## The Second Language Acquisition of English Indefiniteness and Genericity by L1 Saudi Arabic and L1 Mandarin Speakers

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## **Abstract**

This study examines the second language acquisition of indefinite articles and generics, which are notoriously difficult for learners whose first language (L1) does not contain an article system (Mandarin speakers). It also compares their acquisition with that of learners whose L1 has one (Arabic speakers). The Arabic article system is similar to English in distinguishing articles based on definiteness. However, Arabic differs in that it does not have a phonologically overt indefinite article comparable with the English *a/an*. In addition, with respect to generics, they are always definite in Arabic; unlike in English, where they can be either definite or indefinite. Mandarin is topic-prominent and nouns are sensitive to position. In other words, indefinite nouns in Mandarin do not normally take the pre-verbal topic position; rather, they adopt the post-verbal position, unlike Arabic. The variations between Arabic and Mandarin create an environment in which it is possible to examine the role of L1 in the acquisition of indefinite articles and genericity in English, along with proficiency level as a secondary independent variable.

Data were collected from 20 English-speaking controls, 56 Saudi Arabic speakers and 66 Mandarin speakers who were categorised as lower-intermediate, upper-intermediate and advanced according to the Oxford Quick Placement Test. Both a forced-choice elicitation task and a story recall oral production task were administered, and two hypotheses were tested: a) the Full Transfer/Full Access Hypothesis (FT/FA) (Schwartz and Sprouse, 1994; 1996); and b) the Fluctuation Hypothesis (FH) (Ionin *et al.*, 2004; Ionin *et al.*, 2008).

The results do not fully support either hypothesis. The FH is challenged, as only the upper-intermediate Mandarin group overused *the* in [-definite, +specific] plural contexts; yet, the fluctuation was not evident at the individual level. Unexpectedly, the lower-intermediate and upper-intermediate Arabic groups overused *the* in [-definite, -specific] mass contexts. Conversely, the Full Transfer part of the FT/FA is not fully supported, since the Mandarin speakers were not sensitive to noun position. Moreover, both groups correctly used the non-generic indefinite article *a*. The Arabic speakers did not transfer their definite generics in Arabic; rather they, and the Mandarin speakers, frequently omitted them, indicating that semantics affects article choice regardless of the L1.

To my late father and my mother, brothers and sisters

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## **Abbreviations**

**Adv** Advanced

**Ar** Arabic

**ASF** Age of Start of Formal English Language Classes

**C** Complementiser

CL Classifier

**CIP** Classifier Phrase

**CP** Complementiser Phrase

**D** Determiner

**DP** Determiner Phrase

**EFL** English as a Foreign Language

**ESL** English as a Second Language

**FH** Fluctuation Hypothesis

FT/FA Full Transfer/Full Access Hypothesis

**ID** Identification Number

**IP** Inflectional Phrase

L1 First Language

L1A First Language Acquisition

L2 Second Language

**L2A** Second Language Acquisition (the process)

LI Lower-Intermediate

**LOR** Length of Residence

Man Mandarin

MSA Modern Standard Arabic

MSIH Missing Surface Inflection Hypothesis

N Noun

**n.s** Non-significant

**NP** Noun Phrase

NS Native Speaker (Controls)

Num Number

**NumeP** Numeral Phrase

**NumP** Number Phrase

OGT Organic Grammar Theory

**OQPT** Oxford Quick Placement Test

**RDH** Representational Deficit Hypothesis

**SLA** Second Language Acquisition (the field)

**SP** Specificity Phrase

**Spec** Specifier

**TP** Tense Phrase

**UG** Universal Grammar

**UI** Upper-Intermediate

V Verb

**VP** Verb Phrase

## **Chapter 1. Introduction**

The second language acquisition (L2A) of English articles is difficult for second language (L2) learners of English for two main reasons (Ionin, Ko and Wexler, 2004; Ionin, Zubizarreta and Maldonado, 2008; Robertson, 2000; Snape, 2006; Zdorenko and Paradis, 2008): a) the English article system takes time to acquire, as it encodes complex syntactic and semantic properties; and b) languages differ in terms of whether they have an article system, such as Arabic and English, or not, such as Chinese and Russian (Sarko, 2009). Languages that contain an article system may vary in their semantic properties; for example, Arabic and English distinguish articles based on definiteness, but they are based on specificity in Samoan. These variations allow researchers of second language acquisition (SLA) to evaluate the role of Universal Grammar (UG) and the impact of a first language (L1) on the L2A of articles.

The present study is an extension of previous research into the L2A of articles (e.g., Almahboob, 2009; Hawkins *et al.*, 2006; Ionin *et al.*, 2004; Ionin and Montrul, 2010; Ionin *et al.*, 2008; Robertson, 2000; Sarko, 2009; Snape, 2006; 2009; Snape, García Mayo and Gürel, 2013). This study compares two groups of L2 English speakers, one [+article] (Arabic) and one [-article] (Mandarin). On the one hand, the Arabic article system is similar to English in that it contains a phonologically overt definite article *al*-(English has *the*) and a phonologically covert indefinite article  $\phi$  (English has  $\phi$ ). Arabic differs from English in that it does not have a phonologically overt indefinite article (English has a/an). Moreover, generics are always definite in Arabic, whereas they can be either definite or indefinite in English. Mandarin does not have an article system.

Arabic grammaticalises articles based on definiteness, while Mandarin lacks articles and definiteness; therefore, the present study also addresses whether or not L2 learners display fluctuation in their article choice. In this context, fluctuation means that L2 learners whose L1 lacks articles would fluctuate between specificity and definiteness. Ionin *et al.* (2004) propose that definiteness and specificity are universal semantic notions relative to the Article Choice Parameter governing article choice in two-article languages. The Article Choice Parameter consists of two settings: [+/-definite] and [+/-specific] (Ionin *et al.*, 2004: 5):

- a. Definiteness: when 'the speaker and hearer presuppose<sup>1</sup> the existence of a unique<sup>2</sup> individual in the set denoted by the [noun phrase] NP'.
- b. Specificity: when 'the speaker intends to refer to a unique individual in the set denoted by the [noun phrase] NP and considers this individual to possess some noteworthy property'.

Fluctuation between selecting articles based on definiteness or specificity would result in the overuse of *the* in [-definite, +specific] contexts, a in [+definite, -specific] singular contexts and  $\phi$  in [+definite, -specific] plural and mass contexts; however, English links the usage of *the* to definiteness.

Furthermore, this thesis also examines a phenomenon related to whether or not L2 learners of English articles are sensitive to a noun appearing in subject or object position, in connection with articles. This factor has not been explored in any of the aforementioned studies. In particular, Mandarin is topic-prominent, and indefinite nouns cannot take the pre-verbal topic position; rather, they take the post-verbal position (Li and Thompson, 1981), unlike in Arabic. Such variations create an appropriate environment in which to examine the role of L1 background in the L2A of English articles.

Moreover, the thesis examines whether or not Arabic and Mandarin speakers perform similarly, especially given that one of the two languages shares a feature related to articles in the other language. While Arabic is a [+article] language, it varies from many languages, including English, in that it lacks a phonologically overt indefinite article. Consequently, an important factor will be Arabic speakers' usage of English articles in contexts that require a phonologically overt indefinite article. Therefore, as Mandarin is [-article] and we assume L1 transfer effects, Arabic and Mandarin speakers should perform similarly in contexts that require a phonologically overt indefinite article.

The significance of the present study lies in how comparing these two groups will contribute to the on-going debate of: a) the role of L1 background; and b) the extent to which L2A is UG-constrained. More specifically, how their L1 affects their acquisition, and how UG constrains Arabic and Mandarin speakers' route of article acquisition. To investigate the two groups' usage of English articles, the present study tests the following two hypotheses for the effects of transfer and the role of UG: a) the Full

<sup>&</sup>lt;sup>1</sup> A presupposition is 'a statement that must be true in order for another statement to have a truth value at all' (Ionin, 2003: 33).

<sup>&</sup>lt;sup>2</sup> Uniqueness means 'the definite article signals that there is just one entity' (Lyons, 1999: 8).

Transfer/Full Access Hypothesis (FT/FA) (Schwartz and Sprouse, 1994; 1996); and b) the Fluctuation Hypothesis (FH) (Ionin *et al.*, 2004; Ionin *et al.*, 2008). This leads to the following research questions:

- 1. Will L2 learners' article usage reflect L1 transfer?
- 2. Will Mandarin speakers fluctuate between definiteness and specificity in [-definite, +specific] contexts, and will Arabic speakers do likewise in [-definite, +specific] singular contexts?
- 3. Will Arabic and Mandarin speakers with rising overall proficiency restructure away from their L1-transferred grammars to converge on the L2?

The thesis is structured as follows. Chapter Two discusses the distribution of articles in English and Arabic, and their absence in Mandarin. It also discusses the Article Choice Parameter, generics, and the Determiner Phrase (DP) syntax. Chapter Three discusses UG-based theories and hypotheses in SLA, and the role of word position. Chapter Four presents the methodology used to investigate the L2A of English articles in terms of the selection of the participants, the materials used, the procedures followed and data coding. Chapter Five presents the results of the experiment. Chapter Six discusses the findings in relation to the FT/FA and the FH and previous studies. Finally, Chapter Seven presents the conclusions of the research.

## Chapter 2. The Nominal Domain in English, Arabic and Mandarin

#### 2.1 Introduction

Languages differ in relation to whether they have an article system, such as Arabic and English, or not, such as Mandarin and Japanese. These differences between languages have implications for L2 learners of English if we assume L1 influence. The present study examines the L2A of English articles by Arabic speakers and Mandarin speakers, and assumes that the former outperform the latter. However, even the question of what transfers is subject to some debate.

When articles exist, there are two additional aspects that need to be established by learners: first, the complex semantic properties of articles in terms of the relationship between context and usage; second, the syntactic distributional properties of articles (Jaensch, 2008: 18). There are two accounts in the literature of articles, each examining one aspect. The Article Choice Parameter (Ionin *et al.*, 2004) considers the first aspect, whereas the Nominal Mapping Parameter (Chierchia, 1998) looks at the second.

In this chapter, the distribution of articles in English and Arabic will be discussed, and their absence in Mandarin is elaborated on. Then the Article Choice Parameter and generics are described. After this the DP syntax in English, Arabic and Mandarin is discussed.

#### 2.2 Distribution of articles

In this section, the distribution of articles in English and Arabic, and their absence in Mandarin, are described.

## 2.2.1 The distribution of English articles

The use of English articles varies according to two factors: the number and the semantic function of the noun phrases (NPs)<sup>2</sup> in discourse (Hawkins, 2001). Both are reviewed here.

<sup>1</sup> Since this study does not consider the count-mass distinction, the Nominal Mapping Parameter is not discussed (for more informration, see Chierchia, 1998).

<sup>&</sup>lt;sup>2</sup> Labelling varies considerably throughout the literature, with many sources using NP or N. For the sake of continuity in terms of the literature referenced here, we use the term NP to refer to nouns/noun phrases, and DP to refer to nouns/noun phrases that are preceded by determiners/determiner phrases. However, there will be instances where we use, for example, the word 'nouns' to match the terms used in a source.

With regard to number, English has the definite article *the*, and the indefinite articles a/an and  $\phi$  (zero). Trenkic (2008) states that a(n) and *the* differ concerning their source, since *the* derives from a demonstrative and a from the numeral one. Their occurrence possibilities differ according to the properties of the noun they precede, as can be seen below (based on Hawkins, 2001: 232-233).

## 2.2.1.1 The definite article the

The definite article *the* can be used with all types of noun, including singular and plural countable nouns (*rabbit/rabbits*), mass nouns (*rice*) and abstract nouns (*understanding*).

(2.1)

- a. I saw the rabbit/the rabbits. (count)
- b. He cooked *the rice* for us. (mass)
- c. The understanding they reached was short-lived. (abstract)

## 2.2.1.2 The indefinite article a/an

The indefinite article a/an is used with countable singular nouns or abstract nouns. However, indefinite articles are not normally used with mass nouns unless the meaning is limited, or it is interpreted as a singular countable noun: *They like a cheese with a smoky flavour*. The choice between a and an relies on the initial sound of what follows. A is used in front of words that begin with a consonant (a car), whereas an is used with words that start with a vowel (an apple).

(2.2)

- a. I saw a rabbit/\*a rabbits. (count)
- b. He cooked \*a rice. (mass)
- c. They reached an understanding. (abstract)

## 2.2.1.3 The indefinite article ø

The  $\phi$  article is used with plural countable, mass and abstract nouns. It is not normally used with singular countable nouns unless they are interpreted as mass nouns: *They do not eat chicken*.

(2.3)

- a. I saw \*\phi rabbit/\phi rabbits. (count)
- a. She cooked  $\phi$  *rice* for her guests. (mass)
- b. The situation calls for  $\phi$  understanding. (abstract)

The following table shows co-occurrence possibilities of articles with types of noun:

Table 2.1 Co-occurrence possibilities of the articles the, a,  $\phi$  and types of noun

Article	Noun Types		Examples	
the	N [+count, +singular]		the rabbit	
		[+count, -singular]	the rabbits	
		[-count, +mass]	the rice	
		[-count, -mass]	the understanding	
a	N	[+count, +singular]	a rabbit	
		[-count, -mass]	an understanding	
ø	N	[+count, -singular]	ø rabbits	
		[-count, +mass]	ø rice	
		[-count, -mass]	ø understanding	

(Adapted from Hawkins, 2001: 233)

In the following, the distribution of Arabic articles is described.

## 2.2.2 The distribution of Arabic articles

Before discussing the distribution of Arabic articles, it is important to provide a brief background on the Arabic language. The Arabic language consists of a group of spoken dialects, between which there is some syntactic, morphological, phonological and lexical variation. This variation is less, for example, than differences among Romance languages. A standard written variety, Modern Standard Arabic (MSA), also exists. It is taught in schools and used in public writing, media and political speeches in all Arabic-speaking countries. It is important to note that MSA 'is not a native language of any Arabic-speaking people, i.e., children do not learn it from their parents, but in school. Most native speakers of Arabic are unable to produce sustained spontaneous Modern Standard Arabic.' (Chiang, Diab, Habash, Rambow and Shareef, 2006: 369).

The variety that the participants in the present study speak is Saudi Arabic, with two major dialects - Najdi and Hijazi. Both are very similar to each other in terms of lexis and syntax, and articles are no exception. Yet, they vary slightly in terms of phonology and the number of consonants and vowels (Ingham, 1971). For simplicity, the term 'Arabic' will be used to refer to the L1 of the participants.

There are two articles in MSA and most Arabic varieties,<sup>3</sup> including Hijazi and Najdi: a) a phonologically overt definite article *al*-, which is a prefix affixed to the beginning of the NP, as shown in example (2.4); and b) a phonologically covert indefinite article

<sup>&</sup>lt;sup>3</sup> There are some Arabic varieties, such as Syrian Arabic, that are claimed to have a phonologically overt indefinite article as will be seen in section 2.3.2.2.

 $\phi$ , as shown in example (2.5). The articles in Arabic, as in English, are invariant for gender and case (Ryding, 2005).

MSA also marks three types of number (Ryding, 2005): a) singular nouns; b) dual nouns, by adding the dual suffix -ani (in the nominative case) or the dual suffix -ayni (in the accusative and genitive cases) to the singular noun; and c) plural nouns. Plurals contain two subcategories: a) so-called broken plural nouns, whereby vowel patterns shift in the word stem itself, as in English 'woman/women'; and b) so-called sound plural nouns. Sound plural nouns have two subcategories: a) sound masculine plural nouns, which are obtained by adding the suffix -un (in the nominative case) and -in (in the accusative and genitive cases) to the stem of the singular noun; and b) sound feminine plural nouns, which are obtained by adding the suffix -at to the stem of the singular noun.

#### 2.2.2.1 The definite article al-

As with *the* in English, *al*- is used with all types of noun (Ryding, 2005): singular countable (*al-?arnab*, the rabbit), dual countable (*al-?arnaban*, the two rabbits), plural countable (*al-?aranib*, the rabbits), mass (*al-?aruz*, the rice) and abstract (*al-ħub*, the love). However, nouns in both MSA and varieties of Arabic do not all need the definite article *al*- to be [+definite], e.g., proper nouns are [+definite] but do not require *al*-. This is similar to English. As a result, only [+definite] contexts that are expressed through the presence of *al*- are considered throughout the present study.

Note that the definite article al-, although it is always written as al-, has two pronunciations, a) when it precedes the 14 Arabic 'sun letters' which are [+coronal] (Kambuziya, 2007) (t, d,  $\delta$ ,  $\theta$ , r, z, s,  $\int$ , s<sup>ç</sup>, d<sup>ç</sup>, t<sup>ç</sup>,  $\delta$ <sup>ç</sup>, l, n), l is assimilated to the following first consonant to form a double consonant (af- $\int$ ams, the sun); and b) when it precedes the 14 'moon letters' which are [-coronal] (b, f, h, k,  $\Im$ , j, q, x,  $\upbeta$ , w,  $\upbeta$ ,  $\upbeta$ , moon) (Ryding, 2005).

Let us now put the above Arabic examples in sentences:

(2.4)

**MSA** 

- a. raSaitu al-Parnaba/ al-Parnabayni/ al-Parnaba. (count) saw-I-Nom the-rabbit-ACC/ the-rabbits-DUAL-ACC/ the-rabbits-ACC 'I saw the rabbit/the two rabbits/the rabbits.'
- b. tfabaxtu al-?aruza. (mass) cooked-I-Nom the-rice-ACC 'I cooked the rice.'
- c. al-hubu wad<sup>c</sup>ih. (abstract)
  the-love-Nom clear
  'The love is clear.'

(2.5)

Saudi Arabic<sup>4</sup>

- a. Juft al-?arnab/ al-?arnabayn/ al-?aranib. (count) saw-I the-rabbit/ the-rabbits-DUAL/ the-rabbits
  'I saw the rabbit/the two rabbits/the rabbits.'
- b. tfabaxt ar-ruz. (mass) cooked-I the-rice
  'I cooked the rice.'
- c. al-hub wað<sup>ç</sup>ih. (abstract)

  the-love clear

  'The love is clear.'

## 2.2.2.2 The indefinite article ø

The phonologically covert indefinite article  $\phi$  is used with indefinite singular nouns ( $\phi$  *?arnab*,  $\phi$  rabbit), plural countable nouns ( $\phi$  *?aranib*,  $\phi$  rabbits), dual countable nouns ( $\phi$  *?arnaban*, two rabbits), mass nouns ( $\phi$  *?aruz*,  $\phi$  rice) and abstract nouns ( $\phi$   $\hbar ub$ ,  $\phi$  love) (Ryding, 2005); therefore, Arabic differs from English in that  $\phi$  can normally be used with singular countable nouns.

(2.6)

**MSA** 

<sup>&</sup>lt;sup>4</sup> The Saudi Arabic examples are written in the Hijazi dialect since most of the participants speak it.

<sup>&</sup>lt;sup>5</sup> What is claimed to be a phonologically overt indefinite article (the suffix -n) will be discussed in section 2.3.2.2.

```
b. t<sup>s</sup>abaxtu
                       \phi-?aruzan. (mass)
   cooked-I-Nom
                       ø-rice-ACC-INDEF
  'I cooked \phi rice.'
```

c. haða ø-ħubun wad<sup>s</sup>iħun. (abstract) this ø-love-Nom-INDEF clear-Nom-INDEF 'This is  $\phi$  clear love.'6

(2.7)

#### Saudi Arabic

a. ſuft ø-?arnab/ *ø*-?arnabayn/ φ-?aranib. (count) saw-I ø-rabbit/ ø-rabbits-DUAL/ *ø*-rabbits 'I saw \*\phi rabbit/\phi two rabbits/\phi rabbits.'

b. t<sup>s</sup>abaxt φ-ruz. (mass) cooked-I ø-rice 'I cooked ø rice.'

ø-ħub wað<sup>ç</sup>iħ. (abstract) c. haða this ø-love clear 'This is  $\phi$  clear love.'

Now that the distribution of articles in Arabic has been explained, it is important to note that there is an interaction between relative clauses and article choice in Arabic. In terms of definiteness, relative clauses in Arabic agree with their antecedent noun (Fehri, 1993; Ryding, 2005). That is, if the head noun is definite (modified by the definite article al-), then the relative clause must be headed by a definite overt complementiser *alathi* 'that'. This is not the case in English, as can be seen in the following examples:

(2.8)

?an ?astaria al-baita alaði ?abħaθu Sanhu munðu zaman. a. ?uridu buy-I the-house-ACC that search-I for it since 'I want to buy *the* house *that* I have been looking for for some time.'

b. \*?uridu ?an ?astaria al-baita ?abħaθu Sanhu munðu zaman. want-I-NOM to the-house-ACC search-I for it buy-I since 'I want to buy <u>the</u> house  $\underline{\phi}$  I have been looking for for some time.'

On the other hand, when the antecedent noun is indefinite, the complementiser of the relative clause must be null.

<sup>&</sup>lt;sup>6</sup> Since articles in Arabic can be used with all types of noun, ungrammatical uses of articles cannot be provided as has been done for English. However, we will see in section 2.3.2 that articles in Arabic can be ungrammatical due to semantics.

(2.9)

- a. ?uridu ?an ?aʃtaria **baitan** ?abħaθu Sanhu munðu zaman want-I-NOM to buy-I **house-ACC-INDEF** search-I for it since time 'I want to buy *a* house φ I have been looking for for some time.'
- b. \*?uridu ?an ?aʃtaria **baitan** alaði ?abhaθu Sanhu munðu zaman. want-I-NOM to buy-I **house-ACC-INDEF** that search-I for it since time 'I want to buy <u>a</u> house <u>that</u> I have been looking for for some time.'

Conversely, in English, there is no dependency between the definiteness of the antecedent of the relative clause and the presence or absence of the relative complementiser, as illustrated below:<sup>7</sup>

(2.10)

- a. I want to buy *the* house (that/which/ $\phi$ ) I have been looking for for some time.
- b. I want to buy  $\underline{a}$  house (that/which/ $\phi$ ) I have been looking for for some time.

#### 2.2.3 Nominals in Mandarin

Before looking at the absence of articles in Mandarin, a brief background with regard to Chinese is provided. Chinese comprises a number of varieties. The two major ones are Mandarin and Cantonese, which differ as much as Romance languages do. Yet because they are spoken mainly in China, they are known as dialects rather than separate languages (Li and Thompson, 1981). There are some subtle differences between Mandarin and Cantonese in relation to the nominal domain. Because the informants in the present study were Mandarin speakers, Mandarin constitutes the main focus of the present study (for more information about variations between Mandarin and Cantonese, see Leung, 2005; Sio, 2006).

It is assumed conventionally that Mandarin and other Chinese varieties lack articles (see Cheng and Sybesma, 1999; Li and Thompson, 1981). Instead, word order and the use of demonstratives play a role in the interpretation of nouns in Mandarin. The role of word order is considered first.

Mandarin is a topic-prominent language that distinguishes between topic, which is information that the speaker knows and the hearer assumes, and comment, which is what is said about the topic (Li and Thompson, 1981). The following examples illustrate

<sup>&</sup>lt;sup>7</sup> The present study does not consider the L2A of English relative clauses, yet the implication of relative clauses for the use of articles is presented in section 4.3.1.

various facts about Mandarin. The first shows how word position affects the interpretation of NPs.

```
(2.11)

a. rén lái le.
person come PFV/CRS<sup>8</sup>
'The person(s) has/have come.'

b. lái-le rén le.
come-PFV person CRS
'Some person(s) has/have come.'
(Li and Thompson, 1981: 20)
```

The word  $r\acute{e}n$  'person' is interpreted as definite in (2.11a) since it is in topic position, but it is interpreted as indefinite since it follows a verb, as in (2.11b).

Mandarin has morphemes that seem to be developing as definite and indefinite articles. According to Partee (2006), the demonstrative determiners  $n \grave{e} i$  or n a 'that',  $z h \grave{e} i$  'this' and y i 'one' have started to function like articles. This is supported by Chen (2004), who argues that Mandarin employs devices that have started to function like articles. The following examples highlight that if a noun is preceded by  $n \grave{e} i$  'that', it will provide a definite reading, as in (2.12a). If it is preceded by what is claimed to be an indefinite demonstrative y i 'one', then it cannot take the topic position, as in (2.12b); therefore, there is an interaction between noun position and demonstrative interpretation.

```
(2.12)
     a. nèi-zhī gǒu wǒ
                          yĭjing
                                  kàn-guo le.
                          already see-EXP CRS
       that-CL dog I
        'That dog I have already seen.'
     b. * yi-zhī
                 gŏu wŏ
                            yĭjing
                                    kàn-guo le
                             already see-EXP CRS
        one-CL
                 dog
                       I
(Li and Thompson, 1981: 86)
```

While Mandarin does not have a distinction between mass and countable nouns, it uses classifiers, or measure phrases, with nouns to make them countable. Mandarin is similar to English and other languages, as English requires a measure phrase to make mass nouns countable (for example, *a glass of milk*) (Cheng and Sybesma, 1999: 514). Note that classifiers must be followed by nouns; they cannot appear in isolation. Sio (2006)

<sup>9</sup> Though Mandarin does not grammaticalise definiteness, for simplicity, the term 'definite' used by Sio (2006) Cheng and Sybesma (1999) is adopted.

<sup>&</sup>lt;sup>8</sup> The following abbreviations are used in the examples: CL classifier; CRS Currently Relevant State (*le*); EXP experiential aspect (-*guo*); PFV perfective aspect (-*le*); and PL plural (-*xie*).

states that nouns that are modified solely by classifiers are always indefinite, but if the classifier phrase contains definite demonstratives (such as *zhèi* 'this' and *nèi/na* 'that'), the noun becomes definite, as presented below:

```
(2.13)

a. wǒ xiǎng mǎi běn shū.

I want buy CL book
'I want to buy a book.'
(Sio, 2006: 68)

b. zhèi-ge rén
this-CL person
'this person'
(Li and Thompson 1981: 130)
```

Conversely, if a classifier phrase has the indefinite demonstrative *yi* 'one', the noun is indefinite, as demonstrated below:

```
(2.14)

yi-kē shù
one-CL tree
'a tree'

(Li and Thompson, 1981: 130)
```

If a noun appears without either a classifier phrase or a definite demonstrative, definiteness and indefiniteness depend on the context, as can be seen below:

```
(2.15)

wŏ maĭ-le shuĭguŏ le.

I buy-PFV fruit CRS
'I have bought the fruit/some fruit.'
(Li and Thompson, 1981: 130)
```

In fact, Sio (2006: 171) states that *yi* 'one' and *zhèi* 'this' can co-occur, as presented below:

```
(2.16)
zhèi yi xiē shū (nǐ hái yào- bú- yào)?
this one CLpl book (you still want- not- want)
'Do you still want these books?'
```

The fact that definite and indefinite demonstratives are not in complementary distribution shows that the distributional properties of definite and indefinite demonstratives are different to articles in English and Arabic.

In light of the above, Mandarin, unlike English and Arabic, does not grammaticalise definiteness, and there is no systematic way of knowing whether or not a noun is definite. Even the claim that Mandarin has some morphemes that are beginning to function as definite/indefinite articles does not mean that Mandarin is a [+article] language since these morphemes: a) do not share similar functions with articles in other languages, such as English (Chierchia, 1998; Partee, 2006); and b) are not in complementary distribution. Moreover, since nouns that are not preceded by demonstratives can be definite or indefinite, this entails that Mandarin lacks definite and indefinite articles.

## **2.2.4** *Summary*

The review of the distribution of English and Arabic articles, and Mandarin demonstratives and classifiers, demonstrates that English and Arabic are similar in that both have a phonologically overt definite article and a phonologically covert indefinite article. However, Arabic does not have a phonologically overt indefinite article and Mandarin does not have an article system. The characteristics of the three languages are summarised in the table below.

Table 2.2 Cross-linguistic comparisons of English, Arabic and Mandarin

	English	Arabic	Mandarin
Phonologically overt definite article	the	al-	N/A It uses definite demonstratives <i>nèi</i> or <i>na</i> 'that' and <i>zhèi</i> 'this'.
Phonologically overt indefinite article	a/an	N/A  It uses the indefinite demonstrative <i>yi</i> 'one	
Phonologically covert indefinite article	Ø	Ø	N/A
Word position plays a role in the interpretation of the NP	N/A	N/A	NPs that appear in topic position tend to be interpreted as definites, whereas NPs that appear in argument position tend to be interpreted as indefinites, but there are exceptions.

The following section moves on to discuss the semantic constraints on article usage, in particular how discourse-imposed interpretations of articles can be argued to create parametric semantic features of definiteness and specificity. L1 transfer and UG-access effects on the acquisition of relevant L2 semantic as well as syntactic parameters are therefore also central to this thesis. The main focus of the section, being very relevant for the L2A of English articles, is on Ionin *et al.*'s (2004) Article Choice Parameter.

## 2.3 Semantic issues in article usage and the Article Choice Parameter

Further to what was discussed above, the choice of articles seems to be related to the semantic function of the NP. Consider example (2.1a), repeated here for the reader:

a. I saw the rabbit/the rabbits. (count)

Though *the* can be used here, a with *rabbit* and  $\phi$  with *rabbits* are also appropriate, depending on the semantic properties that govern the article choice of the context.

Before discussing the Article Choice Parameter, it is important to consider the framework adopted by early acquisition studies with regard to English articles to classify articles. A number of studies (e.g., Huebner, 1983; Parrish, 1987; Thomas, 1989) addressed this issue using Bickerton's (1981) binary semantic system [+/-specific referent, +/-hearer knowledge]. In the SLA literature, Huebner (1983) was the first to use Bickerton's noun classification system, as earlier studies investigated the presence and absence of articles. Others then followed suit up to 2004.

According to Bickerton (1981), English article usage is determined by the semantic function of the NP. English articles have different semantic interpretations that fall into two binary features, [+/-specific referent] and [+/-hearer knowledge]. [+specific referent] means that the article and the NP refer to a specific item, whereas [+hearer knowledge] means that the article and the NP refer to something the hearer recognises from their previous knowledge, or from the context. These two features are then combined to yield different interpretations, as illustrated below:

(2.17)

- a. [+specific referent, +hearer knowledge] *the* is used. Did you like *the* movie/movies we saw yesterday?
- b. [+specific referent, -hearer knowledge] a and  $\phi$  are used.

Speaker A: How will you get a ticket for the concert? Speaker B: I have a contact/\(\phi\) contacts. (Hawkins, 2001: 234)

c. [-specific referent, -hearer knowledge] a and  $\phi$  are used.

Speaker A: What does she want to do when she's married?

*Speaker B*: Have *a* baby/ $\phi$  babies. (Hawkins, 2001: 234)

d. [-specific referent, +hearer knowledge] All three articles can be used to produce a generic interpretation (*the* and *a* are only used with a singular countable noun as English does not have definite generic plurals). <sup>10</sup>

A/The cat has four legs.

Ø Cats have four legs.

Thomas (1989) criticises Bickerton's classification for not being comprehensive, and this can be seen in that all generic NPs are grouped in one category [-specific referent, +hearer knowledge]. This means that there is no distinction between types of noun, and that this model does not provide us with a specific choice, as the three articles can be used as demonstrated in example (2.17d) above. Moreover, there is a difference between Bickerton's interpretation of *specific referent* and Ionin *et al.*'s (2004) intepretation of *specificity*, which is described below. As a result of these problems, a new approach was introduced by Ionin *et al.* (2004) that proposes the existence of an Article Choice Parameter governing article choice in two-article languages; the Article Choice Parameter consists of two settings: [+/-definite] and [+/-specific]. 'They are related to the knowledge/mind state of the speaker and/or the hearer in the discourse.' (Ionin *et al.*, 2004: 5):<sup>11</sup>

- a. Definiteness: when 'the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP'.
- b. Specificity: when 'the speaker intends to refer to a unique individual in the set denoted by the NP and considers this individual to possess some noteworthy property'. <sup>12</sup>

Importantly, the above definitions state that definiteness is related to the knowledge held by the hearer and the speaker, whereas specificity is related to the knowledge held by the speaker only.

## 2.3.1 Definiteness, indefiniteness and specificity in English

In this section, we discuss how English grammaticalises definiteness, indefiniteness and specificity.

-

<sup>&</sup>lt;sup>10</sup> Generics are discussed in section 2.4.1.

<sup>&</sup>lt;sup>11</sup> This research adopts Ionin *et al.*'s (2004) Article Choice Parameter in classifying English and Arabic article systems

<sup>&</sup>lt;sup>12</sup> Ionin *et al.*'s (2004) definition of specificity is based on Fodor and Sag's (1982) proposal concerning 'speaker intent to refer'; however, they added the concept of noteworthy property.

## 2.3.1.1 Definiteness in English

English expresses definiteness morphologically through *the*, as can be observed in the following examples (adapted from Ionin *et al.*, 2004: 7):

(2.18)

- a. I saw a cat. I gave the cat some milk.
- b. I saw  $\phi$  cats. I gave the cats some milk.

It can be noted from these examples that there is no presupposition of a unique *cat* in (2.18a) or unique *cats* in (2.18b) when they were first mentioned in the examples. Therefore, the definiteness condition is not met, but it is met on the second mention of *cat* in (2.18a) and *cats* in (2.18b). Indeed, there are other contexts, aside from anaphoric use, where *the* is used <sup>13</sup> (for a full definiteness taxonomy, see Hawkins, 1978: 107-123).

## 2.3.1.2 Indefiniteness in English

Indefiniteness in English is expressed through the phonologically overt indefinite article a and the phonologically covert indefinite article  $\phi$ . <sup>14</sup> The [+definite] feature is not expressed by a, as highlighted in the following examples:

(2.19) [-specific] (no particular person in mind)

A man walked into the room. [-definite]

(2.20) [+specific] (a particular person in mind)

A man just proposed to me in the orangery (though I'm much too embarrassed to tell you who it was). [-definite]

(2.19 is taken from Snape, 2006: 442; 2.20 is taken from Fodor and Sag, 1982: 359)

A man in (2.19) is [-specific], while a man in (2.20) is [+specific]; however, a man in both examples cannot be [+definite], as both are not unique and lack a presupposition of uniqueness. In contrast, a man in (2.19) can be made [+definite]. Consider the following:

(2.21) [+specific]

A man walked into the room. After thirty minutes, the man left. [+definite]

<sup>&</sup>lt;sup>13</sup> Since the present study is concerned more with the acquisition of indefiniteness, other contexts will not be reviewed.

<sup>&</sup>lt;sup>14</sup> Other quantifiers that function as the English indefinite articles  $\phi/a$ , such as *some* and *any*, will not be discussed.

If the second mention of *a man* refers to the first mention of *a man* in (2.21), *the* is the suitable article since it expresses the uniqueness of *man* in the discourse; therefore, *the* carries the presupposition that *man* is identified.

## 2.3.1.3 Specificity in English

The English article system does not have a marker for the [+specific] feature. Yet, colloquial (spoken) English has a marker of specificity, which is the referential demonstrative *this* in indefinite referential use (Ionin *et al.*, 2004).

(2.22)

- a. Peter intends to marry *a/this merchant banker*—even though he doesn't get on at all with her.
- b. Peter intends to marry *a/??this merchant banker*—though he hasn't met one yet.

(Lyons, 1999: 167)

It can be noted in (2.22a) that the speaker has a referent in mind that (from the set of merchant bankers) possesses a noteworthy property: 'Peter doesn't get on at all with her'. For these reasons, both *a* and *this* are allowed. However, these conditions are not met in (2.22b). In fact, Maclaran (1982: 90) proposes that the referential *this* 'draws attention to the fact that the speaker has a particular referent in mind, about which further information may be given'. Therefore, the referential *this* is marked for specificity, while *the* is marked for definiteness. Nevertheless, *this* is not compatible with definites. Indeed, in English, specificity does not affect definiteness, as can be evidenced in the [+definite] sentences given below:

(2.23)

- a. I'd like to talk to the winner of today's race—she is my best friend! [+specific]
- b. I'd like to talk to *the winner* of today's race—whoever that is; I'm writing a story about this race for the newspaper. [-specific] (Ionin *et al.*, 2004: 8)

In (2.23a), the speaker refers to the individual who won today's race and who had the noteworthy property of being the *speaker's best friend*, whereas the speaker in (2.23b) refers to whoever happens to be the winner of today's race. It can be noted that definiteness and specificity distinctions are independent, and that, in the above examples, specificity does not affect definiteness.

Ionin, *et al.* (2004) point out that [+specific] does not mean wide scope, <sup>15</sup> since wide scope asserts the existence of a referent in the actual world, while specificity asserts, in addition to this, that a referent has a noteworthy property resulting in the referential *this* being used with the referent. According to Ionin *et al.* (2004), a wide scope noun can be [+/-specific], but a [+specific] noun must take wide scope over modals and intensional verbs, as can be seen in the following examples (Ionin *et al.*, 2004: 9) with the intentional verb *want*.

(2.24)

- a. Peter wants to marry *a/this merchant banker*—even though he doesn't get on at all with her. [+specific, wide scope]
- b. Peter wants to marry  $a/\#^{16}$  this merchant banker; I have no idea who it is [-specific, wide scope]
- c. Peter wants to marry *a*/#this merchant banker; he has to meet one first. [-specific, narrow scope]

To summarise, English encodes definiteness; therefore, only *the* expresses [+definite], whereas only a and  $\phi$  express [-definite]. But both definite and indefinite articles can occur with [+/-specific] interpretations, which can be summarised in the different feature combinations that result in the different interpretations outlined below:

(2.25)

a. [+definite, +specific] context

I want to talk to *the winner* of this race—my sister, Susan.

b. [+definite, -specific] context

I want to talk to *the winner* of this race—whoever that happens to be.

c. [-definite, +specific] context

Professor Smith is meeting with a student from her class—my sister, Susan.

d. [-definite, -specific] context

Professor Smith is meeting with a student from her class—I don't know which one.

(Adapted from Ionin et al., 2009: 338-339)

-

<sup>&</sup>lt;sup>15</sup>As the wide scope/narrow scope distinction does not affect L2 article choice according to a number of researchers (e.g., Hawkins *et al.*, 2006; Ionin and Wexler, 2003), the present study does not discuss the distinction in detail.

<sup>&</sup>lt;sup>16</sup> The marking (#) means that *this* is not licensed here.

## 2.3.2 Definiteness, indefiniteness and specificity in Arabic

In this section, how Arabic grammaticalises definiteness, indefiniteness and specificity is discussed.

## 2.3.2.1 Definiteness and specificity in Arabic

Arabic, similar to English, distinguishes articles based on definiteness. In Arabic, al- is the marker of definiteness,  $\phi$  represents indefiniteness while a phonologically overt indefinite article is assumed not to exist (this will be discussed later). We will see that Arabic is similar to English in that specificity is not grammaticalized (Lyons, 1999).

The environment in which Arabic definite and indefinite articles are used is classified according to Ionin *et al.*'s (2004) two-semantic feature model. Note that the following examples are written in both MSA and Saudi Arabic to show that both grammaticalize the [+definite] feature identically:

(2.26)

a. [+definite, +specific] context

#### **MSA**

?uridu ?an ?taħadaθa masa **al-fa?izati** fi haða as-sibaqi<sup>17</sup> hia ?uxti fatsimah. want-I-NOM to talk-I with **the-winner-FEM** in this the-race she sister-my Fatimah 'I want to talk to *the* **winner** of this race—she is my sister, Fatimah.'

## Saudi Arabic

?abва?atkalammasal-faizahfihaðaas-sibaghiah?uxtifatsmah.want-I¹8talk-Iwiththe-winner-FEMinthisthe-raceshesister-myFatimah'I want to talk to the winner of this race—she is my sister, Fatimah.'

#### b. [+definite, -specific] context

#### **MSA**

?uridu ?an ?tahadaθa masa al-fa?izati fi haða as-sibaqi mas ?ani la ?asrifu man takun. want-I-NOM to talk-I with **the-winner-FEM** in this the-race though-I no know-I who exist 'I want to talk to **the winner** of this race—whoever that happens to be.'

#### Saudi Arabic

Зарка ?atkalam ma\$ al-faizah fi haða as-sibag mas ?ini ?aSrif min hi. want-I talk-I with the-winner-FEM in this the-race though-I know-I who she 'I want to talk to *the* winner of this race—whoever that happens to be.'

<sup>&</sup>lt;sup>17</sup>/l/ is assimilated to /s/ to form a double consonant. See section 2.2.2.1 for more detail.

<sup>&</sup>lt;sup>18</sup> Arabic varieties lack case marking (Brustad, 2000).

#### 2.3.2.2 Indefiniteness in Arabic

In MSA, indefiniteness marking is argued to either have a true marker of indefiniteness (the suffix -n added to a noun, commonly referred to as *tanwin* in Arabic or 'nunation' in English) or having a phonologically null  $\phi$  article. No other varieties mark indefinites in this way (except in some Bedouin dialects). Before discussing nunation, note that some Arabic dialects are thought to have a phonologically overt indefinite article (Brustad, 2000). For example, Syrian Arabic has a phonologically overt indefinite article *shi*, which is always in complementary distribution with *al*-. <sup>19</sup> For example:

(2.27)

- a. si kilmih
  - a word

'a word'

- b. \*si al-kilmih
  - a the-word
  - '\*a the word'
- c. al-kilmih

the-word

'the word'

Nunation is considered to be a variation of the case-marking short vowel that appears at the end of a noun (Ryding, 2005). Examples show variation in MSA and Saudi Arabic:

(2.28)

a. [-definite, +specific] context

#### **MSA**

tuqabilu al-brufisurah salwa **\( \rho-talibatan \)** min s\( \frac{s}{a}\) fiha ?uxti fat\( \frac{s}{u}\) meet-NOM the-professor-FEM Salwa \( \rho-student-FEM-INEDF \) from class-her sister-my Fatimah. 'Professor Salwa is meeting with \( a \) student from her class—my sister, Fatimah.'

#### Saudi Arabic

tigabil al-brufisurah salwa ø-talbah min fas<sup>s</sup>laha ?uxti fat<sup>s</sup>mah. meet the-professor-FEM Salwa ø-student-FEM from class-her sister-my Fatimah 'Professor Salwa is meeting with a student from her class—my sister, Fatimah.'

<sup>19</sup> Illustrating this is important as there are L2A studies that were conducted on L1 Syrian Arabic speakers which are discussed in Chapter Three, section 3.3.5. Since all of the participants of the present study speak Saudi Arabic (see Chapter Four, section 4.2), no further discussion is required with regard to the Syrian Arabic shi.

 $<sup>^{20}</sup>$  The -n suffix is not written as a separate grapheme in Arabic as the letter <n>  $\circ$  nun, but by one of three double vowel diacritics: a) the nominative indefinite sign  $\circ$  -un; b) the accusative indefinite diacritic  $\circ$  -an; and c) the genitive indefinite diacritic  $\circ$  -in. All are forms of nunation. Note that nunation is not pronounced in pause forms.

### b. [-definite, -specific] context

#### **MSA**

tuqabilu al-brufisurah salwa **\( \rho-talibatan \)** min s<sup>s</sup>afiha la ?asrifu ?aja wahidah. meet-NOM the-professor-FEM Salwa **\( \rho-student-FEM-INEDF \)** from class-her no know-I which one-FEM 'Professor Salwa is meeting with **\( a \) student \( from \) her class—I don't know which one.'** 

#### Saudi Arabic

tigabil al-brufisurah salwa ø-talbah min fas laha ma ?asrif ?aj wahdah. meet the-professor-FEM Salwa ø-student-FEM from class-her no know-I which one-FEM 'Professor Salwa is meeting with a student from her class—I don't know which one.'

The example highlights that *talibatan* (in the MSA examples) is [-definite] since it is marked by the accusative version of nunation -an while it is absent from the Saudi Arabic examples, and from other varieties of Arabic.<sup>21</sup> In fact, MSA nunation is sometimes in complementary distribution with the definite article al- with some types of noun. Consider the following examples where al- cannot co-occur with nunation:

## (2.29) Singular NPs:

a. qalamu*n* pen-NOM-INDEF 'a pen' b. *al*-qalamu the-pen-NOM 'the pen'

- c.\*al-qalamun the-pen-NOM-INDEF '\*the a pen'
  - (2.30) Broken plural NPs:<sup>22</sup>
- a. ?qlamun pens-NOM-INDEF 'pens'

- b. *al*-?qlamu the-pens-NOM 'the pens'
- c. \*al-?qlamun the-pens-NOM-INDEF '\*the a pen'

#### (2.31) Sound feminine plural NPs:

- a. magalatun magazine-PL-FEM-NOM-INDEF 'magazines'
- b. *al*-magalatu the-magazine-PL-FEM-NOM 'the magazines'

<sup>&</sup>lt;sup>21</sup> It is important to note that the discussion of nunation in MSA is relevant to the current study, especially since the participants were bidialectal as they speak Saudi Arabic and MSA, which means that the facts on indefinites are pertinent in terms of what they might transfer.

<sup>&</sup>lt;sup>22</sup> See section 2.2.2 for more detail about the types of Arabic nouns and their definitions.

```
c. *al-magalatun
the-magazine-PL-FEM-NOM-INDEF
'*the a magazines'
```

It appears that '(t)he nature of nunation has been a real puzzle for Arabic grammarians' (Fehri, 1993: 216). This can be seen in that nunation is absent phonetically from the following noun types (Ryding, 2005: 164):

```
(2.32)
a. Diptote NPs: <sup>23</sup>
sufra?u
'ambassadors'
b. Sound masculine plural NPs:
muhandisuna
'engineers'
c. Dual NPs:
dawlatani
'two states'
d. Invariable NPs: <sup>24</sup>
fawd<sup>9</sup>a
'chaos'
```

In fact, Fehri (1993) demonstrates that *al*- and nunation can co-occur in sound masculine plural and dual NPs and that nunation is not absent phonetically as proposed by Ryding (2005). Fehri (1993) proposes that nunation is not an absolute marker of indefiniteness. For example:

```
(2.33) Dual NPs:
al-bintani
                                     al-ħadiqati.
                                 fi
the-girl-DUAL-NOM-INDEF
                                     the-park-GEN
                                 in
'The two girls are in the park.'
(2.34) Sound masculine plural NPs:
al-muhandisuna
                                 fi
                                      al-mas<sup>s</sup>naSi.
the-engineer-PL-NOM-INDEF
                                 in
                                     the-factory-GEN
'The engineers are in the factory.'
```

The grammatical sentences show that -ni in dual NPs and -na, which are both graphic variants of the nunation suffix -n, co-occur with the definite article al- (i.e., al-, -ni and -na are not in complementary distribution with definite dual and sound masculine plural NPs).

\_

<sup>&</sup>lt;sup>23</sup> A type of noun that only has two cases.

<sup>&</sup>lt;sup>24</sup> Nouns that 'vary neither in case nor in definiteness' (Ryding, 2005: 200).

In addition to the co-occurrence of *-ni* and *-na* with dual and sound masculine plural NPs, *-n* co-occur with proper NPs that are considered to be [+definite], as evidenced below:

(2.35) Proper NPs:

Mohamadun Mohamad-NOM-INDEF 'Mohammad' (proper name)

The examples above highlight that the definite article and nunation are not in total complementary distribution; therefore, we can adopt Fehri's (1993) position to assert that there is no overt marker of indefiniteness in Arabic and assume that indefiniteness is marked by a null  $\phi$  determiner.

Based on the above, we conclude that Arabic encodes definiteness, and only *al*-expresses [+definite], while only  $\phi$  expresses [-definite]. Neither definite nor indefinite articles are sensitive to [+/-specific] interpretations. The argument presented in Fehri (1993) will be adopted, whereby it is assumed that *al*- and *-n* are not fully in complementary distribution and that nunation is not a true marker of indefiniteness in Arabic.

It can be noted that English and Arabic are very similar, with the exception that Arabic allows only  $\phi$  in [-definite, +/-specific] contexts, whereas  $a/\phi$  is used in English according to type of noun (singular, plural and mass).

#### 2.3.3 Definiteness, indefiniteness and specificity in Mandarin

According to many researchers, Mandarin does not grammaticalise definiteness or specificity; therefore, it lacks the [+/-definite] and [+/-specific] features (Chen, 2004; Cheng and Sybesma, 1999; Zdorenko and Paradis, 2012). Lyons (1999) assumes that languages without articles, such as Chinese and Japanese, lack these features as they are only present in languages 'which show overt definiteness marking, a definite article of some kind' (Lyons, 1999: 278). However, word order and the use of demonstratives play a role in the interpretation of NPs in Mandarin (see section 2.2.3 above). As Mandarin does not grammaticalise definiteness or specificity due to that it is a [-article] language, no further discussion is required. However, regarding the projection of a DP, this is discussed in section 2.5.3.

## **2.3.4** *Summary*

English encodes definiteness by *the* and indefiniteness by  $a/\phi$ , whereas Arabic encodes definiteness by al- and indefiniteness by  $\phi$ . Conversely, Mandarin does not encode definiteness or specificity as it lacks articles. How the three languages encode definiteness and specificity is summarised below:

Table 2.3 Cross-linguistic comparisons of encoding definiteness in English, Arabic and Mandarin

Language	Specificity	+Definite	-Definite	
English	+specific	the	a/ø	
Eligiisii	-specific	uic		
Arabic (Saudi variety)	+specific	al-	d	
Arabic (Saudi Variety)	-specific	al-	Ø	
Mandarin	+specific	N/A	N/A	
ivianuarin	-specific	1 <b>N/A</b>	IN/A	

## 2.4 Genericity in English, Arabic and Mandarin

In this section, the English, Arabic and Mandarin generics are described.

## 2.4.1 Genericity in English

According to Lyons (1999), generics are NPs that refer to an entire class. English can express genericity through NPs that are preceded by the three articles, *the*, a and  $\phi$ , as can be seen below (Lyons, 1999: 179):

(2.36)

- a. A cat has four legs.
- b. The cat has four legs.
- c. Ø Cats have four legs.
- d. Ø Gold is a precious metal. (Krifka, Pelletier, Carlson, ter Meulen, Chierchia and Link, 1995: 5)
- e. \*The cats have four legs.
- f. \*The gold is a precious metal.

From this, we can observe that indefinite singular NPs as in (2.36a), definite singular NPs as in (2.36b), indefinite plural NPs as in (2.36c) and indefinite mass NPs as in (2.36d) are available for generic use. However, English does not have definite generic plural NPs, as shown in (2.36e), or definite generic mass NPs, as shown in (2.36f). Definite plural NPs do not express genericity, with the exception of NPs of nationality. For example:

(2.37)

*The Swiss*/\**Swiss* consume a lot of chocolate. (Lyons, 1999: 182)

However, non-generic NPs are similar in terms of article usage to the generic NPs above. Consider the following:

(2.38)

- a. A cat is drinking milk now.
- b. *The cat* is running on the street.
- c. Ø Cats ate the little mouse yesterday.
- d. Ø Gold was stolen in yesterday's bank robbery. (Krifka et al., 1995: 5)

Examples (2.38a-d) are all non-generic, since a cat, the cat,  $\phi$  cats and  $\phi$  gold do not refer to kind. Indeed, generics is a vast and complex topic (Carlson, 1977; Krifka et al., 1995; Lyons, 1999) that does not constitute a 'unified phenomenon' (Chesterman, 1991: 34), thus explaining why English generics do not have one form of the NP. Next, we will illustrate a phenomenon highlighting how expressing genericity in English is not straightforward.

A generic noun can express something: a) about a class as an entity; or b) about each member of a class. This can be illustrated as follows (Lyons, 1999: 182):

(2.39)

- a. The squid lives on seaweed.
- b. *Squids* live on seaweed.
- c. A squid lives on seaweed.

(2.40)

- a. The dodo is extinct.
- b. *Dodos* are extinct.
- c. \*A dodo is extinct.

From example (2.39c), we can note that indefinite generic singular NPs can refer to a member of a class. Conversely, only definite generic singular NPs as shown in (2.39a) and (2.40a), and indefinite generic plural NPs as shown in (2.39b) and (2.40b), can refer to the class as a unit, and this does not apply to indefinite generic singular NPs as shown in (2.40c). In fact, Krifka *et al.* (1995: 10) point out that predicates, such as *be extinct* and *die out*, are called 'kind' predicates, which favour a kind interpretation for the preceding NP since only kinds (not objects or individual entities) can be extinct. As

noted in the description of English generics, expressing genericity in English is not as straightforward as in Arabic.

## 2.4.2 Genericity in Arabic

Expressing genericity in Arabic (MSA and varieties) is straightforward. Arabic differs from English only insofar as the definite article *al*- expresses generic interpretations with all types of noun (singular, plural and mass). Note that Arabic (MSA and all varieties) does not express genericity with dual NPs. Consider the following examples:

## (2.41) Singular NPs:

#### **MSA**

a. al-qit<sup>s</sup>atu laha arbaSatu ?arjul. the-cat-FEM-NOM has four-NOM legs 'The cat has four legs.'

#### Saudi Arabic

b. al-bisah Sindaha arbaSah rjul. the-cat has four legs 'The cat has four legs.'

#### (2.42) Plural NPs:

#### **MSA**

a. al-qit<sup>s</sup>at<sup>s</sup>u laha arbaSatu ?arjul. the-cats-FEM-NOM have four-NOM legs 'Cats have four legs.'

#### Saudi Arabic

b. al-bisas Sindahum arbaSah rjul. the-cats have four legs 'Cats have four legs.'

# (2.43) Mass NPs:

#### **MSA**

a. að-ðahabu ma\$dinun nafis. the-gold-NOM metal precious 'Gold is a precious metal.'

#### Saudi Arabic

b. að-ðahab masdin nafis. the-gold metal precious 'Gold is a precious metal.'

Where English expresses a generic meaning in the form of NPs that are modified by *the*, a or  $\phi$ , the sole option in Arabic (MSA and all varieties) is with al- 'the'.

## 2.4.3 Genericity in Mandarin

Mandarin is different from English and Arabic in that it lacks generic phrase marking (see Cheng and Sybesma, 1999; Erbaugh, 2006; Tardif, Gelman, Fu and Zhu, 2012). Marking generic references in Mandarin is pragmatic and not syntactic, as can be seen in the following example (Snape, García Mayo and Gürel, 2009: 3):

(2.44)
xiao ya zi yao yao bai bai de<sup>25</sup> zou lu.
little duck waddlingly DE walk road

English translations of this example cannot be generic.

- a. The duck is waddling.
- b. *The* ducks are waddling.
- c. Ducks are waddling.

Example (2.44) shows that Mandarin lacks generic phrase marking.

# **2.4.4** *Summary*

English expresses genericity through NPs that are preceded by one of the three articles *the*, a and  $\phi$ , depending on the type of noun, whereas Arabic expresses genericity only with al-. Conversely, Mandarin lacks articles and any generic marking. The expression of generics in the three languages is summarised in Table 2.4 below:

Table 2.4 Cross-linguistic comparisons of expressing genericity in English, Arabic and Mandarin

Language	Context	Article	
	Definite	the	
English	generics	tile	
Liigiisii	Indefinite	o or Ø	
	generics	a or Ø	
	Definite	al-	
Arabic	generics		
Arabic	Indefinite	ai-	
	generics		
	Definite		
Mandarin	generics	N/A	
	Indefinite	IN/A	
	generics		

Following the discussion of semantic constraints on article usage, we can turn to the syntax of the DP in English, Arabic and Mandarin.

-

<sup>&</sup>lt;sup>25</sup> DE is a modification marker.

## 2.5 The syntax of the DP

In this section, the syntax of the DP in English, Arabic and Mandarin is discussed. When it comes to articles, there is controversy surrounding the existence of a functional determiner category (D) in languages that lack articles (see Lyons, 1999: 28). Does a functional D category in such languages have an underlying abstract D that is phonologically null, or is a functional D category absent? The answers to these questions may have implications for the acquisition of articles when L2 speakers learn a parametrically different L2.

# 2.5.1 The syntax of the English DP

Syntactic views on the structure of the NP, and whether English has a null article, is discussed in this section. Note that views on the nominal phrase vary considerably in the syntax of nominal phrase literature. In line with the objectives of this section, the following paragraphs present a number of views.

The most influential account of the nominal phrase is the DP hypothesis proposed by Abney (1987), within the X-bar theory framework. 26 He aimed to update earlier views on the syntax of the nominal phrase, which was considered to be solely an NP (e.g., Jackendoff, 1977).

Under Abney, determiners are heads of their own phrasal projection, DP, and NPs are complements. Although the DP hypothesis has been highly influential, views in the literature on the syntax of the DP have since differed in relation to: a) whether there is a null definite/indefinite article; and b) whether the DP is always projected regardless of the NP type. In the following paragraphs, two major views are presented: the first is Hawkins et al.'s (2005); and the second is Radford's (2004).

Within a Minimalist framework, <sup>27</sup> Hawkins *et al.* (2005) based their syntactic analysis on Adger (2003) and Lyons (1999). They assume that there is a dependency between the NP and a c-commanding category, which can be explained in terms of an agreement

<sup>&</sup>lt;sup>26</sup> The X-bar theory was first presented by Chomsky (1970) and was developed to overcome redundancy, lack of generalisation, and some problems in terms of dominance or c-command that characterised the previous phrase-structure rules.

Minimalism (Chomsky, 1995) proposes that syntax consists of two operations: a) Merge (words are merged (combined) to make phrases, and phrases merged to form larger phrases); and b) Move. Minimalism tries to find the minimum requirements for a grammar to be a usable system.

relation between an uninterpretable feature<sup>28</sup> (uF:) of the head of the NP, this is N, and an interpretable feature (F:) of a c-commanding category that licenses the appearance of the NP. In fact, the valuing and deletion of the N's (uF:) occurs in an operation termed 'Agree', as is defined below:

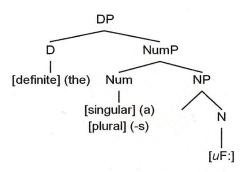
## Agree

In a configuration:

X[F:value] ... Y[uF:] or X[uF:] ... Y[F:value] where ... represents c command, then F (interpretable feature) checks and values uF (uninterpretable feature) (Adger, 2003: 168).

Hawkins *et al.* (2005) follow Lyons (1999) in their proposition that D is the locus of the interpretable feature [definiteness] and represents definiteness, which is considered a grammatical category, which English realises as *the*. They state that definite count Ns are licensed by D, since it is the locus of definiteness. In contrast, the indefinite articles a,  $\phi$ , numerals such as *one* and the plural marking -s are all located in the Number Phrase (NumP). The syntactic structure is as follows (Hawkins *et al.*, 2005: 8):

## (2.45) Definite count NPs



It can be seen from the tree presented above that *the* and *a* can co-occur. However, Lyons (1999) proposes that there is a phonological property blocking this as *the* and *a* are unstressed, and therefore cannot co-occur initially. The other possibility preventing the co-occurrence of *the* and *a* is the subsequent feature clash between the [definite] feature of D and the [indefinite] feature of Num, as in, for example, "\*the a girl' and "\*the a girls'. However, this does not apply to the co-occurrence of *the* and the numeral

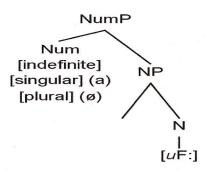
<sup>29</sup> Discussing numerals is beyond the scope of the present study.

<sup>&</sup>lt;sup>28</sup> Interpretable features play a role in semantic interpretation, whereas uninterpretable features are those that play no such role (Radford, 2004: 198). The role of interpretable and uninterpretable features in the acquisition of articles is discussed in section 3.3.3.1.

three and the plural -s in 'the three girls', since three is a stressed form and -s is not adjacent to the. It may be interesting to note that, according to Snape (2006), numerals are not the head of Num, otherwise they would be in complementary distribution with the plural -s. As a result, numerals occupy the Num specifier position.

Due to the feature clash between the [definite] feature of D and the [indefinite] feature of Num, when countable Ns are indefinite, Num carries the [indefinite] feature and a DP is not projected, as demonstrated below (adapted from Hawkins *et al.*, 2005: 8):

## (2.46) Indefinite count NPs



English mass nouns differ from count nouns in that they do not have an uninterpretable number feature [unumber:], nor do they require a c-commanding category to license their occurrence. But, in the event that they are definite, they merge with D, as shown in the trees below (Hawkins et al., 2005: 9):

a.

It can be noted from Hawkins *et al.*'s (2005) account that definite Ns project a DP and that indefinite countable Ns do not project a DP, which means that a and  $\theta$  are base generated in Num.

Radford (2004), similar to Hawkins *et al.*, uses a strong argument in support of the existence of a null indefinite article. Yet, he differs from Hawkins *et al.* regarding the position of  $\phi$ . Radford (2004: 99), who based his view on Abney's (1987) DP hypothesis, argues that 'empty categories play an important role' in syntax. He adds that bare noun expressions are modified by a null determiner. His claim is based on the suggestion by Chomsky (1965: 108) that a mass noun is headed by a null determiner such as *sincerity* in *sincerity may frighten the boy*. Chomsky's proposal was supported by linguists such as Abney (1987), Bernstein (2001), and Longobardi (1994; 2001). In fact, the logic of the DP hypothesis is that bare nouns - 'noun expressions which contain no overt determiner' (Radford, 2004: 99) - are DPs, as will be illustrated later.

Radford states that the null article can be argued for on the basis of the comparison of English and French, as is evident in the following examples (Radford, 2004: 140):

(2.48)

#### **English**

Italians love opera.

(2.49)

#### French

les Italiens adorent l'opéra.
the Italians love the opera
'Italians love opera.'

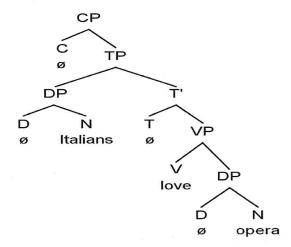
(2.50)

#### **English**

The Italians love the opera.

It can be observed that the French nominals in (2.49) are headed by the French determiners les and l' and this sentence is the French counterpart of the bare nominals in English in (2.48). The example (2.50) shows that this is also possible in English. See the structure for *Italians love opera* below (Radford, 2004: 141):

(2.51)



Radford's reasoning is that since complementiser phrases (CPs) can be headed by a null complementiser (C) as in the tree, this can also apply to DPs.

Another piece of evidence that supports the idea that a noun can be headed by a null D is provided in the examples below (Radford, 2004: 141):

(2.52)

- a. Italians and [the majority of Mediterraneans] love opera.
- b. Italians love [opera] and [the finer things in life].

Examples (2.52a) and (2.52b) show that *Italians* and *opera* can be co-ordinated with *the majority of Mediterraneans* and *the finer things in life*, which suggests that they are similar categories and that *Italians* and *opera* are both headed by a null D; i.e., they are DPs. However, does the null D have any grammatical or semantic properties? Consider the following examples (Radford, 2004: 141):

(2.53)

- a. We linguists take ourselves/\*yourselves/\*themselves too seriously, don't we/\*you/\*they?
- b. You linguists take yourselves/\*ourselves/\*themselves too seriously, don't *you*/\**we*/\**they*?
- c. Linguists take themselves/\*ourselves/\*yourselves too seriously, don't *they*/\**we*/\**you*?

# It can be noted that:

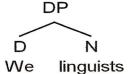
- We linguists in (2.53a) can only bind a 1<sup>st</sup> person reflexive ourselves, and can only be tagged by a 1<sup>st</sup> person pronoun we.
- You linguists in (2.53b) can only bind a 2<sup>nd</sup> person reflexive yourselves, and can only be tagged by a 2<sup>nd</sup> person pronoun you.
- Linguists in (2.53c) can only bind a 3<sup>rd</sup> person reflexive themselves, and can only be tagged by a 3<sup>rd</sup> person pronoun they.

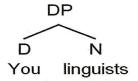
The above observation can be attributed to the proposal that the nominals (we linguists, you linguists and linguists) are all DPs, and that each has a D with certain grammatical features. See the structures for (we linguists, you linguists and linguists) below (Radford, 2004: 142):<sup>30</sup>

(2.54)

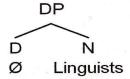
a.

b.





c.



This shows that the person features of the D determine the person properties of the DP (Radford, 2004: 142); all referring expressions are DPs and English has a null article. In fact,  $\emptyset$  has semantic properties that can be observed from the following examples (Radford, 2004: 142):

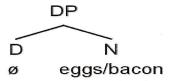
<sup>&</sup>lt;sup>30</sup> Note that Radford (2008, cited in Sarko, 2009: 55) proposes that even a is in D. He bases his claim on the fact that an apple and  $\emptyset$  honey can be co-ordinated in I bought an orange and  $\emptyset$  honey.

(2.55)

- a. Eggs are fattening.
- b. Bacon is fattening.
- c. I had eggs for breakfast.
- d. I had *bacon* for breakfast.

It can be seen that *eggs* and *bacon* in (2.55a) and (2.55b) are generic in that they refer to *eggs* and *bacon* in general, whereas *eggs* and *bacon* in (2.55c) and (2.55d) have a partitive interpretation, <sup>31</sup> that is, 'some eggs and bacon'.

(2.56)



Radford proposes that since the null D in (ø eggs/bacon) above has a generic or partitive interpretation, this will satisfy Chomsky's (1995) condition that heads should have a semantic interpretation and be interpretable. Moreover, this further supports the idea that nominal expressions are DPs.

It can be noted from the above that there is no consensus about the position of a and  $\emptyset$ . Hawkins et al. (2005) and Radford (2004) agree on the fact that the is in D, whereas they differ concerning the position of a and  $\emptyset$ . We assume that the is in D and that  $\emptyset$  has syntactic and semantic interpretations as was proposed by Radford (2004). However, we adopt Hawkins et al.'s (2005) position that both a and  $\emptyset$  are in Num. Our assumption is based on the fact that if a is in Num and  $\emptyset$  is in D, this entails that they are separate morphemes. This is not the case as they are lexically-conditioned allomorphs which are used according to number.

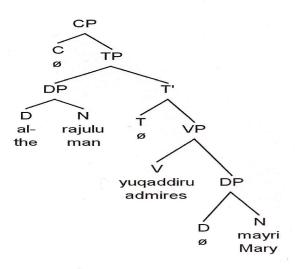
In the following, the Arabic DP is discussed.

<sup>&</sup>lt;sup>31</sup> A partitive quantifier is 'a word like some/any which quantifies over part of the members of a given set' (Radford, 2004: 467).

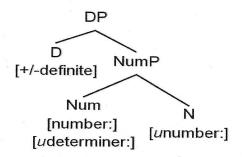
# 2.5.2 The syntax of the Arabic DP

Kremers (2003: 91) argues that the tree structures of the noun phrases in Arabic and English are 'very similar'. Arabic clearly has a DP (Fehri, 1999) since it has a phonologically overt definite article, and distinguishes articles based on definiteness. According to Radford's (2004) analysis of English, both the phonologically covert indefinite article and the phonologically overt definite articles in Arabic are in the D position, as demonstrated in the following partially-translated version of Radford's English structure (see example (2.51)).

(2.57)



Arabic indeed projects a NumP as 'Arabic Ns always have [unumber:] that have to be valued by an interpretable number feature under NumP with three values: singular, dual, plural' (Zomaili, 2005: 28). In fact, it is interesting to note that even Hawkins et al. (2005) assume that a DP projects in languages such as Arabic in which all Ns must be licensed by a c-commanding number feature. This is due to an uninterpretable [udeterminer:] feature in the Num category. The authors propose that even if Ns are indefinite the DP is projected. In light of this, the Arabic DP structure is as follows (Almahboob, 2009: 60):



English and Arabic DPs are almost identical and, in terms of Hawkins *et al.*'s and Radford's accounts, Arabic projects a DP. Since we adopt the position that  $\emptyset$  is in Num in English, it is plausible to argue that  $\emptyset$  in Arabic is also located in Num. Now, after discussing the DP in Arabic and English, we will turn to discuss the syntax of Mandarin nominals.

# 2.5.3 The syntax of Mandarin nominals

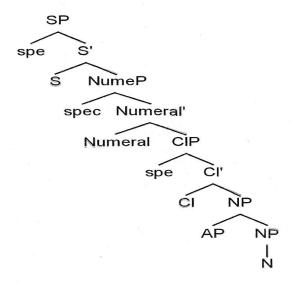
There is no consensus in the literature about whether Mandarin and other articless languages project a DP. In fact, it is argued by a number of researchers (e.g., Cheng and Sybesma, 1999; Li and Thompson, 1981) that Mandarin does not project a DP since it lacks articles, whereas others assume that Mandarin projects a DP (e.g., Aoun and Li 2003; Huang *et al.* 2009; Lin, 2010; Pereltsvaig, 2007).

Regarding the first position, as discussed previously, Mandarin has definite demonstratives (*nèi* or *na* 'that', *zhèi* 'this') and indefinite demonstratives (*yi* 'one'), although they do not function like articles, as definiteness and indefiniteness in Mandarin can be expressed by bare nouns, as shown in (2.11-2.16). Since Mandarin does not project a DP according to this position, it comprises the following layers. The highest layer is that which hosts definite demonstratives (*nèi* or *na* 'that', *zhèi* and 'this'), known as the 'Specificity Phrase' (SP) (Sio, 2006). Mandarin definite demonstratives are located in the SP rather than in D because, according to Bernstein (1997), they are generated lower than the DP. This is based on the fact that some languages such as Greek have demonstratives and determiners which co-occur. Sio (2006) proposes the existence of the SP due to the failure of Cheng & Sybesma's (1999) approach to allocate demonstratives and modifiers which appear to the left of the

classifier or numeral. Cheng and Sybesma (2009) support Sio's (2006) assumption about the projection of the SP in Mandarin. The SP is above the Numeral Phrase (NumeP). The NumeP should not be confused with the Number Phrase (NumP), since Cheng and Sybesma (1999; 2009) assume that there is no number marking in Mandarin. That is, languages such as English use overt number/plural morphology, but these are absent in Mandarin. What is thought to be an indefinite demonstrative *yi* 'one' is argued to be located in the NumeP (Sio, 2006). Below the NumeP is the Classifier Phrase (CIP) (for more detail about classifiers, see section 2.2.3), which hosts classifiers, above NP.

If the NP is definite, the full structure of the Mandarin SP will be as follows:

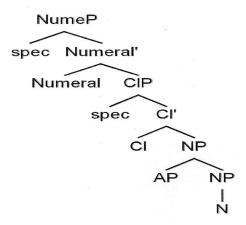
## (2.59) The Mandarin SP



(Adapted from Cheng and Sybesma, 2009: 34; Sio, 2006: 50)

If the NP is indefinite, then the SP is not projected, and the full structure of the Mandarin NumeP will be as follows:

# (2.60) The Mandarin NumeP



(Adapted from Cheng and Sybesma, 2009: 34; Sio, 2006: 50)

On the other hand, assuming that Mandarin projects a DP is not far fetched. Based on Pereltsvaig's (2007) Universal-DP Hypothesis, the syntactic structure of the nominal phrase is universal regardless of the presences of absence of articles. This entails that Mandarin projects a DP with a phonologically null exponent (Lin, 2010). However, this position is not adopted by the present study.

# (2.61) The Mandarin DP

(Adapted from Lin, 2010: 340)

## **2.5.4** *Summary*

The section has laid out explanations for syntactic constraints at the DP level which relate to both overt and null article realisation. The present study adopts the position that: a) English and Arabic project a DP; and b) the English indefinite articles a and  $\emptyset$  are in Num. The location of the articles in the three languages is summarised below:

Table 2.5 Cross-linguistic comparisons of English and Arabic articles, and Mandarin demonstratives

Language	Article	Location
	the	D
English	a	Num
	Ø	Num
Arabic	al-	D
Arabic	Ø	Num
Mandarin	Definite demonstratives nèi or na 'that' and zhèi 'this'	S
Wianuann	Indefinite demonstrative yi 'one'	Nume

## 2.6 Summary of Chapter Two

This chapter has discussed nominals in English, Arabic and Mandarin. It was found that English and Arabic are similar in that both have a phonologically overt definite article and a phonologically covert indefinite article. However, Arabic lacks a phonologically overt indefinite article (since nunation is not in complementary distribution with -al) and Mandarin lacks an article system. Discussion of the Article Choice Parameter revealed that English and Arabic grammaticalise definiteness, whereas Mandarin does not. English expresses genericity through the, a and  $\phi$ , but Arabic expresses genericity with al- only. Conversely, Mandarin lacks generic marking. The chapter also discussed DP, and it is assumed that English and Arabic project a DP. The variations between the three languages are summarised in the table below:

Table 2.6 Cross-linguistic comparisons between English, Arabic and Mandarin

	English	Arabic	Mandarin
Articles	Yes the/a/Ø	Yes al-/Ø	N/A Definite demonstratives <i>nèi</i> or <i>na</i> 'that' and <i>zhèi</i> 'this', and the indefinite demonstrative <i>yi</i> 'one'
D	Yes	Yes	N/A It is controversial.
[+/-definite]	Yes	Yes	N/A
Expressing genericity	Yes the/a/Ø	Yes al-	N/A

Thus, Arabic and Mandarin speakers must establish the following in their acquisition of English:

## Arabic speakers:

- a. In addition to  $\phi$ , as in Arabic, grammaticalization of indefiniteness is by a
- b. In addition to the, as al- in Arabic, generics are expressed by a and  $\phi$ .

### Mandarin speakers:

- a. Articles based on definiteness
- b. Definiteness by the
- c. Indefiniteness by  $a/\phi$
- d. Specificity is not grammaticalized
- e. Generics by the three articles the, a and  $\phi$ .

These syntactic and semantic differences between the three languages are considered in the present study to explore whether there are any positive or negative effects of the L1 grammar on the L2A of English articles.

The research questions, which are based on the above general learning task faced by Arabic and Mandarin speakers, are formulated at the end of the next chapter. As the present study is based on the assumption that adult L2 learners have access to UG, the following chapter will discuss a number of theoretical positions adopted by generative researchers investigating the acquisition of articles.

# Chapter 3. Universal Grammar and Explanations of Variability in L2 Article Use

#### 3.1 Introduction

There is no consensus in the SLA literature regarding the role of L1 transfer, the relationship between age and post-critical-period acquisition, and accessing UG principles and parameters. The main goal of the present study is to examine the L2A of English articles by speakers of Arabic and Mandarin to discover if there is divergence between the two groups that is attributable to their L1 background. The reason for choosing the L2A of English articles by Arabic and Mandarin speakers is that L2 learners of English find it difficult to acquire English articles (Bataineh, 2005; Goad, White and de Garavito, 2011; Ionin *et al.*, 2004; Master, 2002; Ogawa, 2008; Robertson, 2000; Snape, Leung and Ting, 2006; Zdorenko and Paradis, 2012). A comparative study of Arabic and Mandarin learners of English affords SLA researchers more opportunities to identify the impact of L1 and UG on interlanguage grammar.

In this chapter various views on UG and L1 influence/transfer will be reviewed. The Full Transfer/Full Access Hypothesis (FT/FA) and an article-based hypothesis within the frame of the FT/FA (the Fluctuation Hypothesis (FH)) will be reviewed in greater detail, and we will discuss a number of related studies. At the end of the chapter, studies that examine the role of word position in topic-prominent languages will be discussed. The chapter closes with hypotheses relevant to the present study.

### 3.2 Universal Grammar

All children, apart from those with psychological or physiological abnormalities, acquire language effortlessly, regardless of their level of intelligence. The Innateness Hypothesis proposes that the human mind is equipped with a language faculty responsible for the learning process, and is a hypothesis linked to the UG theory proposed by Chomsky (1965). UG, in its classic expression, is 'the system of principles, conditions, and rules that are elements or properties of all human languages' (Chomsky, 1975: 29). UG comprises:

a. a set of principles that are common and universal to all languages; and

<sup>-</sup>

<sup>&</sup>lt;sup>1</sup> The rationale behind discussing it last is that the reader will be better able to understand the role of word position in article choice after discussing a number of article-based studies prior to it.

b. a set of (usually binary-valued) parameters that allow a limited amount of cross-linguistic variation, which provides the learner with choice.

Under Chomsky's Minimalist Program (Chomsky, 1995), the language faculty provides an inventory of features, such as definiteness, number and case, made available by UG, and which is accessed during L1 acquisition (L1A). L1A consists of two processes: a) feature selection; and b) feature assembly (assembly of features into language specific lexical items).<sup>2</sup> This means that parametric differences between languages can be determined by variations in how features are selected and then assembled specifically on functional categories and lexical items. Significantly, the inventory of features is greater than that used by a given language.

UG helps L1 acquirers to arrive at a grammar based on the primary linguistic data they are exposed to until they become adult-like speakers. L2 learners are similar in that they need to build a linguistic system that accounts for L2 input. Two of the main issues in the SLA literature on access to UG are: a) the extent to which L1 'transfer' is involved; and b) the 'access' issue, which is whether or not L2 learners are able to apply UG principles and reset parameters. These are the main issues since L1A and L2A are different as, unlike L1A, L2A, particularly for adults, is characterised by variation and lack of success, and it follows different developmental stages (Bley-Vroman, 1990). This is due to the fact that the assumed relationship between UG and L2A is more complicated in L2A since adult L2 learners are cognitively mature and already know one or more languages.

## 3.3 Models of second language acquisition

The present study tests the claims of the FT/FA and the FH both of which are framed in terms of parameters. Feature-based models will not be discussed (for more discussion, see Lardiere, 2009). Access and transfer issues are described here in terms of theories and hypotheses that have developed around these.

## 3.3.1 Full Transfer/No Access

Proponents of the 'Full Transfer/No Access' hypothesis base their assumption on what is known as the Critical Period Hypothesis (Lenneberg, 1967). During this period, language can be acquired, after which full command over the L2 cannot be achieved,

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<sup>&</sup>lt;sup>2</sup> Note that '[t]he notion of a limited, universal inventory of features from which (acquirers of) particular languages select is closely tied to [...] the Principles and Parameters framework' (Lardiere, 2009: 176).

and adult learners must resort to other learning mechanisms.<sup>3</sup> The implication of the Full Transfer/No Access hypothesis with regard to the present study is that if there is no UG-access, L1 speakers of languages that have articles will outperform L1 speakers of article-less languages as they will rely entirely on their L1.

This position of Full Transfer/No Access is represented by the Fundamental Difference Hypothesis (Bley-Vroman, 1990), whereby child L1A is guided by UG, and adult L2A by native language knowledge and general problem solving (Clahsen, 1988: 47). Two of the major proponents of this view were Clahsen and Muysken (1986), who reported on the child L1A and L2A of German word order by L1 speakers of Turkish and L1 speakers of Romance languages. They found developmental differences between child L1A and adult L2A, which for them suggested that L2A is not UG-constrained. These findings were challenged by duPlessis Solin, Travis and White (1987) who re-analysed Clahsen and Muysken's data, and argued that L2 learners have access to UG, and that errors L2 learners make can be attributable to parameters having been set inappropriately for German. Other studies conducted on the L2A of German word order (e.g., Schwartz and Tomaselli, 1990; Vainikka and Young-Scholten, 1994; 1996a; 1996b) also challenged Clahsen and Muysken's claims. In fact, refuting the claims of the Full Transfer/No Access hypothesis can be done by the number of 'learners who have demonstrably attained native-like proficiency despite having begun exposure well after the closure of the hypothesized sensitive periods' (Long, 1990: 274). This has been supported by a number of researchers and studies, as will be seen below.

## 3.3.2 No Transfer/Full Access

Epstein, Flynn and Martohardjono (1996) and Flynn (1983; 1984; 1987; 1996) claim that there is no critical period or age effects, that UG constrains post-childhood L2A, and that there is no L1 transfer. The implications of this view are that in the L2A of English articles, all speakers perform similarly, and all speakers will attain native-like competence.

Epstein *et al.*'s position is based on work by Flynn (1983; 1984; 1987) that looked at whether or not Japanese speakers were able to acquire the English value of the head-direction parameter (from head-final to head-initial). Flynn based her study on an

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<sup>&</sup>lt;sup>3</sup> Due to word limitations and the scope of this research, with no pre-puberty learners in the sample, the critical period will not be discussed (for more discussion, see White and Genesee, 1996; White and Juffs, 1998).

elicited production of English task. Flynn found that her subjects were able to reset this parameter from the early stages of acquisition. She argues that since adult L2 learners are able to set parameter values that are different from those in their L1, it is plausible to argue that UG is still accessible. The 'No Transfer' part of this hypothesis states that interlanguage grammar develops independently from L1, solely as a result of the interaction between L2 input and UG. That is, UG, not the L1, constitutes the learner's initial state in L2A. Consequently, the interlanguage of speakers of different L1s should be the same, and L2 learners' linguistic competence will come to resemble that of native speakers.

Epstein et al. (1996) argue in favour of the Strong Continuity or Full Competence Hypothesis (Borer and Rohrbacher, 1997; Hyams, 1992; Wexler, 1998), which claims that functional categories are present in a child's L1 grammar from the initial state. However, there are some unclear points surrounding the No Transfer/Full Access hypothesis, and these are evident in Epstein et al.'s (1996) rejection of the possibility that: a) the L1 forms the initial state; and b) the initial state of L1 and the initial state of L2 are identical. White (2003b) criticises this position by stating that Epstein et al. acknowledge that there are some L1 effects in interlangauge grammar, but they claim that these effects are not due to L1 transfer. Their claim entails that the initial state of L2A is similar to L1A, but Epstein et al. (1996: 751) refute this as well. Therefore, if the initial state is not UG and not L1, then 'it is difficult to understand just what they have in mind' because the assumption that either UG or L1 is the initial state is 'the logical outcome of their position' (White, 2003b: 89). Notwithstanding White's view, it is plausible to argue that proposing that L1 transfer is not involved in L2A can be refuted by the large number of studies that support its involvement. There are many instances where UG alone cannot account for interlanguage grammar constructed by L2 learners, suggesting that the No Transfer/Full Access hypothesis is untenable.

## 3.3.3 Full Transfer/Partial Access

# 3.3.3.1 The Representational Deficit Hypothesis

Supporters of L2 learners having partial access to UG principles and parameters propose that this will lead either to: a) failure in resetting parameters by L2 learners (Clahsen and Muysken, 1989; Tsimpli and Roussou, 1991); or b) failure in acquiring L2 features not present in L2 learners' L1 (Hawkins and Chan, 1997; Hawkins and Liszka, 2003).

This account is the Representational Deficit Hypothesis (RDH) (Hawkins, 2000; 2005; Hawkins *et al.*, 2005; Tsimpli and Dimitrakopoulou, 2007; Tsimpli and Mastropavlou, 2007) (originally the Failed Functional Features Hypothesis) (Hawkins and Chan, 1997). The RDH is based on Chomsky's (1995) Minimalist assumptions and proposes that uninterpretable features lacking in L1 cannot be represented in interlanguage grammar, subject to a critical period. On the other hand, L2 learners are able to acquire interpretable features that their L1 lacks in any subsequent language they acquire. The implications of the Full Transfer/Partial Access claims for the present study are that all L2 learners of the English article system, regardless of their L1 background, would perform similarly and will not face difficulties as [+definite] and [+specific] are interpretable features. However, since the number feature [+/-plural] of count nouns is considered to be uninterpretable (Radford, 2000), and since it needs to be checked by either the plural -s or articles, L2 learners will have a permanent difficulty when it comes to acquiring the number feature of count nouns.

A study that supports the RDH was conducted by Hawkins and Liszka (2003) on the L2A of English past tense marking by two Chinese, five Japanese and five German speakers who were L2 learners of English (all of whom were advanced) by comparing their spontaneous oral production. They found that the Chinese speakers, but not the Japanese speakers or the German speakers, showed evidence of not having acquired past tense marking as it is absent in Chinese (Hawkins and Liszka, 2003). Challenging the view that uninterpretable features are subject to a critical period, White, Valenzuela, Kozlowska-MacGregor and Leung (2004) conducted a study on the L2A of gender and number agreement by post-puberty L2 Spanish speakers of English (n=68) and French (n=48) who were placed into a low, intermediate and advanced levels. English does not have grammatical gender, unlike French. The researchers found that gender features on determiners and adjectives showed evidence of acquisition by both groups, who performed similarly, regardless of L1. They concluded that in the L2 'native mental representations are in principle acquirable' (2004: 106).

An article-based study that tested the RDH was conducted by Snape (2009) on 38 L1 Mandarin English as a Second Language (ESL) speakers who were university-level students, and administered a forced-choice elicitation task. He found that some of the results were compatible with the RDH since interpretable features, which are [+definite]

and [+specific], can be acquired, although [+specific] is not the correct feature for English articles.

The ability of L2 learners to learn uninterpretable and interpretable features lacking in their L1 is still a currently debated issue. The RDH does not explain why L2 learners whose L1 lacks uninterpretable features, are able to attain native-like consistency in L2.

#### 3.3.4 Partial Transfer/Full Access

Organic Syntax was developed in response to the failure of Chomsky's (1995) Minimalist Program to present new insights into L1A and L2A (Vainikka and Young-Scholten, 2007). As a result, Organic Syntax was introduced as 'an alternative set of assumptions about structure that is based on work on the first and second language acquisition of syntax' (Vainikka and Young-Scholten, 2007: 1). There are ten assumptions comprising Organic Syntax, but the two major and relevant assumptions to the present study are as follows<sup>4</sup> (Vainikka and Young-Scholten, 2011:12-13):

- a. UG provides the tools for acquiring the Master Tree, based on input.
- b. The Master Tree is acquired from the bottom up.

These two assumptions, in addition to the other eight, are the basis of the Organic Grammar Theory (OGT) of the acquisition of language (Vainikka and Young-Scholten, 2005; 2007; 2011).

The OGT is the new version of the Minimal Trees/Structure Building Hypothesis proposed by Vainikka and Young-Scholten (1994; 1996a; 1996b). It claims that the initial state of interlanguage grammar contains lexical categories transferred from L1 grammar, but the initial state lacks functional categories. With regard to the present study, the implications of the Partial Transfer/Full Access claims for the L2A of English articles would be that: a) all L2 speakers whose L1 has articles will perform similarly to L2 speakers whose L1 lacks articles due to the fact that functional categories are not transferred in the initial state; and b) both groups will attain native-like competence by exposure to L2 input.

Vainikka and Young-Scholten base their claims on studies conducted on the acquisition of German by adult speakers of various L1s who had no formal L2 instruction (see Vainikka and Young-Scholten, 2011). The study used a combination of longitudinal

<sup>&</sup>lt;sup>4</sup> Due to word limitations, the researcher is unable to review all 10 assumptions (for more detail, see Vainikka and Young-Scholten, 2011: 12-16).

research and cross-sectional design, and Vainikka and Young-Scholten claimed that L2 learners, regardless of their L1, transferred their L1 word order to the 'bare' verb phrase (VP) without any inflections or evidence of functional features and their operations. The learners' phrase repertoire later expanded from the lexical VP to functional projections relating to the inflectional phrase (IP), such as the agreement phrase. That is, through the developmental stages, functional categories develop in response to the L2 input to which adult L2 learners are exposed. However, these are claimed not to be transferred from L1, but are available directly from UG. This position indicates that adult L2 learners are able to reset parameters to the appropriate L2 parameter setting. In fact, according to the OGT claims, we should not expect differences in terms of the L2A of functional categories between L2 learners of English from different L1 backgrounds. However, various researchers have argued against this hypothesis, claiming that functional categories are present in the initial state (e.g., Haznedar and Schwartz, 1997; Ionin et al., 2008; Tryzna, 2009). However, this does not falsify the claims of the OGT, as it is possible that the presence of functional categories in interlanguage grammar is due to the fact that the L2 learners tested were not in the initial state/early stages of acquisition (White, 2003b).

The present study tests two hypotheses: a) the Full Transfer/Full Access Hypothesis (FT/FA); and b) the Fluctuation Hypothesis (FH). The rationale for not testing the hypotheses just discussed is that the researcher assumes (as do most SLA researchers) that the No Transfer and the No Access accounts are untenable. Moreover, not including other hypotheses such as the Full Transfer/Partial Access and Partial Transfer/Full Access is because the former is more closely related to the acquisition of uninterpretable features and the later is more concerned with earlier stages of acquisition. Apart from that, just testing the FT/FA allows us to test an article-based account that refers to universals (and to UG) while also examining L1 transfer. Thus, the following section will discuss the two hypotheses tested in the present study: a) the FT/FA; and b) the FH.

# 3.3.5 The Full Transfer/Full Access Hypothesis

The FT/FA of Schwartz and Sprouse (1994; 1996) is the modern version of parameter resetting as proposed by White (1985; 1989) in a model which was called 'Absolute L1 Influence' (Schwartz and Sprouse, 1994). The FT/FA consists of two parts: the transfer part is related to the early stages of L2A, while the access (to UG) part is related to the subsequent parts of L2A. Schwartz and Sprouse (1994; 1996) propose that L2 learners

have full access to the principles and parameters of UG, and that they transfer all the functional categories and abstract features from their L1 in the initial state. Learners then resort to UG parameters when they encounter L2 input properties that cannot be accommodated by their L1. They depend initially on their L1 syntax to form sentences because they have not had sufficient exposure to the L2 data. Then they gradually restructure their L2 grammar based on their exposure to L2 input. Schwartz and Sprouse (1996) developed their hypothesis based on data gathered from a Turkish learner of German. Their results showed that the participant used his L1 knowledge in the placement of verbs in German subordinate clauses, thereby suggesting full transfer. The full access part of the hypothesis was observed when the participant restructured his grammar according to UG options. The implications of the FT/FA claims for the present study are that: a) all L2 learners of the English article system whose L1 has articles will transfer the properties of articles from their L1; and b) all L2 learners whose L1 lacks articles will not be able to use articles correctly; but c) due to full access to UG, L2 learners will restructure away from their L1-transferred grammars with rising overall proficiency.

Haznedar (1997) was one of the first to directly address and support the FT/FA. She conducted a longitudinal study of Erdem (aged 4), a Turkish-speaking boy who was learning English. Haznedar investigated whether the boy transferred from head-final Turkish the headedness of verbal projections. The recordings showed that Erdem produced (around 100 percent) head final word-order in his initial grammar, which suggests L1 influence. He switched gradually to the English order, thus demonstrating his full access to UG. Mobaraki, Vainikka and Young-Scholten (2008) challenged Haznedar's (1997) claims on the basis of data they collected from two L1 Farsi children learning English (Melissa age 7;4 and Bernard age 8;4). They found that they performed similarly to Erdem in transferring the final VP headedness from their L1 into their interlanguage, which is compatible with the OGT that lexical categories are transferred in the initial state. They also claimed that Erdem, Melissa and Bernard only projected a VP at the start. Some (e.g., White, 2003b) note problems with studies involving only one or two learners, as they may only be representative of the individual(s) participating in the study. But note that there are a large number of influential case studies in both L1A and L2A, as well as a number of studies of English articles (e.g., Huebner, 1983; Lardiere, 2004; 2005; Parrish, 1987). Indeed, White contradicts herself regarding criticising case studies, since she conducted a study on data collected from SD, an L1 Turkish-speaking learner of English. Based on these data, she formulated, along with other researchers, two SLA hypotheses: the Missing Surface Inflection Hypothesis (Haznedar and Schwartz, 1997; Prévost and White, 2000a; 2000b; White, 2003a) and the Prosodic Transfer Hypothesis<sup>5</sup> (Goad and White, 2004; 2006; Goad, White and Steele, 2003).

Another study that supports the FT/FA was conducted by White *et al.* (2004) on the L2A of gender and number agreement by post-puberty L2 Spanish speakers of English and French, already mentioned above. Their proficiency levels were low, intermediate and advanced. English does not have grammatical gender, but French has. They found that gender features on determiners and adjectives were acquired by both groups, and that L1 transfer effects did not hinder their acquisition. However, note that White *et al.* (2004) acknowledge the fact that their study supports the Full Access part more than the Full Transfer part as, contrary to their expectations, the low proficiency French speakers did not outperform their English counterparts on gender. This shows that the Full Access effects are sometimes more evident than the Full Transfer effects.

It can be noted from all of the above that the FT/FA argues that L1 grammar is entirely present in interlanguage grammar. However, it may be difficult to conduct a study that looks at 'the initial state as a whole; indeed, it is unrealistic to expect anyone to do so' (White, 2003b: 67). One of the issues raised against the FT/FA is that of falsifiability (White, 2003b). If L1 effects are absent from the interlanguage grammar of an L2 learner, the FT/FA supporters will argue that the learner only has access to UG. White's perspective is logical; however, defining 'initial state' may help to overcome this issue, as for the purposes of the present study, the 'initial state' is held to be a vague expression in the literature of SLA. The term loosely means 'the grammar at the outset of language acquisition' (Leung, 2005: 40).

We now turn to discuss article-based studies that tested the FT/FA.

<sup>&</sup>lt;sup>5</sup> Discussing the Prosodic Transfer Hypothesis is beyond the scope of this thesis.

#### Article-based studies

Among the many studies of the acquisition of articles, there are a number whose authors argue for the FT/FA (e.g., Almahboob, 2009; Robertson, 2000; Sarko, 2009; Slabakova, 2000; Snape, 2006; Tryzna, 2009; Yuan, 1998; Zdorenko and Paradis, 2008).

A study that found a high rate of omission errors due to L1 transfer was performed by Robertson (2000) on 18 Chinese (a [-article] language) learners of English whose proficiency was at the minimum required for admission to postgraduate study. A communication task was administered. He found that their rate of supplying English articles correctly was 78%, while they omitted articles at a rate of 22%. This may be due to the fact that definiteness and indefiniteness are not overtly marked in Chinese as they are in English. Therefore, L1 Chinese learners of English have to learn that what is absent from their grammar is obligatory in English.

Other studies have found more L1 transfer effects in the usage of English articles by [-article] speakers who tend to omit articles due to their L1. For example, Jaensch (2009) conducted a study of 39 (2 elementary, 9 lower-intermediate, 12 upper-intermediate and 16 advanced) L1 Japanese speakers who were L2 learners of English (having received 7 years of instruction from 12 years of age), L3 learners of German (3 years of instruction from 21 years of age) and 8 native German speakers. A large number of omission errors were made by the L3 learners of German in the oral production.

Some research has been conducted on the acquisition of articles by [+article] speakers; for example, Almahboob's (2009) study of 96 Saudi Arabic English as a Foreign Language (EFL) learners whose proficiency level ranged from elementary to advanced, based on the Oxford Quick Placement Test. Two tasks were administered: a) a forced-choice elicitation task; and b) a written task. He found that they transferred articles from Arabic into English as they supplied the definite article *the* correctly in non-generic [+definite, +/-specific] contexts and overused *the* in [-definite, +generic]<sup>6</sup> contexts, while demonstrating some overuse of *the* in non-generic [-definite, +specific] contexts. Then they moved away from non-target L1-based use of articles with rising overall proficiency. However, in his study, Almahboob did not include [-article]

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<sup>&</sup>lt;sup>6</sup> Since generic contexts are [-specific], the specificity value will not be added. Therefore, throughout the thesis, generic [+/-definite] contexts will be written as [+/-definite, +generic], and the reader should assume that [-definite, +/-specific] contexts are non-generic.

language speakers in order to compare them with his Arabic speakers, which means that attributing their performance to their L1 background could only be certain if the study had included a [-article] language group. Moreover, both tasks were written and there was a need to include an oral task to assess whether their performance differed as was observed in the following study by Sarko (2009) on [+article] speakers. She compared 57 Syrian Arabic and 18 French (a [+article] language) speakers. Their English proficiency levels were lower-intermediate, upper-intermediate, advanced and very advanced, based on the Oxford Quick Placement Test. Three tasks were administered: a) a forced-choice elicitation task; b) a story recall oral production task; and c) a written task. The study found that both groups transferred articles from their L1, and then restructured their use of English articles according to UG-access. Sarko discovered that the Syrian Arabic speakers overused the in [-definite, +generic] contexts, yet they used the non-generic indefinite article a accurately. However, Sarko did not notice that Syrian Arabic differs from all other varieties of Arabic (see Chapter Two, section 2.3.2.2) in that it contains the phonologically overt indefinite article shi which is in complementary distribution with the Arabic definite article al- (Brustad, 2000). Moreover, Sarko's participants were EFL and ESL immigrant learners, and she did not consider that they would perform differently. The variation in performance between EFL and ESL learners was found in a study on the L2A of generics by Ionin and Montrul (2010). This study was performed on 35 Spanish (a [+article] language) speakers (24 EFL and 11 ESL) and 38 Korean (a [-article] language) speakers (29 EFL and 9 ESL) on the L2A of the interpretation of plural NPs, since [+article] languages vary in terms of whether they use bare plurals (such as English) or definite plurals (such as Spanish) to express generic interpretation. The researchers found that the Spanish speakers (generic nouns are always definite in Spanish) over-accepted the generic interpretations of English definite plurals, depending on whether they were EFL or ESL learners. The results are as follows: a) for the Spanish speakers, 83% of the EFL learners and 27% of the ESL learners treated definite plurals as generic; and b) for the Korean speakers, 17% of the EFL learners and 0% of the ESL learners treated definite plurals as generic. In fact, the results demonstrated that ESL learners outperformed EFL learners. The fact that EFL learners seem to demonstrate more L1 transfer effects can be observed in Snape et al.'s (2013) study of the L2A of English generics, which was conducted on four different L1 groups: Turkish (n=88); Japanese (n=33); Spanish (n=50); English native control group (n=17). The participants were tested in their own

country. They were placed into two groups (upper-intermediate and advanced) according to the score they achieved on the Oxford Quick Placement Test. A forcedchoice elicitation task was administered that contained 66 dialogues (34 targets; 32 distracters). The researchers found that the Spanish speakers used the definite generic article the correctly (in Spanish, generic nouns are always definite). They also found that the Turkish [-article] speakers and the Japanese [-article] speakers performed less accurately than their Spanish counterparts. On the other hand, Snape et al. (2013) found that in [-definite, +generic] contexts, Spanish, Turkish and Japanese participants used a and  $\phi$  correctly, regardless of their L1. Yet, the Japanese speakers tended to perform less accurately than the Spanish speakers due to L1 transfer. These findings suggest that L1 transfer is not always evident in all L2 learners' production, and that there are instances where the effects of L1 transfer are not always obvious. In fact, Snape et al. (2013) proposed that their [-article] language speakers' low performance in terms of the definite generic article could be due to the fact that L2 input is not rich with definite generics. Moreover, the L1 Spanish, Turkish and Japanese speakers' good performance in selecting the indefinite generic a and  $\phi$  is attributed to both being special cases of the non-referential indefinite article (Lyons, 1999).

Note that there are other studies that are not fully compatible with the FT/FA. A study that does not fully support the Full Transfer claim was conducted by Avery and Radišić (2007) on five Serbian speakers. Serbian is a [-article] language and the participants were high intermediate/advanced speakers of English. They were shown a series of pictures that made coherent stories, and were asked to retell four of them. Their performance varied, but the researchers concluded it was partially constrained by L1 and UG. L1 transfer could be observed in one participant who did not use definite articles in topic position (in Serbian, topics are already marked definite), and UG-access was found in two participants whose performance did not match any pattern found in English or Serbian. The small number of participants in this study should be noted, and this reminds us of White's (2003b) previously noted criticism of a number of studies that were conducted on only a few participants.

An issue with the FT/FA is that one overrides the other: Full Transfer or Full Access. That is, the FT/FA claims that L2 learners whose L1 has the L2 linguistic target will transfer it from their L1 to their L2. It has been observed that there were L1 transfer effects. However, there were instances where L2 learners did not start with their L1.

Moreover, the Full Transfer claim seems to be related to the early stages of acquisition; however, it can be seen from the above that even the studies that were conducted on high-proficiency level speakers found L1 transfer effects. The question remains; which one do L2 learners resort to: Full Transfer or Full Access?

In the literature of SLA, there are other hypotheses within the FT/FA framework that share the same basic assumptions. The hypothesis relevant to the acquisition of articles is the Fluctuation Hypothesis (FH) while the other hypothesis is the Missing Surface Inflection Hypothesis (MSIH) which justifies omission errors in L2 production.

## 3.3.5.1 The Fluctuation Hypothesis

As was seen in Chapter Two, section 2.3, Ionin *et al.* (2004) propose the existence of a semantic parameter, the Article Choice Parameter, which applies to two-article languages, is related to discourse, and has two settings: [+/-definite] and [+/-specific]. Ionin *et al.* (2004:16) and Ionin *et al.* (2008: 560) argue in their FH that:

- a. L2 learners have full access to UG principles and parameters.
- b. L2 learners whose L1 is [-article] will fluctuate between specificity and definiteness until the L2 input leads them to set the parameter to the suitable value.
- c. L2 learners whose L1 is [+article] will transfer article semantics from their L1 to their L2.

The implications of the FH predictions for the present study are that: a) L2 learners whose L1 has articles will not fluctuate; and b) all L2 learners whose L1 lacks articles will fluctuate.

Ionin *et al.* (2004) tested the FH in a study conducted on 26 Russian and 39 Korean speakers on their usage of English articles; both languages are [-article]. The test was a forced-choice elicitation task containing 76 English written dialogues. The results of their study are given in the table below:

Table 3.1 Definiteness versus specificity: all contexts

L1	Specificity	+Definite		-Definite	
		the	a	the	a
Russian (n=26)	+specific	79%*	8%	36%	54%
	-specific	57%	33%	7%	84%
Korean (n=39)	+specific	88%	4%	22%	77%
	-specific	80%	14%	4%	93%

<sup>\*</sup> The percentage shows the occurrence of an article.

(Adapted from Ionin et al., 2004: 30, tables 12 and 13)

The results show that the participants fluctuated between specificity and definiteness because they were unable to transfer the Article Choice Parameter setting from their L1 since it was not relevant. Fluctuation between Article Choice Parameter settings means that 'L2 English learners go back and forth between distinguishing *the* [,  $\emptyset$ ] and *a* on the basis of definiteness, and distinguishing them on the basis of specificity' (Ionin *et al.*, 2004: 36). In their study, the participants overused *the* in [-definite, +specific] singular contexts and *a* in [+definite, -specific] singular contexts (the shaded values in the table), although English distinguishes articles based on definiteness. In other words, English ties the usage of *the* to definiteness. Ionin *et al.* (2004: 16-17) argue that 'L2 learners should have no initial preference for one setting of a parameter over another' since both languages are [-article] and the parameter has never been relevant. If they have full UG-access, they should have access to all of the possible parameter settings until the input guides them to choose the appropriate one for their L2 (the definiteness value, in the case of English).

In early studies by Ionin (2003) and Ionin *et al.* (2004), the question was left open as to what will happen in [+article] languages. However, in a more recent study by Ionin *et al.* (2008), they looked at the acquisition of English articles by [+article] language speakers. A study was undertaken of 20 Spanish (a [+article] language) speakers (11 beginner, 8 intermediate and 1 advanced) and 19 Russian (a [-article] language) speakers (4 beginner, 10 intermediate and 5 advanced). Two written tests were administered: an elicitation test of English article use, and a cloze test of L2 proficiency. The results of their study are given in the following table:

Table 3.2 Definiteness versus specificity: all contexts

L1	Specificity	+Definite		-Definite	
		the	a	the	a
Russian (n=19)	+specific	93%*	5.3%	23.7%	74.6%
	-specific	86%	14%	3.5%	95.6%
Spanish (n=20)	+specific	87.5%	0.8%	1.7%	92.5%
	-specific	96.7%	0.8%	4.1%	91.7%

<sup>\*</sup> The percentage shows the occurrence of an article.

(Adapted from Ionin *et al.*, 2008: 365, tables 18 and 19)

The results of the two groups showed that the Russian speakers achieved the same results as in the previous study by Ionin *et al.* (2004) of the Russian and Korean speakers, whereas the Spanish speakers were highly accurate in choosing articles. These results suggest that 'transfer overrides fluctuation' (Ionin *et al.*, 2008: 569). That is, the

Spanish speakers did not fluctuate between definiteness and specificity, since they transferred article semantics from their L1. In contrast, the Russian speakers, due to the absence of positive L1 transfer, fluctuated between distinguishing *the* and *a*, based on definiteness and specificity.

There are a number of studies that support the FH (e.g., Almahboob, 2009; Ionin et al., 2007; Jia, 2009; Snape, 2009). Kim and Lakshmanan's (2009) study, for example, looked at 19 adult L1 speakers of Korean (a [-article] language) who were all ESL learners of English and whose proficiency levels were intermediate and advanced, in addition to 18 native English speakers. They found that the Korean speakers fluctuated between definiteness and specificity in [+definite, -specific] and [-definite, +specific] contexts, compatible with Ionin et al.'s (2004) and Ionin et al.'s (2008) findings. Conversely, a study that supported the no-fluctuation position of the FH with regard to L1 speakers of [+article] languages was performed by Hawkins et al. (2006) on 12 L1 Japanese (a [-article] language) and 12 L1 Greek (a [+article] language) learners of English, whose proficiency level ranged from upper-intermediate to advanced. They found that the Greek speakers outperformed the proficiency-matched Japanese speakers, which suggests, on the part of the Greek speakers, that they transfer from their L1. This correlates with Ionin et al.'s (2008) findings for the L1 speakers of Spanish (a [+article] language), that transfer overrides fluctuation. Moreover, Hawkins et al. (2006) found that the intermediate Japanese learners of English demonstrated fluctuation in [-definite, +specific] singular and plural contexts, but not in other contexts, as can be seen in the following table:

Table 3.3 Choice of \*the in indefinite count singular and plural contexts

$\mathcal{B}$						
L1 +Specific		Specific		cific	-Specific	
		CITIC	(no scope)		(narrow scope)	
	Singular	Plural	Singular	Plural	Singular	Plural
Japanese	50%*	58%	8%	19%	4%	4%
Greek	0%	8%	0%	4%	0%	4%
English	0%	0%	0%	5%	0%	10%

<sup>\*</sup> The percentage shows the occurrence of an article.

(Adapted from Hawkins et al., 2006: 17)

However, Hawkins *et al.*'s results indicated that not all the Japanese speakers fluctuated; some participants overused *the* in [-definite, +specific] singular contexts

only, while others overused it in [-definite, +specific] plural contexts.<sup>7</sup> In fact, these findings confirm what Ionin *et al.* (2004) found, in that 24 of their 65 participants (37% of the sample) did not fluctuate, and what Ionin *et al.* (2008) found when 9 of their 19 Russian speakers (47%) did not fluctuate.

On the basis of Hawkins et al.'s (2006) findings, it appears that fluctuation may be a pattern of article usage rather than a stage through which all L2 learners whose L1 lacks articles progress. However, it should be pointed out that since the number of participants was relatively small, and their English proficiency level was high in Hawkins et al.'s study, we may not know whether L1 [+article] language learners of L2 [+article] languages are similar to L1 [-article] language learners, in that they might display fluctuation in their earlier L2A stages. This was the case in studies on [+article] language speakers where researchers reported some overuse of the in [-definite, +specific] contexts on the part of low proficiency level participants (e.g., Almahboob, 2009). According to the FH, exposing L1 [-article] language speakers to L2 [+article] language input is the only way to set the Article Choice Parameter. Therefore, in the case of L1 [+article] language speakers, we may not be sure whether they display fluctuation in an earlier stage of their L2A, or whether this fluctuation disappears due to the assumption that they may benefit from L2 [+article] input faster than in the case of L1 [-article] language learners of L2 [+article], as L1 transfer effects and UG-access operate together.

Going back to Ionin *et al.*'s (2008) study, two problems can be identified. Firstly, Ionin *et al.* (2008) did not clearly say how long the participants had been learning English. Moreover, in the case of the Russian speakers, we do not know whether fluctuation will continue, regardless of how much input they receive. There were only 5 participants in the advanced group. Regarding the Spanish speakers, not mentioning how long they had been learning English means that we cannot be sure about whether they passed through a fluctuation phase. This points to the same problem as with Hawkins *et al.*'s (2006) study, in that some participants might display fluctuation in their earlier L2A stages. Secondly, Ionin *et al.* (2008) as criticised by Zdorenko and Paradis (2008: 232), do not show 'how rapidly and successfully learner grammars converge on the target grammar'. Zdorenko and Paradis (2008) addressed this by conducting a longitudinal study of 17 children (mean age 5;4) - 7 children whose L1s

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<sup>&</sup>lt;sup>7</sup> Hawkins *et al.* (2006) did not explicitly show how many of their sample did not fluctuate.

were Arabic, 8 Romanian, and Spanish ([+article] languages) and 10 children whose L1s were Chinese, Japanese, and Korean ([-article] languages). The children were given a series of pictures that represented cohesive stories, and they were asked to write about them. Their acquisition of English articles was examined to test the FH and the role of L1 transfer. It was found that the [+article] L1 children did not outperform the [-article] L1 children. In other words, both groups fluctuated, and [+article] L1 children did not transfer the definiteness setting from their L1, thereby contradicting the findings of Hawkins et al. (2006) and Ionin et al. (2008). Therefore, they claim that fluctuation overrides transfer, at least for pre-puberty learners. That is, [+article] L1 children might not transfer the definiteness setting from their L1 due to their more efficient UG-access when compared with adults. This would make them more vulnerable to fluctuation. In fact, it is not possible to refute Hawkins et al.'s (2006) and Ionin et al.'s (2008) findings unless the participants of these studies had been adults. What Zdorenko and Paradis proposed was that children of a [+article] language were able to transfer the D from their L1, but did not transfer semantic features from their lexicons. Therefore, they called for further research on whether access to UG overrides transfer, or vice versa, to see which guides child L2A.

It can be noted from the above that the FH accounts for substitution errors but does not take into consideration omission errors in producing articles. Errors have been found, especially in oral production, by a number of studies focusing on L2 learners whose L1s lack articles (e.g., Huebner, 1983; Parrish, 1987; Robertson, 2000; White, 2003a). In Ionin *et al.*'s (2008), Hawkins *et al.*'s (2006) and Ionin *et al.*'s (2004) studies, omission errors were not discussed because they were low in number, and the studies administered were fill-in-the-blank tasks. This was found by Lardiere (2004) when she found that omission rates in oral speech were twice that in written contexts. The FH cannot always account for all article misuse, as there are some partial fluctuation and other miscellaneous patterns. For example, Ionin *et al.* (2004) found a number of individual patterns, as was illustrated above, such as three Russian speakers either overusing *the* in [-definite, -specific] contexts, or not using the correct article in [+definite, +specific] contexts; these results cannot be explained within the FH framework.

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<sup>&</sup>lt;sup>8</sup> Zdorenko and Paradis (2008) did not mention what variety of Arabic they speak.

In the light of what has been presented about the FH not explaining all L2 learners' article misuse, it is a hypothesis that explains only substitution errors. However, even though it accounts for substitution errors, it seems to fail to explain why not all L2 learners whose L1 lacks articles fluctuate. Does this mean that fluctuation is a temporary phase in the L2A of articles? Even if this is the case, the FH fails to determine when and for how long L2 learners whose L1 lacks articles will fluctuate, and how much L2 input they need to recover.

As noted in the discussion above, the FH does not account for omission errors. Indeed, there is a description in the literature of the L2A of English articles that accounts for omission errors in spoken production. This relates to the Missing Surface Inflection Hypothesis (MSIH) which is discussed in the following section.

# 3.3.5.2 The Missing Surface Inflection Hypothesis

L2 learners, particularly adult learners, demonstrate optionality in their use of inflectional morphology. That is, they vary in their use/non-use of a grammatical feature, or use two or more forms interchangeably which in the L2 compete in meaning (Robertson, 2000: 138). For example, tense and agreement markings could be present, absent or incorrect in L2 learners' production data (Prévost and White, 2000b). The MSIH claims that there is a mapping problem between the derivational morphemes and the surface phonological exponents that realise them (see Epstein *et al.*, 1996; Grondin and White, 1996; Haznedar and Schwartz, 1997; Lardiere, 1998a; 1998b; Prévost and White, 2000a; 2000b; White, 2003a). Errors cannot be attributed to a deficit in L2 learners' syntax; L2 learners 'have unconscious knowledge of the functional projections and features underlying tense and agreement' (Prévost and White, 2000b: 103). The implication of the MSIH claims for the present study is that, regardless of L1, L2 learners will tend to omit articles.

The MSIH was based on the notion of Distributed Morphology (Halle and Marantz, 1993; 1994; Harley and Noyer, 1999), which proposes that syntactic operations produce terminal nodes that are specified for syntactic and semantic features, but lack phonological exponents. A Vocabulary item is inserted through feature matching; a Vocabulary item or phonological exponent is inserted that has the most number of matching features to those of the terminal node in the syntax. Under-specification indicates that it is not necessary for the features of a Vocabulary item to wholly match

those of a terminal node to be inserted; that is, features can be under-specified, but if a Vocabulary item is partially specified, it means that some features are missing. This can be illustrated in terms of the English articles (*the*, a and  $\phi$ ), which are the phonological exponents of the syntactic category D. Category D has the following terminal nodes, which produce a bundle of features (Hawkins *et al.*, 2006: 20):

```
[D, +definite, +singular] (= 'the')
[D, +definite, -singular] (= 'the')
[D, -definite, +singular] (= 'a')
[D, -definite, -singular] (= '\varphi')
```

Conversely, the phonological exponents contain the following features and the contexts of insertion for the phonological exponents (represented here orthographically):

```
a \leftrightarrow [D, -definite, +singular]
the \leftrightarrow [D, +definite]
\emptyset \leftrightarrow [D]
```

A study of the application of the MSIH to the acquisition of articles was conducted by White (2003a) on data from SD who was an L1 Turkish (a [-article] language) ESL learner of English. The data was collected from four interviews over two months. Her usage of definite and indefinite English articles was quite accurate according to White, as her incidence of the definite article in obligatory contexts was about 72%, whereas the incidence of the indefinite article in obligatory contexts was around 60%. Moreover, she did not fluctuate; she did not use definite articles instead of indefinite articles, or vice versa, in obligatory contexts. In other words, her errors were due to omission rather than substitution, which supports the MSIH. SD's suppliance of agreement and tense on lexical verbs was higher, at around 80%, suggesting that L1 transfer (Turkish is rich in verbal tense/agreement morphology) was relevant.

Lardiere (1998a; 1998b; 2004; 2005) also looked at the acquisition of articles in a study of a single learner. She examined longitudinal data that came from three audio-recorded conversations with an adult Chinese L2 speaker of English, Patty. Unlike Turkish, Chinese lacks tense/agreement morphology and like Turkish it is a [-article] language. Lardiere examined Patty's end-state use of articles and found she omitted them more than she substituted them, although that her usage was quite accurate like SD (see Table 3.4). Her usage of agreement inflection and tense was not as good as her

article usage. However, she demonstrated mastery of the related syntactic phenomena, indicating the possession of tense and agreement. This can be seen in her perfect distribution (100%) of the accusative and nominative pronominal case. However, we do not know why articles and inflectional morphology patterned differently, as can be seen from Patty's results.

Table 3.4 SD's and Patty's suppliance of tense, 3rd person singular, definite articles and

indefinite articles in obligatory contexts (in %)

Study	Participant	L1	Tense	3rd person singular	Definite articles	Indefinite articles
White (2003a)	SD	Turkish	80%	80%	72%	60%
Lardiere (1998a; 1998b; 2004; 2005)	Patty	Chinese	34%	17%	84%	75%

It appears that the MSIH does not pay close attention to the extent to which L1 may affect the L2 learner's interlanguage grammar (Sarko, 2009), although this hypothesis is situated within the FT/FA framework. The MSIH prediction seems to generalize to all L2 learners, as it does not show whether or not L2 learners' performance varies according to their L1. In fact, it can be observed clearly in the table that SD's performance was more accurate than Patty's in terms of tense and agreement. It should be noted that they participated in different studies; however, both were at their endstate, so they were expected to perform similarly. The fact that Turkish has verbal tense and agreement whereas Chinese does not, may account for the performance variation. It is clear from the variation between the two speakers and the involvement of L1, that the MSIH account does not predict cross-linguistic variability in interlanguage. In fact, White (2003a: 139) states that the MSIH is 'post hoc...[and that it does not] predict inevitable variability in suppliance of overt L2 morphology but seek only to account for such variability as is found'. This was supported by McCarthy (2005: 11), who suggests that '[t]he MSIH makes no predictions regarding variability among finite forms, only to say that inflection, when supplied, is accurate.' Since the MSIH does not predict anything, this was the reason we did not pursue this hypothesis in this research. However, we acknowledge the fact that it offers an explanation of why morphemes are not always supplied.

We now turn to the role of word position in the acquisition of articles, an aspect which has been overlooked in all the studies that have been discussed so far, except for the study by Avery and Radišić (2007).

## 3.4 The role of word position in the L2 acquisition of English articles

The role of word order has been overlooked to a large extent in the literature relating to the L2A of English articles. Only a few studies have examined whether a relationship exists between word order, specifically whether a language is topic-prominent or subject-prominent, and the L2A of English articles. As discussed in Chapter Two, section 2.2.3, topic-prominent languages such as Mandarin are those that make a distinction between topic, which is information that the speaker knows and the hearer assumes, and comment, which is what is said about the topic (Li and Thompson, 1981). Indefinites are not information that is known by the speaker and assumed by the hearer; therefore, they cannot take the pre-verbal topic position in such languages. Instead they occupy the post-verbal comment position. MSA is controversial between being categorized as a topic-prominent language (Brustad, 2000) or a subject-prominent language (Meir and Sandler, 2008). Note that word order does not play a role with regard to article usage in MSA (Lyons, 1999; Meir and Sandler, 2008) (see section 2.2.2). Saudi Arabic and English are subject-prominent languages (Meir and Sandler, 2008) which means that the word order in a sentence is determined by their syntactic function. Conversely, the word order in topic-prominent languages is determined by their information function (Lyons, 1999; Meir and Sandler, 2008). The present study adopts the position that English and Saudi Arabic are subject-prominent languages. However, Meir and Sandler (2008) note that even subject-prominent languages like English can have sentences constructed around the topic-comment principle. Yet, the major difference between subject-prominent and topic-prominent languages 'is not the order of the elements in the sentence but rather in whether or not these elements are marked syntactically' (Meir and Sandler, 2008: 130). Lyons (1999) added that there is an overlap between definiteness marking and topic marking in that they do not co-occur. In other words, languages with topic markers do not have definite articles, whereas languages with articles do not have topic marking, although they implement other devices such as intonation to indicate topic-comment structure.

The first study to find a role of noun position in the L2A of articles was a case study conducted by Huebner (1983) on the acquisition of English articles on the part of

a topic-prominent language speaker, namely Hmong. The data was collected by recording free conversations over one year. Huebner found that 74% of article omissions were in subject position. Another study was conducted by Avery and Radišić (2007) on five Serbian (topic-prominent) learners of English, already mentioned above. When the participants were given a series of pictures with each series telling a story, and retold them, the rate in terms of omission errors of the definite article the was 90% in subject position, whereas omission errors in a non-subject position were about 38%. One of the few cross-linguistic comparative studies on the role of word position was conducted by Jarvis (2002), who compared the production of English articles in written narratives by 199 Finnish (topic-prominent) and 145 Swedish (subject-prominent) speakers of English. The study found that the Finnish speakers omitted articles in subject position significantly more than the Swedish speakers. However, a more recent study by Pierce and Ionin (2011) was conducted on 16 Korean and 14 Mandarin ESL learners of English (Pierce and Ionin did not mention their proficiency level(s)) to test their perception of articles. A transcription task consisting of 18 grammatical sentences spoken in a conversational style was administered. Three types of noun were used (definite singular/plural, indefinite singular, and bare plural). The nouns appeared in subject and object positions. The results contradicted previously reported studies. The researchers found that both groups were more accurate in perceiving English articles in subject position (the accuracy rates were 91% for both the Mandarin and Korean speakers) than in object position (the Mandarin speakers' accuracy rate was 65%, while that of the Korean speakers was 75%). Note that Pierce and Ionin used different methodology. Contrary to what was found by the aforementioned studies, topicprominent language speakers do not omit articles in subject position. In fact, Pierce and Ionin (2011) not only attribute their participants' performance to the fact that their L1s are topic-prominent, but also to the fact that, in English, old information tends to occur at the beginning of sentences and is marked with the, whereas new information tends to appear sentence-finally and be marked with a (Birner and Ward, 2006). Biber, Conrad and Reppen (1998) found that the distribution of the and a in English is as follows: the definite article the tends to precede NPs that occur in subject position in 85% of cases, whereas the indefinite article is around 15%. In object position, the occurs in around 55% of cases, and a in around 45%. Therefore, since the distribution of the and a in the L2 input varies, L2 learners may be affected by this as they are sensitive to L2 input. However, noun position and what L2 learners are exposed to in terms of L2 input do not mean that L1 has no role. That is, it seems that, based on the above studies, speakers of topic-prominent languages seem to have sensitivity to word position which leads to either the omission of articles or the overuse of the definite article in subject position. Yet, it is not clear which error pattern they display.

However, there are two main issues in the above studies: a) the data on which Huebner (1983), Avery and Radišić (2007) and Jarvis (2002) based their results were production tasks, and Huebner (1983) assumed that, in oral production tasks, L2 learners tend to make more omission errors than in more controlled tasks (their assumption supports the MSIH); and b) Pierce and Ionin (2011) assume that their results are only suggestive, and that more data should be obtained from L2 learners of different L1 backgrounds and who have different proficiency levels, before drawing any final conclusions. In the light of this, there is a need to: a) conduct a cross-linguistic study between topic-prominent and subject-prominent learners of English of different proficiency levels, to examine how they treat nouns that appear in subject and object positions; and b) administer tasks that are more controlled in terms of the frequency with which a noun appears in subject and object positions in order to facilitate statistical analyses.

#### 3.5 Summary of Chapter Three

The present study tests the FT/FA and the FH in terms of the acquisition of English indefiniteness to examine L1 influence and UG effects, particularly in terms of fluctuation between specificity and definiteness.

A number of methodological issues have been identified and discussed in this chapter, upon which these hypotheses have been based in terms of: a) the small number of participants (e.g., Avery and Radišić, 2007; Hawkins *et al.*, 2006); b) using a mixture of ESL and EFL participants (e.g., Sarko, 2009); c) relying on case studies (e.g., Huebner, 1983; Lardiere, 1998a; 1998b; White, 2003a); and d) using only one type of task (written) (e.g., Almahboob, 2009; Ionin *et al.*, 2004; Ionin *et al.*, 2008) or (oral) (e.g., Avery and Radišić, 2007; Huebner, 1983; Lardiere, 1998a; 1998b; White, 2003a). Apart from these, note that most of the studies examining the acquisition of articles compare:

a. L1 [-article] language speakers with [+article] language speakers (e.g., Hawkins *et al.*, 2006; Ionin *et al.*, 2008; Snape, 2006)

b. Two L1 [+article] language speaker groups (e.g., Sarko, 2009)

c. Two L1 [-article] language speaker groups (e.g., Ionin et al., 2004)

d. OR examine only the production of [-article] language speakers (e.g., Avery and Radišić, 2007; Robertson, 2000) or the production of [+article] language speakers (e.g., Almahboob, 2009).

There is a need to compare two groups of L2 English speakers, one [+article] and one [-article]. But it will be interesting if one of the two languages shares a feature related to articles in the other language, to observe whether or not speakers of these languages perform similarly in L2 English. This applies to Mandarin, which is: a) a [-article] language and b) a topic-prominent language, and Arabic, which is: a) a [+article] language and b) a subject-prominent language. Arabic, although a [+article] language, resembles Mandarin in that it does not have a phonologically overt indefinite article. Arabic and Mandarin speakers should therefore perform similarly in contexts that require a phonologically overt indefinite article. Moreover, in the light of what Pierce and Ionin (2011) have suggested, the role of noun position is important, and topic-prominent Mandarin and subject-prominent Arabic speakers should perform differently.

In the present study, the researcher opted to examine the L2A of English articles in [-definite, +/-specific] and [+/-definite, +generic] contexts rather than [+definite, +/-specific] contexts because it would be difficult to explore all possible contexts in English as this would require much longer and time-consuming tasks, which might affect: a) participants' performance and concentration due to the length of tasks; and b) the number of willing participants. In addition, in [+definite, +/-specific] contexts, English always requires the definite article the, whereas in [-definite, +/-specific] and [-definite, +generic] contexts, the a article is required if the noun is singular and  $\phi$  if the noun is plural or mass. That is, [-definite, +/-specific] and [-definite, +generic] contexts allow us to examine the suppliance of two English articles which are phonologically overt and covert, and not a single one which is phonologically overt. However, this does not mean that the suppliance of the is not examined in this research, as there are [+definite, +generic] contexts that require a definite article. Moreover, [-definite, +/-specific] contexts provide an opportunity to examine more closely the role of specificity effects, and consider how they interact with the [-definite] feature. In fact, specificity effects with indefinites are stronger than those with definites, as has been found by a number of researchers (see Ionin et al., 2009; Tryzna, 2009; Zdorenko and

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<sup>&</sup>lt;sup>9</sup> [+generic] contexts are always [-specific]; therefore, for simplicity, the specificity value will not be provided. However, if the specificity value is provided, the reader should assume that the context is non-generic.

Paradis, 2008). That is, L2 learners' article choice seems to be more sensitive to specificity when the context is [-definite].

Based on the results of the studies discussed above, this study addresses the following three research questions which in turn allows the formulation of the hypotheses shown below:

Research questions: 10

## 1. Will L2 learners' article usage reflect L1 transfer?

**H1a** Only Mandarin, not Arabic, speakers will use *the* in subject position more than in object position, as Mandarin is a topic-prominent language, while Arabic is a subject-prominent language.

**H1b** Arabic and Mandarin speakers will make omission errors at a similar rate in [-definite, +/-specific] singular contexts, since Arabic lacks a phonologically overt indefinite article, while Mandarin lacks an article system.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

**H1d** Arabic speakers will use *the* more accurately than Mandarin speakers in [+definite, +generic] contexts, since generics in Arabic are always definite.

**H1e** Mandarin speakers will omit *the* more than Arabic speakers in [+definite, +generic] contexts, since Mandarin lacks an article system.

**H1f** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] singular contexts, since generics in Arabic are always definite.

**H1g** Mandarin speakers will make more omission errors than Arabic speakers in [-definite, +generic] singular contexts, since Mandarin lacks an article system.

**H1h** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] plural and mass contexts, since generics in Arabic are always definite.

<sup>&</sup>lt;sup>10</sup> Research questions 1 and 3 are based on the predictions of the FT/FA, whereas question 2 is based on the predictions of the FH.

**H1i** Mandarin speakers will use  $\phi$  more accurately than Arabic speakers in [-definite, +generic] plural and mass contexts, since Mandarin lacks an article system.

**H1j** There will be an interaction in the realisation of *the* between the L1 and genericity in [-definite] contexts, in that Arabic speakers will use *the* more in [-definite, +generic] contexts than in [-definite, +specific] and [-definite, -specific] contexts, but Mandarin speakers will not differ in their use of *the*.

2. Will Mandarin speakers fluctuate between definiteness and specificity in [-definite, +specific] contexts, and will Arabic speakers do likewise in [-definite, +specific] singular contexts?

**H2a** Arabic speakers will fluctuate between specificity and definiteness only in [-definite, +specific] singular contexts, although this should be less robust in the advanced group due to exposure to L2 input.<sup>11</sup>

**H2b** Mandarin speakers will fluctuate between specificity and definiteness in all [-definite, +specific] contexts, although this should be less robust in the advanced group due to exposure to L2 input.

- 3. Will Arabic and Mandarin speakers with rising overall proficiency restructure away from their L1-transferred grammars to converge on the L2?
- **H3** L2 learners will restructure away from their L1-transferred grammars and show less non-target-like L1-based use of articles with rising overall proficiency.

The following chapter provides detailed information about the experimental design of the present study.

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<sup>&</sup>lt;sup>11</sup> The absence of a phonologically overt indefinite article may make Arabic speakers fluctuate.

## Chapter 4. Methodology

#### 4.1 Introduction

To investigate the L2A of English articles by Arabic and Mandarin speakers, a quantitative approach was adopted for data collection and analysis. One of the distinctive features of this approach is that the results are less affected by possible bias. Therefore, the procedures of a quantitative research study can be replicated by other researchers, an aspect that will ultimately improve validity and reliability.

This chapter is divided into five sections. The first presents information about the participants. The second section describes the tasks used in the study: a) a forced-choice elicitation task; and b) a story recall oral production task. Section three presents detailed information about the study procedure. The final two sections provide information about scoring and data coding.

#### **4.2 Participants**

The study involved 142 participants. The L1 Arabic speaker group consists of 56 native speakers of Saudi Arabic (aged 24 to 41), while the L1 Mandarin speaker group consists of 66 Mandarin native speakers (aged 23 to 34). The control group comprises 20 English native speakers (NS) of similar ages (22 to 31). All L2 learners were ESL learners who were pre-programme students enrolled on English courses or postgraduate and undergraduate students. EFL and ESL students have been found to perform differently in these types of tests, as was pointed out earlier (see Chapter Three, section 3.3.5). However, all of them had been EFL learners prior to coming to the UK, so were taken to be as homogeneous as possible in terms of age (all are adults), length of residence in English-speaking countries (LOR), and age of start of formal English language classes (ASF) (all were around puberty (aged 11 and above) when they began acquiring English as their second language, and L2 learners who started before the age of 11 were not included). Participants who speak other Arabic varieties were screened out.

As noted in the previous chapter, previous L2A of English article studies were conducted using a relatively small number of participants, e.g., 1 L2 learner as in White's (2003a) study, 5 L2 learners as in Avery and Radišić's (2007) study, or 24 L2

<sup>&</sup>lt;sup>1</sup> For simplicity, we sometimes refer to it as 'oral task'.

learners and 5 control group speakers as in Hawkins *et al.*'s (2006) study. But according to Dörnyei (2007), the number of participants in comparative studies should not be less than 15 in each group, and this was observed in the present study. In the light of this, the researcher thought that 122 L2 learners was large enough to obtain reliable and valid results as other studies that were conducted on smaller numbers of participants came up with interesting findings and are considered to be influential studies in the field of SLA of English articles.

For a homogeneous sample, the researcher ensured that each group spoke the same variety of Arabic (Saudi Arabic) and one variety of Chinese (Mandarin). The rationale for this is that there are differences among variations in each language that may affect English article usage. For example, as discussed in Chapter Two, section 2.3.2.2, Syrian Arabic may have what is thought to be a phonologically overt indefinite article *shi*. Although all Chinese varieties lack articles (Li and Thompson, 1981; Matthews and Yip, 1994), the researcher opted to recruit Mandarin speakers due to differences between Mandarin and other dialects. In addition, none of the participants spoke languages other than their L1 and English, since it has been found that L3 learners may transfer from their L1 and/or L2 (see Leung, 2003). Some participants received monetary compensation for their time as has been the case in other studies (e.g., Ionin and Montrul, 2010; Lu, 2001).

The Arabic and Mandarin speakers were grouped based on the scores they achieved on the Oxford Quick Placement Test (OQPT) (Syndicate U.C.L.E., 2001), paper and pen version 1. It is a timed test (30 minutes) that consists of 60 multiple choice questions. OQPT scores range from 0-60 and the scores divide participants into six proficiency groups, as illustrated in the following table:

Table 4.1 OQPT division of proficiency scores

Level	Score
Beginner	0-17
Elementary	18-29
Lower-intermediate	30-39
Upper-intermediate	40-47
Advanced	48-54
Very advanced	55-60

The rationale behind choosing this test is that many recent studies (e.g., García Mayo, 2008; Hawkins *et al.*, 2006; García Mayo and Hawkins, 2009; Sarko, 2009; Snape,

2006; Snape et al., 2013; Tryzna, 2009) have used this test and it has been found to be an effective predictor of participants' performances on linguistic tasks such as those used in this study. Standardized tests, such as the OQPT, are considered to be highly valid and reliable in SLA research, as they allow researchers to generalize their results to people outside the sample.

In line with previous studies, the participants in this study were placed into three proficiency levels: lower-intermediate (those who scored between 30 and 39 out of a possible top score of 60), upper-intermediate (those who scored between 40 and 47) and advanced (those who scored between 48 and 56<sup>2</sup>). The researcher screened the participants and did not include those who scored too low; that is, below the lowerintermediate band of 30.

The table below presents information on the participants on each proficiency level of each L1 with regard to age, their score on the OQPT, sex, LOR and ASF (for more detail, see Appendix D).

Table 4.2 Background information on participants

L1	Group	Number of Participants		OQPT score	Age	LOR in months	ASF
Arabic	LI	17	Mean	34.82	27.94	14.71	11.82
			SD	2.72	2.84	3.53	0.72
Mandarin	LI	17	Mean	35.29	26.53	14.53	11.59
			SD	2.54	2.37	3.39	0.71
Arabic	UI	22	Mean	44.14	27.55	15.86	11.82
			SD	2.47	2.18	4.28	0.59
Mandarin	UI	22	Mean	44	25.95	16.1	11.64
			SD	2.31	2.52	3.46	0.50
Arabic	Adv	17	Mean	52.76	29.24	18.12	12
			SD	2.33	4.04	5.85	0.50
Mandarin	Adv	27	Mean	52.56	27.26	17.74	11.48
			SD	2.19	2.61	4.28	0.58
NS		20	Mean		26.7		
			SD		2.34		

To see if there is any significant difference between groups in terms of OQPT score, age, LOR and ASF, the data was compared statistically using SPSS 19.0. Since not all of the data is normally distributed in all groups, several Kruskal-Wallis tests were run to

<sup>2</sup> According to the OOPT, 55 and 56 are considered to be very advanced, but since the number of those whose scores were 55 and 56 was not large enough to run statistical tests on, they were included in the advanced group. Note that Snape (2006) combined his lower-intermediate and upper-intermediate groups and called them intermediate, and combined his advanced and very advanced groups and called them

advanced.

identify any differences between the groups in terms of age,<sup>3</sup> LOR and ASF. The tests found a significant difference in age (p> 0.05). Mann-Whitney tests found significant differences between the lower-intermediate Mandarin speakers and all three Arabic groups, and between the advanced Arabic speakers and the native speakers. However, none of the comparisons survived the Bonferroni correction (p< 0.002). Several Mann-Whitney tests were conducted on the OQPT proficiency scores to see if there is a significant difference between: a) the lower-intermediate Arabic and Mandarin groups; b) the upper-intermediate Arabic and Mandarin groups; and c) the advanced Arabic and Mandarin groups. No significant differences (p> 0.05) were found.

It was thought that examining three proficiency levels would allow us to examine the developmental progression of English articles, and this is why we opted to include three proficiency levels, even though most influential studies in the SLA of English articles have included two proficiency levels (intermediate and advanced) (e.g., Hawkins *et al.*, 2006; Ionin *et al.*, 2004; Snape, 2006) while other studies examined production in a case-study of an end-state L2 learner of English (e.g., Lardiere, 1998a; 1998b; White, 2003a). There are yet other studies that did not look at the role of proficiency and did not administer a proficiency test (e.g., Robertson, 2000; Trenkic, 2007).

The tasks are now outlined in the following section.

## 4.3 Materials

In addition to the OQPT proficiency test, participants undertook two tasks to determine the linguistic representations of articles under investigation: a) a forced-choice elicitation task; and b) a story recall oral production task. These two tasks were not timed, in order to avoid pressure, as was the case in other studies (e.g., Sarko, 2009; Snape, 2006).

#### 4.3.1 Forced-choice elicitation task

The forced-choice elicitation task, based on Hawkins *et al.* (2006) and Ionin *et al.* (2004), was administered to establish a baseline for knowledge of articles, and was specifically designed to control the definiteness, specificity and genericity of the contexts, in addition to the type of noun (singular, plural and mass).

The variables represented by the task items are:

<sup>&</sup>lt;sup>3</sup> Age comparisons included the native speaker group.

- a. A contrast between count singular, count plural and mass nouns
- b. A contrast between nouns that are specific and nouns that are non-specific
- c. A contrast between definite generic and indefinite generic nouns
- d. A contrast between generic and non-generic nouns
- e. A contrast between nouns that are in subject position and those in object position.

Table 4.3 Distribution of contexts in the forced-choice elicitation task

Context	Singular	Plural	Mass
[-definite, +specific]	4 (2 subject+2 object) <sup>4</sup>	4 (2 subject+2 object)	4 (2 subject+2 object)
[-definite, -specific]	4 (2 subject+2 object)	4 (2 subject+2 object)	4 (2 subject+2 object)
[+definite, +generic]	4 (2 subject+2 object)	4 (2 subject+2 object)	N/A in English
[-definite, +generic]	4 (2 subject+2 object)	4 (2 subject+2 object)	4 (2 subject+2 object)

It comprised 48 short English language dialogues (44 targets and 4 distracters), each consisting of three conversational lines and a blank in the third line. Three possible choices for filling the blank were given between brackets in the form of the, a/an, and  $\phi$ .

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	A [-definite, +specific] singular noun in object position  A: Kate has been shopping.  B: What did she buy?
	A: She bought book for me—I have read most of it and it is very interesting. (the a $\emptyset$ )
2.	A [-definite, -specific] singular noun in subject position A: What shall we do tomorrow? B: You decide. A: F/film would be good—you pick one to watch. (A The Ø)
3.	A [+definite, +generic] singular noun in object position A: Our politicians want to reduce pollution by 20%. B: How will they do that? A: By persuading drivers to take train, and leave their automobiles at home. (a the Ø)
4.	A [-definite, +generic] singular noun in subject position A: Where were you yesterday? B: I was battling with my cold. Can you recommend anything to help me? A: O/orange has vitamin C, so it will be good for you.  (An The Ø)

<sup>&</sup>lt;sup>4</sup> Two are in subject position and two in object position; this applies to other contexts.

The test items that correspond to each context in the forced-choice elicitation task (see Appendix A) are as follows:

Table 4.4 Test items that correspond to each context in the forced-choice elicitation task<sup>5</sup>

Context	Singular	Plural	Mass
[-definite, +specific]	1, 18, 32, 37	19, 33, 34, 38	3, 5, 8, 29
[-definite, -specific]	13, 22, 30, 48	7, 11, 39, 45	16, 26, 40, 46
[+definite, +generic]	6, 14, 20, 24	12, 27, 31, 44	N/A in English
[-definite, +generic]	10, 15, 28, 47	2, 17, 23, 43	21, 25, 36, 42

The reason why the participants were provided with choices was in line with Ionin (2003: 136) who advised adding specific choices rather than leaving blanks, thus avoiding biasing the learners into supplying an article. They were therefore provided with 'no article' as an explicit alternative to a or the. Due to the large number of dialogues, it was not possible to add distracters, nor was the task timed. Note that 4 [+definite, +specific] contexts were included as distracters, even though the research concerns indefiniteness, for balance overall as  $\phi$  is the target article in 24 [-definite, +/-specific] and [-definite, +generic] plural and mass contexts; a/an is the target article in 12 [-definite, +/-specific] and [-definite, +generic] singular contexts, while the is the target article in 8 [+definite, +generic] contexts. So the researcher thought that adding those 4 definite contexts will make the the target article in 12 contexts instead of 8, which will create more balance.

The dialogues were simplified in terms of vocabulary, so that all words were familiar to all participants. This was because the researcher did not want to provide the meaning of words on a separate sheet or in footnotes, as doing so would have interrupted the flow of reading. The participants needed to digest the context unimpeded, in order to make a valid judgement about the article. However, the researcher informed the participants that they could ask him if they encountered an unfamiliar word, but this did not happen. The researcher also ensured that no articles were used in any of the dialogues in order to eliminate any priming effect. Also, all relative clauses that modified target nouns were removed since, in Arabic, nouns that are modified by relative clauses are always definite (Ryding, 2005) (see Chapter Two, section 2.2.2.2). Ionin (2003: 43) proposes that relative clauses facilitate referential reading. Sarko (2009) found that her Arabic

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<sup>&</sup>lt;sup>5</sup> Dialogue 19 (see Appendix A) was proved to be problematic for the native speakers and L2 learners as it was ambiguous between definite and indefinite interpretations; therefore, it was removed from the statistical analysis. This means that 3 dialogues (1 subject+2 object) remain. Dialogues 12, 31, 44 were excluded as it turned out that they were not plural generic nouns.

speakers overused *the* with nouns modified by relative clauses. Moreover, all adjectives that preceded the target nouns in the original tasks were removed, as examining the role of the presence or absence of adjectives was beyond the scope of this research.

In the original tasks designed by Hawkins *et al.* (2006) and Ionin *et al.* (2004), all target nouns were in object position. Ionin *et al.* put them in object position since they conducted their study on L1 Russian learners of English and in Russian, pre-verbal nouns are interpreted as definites, and post-verbal nouns are interpreted as indefinites. They wished to avoid any word order transfer as they wanted to focus on fluctuation between definiteness and specificity. The researcher thought that varying the order of the target nouns (22 in subject position and 22 in object position) may reveal interesting findings, since Mandarin is a topic-prominent language, and indefinite nouns do not take the pre-verbal topic position, but they do take the post-verbal position (Li and Thompson, 1981) (see Chapter Two, section 2.2.3). Definiteness in Arabic is not sensitive to the position of the noun.

Researchers such as Ionin (2003) and Sarko (2009) also adopted certain techniques that helped to make participants' task more manageable and reduce tiredness and boredom in that they translated the first two lines of each dialogue of their forced-choice elicitation task into their participants' L1s (Russian and Korean in Ionin's study, and Arabic and French in Sarko's study) and left the third line which had a blank that needed to be filled with the missing article. However, this technique was not adopted since translation could impose certain L1 effects, as the participants will read the dialogues in their own language.

In the following section, the second article choice task is described.

#### 4.3.2 Story recall oral production task

The researcher wished to explore how L2 learners of English supply articles in semantically different contexts, in terms of definiteness, specificity and genericity, and how they supply them with different types of noun (singular, plural and mass). The first task met this aim. However, a second task was used to elicit further evidence of article production because it has been claimed (see Huebner, 1983; Lardiere, 2004) that in oral production tasks, L2 learners of English tend to make more omission errors than they do in other, more controlled, tasks. Using an oral production task provides comparative evidence of possible omission or substitution in oral production to triangulate against

the first task to provide a clearer picture of how linguistic representations may be used. The task consisted of hearing 9 short stories of approximately 50-80 words each, containing a total of 70 target nouns (see Appendix B for the stories). The task was not timed. The task closely follows the version designed by Hawkins *et al.* (2005) which was then used by Snape (2006) and Sarko (2009) to test the L2A of English articles, and is therefore taken as reliable. The table below shows the distribution of contexts in the task.

Table 4.5 Distribution of contexts in the story recall oral production task

Context	Singular	Plural	Mass
[-definite, -generic]	16*	13	14
[-definite, +generic]	7	6	7
[+definite, +generic]	3	4	N/A in English

<sup>\*</sup> This indicates the number of target nouns.

Participants were instructed to listen to the 9 short stories which were narrated by a British-English speaking woman (aged 56). They listened to each story twice and prompts (bare nouns listed in the same order they occurred in the stories) were provided on a sheet of A4 paper to help the participants recall the stories. After they had listened to one story twice they were instructed to retell the story immediately as if it was the first time they had heard it. They were told to ignore the presence of the researcher in the room to avoid any definite article overuse, which could have happened if they believed that the hearer (the researcher in this case) had shared knowledge of the target nouns. They were instructed to imagine that they were recalling the story to their friends, who did not know the story. The participants' production was recorded digitally using two voice recorders: a Sony ICD-PX312 and an Olympus WS 750M. Each device was placed at different distances from the participants, so if there were any problems, there was a back-up. The rationale behind placing devices at different distances was due to the fact that if a participant accidentally hit the device next to them at the moment of producing an article, the other recording device was unaffected.

Example story; the underscored words are those that were on the A4 sheet:

A <u>customer</u> enters a <u>shop</u>. The customer is wearing a <u>shirt</u>. He talks to a salesperson and says, 'I would like <u>shoes</u> to match my shirt'. The salesperson replies, 'That's OK'. Then he returns a few minutes later with <u>trainers</u>. The customer is really happy.

While the majority of the retelling data could be closely triangulated against the controlled contexts in the forced-choice elicitation task, an exact match of contexts was

not possible, especially for specificity. As noted above, it is difficult to control production in general, especially when one is examining the L2A of English articles; Ionin (2003: 202) notes that 'the main disadvantage of production data collection is that it does not allow the investigators to control the contexts in which articles are produced'. Consequently, following Snape (2006; 2009), specificity was not examined in the data gathered from the oral task as it was impossible to predict what each participant would say; they may have changed the context from the original story in a number of ways (Snape, personal communication), a point supported by Ionin (2003: 202-203) who commented that 'it is quite difficult to code a context in L2-English production data as specific or non-specific [...] [as] specificity is largely in the mind of the speaker'. Moreover, the role of noun position is not considered in these data, since it is very difficult to make statistical comparisons because, for example, some participants use all the target nouns, in some contexts such as [+definite, +generic] in object position, while others put them in subject position, and still others use some of the four target nouns in subject and some in object position.

#### **4.4 Procedure**

Most of the participants were tested individually in a quiet room at Newcastle University (a few participants were tested in their homes). Before beginning the tests, the researcher engaged them in casual conversation for few minutes in order to make them feel more comfortable. The researcher paid close attention to ethical issues throughout the study, in accordance with standard university procedures. Clear approval was obtained from all the participants using a consent form that they were required to read and sign. Clarification was provided that any monetary token of appreciation for taking part in the study would not be used to influence the data analysis, and they were assured of confidentiality and anonymity in the research. They were also informed of their freedom to leave at any point if they so desired.

The participants were given 30 minutes to complete the OQPT, whereas the forced-choice elicitation task and the story recall oral production task were not timed. The majority of the participants finished the forced-choice elicitation task in an average of 25 minutes, and finished the oral task in 15 minutes on average. The researcher ensured that the participants took the oral task before the forced-choice elicitation task as he did not want them to know that he was testing their article usage. After completing the whole testing process, the researcher asked each participant not to disclose the nature of

the tasks to anyone, as he wanted to make sure that the participants did not know that he was testing their article usage until all of the testing was completed.<sup>6</sup>

#### 4.5 Data coding

This section provides information about the coding of the two tasks.

## 4.5.1 Coding the forced-choice elicitation task

The scoring was based on whether participants chose the articles correctly. Subjects' answers were scored as either correct (1 point) or incorrect (0 point), which allowed for counting: a) how often a participant selected target and non-target articles; and b) how often a participant made omission and substitution errors.

## 4.5.2 Coding the oral data

The researcher followed Ionin (2003) in coding the oral data to a large extent. Due to the low phonological status of English articles, the researcher asked a native English speaker, who was not from the control group, to transcribe the stories. Then the researcher checked the transcripts made by the native speaker. If a phonetic production ambiguity was found in terms of an article, the researcher asked two other natives speakers, who were not from the control group, to check them to confirm what article a participant produced and see whether there was perception variation between the four transcribers (the three native speakers and the researcher). The researcher followed Goad and White (2009), who asked native speakers to transcribe their oral data. It is noteworthy that other SLA of English articles researchers did not ask native speakers to transcribe the stories (e.g., Ionin, 2003; Sarko, 2009; Snape, 2006). Very few variations were noted among the four transcribers. Indeed, there were only eight instances, in the entire oral data, in which it was difficult to know what article a participant produced due to phonetic production ambiguity; moreover, these instances were excluded from the final data analysis. The likely reason for such few instances is that two digital recording devices were used. This minimised the number of instances of the unclear production of English articles.

<sup>&</sup>lt;sup>6</sup> To ensure reliability and validity, a pilot study that involved the three tasks (a forced-choice elicitation task, a story recall oral production task and the OQPT) was conducted on 2 L1 Arabic and 3 L1 Mandarin

Since the researcher is a non-native speaker of English, he followed Sarko (2009) in asking 20 native speakers of English to check the correct and incorrect usage of English articles. Therefore, the data were grouped into three sets: a set of story transcriptions told by the Arabic speakers; the story transcriptions told by the Mandarin speakers; and the story transcriptions told by the native controls. The target articles were replaced in the transcriptions with blanks, as illustrated in the examples below.

Example (A) below is a story told by an Arabic speaker, and (B) is the story given to the native speaker coders in which to insert the appropriate article after replacing the articles with blank spaces:

- a. A <u>customer</u> entered <u>a shop</u> wearing <u>a shirt</u> and he asked a salesperson for <u>shoes</u> that match his shirt. So the salesperson replies, 'That's okay.' And he returned after few minutes later carrying <u>trainers</u> and the customer was happy or felt happy.
- b. <u>customer</u> entered <u>shop</u> wearing <u>shirt</u> and he asked a salesperson for <u>shoes</u> that match his shirt. So the salesperson replies, 'That's okay.' And he returned after few minutes later carrying <u>trainers</u> and the customer was happy or felt happy.

The researcher grouped the 20 native speakers of English into 5 coding groups, with each group consisting of 4 coders. Three coding groups were given 28 transcripts and the other two groups were given 29 transcripts, as the number of participants is 142 as has been mentioned already. Each group of transcripts was a mix of L1 group (Arabic, Mandarin and native controls) and proficiency levels. Each coder in the same group transcribed the same transcripts that the other three members of the group transcribed to ensure inter-coder reliability. That is, each group corrected the same set of data, though the order of transcripts was randomized for each coder. The coders' article choice was used as a baseline to compare the Arabic and Mandarin speakers' article choice. Note that the coders were not told the L1 background of the participants or their level of proficiency. They were only told that the transcripts had been produced by native and non-native speakers of English because the researcher did not want the coders to treat the transcripts differently, for example by paying less attention to the transcripts of

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<sup>&</sup>lt;sup>7</sup> The 20 native speakers who checked the correct and incorrect usage of English articles were not the same speakers as the control group (see Appendix D). The reason why the researcher did not ask the 20 native speakers who formed the control group and on whom the forced-choice elicitation task and story recall oral production task were administered to check the correct and incorrect usage of articles was due to: a) their checking may have been affected by the fact that they had already heard the original stories, but if they had not heard them, their recall of the stories may have been affected by the fact that they checked the transcribed stories; and b) the researcher needed speakers to also check the production of the control group. The researcher did not follow Sarko (2009) who asked her control group to complete the tasks and check the correct and incorrect usage of English articles by her L2 learners.

participants who were native or at an advanced level, since such participants tend to make fewer errors.

In addition to using native speakers for coding for inter-rater reliability, another reason for asking them to code the transcripts was to identify any unreliable judgements of ambiguous contexts in the participants' production, where either definite or indefinite article is felicitous. It is important to make sure that the contexts in which articles were produced were not ambiguous. An unambiguous indefinite context is where all the coders in the same group choose a for singular indefinites and  $\phi$  for plural and mass indefinites, whereas an unambiguous definite context is one where all the coders in the same group choose the.

The following chapter reports a general discussion of the results.

## Chapter 5. Results

This chapter presents the results of the participants' usage of English articles. There are two main sections: a) the forced-choice elicitation task; and b) the story recall oral production task.

#### 5.1 Forced-choice elicitation task results

This section is divided into five parts to address the research hypotheses. The first addresses whether word position affects article usage. The second compares article choice between the Arabic speakers, Mandarin speakers and the native control group to identify the role of L1. The third addresses the role of genericity. The fourth identifies the role of specificity in article choice, while the fifth examines whether or not article choice improves with rising overall proficiency.

Before running statistical analyses tests, the overall percentage results (conflated for all the 40 items of the forced-choice elicitation task) for each group are presented in Table 5.1 and in a histogram in Figure 5.1 to provide a broad overview of the findings.

Table 5.1 Target use of articles: learners and native speakers in the forced-choice elicitation task

	Arabic n=56	Mandarin n=66	Native Speakers n=20
Target-like use	1681/2240	1962/2640	790/800
Mean	75%	74.3%	98.8%
SD	4.9	4.8	0.5

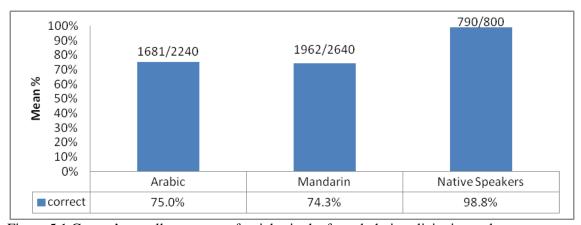


Figure 5.1 Groups' overall target use of articles in the forced-choice elicitation task

The above table and the figure show that the Arabic and Mandarin speakers performed comparably to each other, yet less accurately than the natives. These results conceal differences in terms of definiteness, specificity, genericity, number (singular, plural and mass), word position (subject vs. object) and proficiency levels. These will be seen in the statistical analyses presented in the following sections. Note that reliability analyses, using Cronbach's alpha, were run, and the item analyses demonstrated a strong reliability coefficient of > 0.7. Cronbach's alpha was = 0.751 for the Arabic speakers, 0.716 for the Mandarin speakers, 0.729 for the Arabic and Mandarin speakers combined, 0.829 for the Arabic, Mandarin and native speakers. Subject analyses run on the groups showed that Cronbach's alpha was = 0.928 for the Arabic speakers, 0.937 for the Mandarin speakers, 0.963 the Arabic and Mandarin speakers combined, and 0.962 for the Arabic, Mandarin and native speakers.

The data gathered from the forced-choice elicitation task was assessed for normality of distribution. The Shapiro-Wilk test showed that the data was not normally distributed; therefore, non-parametric tests should be utilised (Dörnyei, 2007; Field, 2009; 2012; Larson-Hall, 2010).

An acquisition threshold (92.5%) was applied to indicate whether or not the L2 learners have acquired any of the properties of English articles. The choice of 92.5% is not arbitrary, as the natives in the present study performed at a minimum of 92.5% accuracy in [+definite, +generic] singular contexts (in object position). Therefore, the figure is conservative and can be used as the cut-off point for acquisition. The acquisition threshold is based on studies that apply similar thresholds, such as Montrul and Slabakova's (2003) which used a 90% accuracy criterion to identify the most advanced non-native speakers in their sample, as their native controls performed at a minimum of 90%. Also, they stated that native controls in other studies performed at around 90%. Other researchers such as Alkafri (2013), applied a lower threshold of 83.33%. The reason why native controls may perform this low could be attributed to mistakes due to 'distraction, performance, or even uncertainty' (Montrul and Slabakova, 2003: 385). The importance of having an acquisition threshold lies in the fact that the natives in the present study performed at ceiling, while this is not expected of L2 participants. In the present study, we will observe that L2 learners' accuracy level could be as high as 93%, but statistical analyses show significant differences between the L2 learners and natives. Concerning using native speakers in SLA research, Schmitt and Miller (2010: 38) comment that studies 'generally use adult native controls of the language under study as

the control group. By comparing second language learners to native controls it is possible to determine what aspects of the language have not been fully acquired'. This is supported by other researchers (e.g., Hawkins and Chan, 1997; Montrul, Foote and Silvia, 2008; Montrul and Slabakova, 2003; White *et al.*, 2004).

## 5.1.1 Investigation of word position effects

In order to ascertain whether L2 learners (Mandarin speakers in particular) are sensitive to word position in their use of articles, the subject mean and object mean of articles were compared in each context to test the following hypothesis:

**H1a** Only Mandarin, not Arabic, speakers will use *the* in subject position more than in object position, as Mandarin is a topic-prominent language, while Arabic is a subject-prominent language.

Since the data is not normally distributed, multiple Wilcoxon Signed-Ranks tests were performed for each proficiency group in both languages alongside the natives<sup>1</sup> for each type of noun, to see if their performance in subject position differed from their performance in object position. Although the hypothesis above is related to the use of *the*, other article choices are considered to see if there are any variations. See the following table:

Table 5.2 Choice of articles by Arabic and Mandarin speakers in all contexts (subject vs. object)

Tuble 5.2 Shores of articles by France and Francaim speakers in air contents (subject +5: object)					
Contexts	Singular	Plural	Mass		
[-definite, +specific]	n.s	n.s	n.s		
[-definite, -specific]	significant Man: LI and Adv	significant Ar: LI	n.s		
[+definite, +generic]	n.s	N/A*	N/A**		
[-definite, +generic] significant Ar: LI, UI and Adv Man: LI, UI and Adv		n.s	significant Ar: LI and UI Man: LI, UI and Adv		

<sup>\*</sup>There was only one item in subject position.

<sup>\*\*</sup>English lacks definite mass generics.

<sup>&</sup>lt;sup>1</sup> The native speakers' performance did not vary between subject and object positions; therefore, their results are not reported.

The table above indicates if there are any significant differences. The contexts in which significant differences were found are examined below to see in which article there were significant differences. The significant differences are presented according to the order of the contexts in the table.

Before presenting the results, it is important to clarify how the statistical comparisons were run. First, comparisons between subject and object positions were made to see if there were any variations between the two positions in the use of each article by using Wilcoxon Signed-Ranks tests. If there were any significant differences, further investigations were made by comparing the article use of each item of the four items to that of the other items<sup>2</sup> to see if the differences were due to an item being responsible for the variation between subject and object positions, and not to the role of word position.

## 1. [-definite, -specific] singular (Mandarin speakers)

Since it was found that the lower-intermediate and advanced Mandarin speakers showed sensitivity towards word position in [-definite, -specific] singular contexts, percentage of their target-like (a/an) and non-target-like  $(\phi$  and the) use of articles is presented below.

Table 5.3 Percentage of target and non-target use of articles by Mandarin speakers in

[-definite, -specific] singular contexts (subject vs. object)

Level	vel a/an* ø		tŀ	ne		
	Subject	Object	Subject	Object	Subject	Object
LI	27/34	32/34	5/34	0/34	2/34	2/34
n=17	79.4%	94.1%	14.7%	0%	5.9%	5.9%
Adv	46/54	54/54	6/54	0/54	2/54	0/54
n=27	85.2%	100%	11.1%	0%	3.7%	0%

<sup>\*</sup> Target-like articles are highlighted in grey.

Multiple Wilcoxon Signed-Ranks tests showed that the Mandarin speakers' performance varied between subject and object positions in terms of selecting the appropriate article a/an and the inappropriate  $\phi$  article. The tests results are reported in the following table:

<sup>&</sup>lt;sup>2</sup> Note that there are four target nouns in each context (two in subject position and two in object position) (see Table 4.3).

Table 5.4 Choice of articles by Mandarin speakers in [-definite, -specific] singular contexts (subject vs. object)

A =4: -1	Lower-intermediate	Upper-intermediate	Advanced
Articles	Mandarin	Mandarin	Mandarin
a/an*	n.s	n.s	(z=-2.530, p=0.011,
a/aii	11.5	II.S	r=0.96)
Ø	(z=-2.236, p=0.025,	n.s	(z=-2.449, p=0.014,
Ø	r= 1)	11.5	r= 1)
the	n.s	n.s	n.s
lic	11.5	11.5	11.5

<sup>\*</sup> Target-like articles are highlighted in grey.

Using the Friedman test, further analyses were conducted by comparing the article usage between the four target nouns (film and child in subject and watch and magazine in object) in [-definite, -specific] singular contexts. Again, the rationale behind this is to find out whether the variation in participants' performance between subject and object positions is due to their sensitivity to word position, or due to a specific item or items. The tests identified significant differences (p< 0.05) in the use of  $\phi$  by the lower-intermediates and in the use of a and  $\phi$  by the advanced speakers. Multiple Wilcoxon Signed-Ranks tests were conducted (Bonferroni correction applied, significance accepted at p< 0.008). The comparisons between the four items showed that the lower-intermediates and advanced speakers made more omission errors with regard to the item film than with the other three items, but when film is excluded, no significant differences were found between subject and object (p> 0.05). The reason why they made more omission errors with film could be attributed to the fact that the word film was borrowed from English into Mandarin which may result in what is thought to be L1 effects.

<sup>&</sup>lt;sup>3</sup> The original alpha level of 0.05 was divided by the number of paired comparisons - 6 in this case. The reason why the researcher did this was to minimise the probability of making a Type 1 error (rejecting the null hypothesis though it is true) (Field, 2012: 68).

## 2. [-definite, -specific] plural contexts (Arabic speakers)

Table 5.5 Percentage of target and non-target use of articles by Arabic speakers in [-definite,

-specific] plural contexts (subject vs. object)

Level	a/an		evel a/an ø		tŀ	ne
	Subject	Object	Subject	Object	Subject	Object
LI n=17	8/34 23.5%	3/34 8.8%	23/34 67.7%	30/34 88.3%	3/34 8.8%	1/34 2.9%

Multiple Wilcoxon Signed-Ranks tests were performed, and they revealed that the lower-intermediate Arabic speakers' performance varied between subject and object positions in the use of  $\phi$ .

Table 5.6 Choice of articles by Arabic speakers in [-definite, -specific] plural contexts (subject

vs. object)

Articles	Lower-intermediate Arabic	11	
a/an	n.s	n.s	n.s
ø	(z= -2.111, p= 0.035, r= 0.75)	n.s	n.s
the	n.s	n.s	n.s

Friedman tests yielded significant differences (p< 0.05) in the use of  $\phi$  and a after comparing the article usage between the four target nouns (women and guests in subject and plants and gifts in object). The Wilcoxon Signed-Ranks tests (Bonferroni correction applied, significance accepted at p< 0.008) were run on the four items and showed that the lower-intermediates used a with women more than with the other three items which resulted in the underuse of  $\phi$ , but after removing women, no significant difference was found between subject and object (p> 0.05). It seems that the Arabic speakers overused the non-target article a as they considered it singular due to the similarity between women and woman.

## 3. [-definite, +generic] singular contexts (Arabic and Mandarin speakers)

Table 5.7 Percentage of target and non-target use of articles by Arabic speakers in [-definite, +generic] singular contexts (subject vs. object)

Level	a/an		ø		the	
	Subject	Object	Subject	Object	Subject	Object
LI	9/34	19/34	8/34	4/34	17/34	11/34
n=17	26.5%	55.9%	23.5%	11.8%	50%	32.3%
UI	13/44	30/44	22/44	3/44	9/44	11/44
n=22	29.5%	68.2%	50%	6.8%	20.5%	25%
Adv	12/34	25/34	17/34	1/34	5/34	8/34
n=17	35.3%	73.5%	50%	2.9%	14.7%	23.6%

Table 5.8 Percentage of target and non-target use of articles by Mandarin speakers in

[-definite, +generic] singular contexts (subject vs. object)

	definite, Eginetie singular contexts (subject vs. object)					
Level	a/an		ø		the	
	Subject	Object	Subject	Object	Subject	Object
LI	10/34	19/34	12/34	4/34	12/34	11/34
n=17	29.4%	55.9%	35.3%	11.8%	35.3%	32.3%
UI	15/44	29/44	9/44	3/44	20/44	12/44
n=22	34.1%	65.9%	20.5%	6.8%	45.4%	27.3%
Adv	15/54	41/54	23/54	3/54	16/54	10/54
n=27	27.8%	75.9%	42.6%	5.6%	29.6%	18.5%

Running Multiple Wilcoxon Signed-Ranks tests found that the Arabic speakers' and Mandarin speakers' performance differed between subject and object positions.

Table 5.9 Choice of articles by Arabic speakers in [-definite, +generic] singular contexts (subject vs. object)

Articles	Lower-intermediate	Upper-intermediate	Advanced
Articles	Arabic	Arabic	Arabic
a/an	(z=-2.236, p=0.025,	(z=-3.368, p=0.001,	(z=-2.804, p=0.005,
a/aII	r=0.60)	r=0.84)	r=0.81)
4	n o	(z= -4.146, p< 0.001,	(z=-3.358, p=0.001,
Ø	n.s	r=0.98)	r=0.93)
the	n.s	n.s	n.s
the	11.5	11.5	11.5

Table 5.10 Choice of articles by Mandarin speakers in [-definite, +generic] singular contexts (subject vs. object)

Articles	Lower-intermediate Mandarin	Upper-intermediate Mandarin	Advanced Mandarin
a/an	(z= -2.496, p= 0.013, r= 0.79)	(z= -3.500, p< 0.001, r= 0.97)	(z=-4.099, p<0.001, r=0.92)
ø	(z=-2.126, p=0.033, r=0.75)	$(z=-1.897, p=0.058, r=0.72)^*$	(z=-3.911, p<0.001, r=0.87)
the	n.s	(z= -2.530, p= 0.011, r= 0.80)	n.s

<sup>\*</sup> Close to significance

The Friedman tests showed significant differences (p< 0.05) between the four target nouns (*orange* and *bottle* in subject and *cat* and *politician* in object). As a result, Wilcoxon Signed-Ranks tests (Bonferroni correction applied, significance accepted at p< 0.008) were run on the four items. The results showed that: a) all groups (except for the Arabic lower-intermediates) made more omission errors with *orange* than with the other three items; b) all groups used *a* with *cat* more correctly than with the other items; and c) the upper-intermediate Mandarin speakers used *the* with *orange* more than with the other items.

The reason why they made more correct use of *a* with *cat* may be due to the fact that they may have classified the context as non-generic, which explains their good performance in the non-generic [-definite, +/-specific] singular contexts, as will be seen later. Conversely, their omission errors with *orange* could be due to the fact that they may have confused *orange* with *orange juice*. Note that Snape *et al.* (2013) found that Spanish speakers made a high rate of omission errors in a generic context where the target article is *potato*.

## 4. [-definite, +generic] mass contexts (Arabic and Mandarin speakers)

Table 5.11 Percentage of target and non-target use of articles by Arabic speakers in [-definite, +generic] mass contexts (subject vs. object)

Level	a/an		ø		the	
	Subject	Object	Subject	Object	Subject	Object
UI	12/44	0/44	29/44	35/44	3/44	9/44
n=22	27.3%	0%	65.9%	79.5%	6.8%	20.5%
Adv	5/34	0/34	26/34	33/34	3/34	1/34
n=17	14.7%	0%	76.5%	97.1%	8.8%	2.9%

Table 5.12 Percentage of target and non-target use of articles by Mandarin speakers in

[-definite, +generic] mass contexts (subject vs. object)

Level	a/an		ø		the	
	Subject	Object	Subject	Object	Subject	Object
LI	6/34	1/34	18/34	29/34	10/34	4/34
n=17	17.7%	2.9%	52.9%	85.3%	29.4%	11.8%
UI	7/44	0/44	27/44	42/44	10/44	2/44
n=22	15.9%	0%	61.4%	95.5%	22.7%	4.5%
Adv	5/54	0/54	42/54	54/54	7/54	0/54
n=27	9.3%	0%	77.7%	100%	13%	0%

Multiple Wilcoxon Signed-Ranks tests were performed. It was found that the Arabic speakers' and Mandarin speakers' performance varied between subject and object positions.

Table 5.13 Choice of articles by Arabic speakers in [-definite, +generic] mass contexts (subject vs. object)

15. 00ject)			
Articles	Lower-intermediate	Upper-intermediate	Advanced
Afficies	Arabic	Arabic	Arabic
a/an	n o	(z=-3.464, p=0.001,	(z=-2.236, p=0.025,
a/all	n.s	r= 1)	r= 1)
d	n c	n c	(z= -2.646, p= 0.008,
Ø	n.s	n.s	r= 1)
the	n o	<b>n</b> 0	<b>n</b> 6
uie	n.s	n.s	n.s

Table 5.14 Choice of articles by Mandarin speakers in [-definite, +generic] mass contexts (subject vs. object)

A mti alaa	Lower-intermediate	Upper-intermediate	Advanced
Articles	Mandarin	Mandarin	Mandarin
a/an	n c	(z=-2.646, p=0.008,	(z=-2.236, p=0.025,
a/all	n.s	r= 1)	r= 1)
d	(z=-2.653, p=0.008,	(z=-3.095, p=0.002,	(z=-3.464, p=0.001,
Ø	r=0.80)	r=0.83)	r= 1)
tho	(z=-2.121, p=0.034,	(z=-2.126, p=0.033,	(z=-2.646, p=0.008,
the	r=0.75)	r=0.75)	r= 1)

The Friedman tests revealed significant differences (p< 0.05) in article usage between the four target nouns (*advice* and *money* in subject and *cheese* and *business* in object). As a result, Wilcoxon Signed-Ranks tests (Bonferroni correction applied, significance accepted at p< 0.008) were run and they showed that the item *advice* is the item with which: a) the upper-intermediate and advanced Arabic and Mandarin speakers overused

the non-target article a; and b) the lower-intermediate, upper-intermediate and advanced Mandarin speakers overused the non-target article the. The reasons why the groups used a with advice more than with the other three items could be due to the fact that they classified it as a singular noun. When advice is excluded, no significant differences were found between subject and object (p> 0.05). It is not clear why the Mandarin groups used the with advice.

#### 5.1.1.1 Summary

The statistics presented above demonstrate that the performance of the Mandarin and even the Arabic speakers did not vary according to whether a target noun was in subject or object position. Even in the contexts where variations were noted, these differences were attributed to a number of items. Due to the low number of items in each position, a statistical difference was found if there was any slight overuse of an article with an item. However, there were a few statistical differences. Therefore, the results are not compatible with H1a, that the Mandarin speakers would use *the* more in subject position than in object position.

## 5.1.2 Comparisons of Arabic and Mandarin L2 learners to examine L1 effects

To address hypotheses (H1a, H1b, H1c, H1d, H1e, H1f, H1g, H1h and H1i), which are concerned primarily with the role of L1 background and how it interacts with the role of definiteness, specificity, genericity, number (singular, plural and mass) and proficiency levels, the results of [-definite, +/-specific] and [+/-definite, +generic] contexts are reported by comparing the outcomes of each proficiency level (lower-intermediate, upper-intermediate and advanced) for the two language groups. The sets of tables below show results for the lower-intermediate, upper-intermediate and advanced speakers.

The results of the 11 contexts included in the forced-choice elicitation task are reported below.

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<sup>&</sup>lt;sup>4</sup> The role of specificity, genericity and proficiency levels are further examined in subsequent sections.

## 1. [-definite, +specific] singular

The following hypothesis was tested.

**H1b** Arabic and Mandarin speakers will make omission errors at a similar rate in [-definite, +/-specific] singular contexts, since Arabic lacks a phonologically overt indefinite article, while Mandarin lacks an article system.

The table below gives percentages<sup>5</sup> for the frequency with which the lower-intermediate Arabic speakers, Mandarin speakers, and native speakers (NS)<sup>6</sup> selected the appropriate article a/an (highlighted in grey), and how often they chose the indefinite zero article  $\phi$  and the definite article the, both of which are inappropriate in [-definite, +specific] singular contexts. The results for the native speakers are presented for comparison purposes.

Table 5.15 Choice of articles by lower-intermediates in [-definite, +specific] singular contexts

		J		, 1 , 5
Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	58/68 85.3%	57/68 83.8%	80/80 100%	(H(2)= 11.005, p= 0.004)
a/an	SD= 17.8	SD= 27.9	SD=0	(11(2)= 11.003, p= 0.004)
	2/68	1/68	0/80	
Ø	2.9%	1.5%	0%	n.s
	SD = 8.3	SD = 6.1	SD=0	
	8/68	10/68	0/80	
the	11.8%	14.7%	0%	(H(2)=7.937, p=0.019)
	SD = 17.9	SD=28	SD=0	

The table demonstrates that the Arabic and Mandarin lower-intermediates seemed to select the target indefinite article *a* correctly, with some overuse of the non-target article *the*, and they were close to the 92.5% acquisition threshold. However, these observations must be confirmed statistically before any conclusions can be drawn. Kruskal-Wallis tests were run to identify any differences between the Arabic, Mandarin and native speakers, and it was found that they differed in the use of *a* and *the*.

the same.

6 Note that the results of the native speakers are displayed in the first table that examines the article usage by the lower-intermediates in each context, but (due to word count limitations) they will not be repeated in the tables that report article usage by the upper-intermediate and advanced speakers.

<sup>&</sup>lt;sup>5</sup> Since scores for each participant were converted into a percentage score, the percentages that are reported indicate the average percentage of the score, which means that the means and the percentages are the same.

To discover which groups differed statistically, separate Mann-Whitney tests (Bonferroni correction applied, significance accepted at p< 0.016)<sup>7</sup> were conducted, as suggested by Larson-Hall (2010). They showed significant differences between the natives and both the Arabic and Mandarin speakers in the use of *a* and *the*.

The following table compares the upper-intermediates and natives in the same [-definite, +specific] singular contexts.

Table 5.16 Choice of articles by upper-intermediates in [-definite, +specific] singular contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	85/88 96.6%	81/88 92%	(H(2)= 8.811, p= 0.012)
a/an	SD= 16	SD = 14.2	(11(2)= 0.011, p= 0.012)
	2/88	2/88	
ø	2.3%	2.3%	n.s
	SD = 10.7	SD = 7.4	
	1/88	5/88	
the	1.1%	5.7%	(H(2)=7.176, p=0.028)
	SD=5.3	SD = 10.7	

These results show that the upper-intermediates correctly selected the target indefinite article a, above or very close to the 92.5% acquisition threshold. The groups differed in the use of a and the.

Separate Mann-Whitney tests revealed a significant difference between the Mandarin and native speakers in the use of a. Although the Kruskal-Wallis test demonstrated a significant difference between the groups' use of the, none of the comparisons survived the Bonferroni correction (p< 0.016).

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 $<sup>^{7}</sup>$  The original alpha level of 0.05 was divided by the number of paired comparisons - 3 in this case. In this section (section 5.1.2), the Bonferroni correction is always accepted at p< 0.016. From now on, this will not be mentioned due to word count limitations.

Table 5.17 Choice of articles by advanced speakers in [-definite, +specific] singular contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	65/68 95.6%	101/108 93.5%	n.s
a/aii	SD= 9.8	SD= 16.4	11.5
	1/68	1/108	
Ø	1.5%	0.9%	n.s
	SD= 6.1	SD= 4.8	
	2/68	6/108	
the	2.9%	5.6%	n.s
	SD = 8.3	SD= 16	

These results show that the advanced speakers performed above the 92.5% acquisition threshold.

The results above do not support H1b, as the Arabic and Mandarin speakers used a correctly and the rate of omission errors was low.

# 2. [-definite, +specific] plural<sup>8</sup>

The following hypothesis was tested.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

Table 5.18 Choice of articles by lower-intermediates in [-definite, +specific] plural contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	2/51 3.9%	1/51 1.9%	0/60 0%	n.s
a/ an	SD=11.1	SD=8.1	SD=0	11.5
_	43/51	39/51	60/60	(II(2) 12 115 · 0 001)
ø	84.3% SD= 20.8	76.5% SD= 28.3	100% SD= 0	(H(2)=13.115, p=0.001)
	6/51	11/51	0/60	
the	11.8%	21.6%	0%	(H(2)=11.245, p=0.004)
	SD = 16.4	SD = 28.7	SD=0	

These results suggest that the lower-intermediates tended to correctly select the target indefinite article  $\phi$  (highlighted in grey), with some overuse of *the*. The groups differed in the use of  $\phi$  and *the*.

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<sup>&</sup>lt;sup>8</sup> Dialogue 19 (see Appendix A) was removed from the analysis as it was mentioned in section 4.3.1.

Mann-Whitney tests discovered significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of  $\phi$  and *the*.

Table 5.19 Choice of articles by upper-intermediates in [-definite, +specific] plural contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	0/66 0%	0/66 0%	n c
a/an	SD=0	SD = 0	n.s
	58/66	47/66	
ø	87.9%	71.2%	(H(2)=17.197, p<0.001)
	SD= 21.9	SD= 31.4	
	8/66	19/66	
the	12.1%	28.8%	(H(2)=17.197, p=0<0.001)
	SD = 21.9	SD = 31.4	

The upper-intermediate Arabic speakers were closer to the 92.5% acquisition threshold than their Mandarin counterparts, who displayed some overuse of *the*. The groups differed in the use of  $\phi$  and *the*.

Separate Mann-Whitney tests revealed close to significant differences between the Arabic and Mandarin speakers<sup>9</sup> in the use of  $\phi$  (U=160.000, z= -2.143, p= 0.032, r= 0.32<sup>10</sup>) and *the* (U=160.000, z= -2.143, p= 0.032, r= 0.32). Significant differences (p< 0.016) were evident between the natives and both the Arabic and Mandarin speakers in the use of  $\phi$  and *the*.

Table 5.20 Choice of articles by advanced speakers in [-definite, +specific] plural contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	0/51 0% SD= 0	1/81 1.2% SD= 6.4	n.s
ø	46/51 90.2% SD= 19.6	62/81 76.6% SD= 29	(H(2)= 14.754, p= 0.001)
the	5/51 9.8% SD= 19.6	18/81 22.2% SD= 29.2	(H(2)= 13.195, p= 0.001)

<sup>&</sup>lt;sup>9</sup> When a significant or close to significant difference is found between the Arabic and Mandarin speakers using the Mann-Whitney tests, they will be reported in detail. However, this will not be the case when a significant difference is found between the natives and Arabic or Mandarin speakers due to word limitations, and due to the fact that it is expected that Arabic and Mandarin speakers' performance tends to vary from that of the natives.

<sup>10</sup> Cohen's (1988; 1992) categorization of the magnitude of effect size is (r = 0.2 = small; r = 0.5 = medium; r = 0.8 = large).

The results demonstrate that the advanced Arabic speakers performed close to the 92.5% acquisition threshold, whereas the advanced Mandarin speakers overused *the*. The groups differed in the use of  $\phi$  and *the*.

Mann-Whitney tests found significant differences (p< 0.016) between the Mandarin and native speakers in the use of  $\phi$  and *the*.

The results support H2c, as the Arabic and Mandarin speakers performed similarly and accurately, although the Mandarin speakers overused the non-target article *the*. This overuse is further examined in section 5.1.4.

## 3. [-definite, +specific] mass

The following hypothesis was tested.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

Table 5.21 Choice of articles by lower-intermediates in [-definite, +specific] mass contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	31/68 45.6% SD= 32.2	17/68 25% SD= 23.4	1/80 1.3% SD= 5.6	(H(2)= 24.670, p< 0.001)
ø	31/68 45.6% SD= 30.9	33/68 48.5% SD= 35.9	78/80 97.4% SD= 7.7	(H(2)= 27.385, p< 0.001)
the	6/68 8.8% SD= 12.3	18/68 26.5% SD= 31.2	1/80 1.3% SD= 5.6	(H(2)= 13.362, p= 0.001)

The results show that the lower-intermediates had difficulty correctly selecting the target article  $\phi$ . The groups differed in the use of the three articles.

Mann-Whitney tests showed significant differences (p< 0.016) between the Arabic and native speakers in the use of  $\phi$  and a, and between the Mandarin and native speakers in the use of  $\phi$ , a and the.

Table 5.22 Choice of articles by upper-intermediates in [-definite, +specific] mass contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	26/88 29.6% SD= 25.2	14/88 15.9% SD= 16.4	(H(2)= 20.846, p< 0.001)
ø	53/88 60.2% SD= 26.3	56/88 63.6% SD= 30.6	(H(2)= 24.209, p< 0.001)
the	9/88 10.2% SD= 18.4	18/88 20.5% SD= 25.2	(H(2)= 10.590, p= 0.005)

The results show that the upper-intermediates also had difficulty choosing  $\phi$ . The groups differed in the use of the three articles.

Mann-Whitney tests found significant differences (p< 0.016) between the Arabic and native speakers in the use of  $\phi$  and a. The Mandarin speakers differed from the natives in the use of  $\phi$ , a and the.

Table 5.23 Choice of articles by advanced speakers in [-definite, +specific] mass contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	8/68 11.8% SD= 20	11/108 10.2% SD= 14.3	(H(2)= 6.861, p= 0.032)
Ø	56/68 82.3% SD= 26.2	87/108 80.6% SD= 21.2	(H(2)= 9.979, p= 0.007)
the	4/68 5.9% SD= 10.9	10/108 9.2% SD= 14.1	n.s

The results reveal that the advanced speakers were closer to the 92.5% acquisition threshold than the lower-intermediates and upper-intermediates. The groups differed in the use of  $\phi$  and a.

Mann-Whitney tests found significant differences (p< 0.016) between the Arabic and native speakers in the use of  $\phi$ , and between the Mandarin and natives speakers in the use of  $\phi$  and a.

The results support H2c, as the Arabic and Mandarin speakers performed similarly, although there was some use of the non-target article a due to some speakers misclassifying some items as singular. Yet, this overuse diminished due to rising overall

proficiency. Using *a* can be attributed to the object item, *bread*, as it is not liquid (bread has slices) like the other items, *water*, *beer* and *smoke*. Note that the subject vs. object analyses did not indicate a significant difference in [-definite, +specific] mass contexts, see section 5.1.1.

## 4. [-definite, -specific] singular

The following hypothesis was tested.

**H1b** Arabic and Mandarin speakers will make omission errors at a similar rate in [-definite, +/-specific] singular contexts, since Arabic lacks a phonologically overt indefinite article, while Mandarin lacks an article system.

Table 5.24 Choice of articles by lower-intermediates in [-definite, -specific] singular contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	62/68 91.2% SD= 15.2	59/68 86.8% SD= 15.6	80/80 100% SD= 0	(H(2)= 11,093, p= 0.004)
ø	3/68 4.4% SD= 9.8	5/68 7.3% SD= 11.7	0/80 0% SD= 0	(H(2)= 6.337, p= 0.042)
the	3/68 4.4% SD= 13.2	4/68 5.9% SD= 14.1	0/80 0% SD= 0	n.s

The results demonstrate that the lower-intermediates performed close to the 92.5% acquisition threshold. The groups differed in the use of a and  $\phi$ .

Mann-Whitney tests revealed a significant difference (p< 0.016) between the Arabic and native speakers in the use of a. The Mandarin and native speakers differed significantly in the use of a and  $\phi$ .

Table 5.25 Choice of articles by upper-intermediates in [-definite, -specific] singular contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	83/88 94.3% SD= 13.2	80/88 90.9% SD= 12.3	(H(2)= 8.645, p= 0.013)
ø	1/88 1.1% SD= 5.3	7/88 7.9% SD= 11.9	(H(2)= 11.455, p= 0.003)
the	4/88 4.6% SD= 12.5	1/88 1.2% SD= 5.3	n.s

The results show that the upper-intermediates correctly selected a. Yet, the groups differed in the use of a and  $\phi$ .

Mann-Whitney tests found a close to significant difference between the Arabic and Mandarin groups in the use of  $\phi$  (U= 176.000, z= -2.318, p= 0.020, r= 0.35). Significant differences (p< 0.016) were highlighted between the Mandarin and native speakers in the use of  $\alpha$  and  $\phi$ .

Table 5.26 Choice of articles by advanced speakers in [-definite, -specific] singular contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	67/68 98.5% SD= 6.1	100/108 92.6% SD= 13.5	(H(2)= 7.904, p= 0.019)
ø	0/68 0% SD= 0	6/108 5.6% SD= 10.6	(H(2)= 8.931, p= 0.011)
the	1/68 1.5% SD= 6.1	2/108 1.8% SD= 6.7	n.s

The results demonstrate that the advanced speakers performed above the 92.5% acquisition threshold. Yet, the groups differed in the use of a and  $\phi$ .

Mann-Whitney tests highlighted a close to significant difference between the Arabic and Mandarin speakers in the use of  $\phi$  (U= 178.500, z= -2.068, p= 0.039, r= 0.31). The Mandarin and native speakers differed significantly (p< 0.016) in their use of a.

The results disconfirm H1b, as both groups correctly used a and achieved close to the 92.5% acquisition threshold from the low-intermediate level onward.

## 5. [-definite, -specific] plural

The following hypothesis was tested.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

Table 5.27 Choice of articles by lower-intermediates in [-definite, -specific] plural contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	11/68 16.2% SD= 23.3	12/68 17.6% SD= 26.2	1/80 1.3% SD= 5.6	(H(2)= 9.223, p= 0.010)
ø	53/68 77.9% SD= 23.2	48/68 70.6% SD= 29.6	79/80 98.7% SD= 5.6	(H(2)= 17.879, p< 0.001)
the	4/68 5.9% SD= 14.1	8/68 11.8% SD= 21.9	0/80 0% SD= 0	(H(2)= 6.366, p= 0.041)

The results show that the lower-intermediates tended to perform similarly, with some use of the non-target articles a and the. The groups differed in the use of  $\phi$ , a and the.

Mann-Whitney tests revealed significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of  $\phi$  and a, and between the Mandarin and native speakers in the use of *the*. Other differences did not survive the Bonferroni correction. The slight overuse of a is due to the item *women* (see section 5.1.1).

Table 5.28 Choice of articles by upper-intermediates in [-definite, -specific] plural contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	3/88 3.4% SD= 8.8	7/88 8% SD= 17.9	n.s
Ø	82/88 93.2% SD= 11.4	71/88 80.7% SD= 24.3	(H(2)= 11.302, p= 0.004)
the	3/88 3.4% SD= 8.8	10/88 11.3% SD= 20	(H(2)= 8.240, p= 0.016)

The table shows that the Arabic speakers performed above the 92.5% acquisition threshold, while the Mandarin speakers performed lower. The groups differed in the use of  $\phi$  and *the*.

Mann-Whitney tests showed significant differences (p< 0.016) between the Mandarin and native speakers in the use of  $\phi$  and *the*.

Table 5.29 Choice of articles by advanced speakers in [-definite, -specific] plural contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
	0/68	0/108	
a/an	0%	0%	n.s
	SD=0	SD=0	
	63/68	92/108	
ø	92.7%	85.2%	(H(2)=11.907, p=0.003)
	SD= 11.7	SD= 15.9	
	5/68	16/108	
the	7.3%	14.8%	(H(2)=14.736, p=0.001)
	SD= 11.7	SD= 15.9	

Both the advanced Arabic and Mandarin speakers performed above or close to the 92.5% acquisition threshold. The groups differed in the use of  $\phi$  and *the*.

Mann-Whitney tests found that the Arabic and native speakers differed significantly (p< 0.016) in the use of *the*, whereas the Mandarin and native speakers differed significantly in their use of  $\phi$  and *the*.

The results confirm H1c, as both groups performed correctly and similarly.

## 6. [-definite, -specific] mass nouns

The following hypothesis was tested.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

Table 5.30 Choice of articles by lower-intermediates in [-definite, -specific] mass contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	21/68 30.9% SD= 27.3	15/68 22.1% SD= 17.4	0/80 0% SD= 0	(H(2)= 23.233, p< 0.001)
ø	32/68 47.1% SD= 31.7	37/68 54.4% SD= 23.8	79/80 98.7% SD= 5.6	(H(2)= 32.544, p< 0.001)
the	15/68 22% SD= 17.4	16/68 23.5% SD= 22.5	1/80 1.3% SD= 5.6	(H(2)= 18.899, p< 0.001)

The results demonstrate that the lower-intermediates did not use  $\phi$  correctly. The groups differed in their use of the three articles.

Mann-Whitney tests illustrated significant differences (p< 0.016) between the native speakers and both the Arabic and Mandarin speakers in the use of  $\phi$ , a and the.

Table 5.31 Choice of articles by upper-intermediates in [-definite, -specific] mass contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	9/68 10.2% SD= 14.8	12/88 13.6% SD= 16.8	(H(2)= 11.558, p= 0.003)
Ø	61/88 69.3% SD= 25.5	59/88 67.1% SD= 30.3	(H(2)= 20.469, p< 0.001)
the	18/88 20.5% SD= 19.9	17/88 19.3% SD= 23.1	(H(2)= 15.015, p= 0.001)

The results show that the upper-intermediates did not use  $\phi$  correctly, as predicted. The groups differed in the use of the three articles.

Mann-Whitney tests revealed significant differences (p< 0.016) between the native speakers and both the Arabic and Mandarin speakers in the use of  $\phi$ , a and the.

Table 5.32 Choice of articles by advanced speakers in [-definite, -specific] mass contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	3/68 4.4% SD= 9.8	4/108 3.7% SD= 9.1	n.s
Ø	57/68 83.8% SD= 17.5	88/108 81.5% SD= 20.3	(H(2)= 12.805, p= 0.002)
the	8/68 11.8% SD= 12.9	16/108 14.8% SD= 15.9	(H(2)= 12.071, p= 0.002)

The results reveal that the advanced speakers were closer to the 92.5% acquisition threshold than the lower-intermediates and upper-intermediates. The groups differed in the use of  $\phi$  and *the*.

Mann-Whitney tests illustrated significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of  $\phi$  and *the*.

The results support H1c since both groups performed similarly. However, the L2 learners did not perform accurately, on the basis of the comparison with the native

speakers, as they used the non-target article a and had difficulty with mass nouns. This is similar to Snape's (2006) findings that mass nouns seem to be problematic for L2 learners.

## 7. [+definite, +generic] singular

The following hypotheses were tested.

**H1d** Arabic speakers will use *the* more accurately than Mandarin speakers in [+definite, +generic] contexts, since generics in Arabic are always definite.

**H1e** Mandarin speakers will omit *the* more than Arabic speakers in [+definite, +generic] contexts, since Mandarin lacks an article system.

Table 5.33 Choice of articles by lower-intermediates in [+definite, +generic] singular contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
,	18/68	9/68	2/80	(11/2) 14 17 ( 0.001)
a/an	26.5% SD= 22.5	13.2% SD= 15.6	2.6% SD= 7.7	(H(2)=14.176, p=0.001)
	12/68	24/68	1/80	
ø	17.6%	35.3%	1.3%	(H(2)=18.750, p<0.001)
	SD = 21.2	SD = 30.7	SD=5.6	
	38/68	35/68	77/80	
the	55.9%	51.5%	96.1%	(H(2)=26.982, p<0.001)
	SD = 27.3	SD= 32.4	SD = 9.2	

The table demonstrates that the lower-intermediates did not accurately select the target article *the*. The groups differed in the use of the three articles.

Mann-Whitney tests observed significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of *the*, a and  $\phi$ .

Table 5.34 Choice of articles by upper-intermediates in [+definite, +generic] singular contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	7/88 8%	10/88 11.4%	n.s
u/ till	SD = 16.2	SD=20	11.5
	28/88	35/88	
ø	31.8%	39.8%	(H(2)=24.307, p<0.001)
	SD= 28	SD= 34.2	
	53/88	43/88	
the	60.2%	48.8%	(H(2)=26.354, p<0.001)
	SD = 26.3	SD= 38.2	_

The upper-intermediates did not use *the* correctly. The groups differed in the use of *the* and  $\phi$ .

Mann-Whitney tests showed significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of *the* and  $\phi$ .

Table 5.35 Choice of articles by advanced speakers in [+definite, +generic] singular contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	10/68 14.7%	12/108 11.1%	n.s
a/an	SD = 26.6	SD = 21.2	11.5
	10/68	34/108	
ø	14.7%	31.5%	(H(2)=15.416, p<0.001)
	SD= 19.9	SD= 33	
	48/68	62/108	
the	70.6%	57.4%	(H(2)=19.416, p<0.001)
	SD= 29.6	SD= 33.1	

Even at the advanced level, neither group was particularly close to the 92.5% acquisition threshold. The groups differed in the use of *the* and  $\phi$ .

Mann-Whitney tests found significant differences (p< 0.016) between the natives and both the Arabic and Mandarin groups in the use of *the* and  $\phi$ .

The results disconfirm H1d and H1e, as the Arabic speakers did not use *the* more accurately than the Mandarin speakers, while the Mandarin speakers did not make more omission errors.

# 8. [+definite, +generic] plural<sup>11</sup>

The following hypotheses were tested.

**H1d** Arabic speakers will use *the* more accurately than Mandarin speakers in [+definite, +generic] contexts, since generics in Arabic are always definite.

**H1e** Mandarin speakers will omit *the* more than Arabic speakers in [+definite, +generic] contexts, since Mandarin lacks an article system.

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<sup>&</sup>lt;sup>11</sup> Dialogues 12, 31, 44 were excluded as it was mentioned in section 4.3.1.

Table 5.36 Choice of articles by lower-intermediates in [+definite, +generic] plural contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	1/17 5.9%	0/17 0%	0/20 0%	n.s
	SD = 24.3	SD=0	SD=0	
	3/17	4/17	0/20	
ø	17.6%	23.5%	0%	n.s
	SD = 39.3	SD = 43.7	SD=0	
	13/17	13/17	20/20	
the	76.5%	76.5%	100%	n.s
	SD = 43.7	SD= 43.7	SD=0	

The results show that the lower-intermediate Arabic and Mandarin speakers performed similarly.

Table 5.37 Choice of articles by upper-intermediates in [+definite, +generic] plural contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	0/22 0%	1/22 4.6%	n c
a/all	SD = 0	SD = 21.3	n.s
4	1/22 4.6%	6/22 27.2%	(H(2)= 0.258 p= 0.010)
Ø	SD = 21.3	SD=45.6	(H(2)=9.258, p=0.010)
,1	21/22	15/22	(11/2) 11 455 0 002)
the	96.4% SD= 21.3	68.2% SD= 47.7	(H(2)=11.455, p=0.003)

The results demonstrate that the Arabic speakers outperformed their Mandarin counterparts in the use of *the*. The groups differed in the use of *the* and  $\phi$ .

Mann-Whitney tests found close to significant differences (p< 0.016) between the Arabic and Mandarin speakers in the use of *the* (U= 176.000, z= -2.318, p= 0.020, r= 0.35) and  $\phi$  (U= 187.000, z= -2.037, p= 0.042, r= 0.31). Significant differences were found between the natives and the Mandarin speakers in the use of *the* and  $\phi$ .

Table 5.38 Choice of articles by advanced speakers in [+definite, +generic] plural contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	0/17 0% SD= 0	0/27 0% SD= 0	n.s
ø	2/17 11.8% SD= 33.2	4/27 14.8% SD= 36.2	n.s
the	15/17 88.2% SD= 33.2	23/27 85.2% SD= 36.2	n.s

The advanced Arabic speakers performed close to the 92.5% acquisition threshold.

The results do not support H1d and H1e, as the Arabic and Mandarin speakers performed similarly.

## 9. [-definite, +generic] singular

The following hypotheses were tested.

**H1f** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] singular contexts, since generics in Arabic are always definite.

**H1g** Mandarin speakers will make more omission errors than Arabic speakers in [-definite, +generic] singular contexts, since Mandarin lacks an article system.

Table 5.39 Choice of articles by lower-intermediates in [-definite, +generic] singular contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	28/68 41.2% SD= 19.6	29/68 42.7% SD=17.1	78/80 97.4% SD= 7.7	(H(2)= 39.137, p< 0.001)
ø	12/68 17.6% SD= 21.2	16/68 23.5% SD= 20.7	1/80 1.3% SD= 5.6	(H(2)= 14.674, p= 0.001)
the	28/68 41.2% SD= 21.5	23/68 33.8% SD= 23.3	1/80 1.3% SD= 5.6	(H(2)= 35.565, p< 0.001)

The lower-intermediates used the target article a (highlighted in grey) poorly. The groups differed in the use of the three articles.

Mann-Whitney tests found significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of a,  $\phi$  and the.

Table 5.40 Choice of articles by upper-intermediates in [-definite, +generic] singular contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	43/88 48.9%	44/88 50%	(H(2)= 37.509, p< 0.001)
a/an	SD= 19.6	SD = 24.4	(11(2)= 37.307, p< 0.001)
	25/88	12/88	
Ø	28.4%	13.6%	(H(2)=25.725, p<0.001)
	SD= 19.4	SD= 18.5	
	20/88	32/88	
the	22.7%	36.4%	(H(2)=25.831, p<0.001)
	SD = 21.7	SD = 24.1	

The table shows that the upper-intermediates did not use the target article correctly. The groups differed in the use of a,  $\phi$  and the.

Mann-Whitney tests found a significant difference between the Arabic and Mandarin speakers in the use of  $\phi$  (U=139.500, z=-2.622, p= 0.009, r= 0.40). The natives differed from both the Arabic and Mandarin speakers in the use of a,  $\phi$  and the.

Table 5.41 Choice of articles by advanced speakers in [-definite, +generic] singular contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	37/68 54.4%	56/108 51.8%	(H(2)= 36.898, p< 0.001)
a/aii	SD = 28.3	SD = 20.7	(11(2)= 30.838, p< 0.001)
	18/68	26/108	
Ø	26.5%	24.1%	(H(2)=26.217, p=0.001)
	SD = 20.7	SD = 17.7	
	13/68	26/108	
the	19.1%	24.1%	(H(2)=19.415, p<0.001)
	SD = 25.8	SD = 20.2	

The advanced speakers did not use the target article correctly. The groups differed in the use of a,  $\phi$  and the.

Mann-Whitney tests identified that the natives differed significantly (p< 0.016) from both the Arabic and Mandarin speakers in the use of a,  $\phi$  and the.

The results disconfirm H1f and H1g, as the Arabic speakers did not use *the* more than the Mandarin speakers, while the Mandarin speakers did not make more omission errors than their Arabic counterparts.

## 10. [-definite, +generic] plural

The following hypotheses were tested.

**H1h** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] plural and mass contexts, since generics in Arabic are always definite.

**H1i** Mandarin speakers will use  $\phi$  more accurately than Arabic speakers in [-definite, +generic] plural and mass contexts, since Mandarin lacks an article system.

Table 5.42 Choice of articles by lower-intermediates in [-definite, +generic] plural contexts

	Twell evil enough of white morning in [ welling, 'Benefit's] branches			
Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	1/68 1.5%	2/68 2.9%	0/80 0%	n.s
a/ an	SD = 6.1	SD=8.3	SD=0	11.5
	41/68	50/68	79/80	
ø	60.3%	73.5%	98.7%	(H(2)=27.853, p<0.001)
	SD= 19.9	SD= 24.2	SD=5.6	
	26/68	16/68	1/80	
the	38.2%	23.6%	1.3%	(H(2)=26.941, p<0.001)
	SD=20	SD = 22.5	SD=5.6	

The table shows that the lower-intermediates overused the non-target article *the*. The groups differed in the use of  $\phi$  and *the*.

Mann-Whitney tests found a close to significant difference between the Arabic and Mandarin speakers in the use of *the* (U= 88.500, z= -2.034, p= 0.042, r= 0.35). The natives differed from both the Arabic and Mandarin speakers in the use of  $\phi$  and *the*.

Table 5.43 Choice of articles by upper-intermediates in [-definite, +generic] plural contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	0/88 0%	0/88 0%	n.s
	SD= 0 67/88	SD= 0 79/88	
ø	76.1% SD= 22.5	89.8% SD= 14.8	(H(2)= 15.276, p< 0.001)
the	21/88 23.9% SD= 22.5	9/88 10.2% SD= 14.8	(H(2)= 15.276, p< 0.001)

The upper-intermediate Mandarin speakers outperformed their Arabic counterparts, who overused *the*. The groups differed in the use of  $\phi$  and *the*.

Mann-Whitney tests showed differences that did not survive the Bonferroni correction (p< 0.016) between the Arabic and Mandarin speakers in the use of  $\phi$  (U= 161.500, z= -2.076, p= 0.038, r= 0.31) and *the* (U= 161.500, z= -2.076, p= 0.038, r= 0.31). The natives differed from both the Arabic and Mandarin speakers in the use of  $\phi$  and *the*.

Table 5.44 Choice of articles by advanced speakers in [-definite, +generic] plural contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
	, ,	, ,	comparing groups
	0/68	0/108	
a/an	0%	0%	n.s
	SD=0	SD=0	
	63/68	103/108	
ø	92.6%	95.4%	n.s
	SD= 11.7	SD= 9.9	
	5/68	5/108	
the	7.4%	4.6%	n.s
	SD= 11.7	SD= 9.9	

The table indicates that the advanced speakers performed above the 92.5% acquisition threshold.

H1h and H1i are not supported fully, as the Arabic speakers did not use *the* more than the Mandarin speakers, and the Mandarin speakers did not use  $\phi$  more correctly than their Arabic counterparts, as the differences did not survive the Bonferroni correction.

## 11. [-definite, +generic] mass

The following hypotheses were tested.

**H1h** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] plural and mass contexts, since generics in Arabic are always definite.

**H1i** Mandarin speakers will use  $\phi$  more accurately than Arabic speakers in [-definite, +generic] plural and mass contexts, since Mandarin lacks an article system.

Table 5.45 Choice of articles by lower-intermediates in [-definite, +generic] mass contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	6/68 8.8%	7/68 10.3%	0/80 0%	(H(2)= 10.043, p= 0.007)
a/ an	SD = 12.3	SD=12.7	SD=0	(11(2)= 10.043, p= 0.007)
	36/68	47/68	80/80	
ø	52.9%	69.1%	100%	(H(2)=32.296, p<0.001)
	SD = 27.8	SD = 20.8	SD=0	
	26/68	14/68	0/80	
the	38.3%	20.6%	0%	(H(2)=22.267, p<0.001)
	SD = 28.1	SD = 22.1	SD=0	

The lower-intermediates seemed to use the target article  $\phi$  incorrectly. The groups differed in the use of  $\phi$ , *the* and a.

Mann-Whitney tests found that the natives differed significantly (p< 0.016) from both the Arabic and Mandarin speakers in the use of  $\phi$ , *the* and a.

Table 5.46 Choice of articles by upper-intermediates in [-definite, +generic] mass contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	12/88 13.6% SD= 12.7	7/88 8% SD= 11.9	(H(2)= 14.770, p= 0.001)
Ø	64/88 72.8% SD= 24.3	69/88 78.4% SD= 17.8	(H(2)= 23.214, p< 0.001)
the	12/88 13.6% SD= 20	12/88 13.6% SD= 18.5	(H(2)= 10.963, p= 0.004)

It is evident that the upper-intermediates performed similarly. The groups differed in the use of  $\phi$ , *the* and a.

Mann-Whitney tests results revealed that the natives differed (p< 0.016) from both the Arabic and Mandarin speakers in the use of  $\phi$ , the and a.

Table 5.47 Choice of articles by advanced speakers in [-definite, +generic] mass contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	5/68 7.3% SD= 11.7	5/108 4.6% SD= 9.9	(H(2)= 6.227, p= 0.044)
ø	59/68 86.8% SD= 15.6	96/108 88.9% SD= 12.7	(H(2)= 13.022, p= 0.001)
the	4/68 5.9% SD= 10.9	7/108 6.5% SD= 11.2	(H(2)= 5.985, p= 0.050

The advanced speakers used  $\phi$  close to the 92.5% acquisition threshold. The groups differed in the use of  $\phi$ , the and a.

Mann-Whitney tests illustrated significant differences (p< 0.016) between the Arabic and native speakers in the use of  $\phi$  and a. The Mandarin and native speakers differed in the use of  $\phi$  and the.

The results disconfirm H1h and H1i, as both groups performed similarly.

## **5.1.2.1** Summary

This section compares the Arabic and Mandarin speakers' article selection in order to examine the role of L1 and test the related hypotheses. The results did not comply with H1b, as the groups did not exhibit a high rate of omission errors in [-definite, +/-specific] singular contexts. H1c, which states that both the Arabic and Mandarin speakers will accurately use  $\phi$  in [-definite, +/-specific] plural and mass contexts, is supported despite an overuse of a in [-definite, +/-specific] mass contexts. H1d, H1e, H1f, H1g, H1h and H1i, which predict that the Arabic speakers will use *the* more accurately in [+definite, +generic] contexts and will use *the* in [-definite, +generic] contexts more than their Mandarin counterparts, were not supported, as the Arabic speakers did not use *the* as predicted, and the Mandarin speakers did not use  $\phi$  as predicted.

In the following, the role of genericity is further investigated.

## 5.1.3 Investigation of genericity effects

To examine the role of genericity more closely, and its effect on L2 learners' article use, the total means of *the* in [-definite, +generic]<sup>12</sup> contexts were compared with their non-generic [-definite, +/-specific] counterparts for each proficiency level of each language group, in addition to the native speakers, to test the following hypothesis:

**H1j** There will be an interaction in the realisation of *the* between the L1 and genericity in [-definite] contexts, in that Arabic speakers will use *the* more in [-definite, +generic] contexts than in [-definite, +specific] and [-definite, -specific] contexts, but Mandarin speakers will not differ in their use of *the*.

Multiple Wilcoxon Signed-Ranks tests were conducted (Bonferroni correction applied, significance accepted at p< 0.025)<sup>13</sup> and differences that survived or did not survive the Bonferroni correction are reported below.

## 1. [-definite, +generic] vs. non-generic [-definite, +/-specific] singular contexts

Table 5.48 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite, +specific] singular contexts

[ definite,   speeme] singular contexts				
L1	Lower-intermediate	Upper-intermediate	Advanced	
Ar	(z= -3.086, p= 0.002, r= 0.82)	(z= -3.416, p= 0.001, r= 0.91)	(z= -2.636, p= 0.008, r= 0.93)	
Man	n.s	(z= -3.494, p< 0.001, r= 0.80)	(z= -2.920, p= 0.003, r= 0.69)	

The table above shows the results of the comparisons of the use of the non-target article *the* between [-definite, +generic] and [-definite, +specific] singular contexts. All the Arabic and Mandarin groups, except for the Mandarin lower-intermediates, used *the* more in [-definite, +generic] contexts than in [-definite, +specific] contexts. Consequently, the Arabic speakers' results support H1j, but the Mandarin speakers' results do not.

<sup>&</sup>lt;sup>12</sup> Since the present study did not include [+definite, +/-specific] contexts, [+definite, +generic] contexts cannot be investigated.

<sup>&</sup>lt;sup>13</sup> The original alpha level of 0.05 was divided by the number of paired comparisons which are 2, [-definite, +generic] vs. [-definite, +specific] and [-definite, +generic] vs. [-definite, -specific].

Table 5.49 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic

[-definite, -specific] singular contexts

L1	Lower-intermediate	Upper-intermediate	Advanced
Ar	(z=-3.333, p=0.001, r=0.83)	(z= -2.996, p= 0.003, r= 0.75)	(z= -2.636, p= 0.008, r= 0.93)
Man	(z= -3.442, p= 0.001, r= 0.92)	(z= -3.804, p< 0.001, r= 0.90)	(z= -4.062, p< 0.001, r= 0.93)

All the Arabic and Mandarin groups used *the* more in [-definite, +generic] contexts than in [-definite, -specific] contexts. The Arabic speakers' results support H1j, but the Mandarin speakers' results do not.

The following three graphs show the use of the non-target definite article *the*. They demonstrate how the Arabic and Mandarin speakers used *the* more in [-definite, +generic] contexts than in [-definite, +/-specific] contexts, and how they did so similarly.

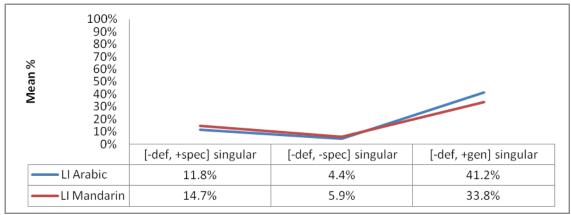


Figure 5.2 Lower-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] singular vs. non-generic [-definite, +/-specific] singular contexts

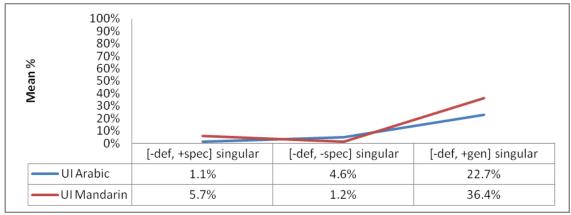


Figure 5.3 Upper-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] singular vs. non-generic [-definite, +/-specific] singular contexts

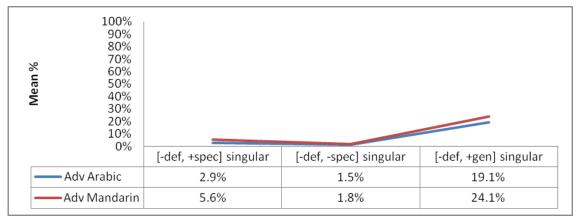


Figure 5.4 Advanced Arabic and Mandarin speakers' use of *the* in [-definite, +generic] singular vs. non-generic [-definite, +/-specific] singular contexts

## 2. [-definite, +generic] vs. non-generic [-definite, +/-specific] plural contexts

Table 5.50 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite, +specific] plural contexts

L1	Lower-intermediate	Upper-intermediate	Advanced
Ar	(z= -2.846, p= 0.004, r= 0.82)	n.s	n.s
Man	n.s	$(z=-2.156, p=0.031, r=0.54)^*$	(z= -2.701, p= 0.007, r= 0.81)

<sup>\*</sup> Close to significance

The Arabic lower-intermediates used *the* more in [-definite, +generic] contexts than in [-definite, +specific] contexts which is compatible with H1j. Conversely, the upper-intermediate and advanced Mandarin speakers used *the* more in [-definite, +specific] contexts <sup>14</sup> than in [-definite, +generic] contexts, which does not support H1j.

Table 5.51 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite, -specific] plural contexts

Lacinite	ierinite, -specifie] piurui contexts					
L1	Lower-intermediate	Upper-intermediate	Advanced			
Ar	(z= -3.162, p= 0.002, r= 0.88)	(z= -3.106, p= 0.002, r= 0.83)	n.s			
Man	n.s	n.s	(z=-2.517, p=0.012, r=0.70)			

The Arabic lower-intermediates and upper-intermediates used *the* more in [-definite, +generic] contexts than in [-definite, -specific] contexts which supports H1j. Conversely, the advanced Mandarin speakers used *the* more in [-definite, -specific] contexts than in [-definite, +generic] contexts. Consequently, this does not support H1j.

The following three graphs present how the Arabic and Mandarin speakers used the non-target definite article *the*. It will be noted that the lower-intermediate and upper-

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<sup>&</sup>lt;sup>14</sup> Specifically effects are examined later in section 5.1.4.

intermediate Arabic speakers used *the* more in [-definite, +generic] contexts than in [-definite, +/-specific] contexts, while this was not the case with the Mandarin speakers.

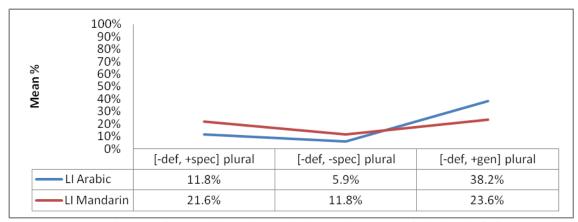


Figure 5.5 Lower-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] plural vs. non-generic [-definite, +/-specific] plural contexts

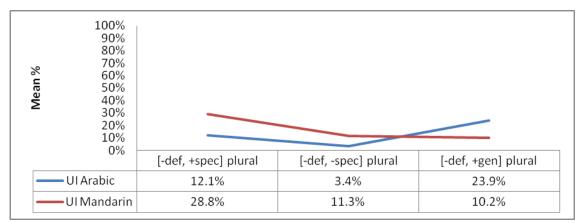


Figure 5.6 Upper-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] plural vs. non-generic [-definite, +/-specific] plural contexts



Figure 5.7 Advanced Arabic and Mandarin speakers' use of *the* in [-definite, +generic] plural vs. non-generic [-definite, +/-specific] plural contexts

## 3. [-definite, +generic] vs. non-generic [-definite, +/-specific] mass contexts

Table 5.52 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite, +specific] mass contexts

L1	Lower-intermediate	Upper-intermediate	Advanced
Ar	(z= -2.843, p= 0.004, r= 0.76)	n.s	n.s
Man	n.s	n.s	n.s

Only the Arabic lower-intermediates used *the* more in [-definite, +generic] contexts than in [-definite, +specific] contexts. This is compatible with H1j.

Table 5.53 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite, -specific] mass contexts

L1	Lower-intermediate	Upper-intermediate	Advanced
Ar	n.s	n.s	n.s
Man	n.s	n.s	$(z=-2.066, p=0.039, r=0.57)^*$

<sup>\*</sup> Close to significance

The Arabic speakers' results are not compatible with H1j. The advanced Mandarin speakers tended to use *the* more in [-definite, -specific] contexts than in [-definite, +generic] contexts, though that this did not survive the Bonferroni correction.

The following graphs demonstrate how the Arabic and Mandarin speakers used *the*, which is similar across the three contexts except for the lower-intermediate Arabic speakers and the advanced Mandarin speakers.

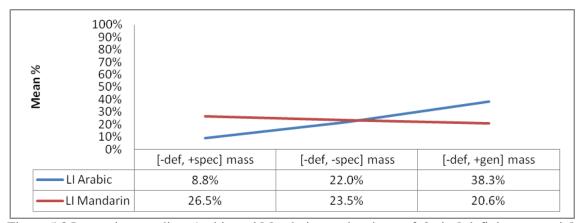


Figure 5.8 Lower-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] mass vs. non-generic [-definite, +/-specific] mass contexts

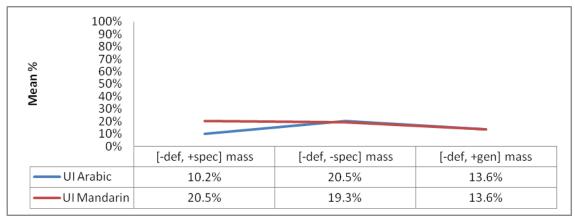


Figure 5.9 Upper-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] mass vs. non-generic [-definite, +/-specific] mass contexts

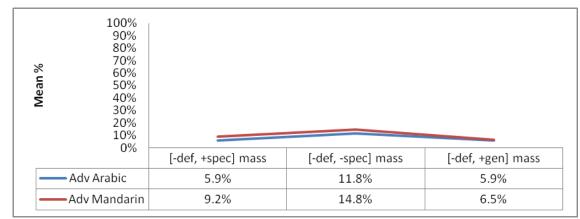


Figure 5.10 Advanced Arabic and Mandarin speakers' use of *the* in [-definite, +generic] mass vs. non-generic [-definite, +/-specific] mass contexts

#### 5.1.3.1 **Summary**

The results demonstrate that the Arabic and Mandarin speakers used *the* more in [-definite, +generic] singular contexts than in non-generic [-definite, +/-specific] singular contexts. There are language differences in plural contexts: the Arabic, but not the Mandarin, speakers used *the* more in [-definite, +generic] plural contexts than in [-definite, +/-specific] plural contexts. In mass contexts, the lower-intermediate Arabic speakers appeared to use *the* more in [-definite, +generic] contexts than in [-definite, +specific] contexts. The Arabic speakers' results generally support H1j, but the Mandarin results do not.

It can be noted from the above results and graphs that the participants seemed to be sensitive to whether a context is specific or not. According to the FH, specificity plays a role in article usage. In the following, the role of specificity is examined.

## 5.1.4 Investigation of specificity effects

This section tests the role of specificity and its effect on L2 learners' article use and the related hypotheses. The following hypotheses were tested.<sup>15</sup>

**H2a** Arabic speakers will fluctuate between specificity and definiteness only in [-definite, +specific] singular contexts, although this should be less robust in the advanced group due to exposure to L2 input.

**H2b** Mandarin speakers will fluctuate between specificity and definiteness in all [-definite, +specific] contexts, although this should be less robust in the advanced group due to exposure to L2 input.

The means of articles in [-definite, +specific] contexts were compared with their [-definite, -specific] counterparts for each proficiency level of each language group, in addition to that of the natives.

## 1. [-definite, +specific] vs. [-definite, -specific] singular contexts

Multiple Wilcoxon Signed-Ranks tests were conducted to identify any fluctuation between *a* and *the* with no significant comparisons across all proficiency levels.

## 2. [-definite, +specific] vs. [-definite, -specific] plural contexts

Multiple Wilcoxon Signed-Ranks tests were performed to identify fluctuation between  $\phi$  and *the*. Again, most comparisons were insignificant, except for the use of *the* by the upper-intermediate Mandarin speakers (z= -2.317, p= 0.021, r= 0.64) which was used more in [-definite, +specific] than in [-definite, -specific] plural contexts. Ionin *et al.*'s (2008) criterion for determining if fluctuation is held at the level of the individual was adopted. Ionin *et al.* (2008: 567) proposed that individuals make a specificity distinction with indefinites 'if he or she have at least one more use of *the* and at least one less use of *a*, with specific indefinites than with non-specific indefinites'. Since the context is plural, the participants are expected to fluctuate between  $\phi$  and *the*, not *a* and *the*. The analyses showed that ten out of the twenty-two Mandarin upper-intermediates (45%) made the specificity distinction.

## 3. [-definite, +specific] vs. [-definite, -specific] mass contexts

Multiple Wilcoxon Signed-Ranks tests were conducted to identify fluctuation between  $\phi$  and *the*. Comparisons were insignificant, except for the use of *the* by the lower-

<sup>&</sup>lt;sup>15</sup> Since the study does not include [+definite, +/-specific] contexts, signs of fluctuation are based on their misuse of articles in only [-definite, +/-specific] contexts.

intermediate Arabic speakers (z=-2.165, p=0.030, r=0.76) and the upper-intermediate Arabic speakers (z=-2.183, p=0.029, r=0.58). They used *the* more in [-definite, -specific] than in [-definite, +specific] mass contexts. Further individual analyses showed that four out of the seventeen lower-intermediates (24%) and four out of the twenty-two upper-intermediates (18%) surprisingly linked the use of *the* to the [-specific] feature.

#### 5.1.4.1 Summary

These results show some evidence of fluctuation, although it was not noted in all types of noun, as the upper-intermediate Mandarin speakers overused the non-target article *the* in [-definite, +specific] plural contexts. Moreover, the lower-intermediate and upper-intermediate Arabic speakers overused *the* in [-definite, -specific] mass contexts. Nevertheless, these results do not comply with H2a or H2b.

#### 5.1.5 Investigation of developmental trends

This section addresses the following hypothesis:

**H3** L2 learners will restructure away from their L1-transferred grammars and show less non-target L1-based use of articles with rising overall proficiency.

In this section, comparisons were made between the three proficiency levels in each language group in terms of each noun type and context. Several Kruskal-Wallis tests were run to find any statistically significant differences (p< 0.05) between the three proficiency groups in terms of the use of each article. When a statistically significant difference was found, separate Mann-Whitney tests (Bonferroni correction applied, significance accepted at p< 0.016) were conducted. H3 predicts less non-target L1-based use of articles; however, the improvement in terms of the use of all articles is reported below. Here, we can see how they improved in terms of target and non-target L1-based and non-L1-based use of articles.

#### 1. Arabic groups

Table 5.54 Comparisons between Arabic groups in all contexts

Context	Target article	Expected L1-based use of articles	Lower- intermediate vs. Upper- intermediate	Lower- intermediate vs. Advanced	Upper- intermediate vs. Advanced
[-def, +spec]					
singular	а	ø*	a and the	n.s	n.s
plural	Ø	Ø	n.s	n.s	n.s
mass	Ø	Ø	n.s	$\phi$ and $a$	$\phi$ and $a$
[-def, -spec]					
singular	а	Ø	n.s	n.s	n.s
plural	Ø	Ø	n.s	а	n.s
mass	Ø	Ø	а	$\phi$ and $a$	n.s
[+def, +gen]					
singular	the	the	а	n.s	n.s
plural	the	the	n.s	n.s	n.s
[-def, +gen]					
singular	а	the	the	the	n.s
plural	ø	the	n.s	ø and <i>the</i>	n.s
mass	Ø	the	the	ø and <i>the</i>	n.s

<sup>\*</sup>Articles highlighted in grey are the expected non-target L1-based articles.

All the differences are significant (p< 0.016), indicating that the participants improved in their article usage with rising overall proficiency. The results of [-definite, +generic] contexts support H3, as the lower-intermediates used the non-target L1-based article the more than the advanced speakers, while the lower-intermediates used the more than the upper-intermediates in [-definite, +generic] singular and plural contexts (generics in Arabic are always definite). The results also reveal that the Arabic speakers recovered from other non-target use of articles that were not L1-based, as they recovered from using the in [-definite, +specific] singular contexts (the lower-intermediates used the more than the upper-intermediates), a in [-definite, +/-specific] mass contexts (the Arabic lower-intermediates and upper-intermediates tended to misclassify some mass nouns as singular more than the advanced speakers), a in [-definite, -specific] plural contexts (the lower-intermediates overused a with the item women as they may have confused it with the singular form woman (see section 5.1.1)), and a in [+definite, +generic] singular contexts (the lower-intermediates used a more than the upperintermediates). However, the Arabic speakers made no improvement in the use of the non-target L1-based article  $\phi$  in [-definite, +/-specific] singular contexts. The graph below illustrates the means of omission errors in terms of each proficiency level in [-definite, +/-specific] singular contexts. It can be noted from the graph that they did not make fewer omission errors with rising overall proficiency, due to the fact that their omission errors were low at all proficiency levels (see section 5.1.2).

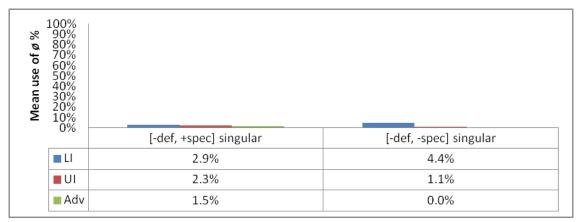


Figure 5.11 Arabic speakers' omission errors in [-definite, +/-specific] singular contexts

Note that the results generally support H3 as the Arabic speakers, due to greater L2 input, were able to improve in contexts in which their L1 differs. In particular, this can be observed in terms of the improvement they made in [-definite, +generic] singular, plural and mass contexts. The improvements are more evident in comparisons between the lower-intermediates and upper-intermediates, and the lower-intermediates and advanced speakers.

#### 2. Mandarin groups

Table 5.55 Comparisons between Mandarin groups in all contexts

Context	Target article	Expected L1-based use of articles	Lower- intermediate vs. Upper- intermediate	Lower- intermediate vs. Advanced	Upper- intermediate vs. Advanced
[-def, +spec]					
singular	а	ø*	n.s	n.s	n.s
plural	ø	ø	n.s	n.s	n.s
mass	ø	ø	n.s	Ø	n.s
[-def, -spec]					
singular	а	ø	n.s	n.s	n.s
plural	ø	ø	n.s	а	а
mass	ø	ø	n.s	$\phi$ and $a$	а
[+def, +gen]					
singular	the	ø	n.s	n.s	n.s
plural	the	Ø	n.s	n.s	n.s
[-def, +gen]					
singular	а	Ø	n.s	n.s	n.s
plural	ø	ø	n.s	ø and <i>the</i>	n.s
mass	ø	ø	n.s	ø	n.s

<sup>\*</sup>Articles highlighted in grey are the expected non-target L1-based articles.

The table reveals no significant improvements in the use of the non-target L1-based article  $\phi$ . However, the Mandarin speakers recovered from other non-target non-L1-based use of articles as they moved away from using a in [-definite, -specific] plural contexts (the lower-intermediates and upper-intermediates used a more than the advanced speakers), a in [-definite, -specific] mass contexts (the lower-intermediates and upper-intermediates tended to misclassify some mass nouns as singular more than the advanced speakers), and *the* in [-definite, +generic] plural contexts (the lower-intermediates overused *the*, which did not persist into the advanced level). The Mandarin speakers did not demonstrate any improvement in the use of the non-target L1-based article  $\phi$ . The graph below shows the means of omission errors in terms of each proficiency level in each context, where we expect non-target L1-based use of articles (omission errors in the case of the Mandarin speakers).

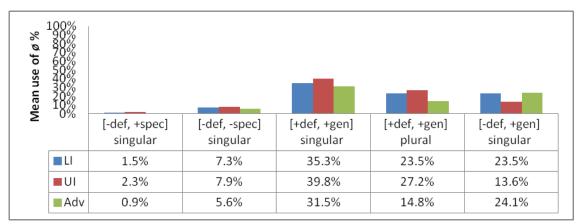


Figure 5.12 Mandarin speakers' omission errors in [-definite, +/-specific] singular, [+definite, +generic] singular and plural, and [-definite, +generic] singular contexts

The results of the Mandarin speakers do not support H3, note that their performance in [-definite, +/-specific] contexts is at ceiling, which justifies their lack of improvement (see section 5.1.2). The omission errors in generic contexts persisted into the advanced level.

## 5.1.5.1 Summary

The Arabic speakers' results, but not those for the Mandarin speakers, support H3. It should be stressed that if the study had included beginners and near-to-native L2 speakers, the improvements might have been more evident. Moving away from non-target L1-based use of articles due to exposure to L2 input is one of the pieces of evidence that UG constrains L2A.

## 5.2 Summary of the forced-choice elicitation task results

This section compares the article selection of both the Arabic and Mandarin speakers with each other and with the natives, where necessary. The purpose of this is to examine the role of word position, L1, definiteness, genericity, specificity and proficiency by testing the related hypotheses. The results are not compatible with H1a, as the Mandarin speakers were not sensitive to word position. The results disconfirm H1b, as the Arabic and Mandarin speakers used a correctly in [-definite, +/-specific] singular contexts. H1c is supported, as both the Arabic and Mandarin speakers performed similarly and accurately in [-definite, +/-specific] plural and mass contexts, although they overused a with mass nouns. H1d, H1e, H1f, H1g, H1h and H1i were not supported, as the Arabic speakers did not use *the* more than the Mandarin speakers, while the Mandarin speakers did not omit *the* more than their Arabic counterparts, as predicted in generic contexts. Moreover, both groups made omission errors. The results appear to support H1j, as the Arabic groups sometimes used the more in generic contexts than in non-generic contexts, while the Mandarin speakers' performance was not the same in both contexts, and this does not support H1j. The results do not comply with H2a or H2b, as there was no obvious fluctuation effects. The Arabic results, not the Mandarin's, concur with H3, as they showed recovery from non-target L1-based use of articles.

#### 5.3 Story recall oral production task results

The results of the story recall oral production task address the hypotheses related to: a) the role of L1 background; b) the role of genericity; and c) the role of proficiency. Unlike in the forced-choice elicitation task, the role of specificity will not be addressed as it is 'in the mind of the speaker' (Ionin, 2003: 202-203) and cannot be determined by such tasks (see Chapter Four, section 4.3.2). This is why there are 8 contexts and not 11 as in the forced-choice elicitation task. Moreover, the role of noun position (see Chapter Three, section 3.4) will not be discussed, as a number of participants used all target nouns in some contexts in subject position, while others placed them in object position which made it impossible to carry out statistical analyses.

Before statistical analyses results are shown, the overall results in percentages (conflated for all the 70 items of the story recall oral production task) for each group (the Arabic speakers, Mandarin speakers and native speakers) are presented below in terms of a table and a histogram:

Table 5.56 Target suppliance of articles: learners and native speakers in the oral task

Twelve to the stranger supplies	Arabic n=56	Mandarin n=66	Native Speakers n=20
Target-like use	2752/3372	3474/4217	1337/1353
Mean	81.6%	82.4%	98.8%
Standard deviation	10.2	7.4	1.5

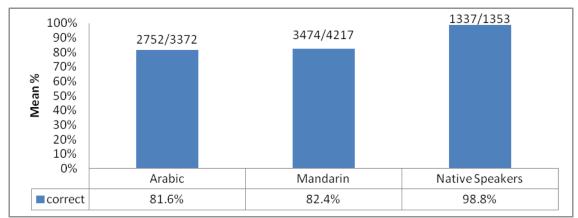


Figure 5.13 Groups' overall target suppliance of articles in the oral task

The Arabic and Mandarin speakers performed similarly to, but less accurately than, the native speakers. However, the results conceal differences associated with definiteness, genericity, number (singular, plural and mass) and proficiency levels. These will be illustrated in the statistical analyses given in the following sections.

Assessment for normality of distribution using Shapiro-Wilk tests showed that the data was not normally distributed. Consequently, non-parametric tests were used (Dörnyei, 2007; Field, 2009; 2012; Larson-Hall, 2010). In the following section, comparisons of the Arabic and Mandarin speakers are presented.

#### 5.3.1 Comparisons of Arabic and Mandarin L2 learners to examine L1 effects

The discussion of the results in this section follows a similar order as the discussion of the forced-choice elicitation task results.

The results of the eight contexts included in the story recall oral production task are reported below. The non-generic [-definite] contexts will be presented, followed by [+/-definite, +generic] contexts, both of which are divided by type of noun (singular, plural and mass).

# 1. [-definite] singular

The following hypothesis was tested:

**H1b** Arabic and Mandarin speakers will make omission errors at a similar rate in [-definite, +/-specific]<sup>16</sup> singular contexts, since Arabic lacks a phonologically overt indefinite article, while Mandarin lacks an article system.

The table below illustrates the frequency with which the Arabic and Mandarin speakers supplied the appropriate article a/an (highlighted in grey) and the inappropriate articles  $\phi$  and the.

Table 5.57 Suppliance of articles by lower-intermediates in [-definite] singular contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	158/238 <sup>17</sup> 66.4%	167/247 67.6%	296/300 98.7%	(H(2)= 33.349, p< 0.001)
	SD = 21.7	SD=16.5	SD = 2.7	
	48/238	51/247	1/300	
ø	20.2%	20.7%	0.3%	(H(2)=28.199, p<0.001)
	SD = 17.4	SD=15.1	SD=1.5	
	32/238	29/247	3/300	
the	13.4%	11.7%	1%	(H(2)=19.333, p<0.001)
	SD= 11	SD= 14.1	SD=2.4	

The results demonstrate that the lower-intermediates performed equally. The groups differed in the use of the three articles.

Mann-Whitney tests (Bonferroni correction applied, significance accepted at p< 0.016)  $^{18}$  discovered significant differences between the natives and both the Arabic and Mandarin speakers in the use of a,  $\phi$  and the.

depending on what the participants had in mind.

17 Although the number of the lower-intermediate Arabic and the Mandarin participants is equal (n=17), yet due to the nature of the task, the participants vary concerning recalling the target items. This explains why it is 238 for the Arabic speakers and 247 for the Mandarin speakers.

<sup>&</sup>lt;sup>16</sup> Although specificity is not tested here, yet each non-generic [-definite] context could be specific or not depending on what the participants had in mind.

<sup>&</sup>lt;sup>18</sup> The original alpha level of 0.05 was divided by the number of paired comparisons which is 3 in this case.

Table 5.58 Suppliance of articles by upper-intermediates in [-definite] singular contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	246/300 82% SD= 15.5	272/327 83.2% SD= 12.8	(H(2)= 25.114, p< 0.001)
ø	33/300 11% SD= 14.6	39/327 11.9% SD= 10.7	(H(2)= 17.409, p< 0.001)
the	21/300 7% SD= 8.1	16/327 4.9% SD= 6.5	(H(2)= 11.843, p= 0.003)

The table shows that the upper-intermediates seemed to use the target article a correctly. The groups differed in the use of the three articles.

Mann-Whitney tests yielded significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of a,  $\phi$  and the.

Table 5.59 Suppliance of articles by advanced speakers in [-definite] singular contexts

1 4010 0 10 7	Tuble 5.55 Suppliance of differences by dustanced speakers in [ definite] singular contexts				
Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups		
a/an	227/244 93% SD= 8	361/398 90.7% SD= 8.6	(H(2)= 13.744, p= 0.001)		
ø	4/244 1.7% SD= 3	15/398 3.8% SD= 5.7	(H(2)= 6.415, p= 0.040)		
the	13/244 5.3% SD= 7.5	22/398 5.5% SD= 7.2	(H(2)=8.352, p=0.015)		

The results above show that the advanced speakers supplied the target article a above or close to the 92.5% acquisition threshold. The groups differed in the use of the three articles.

Mann-Whitney tests identified significant differences between the Arabic and native speakers in the use of a and the, and between the Mandarin and native speakers in the use of a,  $\phi$  and the.

The results are not compatible with H1b, as both groups used *a* correctly, similar to how they performed in the forced-choice elicitation task.

## 2. [-definite] plural

The following hypothesis was tested.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

Table 5.60 Suppliance of articles by lower-intermediates in [-definite] plural contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
0/04	16/146	13/170	0/253	(H(2) 12 (90 = 0.002)
a/an	11% SD= 15.3	7.7% SD= 12.3	0% SD= 0	(H(2)=12.689, p=0.002)
	114/146	136/170	251/253	
ø	78%	80%	99.2%	(H(2)=23.111, p<0.001)
	SD= 23.6	SD= 18.4	SD= 2.4	2
	16/146	21/170	2/253	
the	11%	12.3%	0.8%	(H(2)=14.509, p=0.001)
	SD=12.4	SD = 12.2	SD=2.4	

The lower-intermediates performed similarly with some equal overuse of *a* and *the*. The groups differed in the use of the three articles.

Mann-Whitney tests highlighted significant differences between the natives and both the Arabic and Mandarin speakers in the use of  $\phi$ , a and the.

Table 5.61 Suppliance of articles by upper-intermediates in [-definite] plural contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	16/202 7.9% SD= 8.4	9/242 3.7% SD= 5.7	(H(2)= 15.210, p< 0.001)
ø	168/202 83.2% SD= 16	207/242 85.6% SD= 12	(H(2)= 24.519, p< 0.001)
the	18/202 8.9% SD= 10.7	26/242 10.7% SD= 11.8	(H(2)= 14.686, p= 0.001)

The upper-intermediates seemed to supply the target article  $\phi$  correctly, close to the 92.5% acquisition threshold, with some slight overuse of a and the. The groups differed in the use of the three articles.

Mann-Whitney tests yielded significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of  $\phi$ , a and the.

Table 5.62 Suppliance of articles by advanced speakers in [-definite] plural contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	5/181 2.7% SD= 6.5	5/285 1.8% SD= 4.4	n.s
ø	169/181 93.4% SD= 13.1	273/285 95.8% SD= 5.7	n.s
the	7/181 3.9% SD= 7.6	7/285 2.4% SD= 4.1	n.s

The advanced groups performed above the 92.5% acquisition threshold.

The results confirm H1c, as both groups performed similarly and accurately, as they did in the forced-choice elicitation task.

## 3. [-definite] mass

The following hypothesis was tested.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

Table 5.63 Suppliance of articles by lower-intermediates in [-definite] mass contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
,	13/203	6/207	0/266	(11/2) 11 712 0 002)
a/an	6.4%	2.9%	0%	(H(2)=11.713, p=0.003)
	SD= 8.2	SD= 5.1	SD= 0	
	174/203	189/207	264/266	
Ø	85.7%	91.3%	99.2%	(H(2)=19.307, p<0.001)
	SD= 14.2	SD= 10.5	SD=2.4	_
	16/203	12/207	2/266	
the	7.9%	5.8%	0.8%	(H(2)=11.413, p=0.003)
	SD = 9.9	SD = 8.3	SD=2.4	

The results demonstrate that the lower-intermediates supplied  $\phi$  correctly, close to the 92.5% acquisition threshold. The groups differed in the use of the three articles.

Separate Mann-Whitney tests yielded significant differences between the natives and both the Arabic and Mandarin speakers in the use of  $\phi$ , a and the.

Table 5.64 Suppliance of articles by upper-intermediates in [-definite] mass contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	15/263 5.7% SD= 10.4	2/284 0.7% SD= 2.2	(H(2)= 17.210, p< 0.001)
ø	235/263 89.4% SD= 11.2	268/284 94.4% SD= 7	(H(2)= 18.439, p< 0.001)
the	13/263 4.9% SD= 5.4	14/284 4.9% SD= 6	(H(2)= 9.263, p= 0.010)

The results show that the upper-intermediates performed above or close to the 92.5% threshold. The groups differed in the use of the three articles.

Mann-Whitney tests demonstrated significant differences between the Arabic and Mandarin speakers in the use of a (U= 144.500, z= -2.918, p= 0.004, r= 0.44), between the Arabic and native speakers in the use of  $\phi$ , a and the, and between the Mandarin and native speakers in the use of  $\phi$  and the.

Table 5.65 Suppliance of articles by advanced speakers in [-definite] mass contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	5/216 2.3%	3/342 0.9%	n.s
	SD= 9.7	SD= 2.4	
	208/216	331/342	
ø	96.3%	96.8%	n.s
	SD= 9.9	SD= 3.9	
	3/216	8/342	
the	1.4%	2.3%	n.s
	SD = 3.2	SD = 3.6	

The results show that the advanced speakers performed above the 92.5% acquisition threshold.

The results support H1c, since both groups performed similarly, as in the forced-choice elicitation task. However, the upper-intermediate Arabic speakers tended to slightly overuse a, which is similar to the performance of the Arabic and Mandarin speakers in the forced-choice elicitation task.

## 4. [+definite, +generic] singular

The following hypotheses were tested.

**H1d** Arabic speakers will use *the* more accurately than Mandarin speakers in [+definite, +generic] contexts, since generics in Arabic are always definite.

**H1e** Mandarin speakers will omit *the* more than Arabic speakers in [+definite, +generic] contexts, since Mandarin lacks an article system.

Table 5.66 Suppliance of articles by lower-intermediates in [+definite, +generic] singular contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
,	15/45	2/43	1/60	(11/2) 27 000 0.001)
a/an	33.3%	4.7%	1.7%	(H(2)=27.800, p<0.001)
	SD= 26.9	SD= 11.1	SD= 7.5	
	24/45	36/43	0/60	
Ø	53.4%	83.7%	0%	(H(2)=36.983, p<0.001)
	SD = 33.3	SD = 27.6	SD=0	
	6/45	5/43	59/60	
the	13.3%	11.6%	98.3%	(H(2)=38.837, p<0.001)
	SD = 27.6	SD = 27.3	SD = 7.5	_

The results demonstrate that the lower-intermediates performed poorly. The groups differed in the use of the three articles.

Mann-Whitney tests demonstrated significant differences between the Arabic and Mandarin speakers in the use of a (U= 46.000, z= -3.792, p< 0.001, r= 0.65) and  $\phi$  (U= 62.500, z= -2.965, p= 0.003, r= 0.51), between the native and Arabic speakers in the use of *the*, a and  $\phi$ , and between the native and Mandarin speakers in the use of *the* and  $\phi$ .

Table 5.67 Suppliance of articles by upper-intermediates in [+definite, +generic] singular contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	14/54 25.9% SD= 30.6	10/63 15.9% SD= 24.6	(H(2)= 8.611, p= 0.013)
ø	23/54 42.6% SD= 38.8	47/63 74.6% SD= 26.1	(H(2)= 36.951, p< 0.001)
the	17/54 31.5% SD= 35.6	6/63 9.5% SD= 16.8	(H(2)= 41.671, p< 0.001)

The table above shows that the upper-intermediates supplied the target article *the* poorly. The groups differed in the use of the three articles.

Separate Mann-Whitney tests showed a significant difference between the Arabic and Mandarin speakers in the use of  $\phi$  (U= 132.500, z= -2.656, p= 0.008, r= 0.40) and a close to significant difference in the use of *the* (U= 166.000, z= -2.007, p= 0.045, r= 0.30). Significant differences (p< 0.016) were found between the natives and both the Arabic and Mandarin speakers in the use of *the*, a and  $\phi$ .

Table 5.68 Suppliance of articles by advanced speakers in [+definite, +generic] singular contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	5/44 11.4% SD= 19.3	21/79 26.6% SD= 30.2	(H(2)= 15.819, p< 0.001)
ø	3/44 6.8% SD= 13.1	30/79 38% SD= 35	(H(2)= 22.215, p< 0.001)
the	36/44 81.8% SD= 26	28/79 35.4% SD= 39.7	(H(2)= 29.734, p< 0.001)

The results demonstrate that the advanced Arabic speakers were more accurate than their Mandarin counterparts in supplying the target article *the*. The groups differed in the use of the three articles.

Mann-Whitney tests yielded significant differences between the Arabic and Mandarin speakers in the use of *the* (U= 86.000, z= -3.608, p< 0.001, r= 0.54) and  $\phi$  (U= 116.000, z= -3.056, p= 0.002, r= 0.46), and between the Mandarin and native speakers in the use of *the*, a and  $\phi$ .

The lower-intermediate Arabic speakers used the non-target *a* more than their Mandarin counterparts, while the advanced Arabic speakers used *the* more accurately than their Mandarin counterparts, which is not fully compatible with H1d. The Mandarin groups made more omission errors than their Arabic counterparts, which confirms H1e. The oral task results demonstrate more evidence of L1 transfer than the forced-choice elicitation task.

## 5. [+definite, +generic] plural

The following hypotheses were tested.

**H1d** Arabic speakers will use *the* more accurately than Mandarin speakers in [+definite, +generic] contexts, since generics in Arabic are always definite.

**H1e** Mandarin speakers will omit *the* more than Arabic speakers in [+definite, +generic] contexts, since Mandarin lacks an article system.

Table 5.69 Suppliance of articles by lower-intermediates in [+definite, +generic] plural contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	1/64 1.6% SD= 6.1	0/67 0% SD= 0	0/80 0% SD= 0	n.s
ø	50/64 78.1% SD= 20.6	56/67 83.6% SD= 17.9	1/80 1.3% SD= 5.6	(H(2)= 40.262, p< 0.001)
the	13/64 20.3% SD= 21.3	11/67 16.4% SD= 17.9	79/80 98.7% SD= 5.6	(H(2)= 40.183, p< 0.001)

The results demonstrate that the lower-intermediates performed poorly. The groups differed in the use of *the* and  $\phi$ .

Mann-Whitney tests yielded significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of *the* and  $\phi$ .

Table 5.70 Suppliance of articles by upper-intermediates in [+definite, +generic] plural contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	0/86 0%	0/88 0%	no
a/ a11	SD = 0	SD = 0	n.s
	64/86	76/88	
Ø	74.4%	86.4%	(H(2)=45.334, p<0.001)
	SD = 26.7	SD = 22.8	
	22/86	12/88	
the	25.6%	13.6%	(H(2)=45.334, p<0.001)
	SD= 26.7	SD= 22.8	

The results show that the upper-intermediates performed poorly. The groups differed in the use of *the* and  $\phi$ .

Mann-Whitney tests showed significant differences between the natives and both the Arabic and Mandarin speakers in the use of *the* and  $\phi$ .

Table 5.71 Suppliance of articles by advanced speakers in [+definite, +generic] plural contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	0/67 0%	2/107 1.9%	n c
a/all	SD=0	SD= 9.6	n.s
	31/67	75/107	
ø	46.3%	70.1%	(H(2)=40.825, p<0.001)
	SD = 26.9	SD = 29.4	
	36/67	30/107	
the	53.7%	28%	(H(2)=41.731, p<0.001)
	SD= 26.9	SD= 28	

The table demonstrates that the advanced Arabic speakers were better at using the target article *the* than the Mandarin speakers, note that neither group was close to the 92.5% acquisition threshold. The groups differed in the use of *the* and  $\phi$ .

Mann-Whitney tests highlighted significant differences between the Arabic and Mandarin speakers in the use of *the* (U= 118.000, z= -2.771, p= 0.006, r= 0.42) and  $\phi$  (U= 128.500, z= -2.507, p= 0.012, r= 0.38), and between the natives and both the Arabic and Mandarin speakers in the use of *the* and  $\phi$ .

The results partially support H1d and H1e. However, the results do not show L1 transfer evidence on the part of the Arabic speakers, as was the case in the forced-choice elicitation task.

## 6. [-definite, +generic] singular

The following hypotheses were tested.

**H1f** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] singular contexts, since generics in Arabic are always definite.

**H1g** Mandarin speakers will make more omission errors than Arabic speakers in [-definite, +generic] singular contexts, since Mandarin lacks an article system.

Table 5.72 Suppliance of articles by lower-intermediates in [-definite, +generic] singular contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	65/99 65.7% SD= 15.3	80/109 73.4% SD= 16.1	136/138 98.5% SD= 4.4	(H(2)= 32.811, p< 0.001)
ø	22/99 22.2% SD= 18.2	26/109 23.9% SD= 15.7	2/138 1.5% SD= 4.4	(H(2)= 23.806, p< 0.001)
the	12/99 12.1% SD= 12.9	3/109 2.7% SD= 7.8	0/138 0% SD= 0	(H(2)= 16.513, p< 0.001)

The results demonstrate that the lower-intermediates made omission errors. The groups differed in the use of the three articles.

Mann-Whitney tests demonstrated significant differences between the Arabic and Mandarin speakers in the use of *the* (U= 84.500, z= -2.488, p= 0.013, r= 0.43), between the Arabic and native speakers in the use of a, *the* and  $\phi$ , and between the Mandarin and native speakers in the use of a and  $\phi$ .

Table 5.73 Suppliance of articles by upper-intermediates in [-definite, +generic] singular contexts

Articles	UI Arabic	UI Mandarin	Kruskal-Wallis
Articles	(n=22)	(n=22)	comparing groups
	103/124	124/149	
a/an	83.1%	83.2%	(H(2)=21.994, p<0.001)
	SD= 14.7	SD= 10.4	-
	20/124	24/149	
ø	16.1%	16.1%	(H(2)=19.611, p<0.001)
	SD= 14.5	SD= 10.1	
	1/124	1/149	
the	0.8%	0.7%	n.s
	SD= 3	SD=3	

The table shows that the upper-intermediates seemed to supply a accurately, close to the 92.5% acquisition threshold, with some omission errors. The groups differed in the use of a and  $\phi$ .

Mann-Whitney tests revealed significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of a and  $\phi$ .

Table 5.74 Suppliance of articles by advanced speakers in [-definite, +generic] singular contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	91/104 87.5%	149/172 86.6%	(H(2)= 14.156, p= 0.001)
u, un	SD= 11.2	SD= 14.4	(11(2)=11.136, p=0.001)
	12/104	21/172	
Ø	11.5%	12.2%	(H(2)=11.142, p=0.004)
	SD = 10.3	SD= 13.7	
	1/104	2/172	
the	1%	1.2%	n.s
	SD = 3.5	SD = 3.8	

The results show that the advanced speakers performed close to the 92.5% acquisition threshold. The groups differed in the use of a and  $\phi$ . Mann-Whitney tests demonstrated significant differences (p< 0.016) between the natives and both the Arabic and Mandarin speakers in the use of a and  $\phi$ .

Similar to the forced-choice elicitation task, the results do not support H1f or H1g, as both groups performed similarly and accurately in the oral task, with the exception of the overuse of *the* by the lower-intermediate Arabic speakers which did not persist into higher proficiency levels.

## 7. [-definite, +generic] plural

The following hypotheses were tested.

**H1h** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] plural and mass contexts, since generics in Arabic are always definite.

**H1i** Mandarin speakers will use  $\phi$  more accurately than Arabic speakers in [-definite, +generic] plural and mass contexts, since Mandarin lacks an article system.

Table 5.75 Suppliance of articles by lower-intermediates in [-definite, +generic] plural contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	3/88	1/97	0/118	
	3.4% SD= 12.8	1% SD= 4	0% SD= 0	n.s
ø	83/88	94/97	117/118	
	94.3%	96.9%	99.1%	n.s
	SD= 15.2	SD= 7	SD = 3.7	
the	2/88	2/97	1/118	
	2.3%	2.1%	0.9%	n.s
	SD= 6.1	SD= 6.1	SD = 3.7	

The results show that the lower-intermediates used the target article  $\phi$  accurately and above the 92.5% acquisition threshold.

Table 5.76 Suppliance of articles by upper-intermediates in [-definite, +generic] plural contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
0/00	1/122 0.8%	0/126 0%	<b>n</b> a
a/an	SD=3.6	SD=0	n.s
	114/122	126/126	
ø	93.5%	100%	(H(2)=11.581, p=0.003)
	SD= 13.8	SD= 0	
	7/122	0/126	
the	5.7%	0%	(H(2)=9.405, p=0.009)
	SD = 13.8	SD=0	

The results demonstrate that the upper-intermediates' use of  $\phi$  was above the 92.5% acquisition threshold. The groups differed in the use of  $\phi$  and *the*.

Mann-Whitney tests revealed significant differences between the Arabic and Mandarin speakers in the use of  $\phi$  (U= 165.000, z= -2.839, p= 0.005, r= 0.43) and the (U= 176.000, z= -2.597, p= 0.009, r= 0.39).

Table 5.77 Suppliance of articles by advanced speakers in [-definite, +generic] plural contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	0/99 0%	0/157 0%	n.s
a/ an	SD=0	SD=0	11.5
	97/99	157/157	
ø	98%	100%	n.s
	SD= 5.5	SD= 0	
	2/99	0/157	
the	2%	0%	n.s
	SD=5.5	SD=0	

The results show that the advanced speakers performed above the 92.5% acquisition threshold.

Similar to the forced-choice elicitation task, H1h and H1i are not supported, as the Arabic speakers' did not use *the* more than the Mandarin speakers, except for the upper-intermediate Arabic speakers. However, their accuracy rate was above 92.5%. The Mandarin speakers did not use  $\phi$  more accurately than the Arabic speakers.

# 8. [-definite, +generic] mass

The following hypotheses were tested.

**H1h** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] plural and mass contexts, since generics in Arabic are always definite.

**H1i** Mandarin speakers will use  $\phi$  more accurately than Arabic speakers in [-definite, +generic] plural and mass contexts, since Mandarin lacks an article system.

Table 5.78 Suppliance of articles by lower-intermediates in [-definite, +generic] mass contexts

Articles	LI Arabic (n=17)	LI Mandarin (n=17)	NS (n=20)	Kruskal-Wallis comparing groups
a/an	3/118 2.5% SD= 5.9	2/118 1.7% SD= 4.7	1/137 0.7% SD= 3.2	n.s
ø	112/118 95% SD= 8.8	113/118 95.8% SD= 6.7	135/137 98.6% SD= 4.4	n.s
the	3/118 2.5% SD= 5.6	3/118 2.5% SD= 5.6	1/137 0.7% SD= 3.2	n.s

The lower-intermediates performed above the 92.5% threshold.

Table 5.79 Suppliance of articles by upper-intermediates in [-definite, +generic] mass contexts

Articles	UI Arabic (n=22)	UI Mandarin (n=22)	Kruskal-Wallis comparing groups
a/an	1/149 0.7% SD= 3	2/153 1.3% SD= 4.2	n.s
ø	144/149 96.6% SD= 7.7	148/153 96.7% SD= 9.8	n.s
the	4/149 2.7% SD= 7.4	3/153 2% SD= 6.7	n.s

The upper-intermediates performed above the 92.5% threshold.

Table 5.80 Suppliance of articles by advanced speakers in [-definite, +generic] mass contexts

Articles	Adv Arabic (n=17)	Adv Mandarin (n=27)	Kruskal-Wallis comparing groups
a/an	0/116 0% SD= 0	0/187 0% SD= 0	n.s
ø	114/116 98.3 SD= 4.7	187/187 100% SD= 0	n.s
the	2/116 1.7% SD= 4.7	0/187 0% SD= 0	n.s

The advanced speakers performed above the 92.5% threshold.

Similar to the forced-choice elicitation task, the results do not support H1h and H1i as both groups performed similarly and accurately.

## 5.3.1.1 Summary

This section compares article suppliance made by the Arabic and Mandarin speakers to observe the effects of L1 background and to test the related hypotheses. The findings are not compatible with H1b, as the Arabic and Mandarin speakers performed accurately. H1c is supported. The performance of the Arabic speakers in [+definite, +generic] singular and plural contexts is not fully compatible with H1d as they did not use *the* as predicted. Yet, the Mandarin speakers made more omission errors than their Arabic counterparts, which supports H1e, although the plural contexts do not provide such support. The results of [-definite, +generic] singular contexts disconfirm H1f and H1g, as the Arabic speakers did not use *the* and the Mandarin speakers did not omit *a* as predicted. The performance of the Arabic and Mandarin speakers was similar and accurate in [-definite, +generic] plural and mass contexts, which does not comply with H1h and H1i.

## 5.3.2 Investigation of genericity effects

This section examines the following hypotheses.

**H1j** There will be an interaction in the realisation of *the* between the L1 and genericity in [-definite] contexts, in that Arabic speakers will use *the* more in [-definite, +generic] contexts than in [-definite, +specific] and [-definite, -specific] contexts, but Mandarin speakers will not differ in their use of *the*.

Participants' use of *the* in [-definite, +generic] contexts was compared with that in non-generic [-definite] contexts for each proficiency level of each language group, in addition to that of the natives. Multiple Wilcoxon Signed-Ranks tests were conducted and the differences are reported below.

## 1. [-definite, +generic] vs. non-generic [-definite] singular contexts

Table 5.81 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite] singular contexts

L1	Lower-intermediate	Upper-intermediate	Advanced
Ar	n.s	(z= -3.303, p= 0.001, r= 0.88)	(z= -2.081, p= 0.037, r= 0.69)
Man	(z=-2.276, p=0.023, r=0.66)	(z= -2.943, p= 0.003, r= 0.89)	(z= -2.220, p= 0.026, r= 0.57)

The upper-intermediate and advanced Arabic groups used *the* more in non-generic [-definite] contexts than in [-definite, +generic] contexts. The results do not support H1j. The Mandarin groups used *the* more in non-generic contexts, which does not confirm H1j.

The following three graphs present how the Arabic and Mandarin speakers used the non-target definite article *the*. It will be noted that all groups, except for the Arabic lower-intermediates, used *the* more in non-generic contexts than in generic contexts.

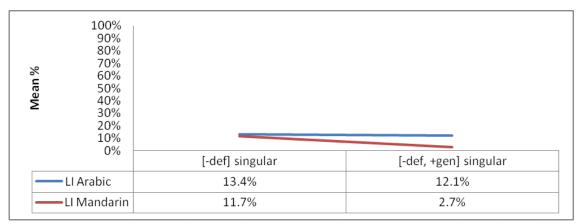


Figure 5.14 Lower-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] singular vs. non-generic [-definite] singular contexts

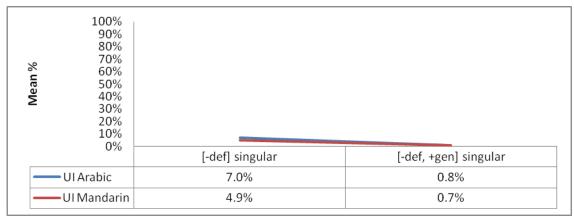


Figure 5.15 Upper-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] singular vs. non-generic [-definite] singular contexts

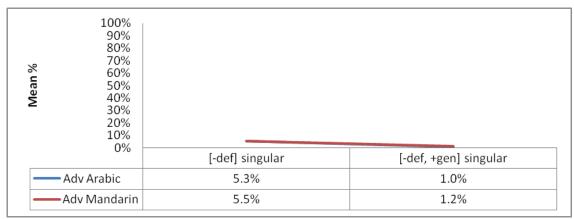


Figure 5.16 Advanced Arabic and Mandarin speakers' use of *the* in [-definite, +generic] singular vs. non-generic [-definite] singular contexts

# 2. [-definite, +generic] vs. non-generic [-definite] plural contexts

Table 5.82 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite] plural contexts

L1	Lower-intermediate	Upper-intermediate	Advanced
Ar	(z= -2.041, p= 0.041, r= 0.65)	n.s	n.s
Man	(z= -2.758, p= 0.006, r= 0.83)	(z= -3.298, p= 0.001, r= 0.88)	(z= -2.388, p= 0.017, r= 0.90)

The Arabic lower-intermediates used *the* more in non-generic contexts than in generic contexts, which does not support H1j. Conversely, the Mandarin speakers used *the* more in non-generic contexts. This challenges H1j.

The following three graphs show how the Arabic and Mandarin speakers used *the*. It can be seen that the Arabic lower-intermediates and the Mandarin speakers used *the* more in non-generic contexts.

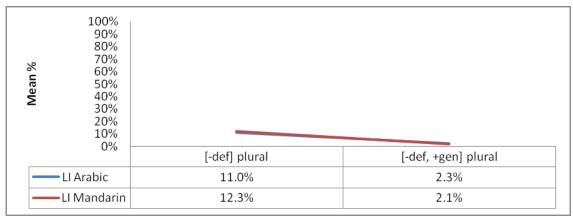


Figure 5.17 Lower-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] plural vs. non-generic [-definite] plural contexts

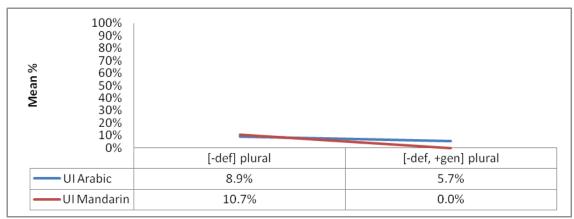


Figure 5.18 Upper-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] plural vs. non-generic [-definite] plural contexts

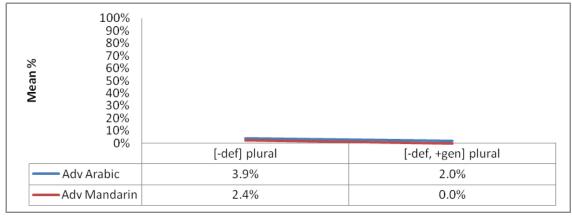


Figure 5.19 Advanced Arabic and Mandarin speakers' use of *the* in [-definite, +generic] plural vs. non-generic [-definite] plural contexts

### 3. [-definite, +generic] vs. non-generic [-definite] mass contexts

Table 5.83 Arabic and Mandarin speakers' use of *the* in [-definite, +generic] vs. non-generic [-definite] mass contexts

L1	Lower-intermediate	Upper-intermediate	Advanced
Ar	(z= -2.002, p= 0.045, r= 0.60)	n.s	n.s
Man	n.s	n.s	(z= -2.588, p= 0.010, r= 0.91)

The Arabic lower-intermediates' use of *the* was less in generic contexts than in non-generic contexts, which is not compatible with H1j. On the other hand, only the advanced Mandarin speakers' use of *the* was more in non-generic contexts, which does not confirm H1j.

The following three graphs show how the Arabic and Mandarin speakers used *the*. Generally, the L2 learners seemed to use *the* similarly across the contexts.

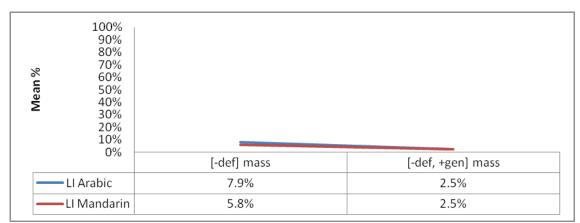


Figure 5.20 Lower-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] mass vs. non-generic [-definite] mass contexts

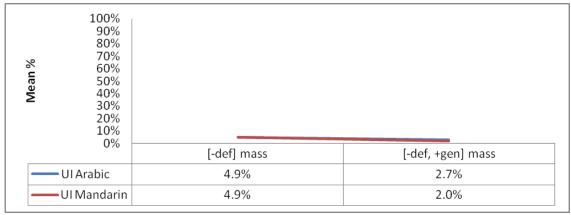


Figure 5.21 Upper-intermediate Arabic and Mandarin speakers' use of *the* in [-definite, +generic] mass vs. non-generic [-definite] mass contexts

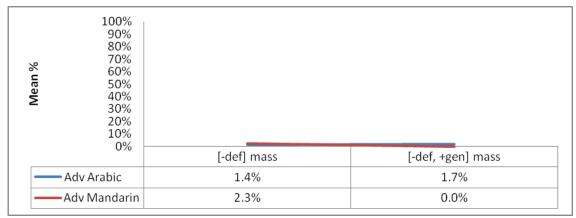


Figure 5.22 Advanced Arabic and Mandarin speakers' use of *the* in [-definite, +generic] mass vs. non-generic [-definite] mass contexts

## 5.3.2.1 Summary

Both groups used *the* more accurately in [-definite, +generic] contexts than in non-generic [-definite] contexts, which disconfirms H1j. Furthermore, the results do not show the L1 transfer effects highlighted by the forced-choice elicitation task.

## 5.3.3 Investigation of developmental trends

The following hypothesis was tested:

**H3** L2 learners will restructure away from their L1-transferred grammars and show less non-target L1-based use of articles with rising overall proficiency.

The three proficiency levels in each language were compared to examine whether or not L2 learners demonstrate less non-target L1-based use of articles as a result of an increase in overall proficiency. In this section, each language group was compared separately for each type of noun and context. Several Kruskal-Wallis tests were conducted to locate any statistically significant differences (p< 0.05) between the three proficiency groups in the use of all articles. When a statistically significant difference was found, separate Mann-Whitney tests (Bonferroni correction applied, significance accepted at p< 0.016) were conducted. Note that the improvement in terms of the increase in overall proficiency in the use of all articles is reported below, to identify whether they improved in target and non-target L1-based and non-L1-based use of articles.

## 1. Arabic groups

Table 5.84 Comparisons between Arabic groups in all contexts

Context	Target article	Expected L1-based use of articles	Lower- intermediate vs. Upper- intermediate	Lower- intermediate vs. Advanced	Upper- intermediate vs. Advanced
[-def]					
singular	а	ø*	n.s	$a$ and $\phi$	а
plural	ø	ø	n.s	n.s	n.s
mass	ø	ø	n.s	ø and <i>the</i>	$\phi$ and the
[+def, +gen]					
singular	the	the	n.s	the, a and $\phi$	the and $\phi$
plural	the	the	n.s	the and $\phi$	the and $\phi$
[-def, +gen]					
singular	а	the	a and the	a and the	n.s
plural	ø	the	n.s	n.s	n.s
mass	ø	the	n.s	n.s	n.s

<sup>\*</sup>Articles highlighted in grey are the expected non-target L1-based articles.

The table highlights the fact that there was movement away from using the non-target L1-based article  $\phi$  in [-definite] singular contexts (the lower-intermediates made more omission errors than the advanced group), and *the* in [-definite, +generic] singular contexts (the lower-intermediates used *the* more than the upper-intermediate and advanced groups, which resulted in improvement in terms of using the target article a). Note that there was an improvement in contexts in which Arabic and English do not vary as in [-definite] mass contexts (the lower-intermediates and upper-intermediates used *the* slightly more than the advanced group), and in [+definite, +generic] singular and plural contexts (lower-intermediates and upper-intermediates were less accurate than the advanced speakers in using the target article).

The reason they did not recover from using the non-target L1-based article *the* in [-definite, +generic] plural and mass contexts, is due to the fact that their use of *the* was low, as illustrated in the following graph:

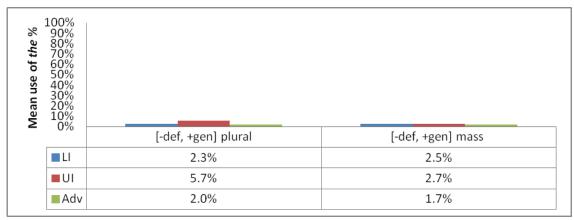


Figure 5.23 Arabic speakers' use of the in [-definite, +generic] plural and mass contexts

The results generally support H3 as the Arabic speakers tended to restructure away from their L1-transferred grammars. The improvements are clearer in the comparisons between the lower-intermediates and advanced speakers, and the upper-intermediates and advanced speakers.

## 2. Mandarin groups

Table 5.85 Comparisons between Mandarin groups in all contexts

Context	Target article	Expected L1-based use of articles	Lower- intermediate vs. Upper- intermediate	Lower- intermediate vs. Advanced	Upper- intermediate vs. Advanced
[-def]					
singular	а	ø*	а	a and ø	ø
plural	ø	ø	n.s	$\phi$ , a and the	ø and <i>the</i>
mass	Ø	ø	n.s	n.s	n.s
[+def, +gen]					
singular	the	Ø	n.s	$a$ and $\phi$	ø
plural	the	ø	n.s	n.s	n.s
[-def, +gen]					
singular	а	ø	а	$a$ and $\phi$	n.s
plural	Ø	Ø	n.s	n.s	n.s
mass	ø	ø	n.s	Ø	n.s

<sup>\*</sup>Articles highlighted in grey are the expected non-target L1-based articles.

The table reveals that there was recovery from using the non-target L1-based article  $\phi$  in [-definite] and [+definite, +generic] singular contexts (the lower-intermediates and upper-intermediates made more omission errors than the advanced group), and  $\phi$  in [-definite, +generic] singular contexts (the lower-intermediates made more omission errors than the advanced group). The improvement was noted in other contexts where Mandarin and English are similar as in [-definite] plural contexts (the advanced speakers demonstrated less use of *the* than the lower-intermediates and upper-intermediates, and less use of *a* than the lower-intermediates). The advanced speakers

were better at supplying the target article in [-definite, +generic] mass contexts than the lower-intermediates, though both groups performed at ceiling. The reason why there was no improvement in [-definite] mass contexts and [-definite, +generic] plural contexts is due to the fact that they performed at ceiling.

They did not improve significantly in using the non-target L1-based article  $\phi$  in [+definite, +generic] plural contexts because their use of  $\phi$  was high. This persisted into the advanced level, as illustrated in the following graph:

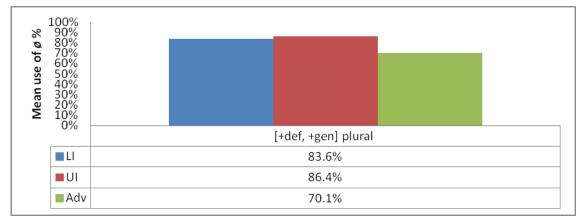


Figure 5.24 Mandarin speakers' omission errors in [+definite, +generic] plural contexts

The results support H3, although they did not recover from non-target L1-based use of articles in all contexts. The improvements are evident in the comparisons made between the lower-intermediates and advanced speakers, and the upper-intermediates and advanced speakers.

## 5.3.3.1 Summary

The results of the story recall oral production task are more compatible with H3 than those of the forced-choice elicitation task. This is because the Mandarin speakers restructured away from their non-target L1-based use of articles.

## 5.4 Summary of the story recall oral production task results

This section compares the article suppliance of both the Arabic and Mandarin speakers with each other and with the natives, when necessary, in order to examine the role of L1, genericity, definiteness and proficiency. The findings do not support H1b, but support H1c, as the speakers did not make a high rate of omission errors in [-definite] singular contexts, and performed similarly and accurately in [-definite] plural and mass contexts. The performance of the Arabic speakers in [+definite, +generic] singular and plural contexts does not fully concur with H1d, as they did not use *the* as anticipated. The Mandarin speakers' high rate of omission errors, which sometimes surpassed that

of their Arabic counterparts (especially in [+definite, +generic] singular contexts), supports H1e. The Arabic speakers did not use *the* more than the Mandarin speakers, and the Mandarin speakers did not omit *a* more than the Arabic speakers as predicted in [-definite, +generic] singular contexts, which does not support H1f or H1g. The article suppliance of the Arabic and Mandarin speakers was similar in [-definite, +generic] plural and mass contexts, which does not concur with H1h and H1i. Both groups performed more accurately in [-definite, +generic] contexts, which is not compatible with H1j. H3 is supported, as participants showed less non-target L1-based use of articles with overall rising proficiency.

## 5.5 Summary of Chapter Five

This chapter presents the results of: a) the forced-choice elicitation task; and b) the story recall oral production task. The forced-choice elicitation task results do not support H1a as there was no role of noun position. The results of both tasks are not compatible with H1b, as all groups used a correctly in [-definite, +/-specific] singular contexts. The results of [-definite, +/-specific] plural and mass contexts in both tasks confirm H1c, although there was some overuse of a in mass contexts in the forced-choice elicitation task. The results of the forced-choice elicitation task do not support H1d and H1e; however, the oral task results demonstrate that only the advanced Arabic group used the more correctly in [+definite, +generic] singular and plural contexts than the Mandarin speakers, which is partially compatible with H1d. The Mandarin groups made more omission errors than their Arabic counterparts in [+definite, +generic] singular contexts, which confirms H1e, but this was not as evident in plural contexts. The results of both tasks for the Arabic and Mandarin speakers in [-definite, +generic] singular contexts disconfirm H1f and H1g, as both groups performed similarly, with the exception of the lower-intermediate Arabic speakers in the oral task, who used the more than their Mandarin counterparts. H1h and H1i are not supported, as the Arabic speakers did not use the more than the Mandarin speakers, and the Mandarin speakers did not use  $\phi$  more correctly than the Arabic speakers. Unlike the forced-choice elicitation task, the oral task does not support H1j, as both groups used the more in non-generic [-definite] contexts than in generic contexts. The results of the forced-choice elicitation task reveal no strong evidence of fluctuation; thus countering H2a and H2b. The results of the oral task concur more with H3 than the results of the forced-choice elicitation task.

It seems that the results of both tasks are similar, except that, in the oral task, Arabic and Mandarin speakers tended to: a) have a higher rate of omission errors in [+definite,

+generic] contexts; and b) use the indefinite article  $\phi$  more correctly, especially with mass nouns. This is expected due to the nature of the task, as L2 learners tend to make omission errors in oral tasks. However, this was not always evident in the oral task.

# **Chapter 6. Discussion**

#### 6.1 Introduction

The present study's main aim was to examine the target and non-target usages of English articles and to see whether the patterns found can be attributed to L1 background, to UG, or to fluctuation. This chapter discusses the results of the testing of the study hypotheses in relation to the two hypotheses tested: the FT/FA and the FH.

## 6.2 The Full Transfer/Full Access Hypothesis

Schwartz and Sprouse (1994; 1996) assume that L2 learners transfer their L1 grammar from their L1 (Full Transfer) and that they will resort to UG (Full Access) when they encounter L2 input properties that cannot be accommodated by their L1. As discussed in the literature review, a number of studies on the L2A of English articles support the FT/FA (e.g., Ionin *et al.*, 2008; Sarko, 2009; Snape, 2006; Tryzna, 2009; Zdorenko and Paradis, 2008) (see Chapter Three, section 3.3.5).

The results of the present study show that the role of L1 does not appear to be the L2 learners' first resort as became evident during the discussion of their results in relation to the research hypotheses. The L1 transfer effects found were not as predicted given that the Arabic and Chinese speakers showed L1 transfer effects in only some [+/-definite, +generic] contexts as will be discussed later in detail. It seems that the Arabic and Mandarin speakers have full access to UG, as their article choice can be seen as being constrained by UG. Access to UG is supported by results showing that both the Arabic and Mandarin speakers involved in this study performed similarly and sometimes accurately in contexts where their L1s differ from each other. This can be interpreted as indicating that they have established the parameters relevant for the target-like use of English articles. They have been able to do this regardless of how their L1 grammaticalises articles. Moreover, the learners from both language backgrounds have restructured their English interlanguage away from their L1-transferred grammars. However, we acknowledge the fact that we should be cautious regarding the involvement of UG-access, as L2 learners may have applied domain-general problemsolving strategies. Moreover, it is noteworthy that the fact that the Arabic and Mandarin speakers performed similarly in some contexts questions making a structural distinction between Arabic and Mandarin indefiniteness which means that Mandarin may project a DP, after all.

This section considers the results of the forced-choice elicitation task and the oral task due to their similar results. It will help the reader to see the discussion of the results associated with each task in parallel for comparison. This section comprises two subsections. The first considers the role of word order in relation to hypothesis H1a. The second addresses the role of semantic features. This latter part is further divided into four sections: 1) discussion of the findings of non-generic [-definite, +/-specific]¹ contexts in relation to the related hypotheses (H1b and H1c); 2) discussion of the findings of [+definite, +generic] contexts in relation to the related hypotheses (H1d and H1e); 3) discussion of the findings of [-definite, +generic] contexts in relation to the related hypotheses (H1f, H1g, H1h, H1i and H1j); 4) a recap of the findings and discussions of all the findings of [-definite, +/-specific] and [+/-definite, +generic] contexts and discussion of H3.

## 6.2.1 The role of word order

**H1a** Only Mandarin, not Arabic, speakers will use *the* in subject position more than in object position, as Mandarin is a topic-prominent language, while Arabic is a subject-prominent language.

Previous studies of the L2A of English articles found that topic-prominent speakers omit articles in subject position (e.g., Avery and Radišić, 2007; Huebner, 1983; Jarvis, 2002). Conversely, a study conducted by Pierce and Ionin (2011) found that Mandarin speakers and Korean speakers, both topic-prominent languages, were more accurate in perceiving *the* in subject than in object position.

The Mandarin speakers in our study did not use *the* significantly more in subject position than in object position, which challenges H1a. The results showed that neither the Mandarin nor the Arabic speakers had sensitivity to word position regarding the usage of other articles. In the light of the results, our participants appear neither to be influenced by whether their L1 is topic-prominent, nor by the fact that the definite article *the* in English precedes nouns in 85% of cases in subject position and 55% in object position, whereas the indefinite article *a* occurs around 15% of the time in subject position and 45% in object position, according to corpus findings of Biber *et al.* (1998). In other words, our participants are not sensitive to their L1 or to how definite and indefinite articles are distributed in the input. Why do these results differ from those in

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<sup>&</sup>lt;sup>1</sup> For simplicity, when the specificity value is stated, the reader should assume that the context is non-generic.

the aforementioned studies? We can attribute this to a task effect. The results of the present study were obtained through the use of a forced-choice elicitation task rather than through a perception task (e.g., Pierce and Ionin, 2011) or an oral production task (e.g., Avery and Radišić, 2007; Huebner, 1983) or a written production task (e.g., Jarvis, 2002). Consequently, our results may be more reliable as our task facilitates a closer examination of the role of word position, as the number of items in subject equals the number of items in object position. These results support the conclusion that word order does not affect article usage. In the following, we will consider whether or not L2 learners are sensitive to semantic features.

# 6.2.2 The role of semantic features

This section consists of discussions of the following contexts: 1) [-definite, +/-specific]; 2) [+definite, +generic]; 3) [-definite, +generic]; and 4) a recap of all the results for [-definite, +/-specific] and [+/-definite, +generic] and discussion of H3.

## 6.2.2.1 Article use in non-generic [-definite, +/-specific] contexts

**H1b** Arabic and Mandarin speakers will make omission errors at a similar rate in [-definite, +/-specific] singular contexts, since Arabic lacks a phonologically overt indefinite article, while Mandarin lacks an article system.

**H1c** Arabic and Mandarin speakers will perform similarly and accurately in [-definite, +/-specific] plural and mass contexts, since Arabic has  $\phi$ , while Mandarin lacks an article system.

The results are not consistent with H1b due to the fact that both groups used *a* at native-like levels (above or close to the 92.5% threshold) in [-definite, +/-specific] singular contexts in the forced-choice elicitation task, and in [-definite]<sup>2</sup> singular contexts in the oral task where the rate of omission errors was low; however, both groups displayed some omission (20.2% Arabic, 20.7% Mandarin) at the lower-intermediate level in the oral task, which is higher than the omission errors in the forced-choice elicitation task in [-definite, +specific] contexts (2.9% Arabic, 1.5% Mandarin) and [-definite, -specific] contexts (4.4% Arabic, 7.3% Mandarin). This confirms other researchers' findings (e.g., Lardiere, 2004) concerning higher omission errors in oral tasks compared with written tasks. The omission errors in the oral task could be attributed to the nature of this

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 $<sup>^2</sup>$  It is important to remind the reader that specificity is in the mind of the speaker, and participants may change the context from the original in a number of ways; therefore, we followed Snape (2006) in not considering specificity in the oral task, which means that the specificity value will not be assigned as it could be + or -.

specific type of task given that it imposes more communication pressure than those that are more controlled. The high performance of the Arabic speakers is similar to Sarko (2009), whereby her Syrian Arabic speakers did not omit the indefinite article a. The results from the present study suggest that the presence of what is thought to be a phonologically overt indefinite article in Syrian Arabic may not account for Sarko's participants' good performance. However, the good performance of the Mandarin speakers bears no similarity to the performance of the Chinese speakers in Robertson's (2000) study, or to that of the Japanese (a [-article] language) speakers in Jaensch's (2009) study. In fact, the results may not be explained in terms of L1 transfer, as we are presented with two scenarios: a) if Arabic has a phonologically overt indefinite article and an indefinite D which has a phonologically null exponent, the Arabic speakers should use a more correctly than the Mandarin speakers; and b) if both Arabic and Mandarin lack phonologically overt indefinite articles and an indefinite D, they should both omit a. However, neither of these criteria were met, as both groups' accuracy level was high in using a, and L1 differences were not significant in [-definite, +/-specific] singular contexts. This could be attributed to: a) both groups linking the use of a to singularity; and/or b) both groups having full access to UG, as claimed in the FT/FA. The issues related to why they did or did not resort to their L1, and whether they have full access to UG, will be set aside until we discover how L2 learners perform in other contexts. This will enable us to obtain a clearer picture.

Regarding H1c, the results of [-definite, +/-specific] plural and mass contexts in the forced-choice elicitation task and [-definite] plural and mass contexts in the oral task, support H1c. However, in the forced-choice elicitation task: a) both the Arabic and Mandarin speakers used the non-target article *a* in mass contexts; and b) the Mandarin speakers used the non-target article *the* in [-definite, +specific] plural contexts.<sup>3</sup> Using the non-target *a* with mass nouns confirms the findings of other researchers (e.g., Sarko, 2009; Snape, 2006) and their attribution of this to L2 learners' misclassifying some mass nouns as singular nouns. The question remains: can the nature of this written task account for the use of *a* as, when writing, L2 learners tend to use articles instead of leaving them out? The answer is 'No' since the use of *a* occurs only with some mass nouns that resemble singular nouns (e.g., *advice* and *bread*), but not with liquid mass nouns (e.g., *wine*, *honey* and *water*) or plural nouns. In other words, the nature of the task is not the only reason. Similar to both Arabic and Mandarin speakers' performance

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<sup>&</sup>lt;sup>3</sup> The overuse of *the* will be discussed later in terms of the Fluctuation Hypothesis.

in singular contexts, both groups' high performance in plural contexts could be attributed to: a) L1 transfer, since Arabic has  $\phi$  and Mandarin lacks articles; and/or b) full access to UG. As mentioned previously in relation to [-definite, +/-specific] singular contexts, this will be confirmed, and clarification provided, following the examination of other contexts.

## 6.2.2.2 Article use in [+definite, +generic] contexts

**H1d** Arabic speakers will use *the* more accurately than Mandarin speakers in [+definite, +generic] contexts, since generics in Arabic are always definite.

**H1e** Mandarin speakers will omit *the* more than Arabic speakers in [+definite, +generic] contexts, since Mandarin lacks an article system.

The results of [+definite, +generic] singular contexts in the forced-choice elicitation task showed that the Arabic speakers' accurate use of articles and omission errors were not significantly different from their Mandarin counterparts. This disconfirms H1d and H1e. Note that the Arabic speakers' correct selection of the target article the was not close to the 92.5% acquisition threshold (55.9% at lower-intermediate, 60.2% at upperintermediate and 70.6% at advanced) which is similar to the Mandarin speakers' correct selection (51.5% at lower-intermediate, 48.8% at upper-intermediate and 57.4% at advanced). On the other hand, in the oral task, the lower-intermediate Arabic speakers used the non-target a significantly more than the lower-intermediate Mandarin speakers in [+definite, +generic] singular contexts, while the advanced Arabic speakers used the significantly more correctly than their Mandarin counterparts, partially compatible with H1d. In the oral task, suppliance of the target article the by the lower-intermediate and upper-intermediate Arabic speakers' was low at 13.3% and 31.5% respectively. Moreover, for the same task, the lower-intermediate, upper-intermediate and advanced Mandarin speakers' omission errors were significantly more than those of their Arabic counterparts, which concurs with H1e.

It can be noted from the results of the forced-choice elicitation task that both groups performed similarly; however, in the oral task, traces of L1 influence are more evident, despite the poor performance of the lower-intermediate and upper-intermediate Arabic speakers. Note that these results differ from those from other studies (e.g., Ionin and Montrul, 2010; Snape *et al.*, 2013). In these, the researchers found that Spanish speakers did not experience difficulty in selecting the definite generic article *the*, as generic nouns are always definite in Spanish. Snape *et al.*'s (2013) study also included Turkish

[-article] and Japanese [-article] speakers who were significantly less accurate than the Spanish speakers, which differs from the performance of the Mandarin speakers in the present study. However, our results, to some extent, confirm the findings of Almahboob (2009), whereby his Saudi Arabic speakers fluctuated between *a* and *the* at low proficiency levels. This is similar to the Arabic speakers in this study, with the exception that his participants' fluctuation did not persist into high proficiency levels, while our Arabic speakers continued to exhibit a high rate of omission errors (42.6% in the oral task and 31.8% in the forced-choice elicitation task at the upper-intermediate level). Therefore, the question remains as to why our Arabic speakers did not behave as anticipated with regard to using the target article *the*. This could be attributed to the fact that bare plural and mass nouns in English can be [+generic], and to the possibility that the participants overgeneralised this with regard to [+definite, +generic] singular nouns. Before discussing this further, we need to know how both groups performed in [+definite, +generic] plural contexts.

In the forced-choice elicitation task, the results do not support H1d and H1e. In the oral task, a high rate of omission errors was made by the lower-intermediate, upper-intermediate and advanced Arabic speakers (78.1%, 74.4% and 46.3% respectively) and the lower-intermediate, upper-intermediate and advanced Mandarin speakers (83.6%, 86.4% and 70.1% respectively). Meanwhile, the advanced Arabic speakers outperformed their Mandarin counterparts, despite the advanced Arabic speakers' relatively high rate of omission errors (46.3%), while the advanced Mandarin speakers made more omission errors than their Arabic counterparts. These results are partially compatible with H1d and H1e.

It can be noted from the above results in [+definite, +generic] singular and plural contexts that the Arabic speakers did not resort to their L1 as predicted. The question is: can the tendency to select bare nouns by the lower-intermediate and upper-intermediate Arabic speakers in [+definite, +generic] plural contexts in the oral task be attributed only to the oral nature of the task? The answer is 'No', as such a tendency was not evident in using the target article *a* in non-generic [-definite] singular contexts in the oral task. Note that the [+definite, +generic] plural nouns differ from the [+definite, +generic] singular nouns in that they relate to people of a particular nationality [e.g., the British and the Australians]. Therefore, the participants could have confused them with adjectives derived from these names [British and Australian] due to oral tasks minimising the usage of metalinguistic knowledge. Moreover, this could account for

why articles were omitted. Furthermore, our discussion of [+definite, +generic] singular and plural contexts may have benefited from comparing the participants' performance in [+definite, +generic] contexts with non-generic [+definite, +/-specific] contexts when it comes to evaluating their sensitivity to genericity; however, non-generic [+definite, +/-specific] contexts were not included in the present study. Next, the discussion will focus on the results of [-definite, +generic] contexts, followed by an outline of all the previously-discussed contexts in order to obtain a clearer picture.

## 6.2.2.3 Article use in [-definite, +generic] contexts

**H1f** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] singular contexts, since generics in Arabic are always definite.

**H1g** Mandarin speakers will make more omission errors than Arabic speakers in [-definite, +generic] singular contexts, since Mandarin lacks an article system.

**H1h** Arabic speakers will use *the* more than Mandarin speakers in [-definite, +generic] plural and mass contexts, since generics in Arabic are always definite.

**H1i** Mandarin speakers will use  $\phi$  more accurately than Arabic speakers in [-definite, +generic] plural and mass contexts, since Mandarin lacks an article system.

**H1j** There will be an interaction in the realisation of *the* between the L1 and genericity in [-definite] contexts, in that Arabic speakers will use *the* more in [-definite, +generic] contexts than in [-definite, +specific] and [-definite, -specific] contexts, but Mandarin speakers will not differ in their use of *the*.

The results of the forced-choice elicitation task and the oral task disconfirm H1f, H1g, H1h and H1i. Conversely, the forced-choice elicitation task comparisons between [-definite, +generic] and [-definite, +/-specific] contexts showed L1 transfer evidence in the case of the Arabic speakers, as they used the non-target article *the* significantly more in [-definite, +generic] contexts than in non-generic [-definite, +/-specific] contexts which is compatible with H1j. However, the Mandarin speakers used *the* significantly more in [-definite, +generic] singular contexts than in non-generic [-definite, +/-specific] singular contexts, and these results are not compatible with H1j. The oral task showed that both groups used *the* significantly more in non-generic [-definite] contexts than in [-definite, +generic] contexts, which disconfirms H1j. Note that since it was not possible to know whether the [-definite] contexts in the oral task were specific, it may not be possible to know if this could be attributed to the role of specificity.

As outlined above, the results of the Arabic speakers in [-definite, +generic] singular, plural and mass contexts are not similar to those of other studies (e.g., Sarko, 2009). These studies found that Arabic speakers demonstrated greater L1 effects, as they tended to use the non-target the more than the participants in the present study. For example, Sarko's Arabic speakers' use of the in [-definite, +generic] singular was 64% at lower-intermediate, 65% at upper-intermediate and 48% at advanced level, compared with our Arabic speakers (41.2% at lower-intermediate, 22.7% at upper-intermediate and 19.1% at advanced level). However, even our Mandarin speakers used the (33.8%) at lower-intermediate, 36.4% at upper-intermediate and 24.1% at advanced level) which indicates that they used *the* incorrectly. One of the reasons why Sarko's participants displayed more L1 transfer effects than ours could confirm our criticism of the technique she followed when she translated the first two lines of each dialogue of her forced-choice elicitation task into Arabic, and left the third line which had a blank, in English. The present study did not adopt this technique due to the possibility of encouraging greater L1 effects, since the participants read the dialogues in Arabic and Mandarin.

Moreover, our results are not that similar to those presented by Snape *et al.* (2013). In their study: a) Spanish speakers used the target generic indefinite article *a* correctly, and did not overuse *the*; b) Turkish [-article] speakers were as accurate as the Spanish speakers, since Turkish (though it is classified as an articleless language) has an indefinite article, whereas Japanese [-article] speakers performed well, despite being generally less accurate than the Spanish speakers due to L1 transfer; and c) all groups performed accurately in [-definite, +generic] plural and mass contexts. It can be noted in the results from our participants in [-definite, +generic] singular, plural and mass contexts, that the use of *the* may not be attributed to how the [+generic] feature is grammaticalized in Arabic and Mandarin. This is because the Mandarin speakers demonstrated an overuse of *the*, thereby sometimes exceeding that of the Arabic speakers, whereas some Arabic groups used *the* more in non-generic [-definite, +/-specific] contexts than in [-definite, +generic] contexts.

This discussion of all [-definite, +/-specific] and [+/-definite, +generic] contexts now allows us to clarify whether our results support or challenge the FT/FA.

## 6.2.2.4 Article use in [-definite, +/-specific] and [+/-definite, +generic] contexts

The discussion above of the participants' performance in [+/-definite, +generic] contexts helps us explain their good performance in non-generic [-definite, +/-specific] singular contexts (see section 6.2.2.1). Their good performance is thus not due to their linking of a to singularity, as suggested previously. If it were, their performance should not have been low in [-definite, +generic] singular contexts where a is the target article. Moreover, the performance of the Arabic speakers should not have been low, assuming L1 transfer, in [+definite, +generic] contexts given the fact that generics are always definite in Arabic. Rather, we can propose that the difficultly lies in the [+generic] feature. But why is it difficult? The definite generic article is semantically distinct from the other uses of the definite article (Master, 1987). Snape et al. (2013) attributed their [-article] language speakers' low performance on the definite generic article to the lack of sufficiently rich L2 input with definite generics. According to corpus data from Biber et al. (1999), the definite generic article is scarce in English: it is used less than 5% in news, 5% in academia, and 2.5% in conversation. This is supported by Schwartz and Sprouse (1996: 42) who propose that target divergence is expected if the needed L2 input data is rare.

This explains the difficulty of definite generics in English, but what about indefinite generics? According to Snape et al. (2013), performance is good by the L1 Spanish, Turkish and Japanese speakers of English in selecting the indefinite generic a and  $\phi$ , as these are special cases of the non-referential indefinite article (Lyons, 1999) and can provide generic, specific and non-specific readings. Snape et al.'s justification can account for our participants' good performance in [-definite, +generic] contexts in the oral task. However, it seems that our participants are sensitive to the [+generic] feature, and this sensitivity appears not to be L1-based. The fact that they were ESL learners living in the target language country could account for their similar performances, as they are exposed to more L2 input than EFL learners. This confirms what was found by Ionin and Montrul (2010) regarding the variation in performance on articles between EFL and ESL learners and is further shown by the results of the Arabic and Japanese speakers in other studies (e.g., Almahboob, 2009; Sarko, 2009; Snape et al., 2013) where there are more L1 effects than for the participants in this study. One possibility is that the present study's participants were too advanced to rely on their L1. However these studies also administered the Oxford Quick Placement Test.

The fact that ESL learners are exposed to more L2 input may cause them to overgeneralise rules concerning the fact that bare nouns (plural and mass) in English can be [+generic]. Indeed, we have observed that both groups, regardless of how their L1 realises generics, omitted articles with generics. This is especially the case in [+definite, +generic] singular contexts in both tasks, and in [+definite, +generic] plural contexts in the oral task. Apart from explaining the results in terms of exposure to L2 input, it seems that our L2 learners rely more on UG-access than L1 transfer, thereby explaining the similarities between the Arabic and Mandarin speakers. Note that our results support White et al. (2004) who favoured a Full Access explanation over Full Transfer for their English speakers who performed similarly to their French counterparts on the L2A of Spanish gender, despite English lacking a gender feature for nouns. That is, our results highlights an issue with regard to the FT/FA, as it is not clear which overrides the other - L1 transfer or UG-access - as it claims that L2 learners rely on their L1 before resorting to UG-access. This leads us to question if Full Access to semantic features in UG precedes Full Transfer of semantic features, or vice versa. In fact, Full Access to UG in the present study is evident as noted above, in that the participants generally performed similarly. Moreover, they improved with rising proficiency, including in their use of the indefinite generic article, regardless of how it is realised in their L1. This supports H3, which is repeated below.

**H3** L2 learners will restructure away from their L1-transferred grammars and show less non-target L1-based use of articles with rising overall proficiency.

It should be pointed out that the learners demonstrated improvement in the correct use of L1-based articles. L1 transfer can account for such improvement, but only UG-access can account for the movement away from non-target L1-based use of articles. Moreover, the L2 learners in the present study displayed a native-like performance in the problematic [+generic] context, as both groups of participants performed above the 92.5% acquisition threshold in several contexts in the forced-choice elicitation task as in [-definite, +generic] plural contexts with regard to both the advanced Arabic and Mandarin groups. In the oral task, all the Arabic and Mandarin groups performed at native-like levels in [-definite, +generic] plural and mass contexts. This indicates that L2 learners can achieve native-like competence in [+generic] contexts in an ESL setting, with exposure to L2 input, regardless of how their L1 realises generics. However, since generics are not as abundant in the L2 input as non-generics, their acquisition seems to lag behind other non-generic contexts. In light of the above, the

issue is with regard to the Full Transfer claim by the FT/FA, as neither the results of non-generic [-definite, +/-specific] singular contexts are fully compatible with the Full Transfer claim of the FT/FA, nor are the results of [+/-definite, +generic] contexts. The discussion provides further evidence in support of the claim that L2A is UG-constrained in that L2 learners are sensitive to semantic features, and that Full Transfer is not overwhelmingly evident, even at lower proficiency levels.

## **6.3** The Fluctuation Hypothesis

We now examine the results in terms of the Article Choice Parameter and the FH. The FH states that L2 learners have full access to UG principles and parameters, and that only L2 learners whose L1 is [-article] will fluctuate between specificity and definiteness. Learners will set the Article Choice Parameter to the suitable value with exposure to L2 input. Previous studies on the fluctuation between specificity and definiteness have yielded contradictory results either supporting the FH (e.g., Ionin *et al.*, 2004; Ionin *et al.*, 2008; Kim and Lakshmanan, 2009; Snape, 2006; Zdorenko and Paradis, 2008) or challenging it (e.g., Hawkins *et al.*, 2006; Jaensch, 2009; Sarko, 2009). To address this, the present study tested the following hypotheses:

**H2a** Arabic speakers will fluctuate between specificity and definiteness only in [-definite, +specific] singular contexts, although this should be less robust in the advanced group due to exposure to L2 input.

**H2b** Mandarin speakers will fluctuate between specificity and definiteness in all [-definite, +specific] contexts, although this should be less robust in the advanced group due to exposure to L2 input.

The results suggest some evidence of fluctuation, as the upper-intermediate Mandarin speakers used the non-target article *the* in [-definite, +specific] plural contexts more than they did in [-definite, -specific] plural contexts. The results provide only prima facie support of H2b due to the following evidence. First, results showing that the upper-intermediate Mandarin speakers fluctuated in [-definite, +specific] plural contexts required further analysis in order to ascertain whether fluctuation was an individual pattern. The analysis revealed fluctuation in 45% of the upper-intermediate group, thereby confirming Hawkins *et al.*'s (2006) findings that not all of their Japanese speakers fluctuated. Second, the upper-intermediate Mandarin speakers' fluctuation in [-definite, +specific] plural contexts leads to the assumption that even individual fluctuation may not be actual fluctuation. This is because the participants did not

display a high rate of using a in all plural contexts; therefore, they were successful in realising that English allows only the and  $\phi$  with plural nouns. The incorrect use of the in [-definite, +specific] plural contexts could therefore be a result of the participants having more limited choices: the and  $\phi$ . The question is why the Mandarin speakers did not fluctuate in [-definite, +specific] mass contexts, since mass nouns are similar to plural nouns in English in that only the and  $\phi$  are permitted. This is due to the fact that the Mandarin speakers incorrectly used a with mass nouns, as they tended to misclassify some mass nouns as singular nouns. What about [-definite, +specific] singular contexts? Both the Mandarin and Arabic speakers were successful in associating a with indefiniteness rather than singularity or specificity. Both language groups demonstrated other article selection patterns with [+generic] singular nouns, as illustrated previously. Another piece of evidence against fluctuation is the fact that the Arabic speakers used the more in [-definite, -specific] than in [-definite, +specific] mass contexts. Further analyses showed that the lower-intermediates (24% of the group) and upperintermediates (18% of the group) incorrectly used the in [-definite, -specific] mass contexts where the target articles is  $\phi$ . This does not comply with the FH as it does not predict fluctuation by L1 [+article] speakers, although that we assume that the absence of a phonologically overt indefinite article may make Arabic speakers fluctuate. More importantly, the FH does not anticipate overuse of the in [-definite, -specific] or  $\phi$  in [+definite, +specific] mass contexts.

It can be noted from the discussion above that our L2 learners did not fluctuate, regardless of their L1 and whether it has articles. Indeed, they managed to set the Article Choice Parameter to the suitable value, which supports full access to UG. However, even with the hypothetical assumption that L2 learners might fluctuate, it seems that this fluctuation is a pattern that some L2 learners display. This is in accordance with the findings of Hawkins *et al.* (2006), and evidence is also found in Ionin *et al.* (2004) where 24 of their 65 participants (37% of the sample) did not fluctuate, and in Ionin *et al.* (2008) where 9 of their 19 Russian speakers (47% of the sample) did not fluctuate. They propose that L2 learners set the Article Choice Parameter to the suitable value based on L2 input, which implies that the more input L2 learners receive, the more likely they are to reset the parameter. Ionin *et al.*'s (2004) participants were also ESL learners which may explain why not all of them fluctuated. This is similar to why most of our participants did not fluctuate, along with those who are ESL learners in other studies (e.g., Hawkins *et al.*, 2006). Fluctuation may be more

evident in the case of less proficient L2 speakers who are at an early stage of acquisition, and who have had less exposure to L2 input. Therefore, even in the case of L1 [+article] language speakers, we are not sure if they showed fluctuation at an earlier stage of their L2A, which disappears as a result of the fact that they benefit from input faster than L1 [-article] language learners, since L1 influence and UG-access operate together. In fact, Almahboob (2009) found that his low proficiency level Arabic speakers who were EFL learners of English fluctuated, but he did not report if this was as evident at the individual level. This is consistent with Zdorenko and Paradis (2008) who found fluctuation in children who speak [+article] languages, and children who speak [-article] languages. In the case of children, we assume full access to UG, and this would explain their fluctuation. Ideally an examination of fluctuation should be performed on L2 learners who are in the initial state and then tracked longitudinally. Moreover, while the present study did not include [+definite, +/-specific] contexts, makes the assumption that there may not be fluctuation limited to [-definite, +/-specific] contexts. However, fluctuation has been found to be more prevalent in [-definite, +specific] contexts as specificity effects are stronger with indefinites than with definites (see Almahboob, 2009; Hawkins et al., 2006; Ionin et al., 2009; Zdorenko and Paradis, 2008). This leads to the expectation that if [+definite, +/-specific] were included, the results would not vary significantly.

As a conclusion to our discussion of the results in relation to the FH and FT/FA, it is interesting to note how our results fit with other SLA models. It can be observed that the Full Transfer/No Access hypothesis (Bley-Vroman, 1990) and the No Transfer/Full Access hypothesis (Epstein *et al.*, 1996; Flynn, 1983; 1984; 1987; 1996) are not supported. The Full Transfer/Partial Access hypothesis (Hawkins and Chan, 1997; Hawkins and Hattori, 2006; Hawkins and Liszka, 2003) is confirmed, since interpretable features are acquirable, although the Full Transfer part is not fully supported. However, note that uninterpretable features were not examined in the present study. The Partial Transfer/Full Access hypothesis (Vainikka and Young-Scholten, 1994; 1996a; 1996b; 2007; 2011) is not supported as there was some evidence that the functional category D was transferred from L1, but the Full Acess part is supported. Conversely, other models situated within the FT/FA frame, such as the Missing Surface Inflection Hypothesis (Prévost and White, 2000a; 2000b; White, 2003a; 2003b), could account for the participants' performance in [+generic] contexts, as there was a high rate of omission errors in the oral production task, which was not as evident in the

forced-choice elicitation task. However, it does not explain their good performance in non-generic [-definite, +/-specific] singular contexts in the oral task. The FH (Ionin *et al.*, 2004; Ionin *et al.*, 2008) was not supported, as was seen earlier. Our results seem to be most compatible with the FT/FA, although they are not totally consistent with the Full Transfer part due to L2 learners not resorting to their L1 as anticipated. In conclusion, L2 learners can gain access to UG in the L2A of English articles, and the L1 can facilitate L2A; however, this is not always the case.

# **Chapter 7. Conclusions**

#### 7.1 Introduction

In this chapter, the limitations of the research, suggestions for future research, and the conclusions are presented.

#### 7.2 Limitations of the research

There are five limitations. First, the study did not include all possible contexts, as nongeneric [+definite, +/-specific] contexts were not included. However, testing all possible contexts would require the use of far longer tasks that could be boring and tiring for the participants, and could affect the number of individuals willing to contribute to the study. This in turn could affect the reliability of the data as one of the aims of the present study was to recruit as many participants as possible. Moreover, not including [+definite, +/-specific] contexts enabled us to focus more on [-definite, +/-specific] contexts. Second, the number of [+/-definite, +generic] tokens in the oral task should have been higher, since the participants tended to not use all of them due to the nature of the task. Third, the study did not include beginners. This was because we intended to make our participants as homogeneous as possible in terms of age and educational background. Therefore, it may be very difficult to find Arabic and Mandarin ESL beginners who were of a similar age and with a similar educational background to those who were intermediate and advanced. Apart from this issue, all of the participants needed to complete the same tasks. It was considered that it would be difficult for beginners to complete such tasks due to their English proficiency being too low to understand all the vocabulary in the sentences for which they had to supply a suitable article, and because there was also a story recall oral production task that requires a relatively high mastery of English. This justification is supported by García Mayo (2008). Fourth, the study did not include EFL learners. This was because it was difficult for the researcher to travel to Saudi Arabia and China to collect data. Fifth, the study administered two tasks only, and more tasks could have been administered. However, including more tasks could be tiring for those participants willing to participate, and could reduce the number willing to take part.

#### 7.3 Future research

The researcher recommends that L1 Arabic speakers who speak different varieties of Arabic should be compared to ascertain whether or not the slight variations between Arabic speakers play a role. Another project could be to compare the L2A of English

generics by L1 speakers of various L1 backgrounds whose languages treat generics as definite, such as Arabic and Spanish, with other L1 speakers of articleless languages from various L1 backgrounds, such as Chinese and Japanese. This would make comparisons more effective, as it would allow the linking of Spanish speakers with Arabic speakers whose L1 shares the same characteristics, and then with other speakers of articleless languages. Future researchers could also examine beginners' provision of English articles. Another interesting project could compare the suppliance of English articles of ESL learners to those of EFL learners, in order to examine the differences between the two more closely. In addition, there could be a longitudinal study of the L2A of English articles. Such a study would allow the tracking of fluctuation and L1 transfer, and whether or not they decrease with exposure to L2 input.

#### 7.4 Conclusions

The main aim of the present study was to examine the L2A of English articles by addressing the on-going debate of the role of UG-access and L1 transfer. Different from the majority of previous studies, this study compared learners whose native language does not contain an article system (Mandarin-speaking learners) with Arabic learners, whose language has an article system similar to that in English, except that it lacks a phonologically overt indefinite article. Moreover, in Arabic, generics are always definite, whereas in English, generics can be either definite or indefinite. Furthermore, unlike the vast majority of studies on the L2A of articles, this study examined the role of word order in the acquisition of articles, as Mandarin, a topic-prominent language, treats nouns that appear in topic position as definite. The variations between Arabic and Mandarin created a suitable environment in which to examine the role of L1 background in the L2A of English articles, as the key independent variable affecting attainment, together with proficiency level as a secondary independent variable.

The results partially support the FT/FA, but challenge the FH claims. The FT/FA hypothesis is partially supported as, unexpectedly, based on participants' L1s: a) both groups used the indefinite article *a* correctly in [-definite, +/-specific] singular contexts; b) the Arabic speakers did not benefit as much as anticipated from the fact that generics in Arabic are always definite, as they showed a high rate of omission errors; the Mandarin speakers did the same and; c) the Mandarin speakers were not sensitive to noun position, indicating that semantics may affect article choice more than the L1. Some evidence of fluctuation was found as the upper-intermediate Mandarin speakers tended to link their use of *the* to specificity rather than definiteness in [-definite,

+specific] plural contexts. However, this was not considered to be fluctuation due to the following factors: a) the individual performance of the Mandarin participants indicated that not all of them fluctuated; and b) the lower-intermediate and upper-intermediate Arabic groups overused *the* in [-definite, -specific] mass contexts.

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# **Appendices**

## **Appendix A Forced-Choice Elicitation Task**

Please choose the word that you feel is most appropriate and put **a circle around it**. Make sure that you read each dialogue carefully before making your choice. **CHOOSE ONLY ONE ITEM**. Don't think too hard about your decision. When you have made a decision, go on to the next item, **AND DON'T GO BACK** to correct earlier items.

TII	4 4 •	
111	ustration	١

B: How A: I liste	s in bed with flu last week. did you pass the time? ened the radio a lot.
`	to from
In this c	context you would put a circle around 'to'
	t starts here A: Kate has been shopping.
I	B: What did she buy?
	A: She bought book for me—I have read most of it and it is very interesting.
(	(the a $\emptyset$ )
	A: Alice and Harry have been discussing what kind of animal they should choose.
I	B: What will they choose?
1	A: D/dogs are their first choice.
(	(A Ø The)
3. 4	A: I have to replace my carpet that I bought with you last week.
]	B: That's bad! What happened!
1	A: W/water leaked from my ceiling and it damaged my carpet.
(	(A Ø The)

4.	A: I left my wallet bening this morning.
	B: That's terrible! What did you do?
	A: I returned home to get wallet.
	(Ø a the)
5.	A: Hello John! I am so sorry! I may not come to your party.
	B: Why? Everybody is asking me why you are not here.
	A: S/smoke came out from my car engine and I cannot make it on time.
	(Ø A The)
6.	A: Our politicians want to reduce pollution by 20%.
	B: How will they do that?
	A: By persuading drivers to take train, and leave their automobiles at home.
	(a the $\emptyset$ )
7.	A: John was shopping on Amazon.
	B: What did he buy?
	A: He bought plants. I wonder what they will look like?
	(Ø the a)
8.	A: Brian was home.
	B: What did he do?
	A: He made bread, and it tasted very nice.
	(Ø a the)
9.	A: Hi, Jimmy! How was school?
	B: We had two chemistry tests.
	A: Did you find tests difficult?
	$(\emptyset)$ a the

10. A: Don't throw that away!
B: Why?
A: B/bottle, for example, needs years to break down, and this is bad for our environment.
(A Ø The)
11. A: Our aunt Susan is very generous.
B: Is she?
A: She has sent gifts for each of us, but they haven't arrived yet.
(a the $\emptyset$ )
12. A: My sister likes sport so much.
B: Does she?
A: She respects French for organising sporting events so well.
(a Ø the)
12. A. O., lara and Lara and
13. A: Our bus can't leave yet.
B: Why not?
A: C/child is yet to come, but I am not sure who it is.
(Ø A The)
14. A: Life is not as simple as it used to be. We get so much information every day.
B: I think you are right. I don't know what is behind this change.
A: C/computer has changed our life in many ways.
(A
15. A: Our Prime Minister likes to help poor families.
B: That's good.
A: Yes, I respect politician with principles.
(the a Ø)

16. A: John is running late for dinner. I have just spoken to him and he said that his car has broken down.
B: What happened?
A: S/smoke was coming out from his car. Actually, he did not tell me what sort of smoke—I hope that he makes it to dinner on time.
(Ø A the)
17. A: Many scientists now say that global warming is happening.
B: What do you think is causing it?
A: C/cars may be the cause, but I'm not so sure.
(The A $\emptyset$ )
18. A: Kate went to Tim's party.
B: Did she have fun?
A: No, she did not M/man said bad things when she was there—unfortunately, he was my workmate, John.
(A The $\emptyset$ )
19. A. Hi Jack! Please come in!
B. Thank you! Why is your room so messy and untidy? Who made it like this?
A S/students were studying here last night! Don't worry! I will clean it.
(Ø A The)
20. A: Michelin have made some advances in bicycle tyre technology.
B: Oh, yes!
A: They have developed tyres to help cyclist avoid tyre damage.
(a Ø the)

21. A: I have read something good about business.
B: What is it?
A: A/advice is valuable, but always make your own decisions.
(An Ø The)
22. A: Rose is happy.
B: Why?
A: She got watch for her birthday. I wonder what it looks like.
(the $a \emptyset$ )
23. A: That country hopes to make its economy stronger.
B: How?
A: By welcoming tourists.
(Ø the a)
24. A: Did you go to Professor Smith's lecture on wild animals?
B: No, did he say something interesting?
A: Yes, he did T/tiger will become extinct soon because of hunting
(The A $\emptyset$ )
25. A: What did Mary's consultant say about her health?
B: He said she should eat calcium-rich food.
A: Oh! Unfortunately, she doesn't like cheese.
(the $\emptyset$ a)
26. A: Terry is working hard in his kitchen.
B: What is he doing?
A: He is making wine apparently, but I don't know what sort.
(the a Ø)

27. A: My grandfather spent time in Italy.
B: What did he do there?
A: Italians want to improve their farming techniques—so, he was helping them with this.
(An Ø The)
28. A: Where were you yesterday?
B: I was battling with my cold. Can you recommend anything to help me?
A: O/orange has vitamin C, so it will be good for you.
(An The $\emptyset$ )
29. A: I went to my sister's dinner party last night, and she had wanted each of us to bring something.
B: What did you take?
A: I took beer—everybody liked it.
(Ø the a)
30. A: What shall we do tomorrow?
B: You decide.
A: F/film would be good—you pick one to watch.
(A The $\emptyset$ )
31. A: Angela wrote about holidays abroad for some newspaper.
B: What did she write?
A: English behave so badly when they are in other countries—so, she was criticising them for this.
(An Ø The)

32. A: Hi!
B: Hi! I haven't seen you in weeks. Do you have time for lunch?
A: No, I am sorry. I'm busy! Today, I am interviewing doctor—he is very famous in London, and he doesn't have much time for interviews. So I should run!
(the a $\emptyset$ )
33. A: I'm not going to Tom's house.
B: Why not?
A: P/people are in his house, and they don't like me.
(Ø A The)
34. A: I visited my aunt's house yesterday.
B: Oh yes? Did she give you anything?
A: She gave me cakes—I really liked them.
(a the $\emptyset$ )
35. A: Mom! Where did you put my cap?
B: Which cap do you mean?
A: I mean cap that has 'GAP' on it.
(Ø a the)
36. A: Susan's new job is strange.
B: What does she do?
A: She helps companies attract business.
(Ø a the)
37. A: What do you think about my room?
B: Your room is nice, but it is smelly.
A: Yes, I know C/colleague was smoking here yesterday.
(A The $\emptyset$ )

38. A: My wife has just come back from Germany.
B: What was she doing there?
A: She was visiting friends—I miss them so much.
(a Ø the)
39. A: Harry is organising his birthday party this weekend.
B: Who is going to come?
A: G/guests are coming, but I don't know who they are.
(A The Ø)
40. A: I am thirsty!
B: Did you order something to drink?
A: T/tea is coming—hopefully, it will not be too hot.
(A Ø The)
41. A: Hi John!
B: Hi Jack! I haven't seen you in a long time. You must be very busy.
A: Yes. Did you hear about Miss Sarah Andrews who was killed several weeks ago? We are trying to find murderer of Miss Andrews—his name is Roger Williams.
(Ø a the)
42. A: Star Computers fired 200 employees last month.
B: Why did they do this?
A: M/money is more important than human beings to them.
(A The $\emptyset$ )
43. A: I would like to study something different at university.
B: Like what?
A: Since I like trees, maybe I can study forestry.
(a the $\emptyset$ )

playing.
B: Do they?
A: Last week, they supported Germans when they were playing England
(the a Ø)
45. A: Do you need any help?
B: I am here to see Mrs Smith? Is she alone?
A: No! W/women are in her office—I've not seen them yet.
(A The $\emptyset$ )
46. A: Alan visited Turkey and came back last week.
B: Did he bring anything with him?
A: He brought honey, but I haven't seen any of it.
(Ø a the)
47. A: Terry and Liz are arguing over what pet to buy.
B: What does Liz want?
A: She favours cat.
(a the $\emptyset$ )
48. A: Can we go to Blackwell's?
B: Why?
A: I need magazine to read at bedtime—any will be fine.
(Ø a the)

**Appendix B Story Recall Oral Production Task** 

Story 1

John has invited friends for dinner. His plan is to make cheesecake for dessert. He asks

his brother to visit the supermarket to buy sugar, butter and eggs and to visit the

greengrocer to buy strawberries. His brother goes to Tesco and returns carrying bags.

John inspects the bags and then says, 'You forgot the eggs'.

Prompts: friends, dinner, cheesecake, dessert, sugar, butter, eggs, strawberries,

Tesco, bags, eggs

Story 2

A <u>customer</u> enters a <u>shop</u>. The customer is wearing a <u>shirt</u>. He talks to a salesperson and

says, 'I would like shoes to match my shirt'. The salesperson replies, 'That's OK'. He

returns a few minutes later with <u>trainers</u>. The customer is really happy.

Prompts: customer, shop, shirt, shows, trainers

Story 3

John always watches the weather forecast on TV. If it predicts rain, he takes an

<u>umbrella</u>. If it predicts <u>sunshine</u>, he doesn't wear a <u>coat</u>. Unfortunately, the forecast is

not always correct. As a result, when John arrives at work, he often has a wet shirt

because he didn't take an umbrella, or he feels very cold because he didn't wear a coat.

Prompts: rain, umbrella, sunshine, coat, work, umbrella, coat

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Story 4

When Tom grows up, he wants to own a flat in London and have a house in Newcastle.

His mother says, 'Money buys everything today! Education is not very important

nowadays. So, you will have to get a job and get a salary—London is expensive'. His

father says, 'No. You will have to pass exams and go to university. But you still have

time to prepare though, you are only six'.

Prompts: flat, London, house, coat, money, education, job, salary, exams,

university, time

Story 5

John is a student and he likes learning languages. He can have a conversation in 16

languages. People ask him how he did it. He says, 'I start by learning vocabulary, then I

practice greetings'. He says that the computer is a great invention and it's very useful

when learning a <u>language</u>. John says that he will go to Belgium to learn French. He says

that the Belgians are fun.

Prompts: student, languages, conversation, people, vocabulary, greetings,

computer, language, Belgians

Story 6

A man entered a <u>café</u> and he was carrying <u>books</u> in one hand and <u>keys</u> in the other. He

put them on a table and went to hang up his coat. When he returned, a thief had taken

the books but left the keys. He was very surprised and then he said, 'The thief must be a

student'.

Prompts: man, café, books, keys, thief, student

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Story 7

Tom's favourite form of transport is the train, whereas Susan's favourite form of

transport is the airplane. Last year, Tom and Susan took the train to Sydney. They both

love <u>animals</u>. Tom likes <u>kangaroos</u> and Susan likes <u>koalas</u>. They enjoyed their trip but

they did not enjoy eating there, as Tom is allergic to milk and Susan is allergic to garlic.

However, they said that the <u>Australians</u> were nice. They were as friendly as the <u>British</u>,

but they were not as friendly as the Irish.

Prompts: train, airplane, train, animals, Tom, Kangaroos, Koalas, milk, garlic,

Australians, British, Irish

Story 8

Today, my wife visited relatives. Actually, we have not seen them for years. My wife

loves coffee but she hates tea. The funny thing is that her relatives served her tea with

bread and honey. When she left, they gave her photos and these photos had been taken

when she was a child, to remind her of the visit.

Prompts: relatives, wife, coffee, tea, bread, honey, photos, child, remind

Story 9

Mary respects <u>teachers</u>. She knows that a <u>teacher</u> has to work <u>hours</u> every day and they

don't get respect. A friend said she hates her job. She says that if she had not become a

teacher she would have been a banker.

Prompts: teachers, teacher, hours, respect, friends, hates, teacher, banker

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# **Appendix C Consent Form**



I, the undersigned, confirm that (please tick box as appropriate):

1.	I voluntarily agree to participate in the project.					
2.	I understand I can withdraw at any time without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.					
3. I understand that my name will not be used in this project.						
4.	I, along with the Researcher, agree to sign and date this informed consent form.					
Parti	cipant:					
Name of Participant		Signature	Date	<del></del>		
Rese	archer:					
	ulrahman Alzamil					
Name	e of Researcher	Signature	Date			

# **Appendix D Informants' Biographical Information**

## Background information on lower-intermediate Saudi Arabic participants

ID	L1	OQPT score	Class	Sex	Age	LOR	ASF
A1	SA	30	LI	M	25	10	12
A2	SA	38	LI	M	27	16	11
A3	SA	36	LI	M	29	14	12
A4	SA	37	LI	F	26	15	12
A5	SA	37	LI	F	25	19	12
A6	SA	34	LI	M	30	12	11
A7	SA	34	LI	M	25	13	11
A8	SA	33	LI	M	25	13	11
A9	SA	34	LI	F	32	16	12
A10	SA	37	LI	M	33	7	13
A11	SA	31	LI	F	29	12	12
A12	SA	38	LI	M	26	12	11
A13	SA	37	LI	M	30	17	12
A14	SA	38	LI	M	28	19	12
A15	SA	34	LI	M	33	18	11
A16	SA	30	LI	M	26	20	13
A17	SA	34	LI	M	26	17	13
Mean		34.82			27.94	14.71	11.82
Standard Deviation		2.72			2.84	3.53	0.72

#### Background information on upper-intermediate Saudi Arabic participants

ID	L1	OQPT score	Class	Sex	Age	LOR	ASF
A18	SA	40	UI	M	27	15	11
A19	SA	45	UI	F	28	12	11
A20	SA	43	UI	M	27	15	12
A21	SA	45	UI	M	29	24	12
A22	SA	41	UI	M	26	6	12
A23	SA	45	UI	M	30	19	12
A24	SA	45	UI	F	30	17	11
A25	SA	47	UI	M	25	15	13
A26	SA	47	UI	M	29	17	13
A27	SA	40	UI	M	28	26	12
A28	SA	47	UI	M	29	20	11
A29	SA	45	UI	M	27	18	11
A30	SA	42	UI	M	26	17	12
A31	SA	47	UI	F	25	12	12
A32	SA	46	UI	F	25	12	12
A33	SA	45	UI	F	31	14	12
A34	SA	43	UI	M	32	16	12
A35	SA	47	UI	M	26	18	12
A36	SA	45	UI	M	28	12	11
A37	SA	40	UI	F	29	14	12
A38	SA	41	UI	M	24	17	12
A39	SA	45	UI	M	25	13	12
Mean		44.14			27.55	15.86	11.82
Standard Deviation		2.47			2.18	4.28	0.59

Background information on advanced Saudi Arabic participants

ID	L1	OQPT score	Class	Sex	Age	LOR	ASF
A40	SA	55	ADV	M	41	16	12
A41	SA	54	ADV	F	29	12	12
A42	SA	53	ADV	F	25	21	12
A43	SA	50	ADV	M	27	15	12
A44	SA	52	ADV	M	28	13	13
A45	SA	53	ADV	F	31	22	13
A46	SA	49	ADV	F	26	13	12
A47	SA	55	ADV	M	25	17	12
A48	SA	50	ADV	M	25	19	12
A49	SA	55	ADV	M	29	13	11
A50	SA	56	ADV	M	30	19	11
A51	SA	51	ADV	M	32	21	12
A52	SA	51	ADV	M	30	18	12
A53	SA	55	ADV	M	28	35	12
A54	SA	52	ADV	M	27	13	12
A55	SA	56	ADV	M	35	26	12
A56	SA	50	ADV	F	29	15	12
Mean		52.76			29.24	18.12	12
Standard Deviation		2.33			4.04	5.85	0.50

#### **Background information on lower-intermediate Mandarin participants**

ID	L1	OQPT score	Class	Sex	Age	LOR	ASF
CH1	MAN	37	LI	M	23	13	11
CH2	MAN	35	LI	F	24	15	11
CH3	MAN	35	LI	F	24	11	12
CH4	MAN	36	LI	M	28	16	11
CH5	MAN	34	LI	F	29	13	11
CH6	MAN	36	LI	F	26	11	12
CH7	MAN	39	LI	M	25	12	12
CH8	MAN	30	LI	M	27	15	11
CH9	MAN	38	LI	F	23	22	11
CH10	MAN	37	LI	M	30	17	13
CH11	MAN	36	LI	F	28	18	11
CH12	MAN	36	LI	M	29	12	12
CH13	MAN	37	LI	M	30	17	12
CH14	MAN	37	LI	M	24	18	12
CH15	MAN	32	LI	F	28	8	11
CH16	MAN	35	LI	F	26	16	11
CH17	MAN	30	LI	F	27	13	13
Mean		35.29			26.53	14.53	11.59
Standard Deviation		2.54			2.37	3.39	0.71

## **Background information on upper-intermediate Mandarin participants**

ID	L1	OQPT score	Class	Sex	Age	LOR	ASF
CH18	MAN	45	UI	M	25	22	11
CH19	MAN	47	UI	M	27	23	12
CH20	MAN	43	UI	F	26	14	12
CH21	MAN	45	UI	F	28	12	12
CH22	MAN	40	UI	F	23	13	12
CH23	MAN	43	UI	F	23	12	11
CH24	MAN	47	UI	F	26	12	12
CH25	MAN	45	UI	F	25	14	12
CH26	MAN	43	UI	F	27	15	12
CH27	MAN	41	UI	M	24	19	11
CH28	MAN	45	UI	F	24	20	11
CH29	MAN	44	UI	M	32	18	11
CH30	MAN	47	UI	M	24	14	11
CH31	MAN	44	UI	M	23	13	12
CH32	MAN	41	UI	F	29	16	11
CH33	MAN	47	UI	F	29	16	12
CH34	MAN	45	UI	M	30	12	12
CH35	MAN	46	UI	F	27	15	11
CH36	MAN	41	UI	F	27	20	12
CH37	MAN	43	UI	F	25	21	12
CH38	MAN	40	UI	F	24	16	12
CH39	MAN	46	UI	F	23	17	12
Mean		44			25.95	16.1	11.64
Standard Deviation		2.31			2.52	3.46	0.50

**Background information on advanced Mandarin participants** 

ID	L1	OQPT score	Class	Sex	Age	LOR	ASF
CH40	MAN	55	ADV	F	26	30	11
CH41	MAN	52	ADV	M	27	19	11
CH42	MAN	56	ADV	F	24	20	12
CH43	MAN	49	ADV	M	24	16	12
CH44	MAN	54	ADV	F	29	11	13
CH45	MAN	52	ADV	F	31	17	12
CH46	MAN	53	ADV	F	28	18	12
CH47	MAN	56	ADV	M	29	11	12
CH48	MAN	50	ADV	M	25	20	11
CH49	MAN	53	ADV	F	25	23	11
CH50	MAN	52	ADV	M	34	19	11
CH51	MAN	49	ADV	F	25	21	11
CH52	MAN	53	ADV	F	29	18	11
CH53	MAN	50	ADV	F	28	18	11
CH54	MAN	54	ADV	F	30	19	11
CH55	MAN	55	ADV	F	32	19	12
CH56	MAN	53	ADV	M	26	17	12
CH57	MAN	54	ADV	M	28	14	12
CH58	MAN	50	ADV	M	27	17	11
CH59	MAN	51	ADV	M	29	20	11
CH60	MAN	51	ADV	F	25	23	11
CH61	MAN	51	ADV	F	24	22	11
CH62	MAN	52	ADV	F	26	17	11
CH63	MAN	51	ADV	F	28	12	12
CH64	MAN	56	ADV	F	25	13	12
CH65	MAN	51	ADV	M	28	12	12
CH66	MAN	56	ADV	F	24	13	11
Mean		52.56			27.26	17.74	11.48
Standard Deviation		2.19			2.61	4.28	0.58

#### Background information on native speakers of English (the control group)

ID	L1	Sex	Age
E1	English	M	22
E2	English	M	31
E3	English	F	26
E4	English	F	27
E5	English	M	26
E6	English	M	24
E7	English	M	24
E8	English	M	28
E9	English	F	26
E10	English	F	29
E11	English	M	25
E12	English	F	30
E13	English	M	28
E14	English	F	27
E15	English	F	28
E16	English	M	25
E17	English	M	30
E18	English	F	28
E19	English	M	26
E20	English	F	24
Mean			26.7
Standard			2.34
Deviation			2.34

#### Background information on native speakers of English (the coder group)

ID	L1	Sex	Age
EC1	English	F	23
EC2	English	F	27
EC3	English	F	26
EC4	English	M	28
EC5	English	F	25
EC6	English	M	24
EC7	English	F	29
EC8	English	F	27
EC9	English	M	26
EC10	English	F	29
EC11	English	M	30
EC12	English	M	32
EC13	English	M	23
EC14	English	M	25
EC15	English	M	28
EC16	English	M	27
EC17	English	M	25
EC18	English	M	28
EC19	English	M	30
EC20	English	M	26
Mean			26.90
Standard Deviation			2.40