-1.01)         (-1.17)          (0.10)          (1.26)
Arabic                -0.00140        -0.00395         0.0000733       0.00528
                      (-0.16)         (-0.16)          (0.10)          (0.16)
LL_Gr                  0.00115         0.00323        -0.0000600      -0.00432
                       (0.35)          (0.35)         (-0.10)         (-0.36)
GRProf                -0.0247         -0.0695*         0.00129         0.0929*
                      (-1.53)         (-2.19)          (0.11)          (2.55)
--------------------------------------------------------------------------------
N                       52              52              52              52
Z statistics in parentheses       * p<0.05, ** p<0.01, *** p<0.001
--------------------------------------------------------------------------------
                        (1)             (2)             (3)             (4)
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GJT  L3 PJ-E-CG       Model 8.(v): Context E
--------------------------------------------------------------------------
Age              -0.000991        -0.00888*        -0.000735         0.00962*
                   (-0.89)          (-2.07)          (-0.46)          (2.24)
ENProf            -0.0195          -0.0951**        -0.00787          0.103**
                   (-1.09)          (-2.71)          (-0.45)          (2.90)
EnExUni            0.00161         -0.0897*         -0.00742          0.0971*
                   (0.21)           (-2.36)          (-0.41)          (2.06)
EnExComm          -0.00268          0.0270           0.00224         -0.0293
                   (-0.38)          (0.73)           (0.35)           (-0.71)
EnExHome          -0.00638          0.00543          0.000449        -0.00588
                   (-0.92)          (0.22)           (0.19)           (-0.22)
LL_En              0.00223          0.0238*          0.00197         -0.0257*
                   (0.84)           (2.33)           (0.41)           (-2.08)
Arabic             0.00945          0.0622*          0.00515         -0.0673*
                   (0.98)           (2.12)           (0.46)           (-2.39)
LL_Gr              0.00352          0.0125           0.00103         -0.0135
                   (0.94)           (1.06)           (0.46)           (-1.12)
GRProf             0.00581         -0.0654          -0.00541          0.0708
                   (0.74)           (-1.79)          (-0.45)          (1.89)
--------------------------------------------------------------------------
Model 8.(vi): Context F
--------------------------------------------------------------------------
Age              -0.00327         -0.00924*         0.000609         0.0119**
                   (-1.54)          (-2.35)          (0.28)           (2.67)
ENProf            -0.0279          -0.0790*          0.00521          0.102**
                   (-1.63)          (-2.43)          (0.28)           (2.60)
EnExUni           -0.00824         -0.0233           0.00154         0.0300
                   (-0.64)          (-0.70)          (0.28)           (0.68)
EnExComm          -0.00906         -0.0257           0.00169         0.0330
                   (-0.78)          (-0.80)          (0.26)           (0.83)
EnExHome           0.0133           0.0376          -0.00248        -0.0484
                   (1.36)           (1.70)           (-0.29)          (-1.72)
LL_En              0.00322          0.00913         -0.000601        -0.0118
                   (0.89)           (1.01)           (-0.29)          (-0.98)
Arabic             0.0140           0.0395          -0.00260         -0.0509
                   (1.20)           (1.58)           (-0.28)          (-1.63)
LL_Gr              0.00271          0.00767         -0.000505        -0.00988
                   (0.71)           (0.75)           (-0.25)          (-0.77)
GRProf            -0.00900         -0.0255           0.00168          0.0328
                   (-0.80)          (-0.88)          (0.26)           (0.90)
--------------------------------------------------------------------------
N                       50               50               50               50
Z statistics in parentheses        * p<0.05, ** p<0.01, *** p<0.001
```

Appendix 22: Grammaticality judgment task (GJT): Multiple regression analyses

Contexts A and C

The results of the L2 PJ group in context A revealed that *Model 5.(i)* was not significant: (F(3, 74) =.560, p =.643, R^2=.022, $R^2_{Adjusted}$ =-.022). Their results in context C revealed that *Model 5.(iii)* was not significant: (F(3, 74) =.576, p =.633, R^2=.023, $R^2_{Adjusted}$ =-.016). The results of the L2 CG participants revealed that neither *Model 6.(i): Context A*: (F(3, 68) =.140, p =.936, R^2=.006, $R^2_{Adjusted}$ =-.0377) nor *Model 6.(iii): Context C* were significant: (F(3, 68) =.099, p =.960, R^2=.004, $R^2_{Adjusted}$ =-.039). The results of the L3 PJ–CG–E participants revealed that neither *Model 7.(i): Context A*: (F(4, 42) =.487, p =.745, R^2=.044, $R^2_{Adjusted}$ =-.047) nor *Model 7.(iii): Context C* were significant: (F(4, 42) =.554, p =.697, R^2=.050, $R^2_{Adjusted}$ =-0.040). The results of the L3 PJ–E–CG participants demonstrated that both *Model 8.(i): Context A was*: (F(4, 45) =1.103, p =.367, R^2=.089, $R^2_{Adjusted}$ =-.008) and *Model 8.(iii): Context C* were not significant as well: (F(4, 45) =1.904, p =.126, R^2=.145, $R^2_{Adjusted}$ =.069).

Contexts B and D

The results of the L2 PJ group in context B revealed that *Model 5.(ii)* was not significant: (F(3, 74) =.460, p =.711, R^2=.018, $R^2_{Adjusted}$ =-0.022). Their results in context D showed that *Model 5.(vi)* was not significant as well: (F(3, 74) =.434, p =.729, R^2=.017, $R^2_{Adjusted}$=-.023). The results of the L2 CG participants revealed that neither *Model 6.(ii): Context B*: (F(3, 68) =.520, p =.670, R^2 =.022, $R^2_{Adjusted}$ =-.021) nor *Model 6.(iv): Context D* were significant: (F(3, 68) =.418, p =.741, R^2=.018, $R^2_{Adjusted}$ =-.025). The results of the L3 PJ–CG–E participants indicated that *Model 3.(ii): Context B*: (F(4, 42) =.769, p =.552, R^2=.068, $R^2_{Adjusted}$ =-020) nor *Model 3.(iv): Context D* were significant: (F(4, 42) =.840, p =.508, R^2=.074, $R^2_{Adjusted}$ =-0.014). Similarly, the results of the L3 PJ–CG–E participants revealed that

both *Model 8.(iv): Context B* was: (F(4, 45) =1.125, p =.357, R^2=. 091, $R^2_{Adjusted}$ =.010) and Model 8.(ii): Context D were not significant: (F(4, 45) =2.011, p =.109, R^2=.152, $R^2_{Adjusted}$ =-.076).

Contexts E and F

More specifically, the results of the L2 PJ participants demonstrated that neither *Model 1.(v): Context E*: (F(3, 74) =.186, p=.906, R^2=.007, $R^2_{Adjusted}$ =-0.033) nor *Model 5.(vi): Context F* were significant: (F(3, 74) =.269, p =.847, R^2=.011, $R^2_{Adjusted}$ =-.29). The results of the L2 CG participants revealed that both *Model 6.(v): Context E*: (F(3, 68) =.571, p =.636, R^2=.025, $R^2_{Adjusted}$ =-.019) and *Model 2.(vi): Context F* were not significant: (F(3, 68) =.480, p =.697, R^2=.021, $R^2_{Adjusted}$ =-.023).

The results of the L3 PJ–CG–E participants revealed that both *Model 7.(v): Context E*: (F(4, 42) =1.425, p =242, R^2=.119, $R^2_{Adjusted}$ =.036) and *Model 7.(vi): Context F* were not significant: (F(4, 42) =1.269, p =.297, R^2=.108, $R^2_{Adjusted}$=.023). Similarly, the results of the L3 PJ–ECG participants revealed that neither *Model 8.(v): Context E*: (F(4, 45) =2.095, p =.097, R^2=.157, $R^2_{Adjusted}$ =.082) nor *Model 8.(vi): Context F* were significant: (F(4, 45) =.968, p =.434, R^2=.079, $R^2_{Adjuste d}$=-.003).