



**The acquisition of French morpho-syntactic properties:  
Cross-linguistic Influence in the Learning of L3 French by  
Turkish/Spanish speakers who learned English as an L2**

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**To the memory of my sister Cherifa**

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## Abstract

Many studies have investigated third language acquisition (L3A) as an independent area of research. The core common interest of these studies has been to search for the source of cross-linguistic influence (CLI) among the previously acquired languages (i.e. L1 and L2) in the learning of an L3. In the domain of morpho-syntax, three competing hypotheses have emerged: one attributes a primary role to the L1 as the source of CLI (Jin, 2009; Hermas, 2014); a second proposes the L2 as the main source of transfer (Bardel and Falk, 2007; Falk and Bardel, 2011); while a third considers that the order of acquisition *per se* is not the significant factor triggering CLI in L3A, but rather the degree of typological proximity between the L1/L2 and the L3 (Rothman, 2011, 2013, 2015).

This study set out to test these hypotheses in the learning of L3 French by two groups: L1 speakers of Spanish and L1 speakers of Turkish, both of whom had learned English as an L2. Each group was further sub-divided by their L2 proficiency into lower intermediates (LIs) and advanced (Adv). Using a ‘mixed methods approach’ consisting of quantitative and qualitative instruments, the acquisition of four morpho-syntactic properties was investigated: (i) Gender, (ii) Number Concord, (iii) Definiteness/Specificity and (iv) Verb Raising. Results were consistent with the proposal of Rothman (2011, 2013, 2015); (psycho)typological proximity seems indeed to be a determining factor triggering CLI in L3A. However, unlike Rothman, who always advocates holistic typological proximity, this study found evidence for CLI based on property-by-property structural similarity. In particular, it is argued that in the absence of clear holistic typological similarity, structural similarity on a property-by-property basis (actual and perceived) is the driving variable for CLI at the initial state of L3A. These findings led to the proposal of a new model entitled the property-based structural proximity (PSP) hypothesis.

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## Abbreviations

ACP	Article Choice Parameter
Adv	Advanced
AGR	Agreement
AP	Adjectival phrase
ASC	Acceptability Sentence Correction
CEM	Cumulative enhancement Model
CLI	Cross-linguistic Influence
C	Complementiser
CP	Complementiser phrase
Def / [+Def]	Definite
Det	Determiner
DP	Determiner phrase
Fem	Feminine gender
FFFH	Failed Functional Features Hypothesis
FH	Fluctuation Hypothesis
FT/FA	Full Transfer/Full Access
GJCT	Grammaticality Judgment/Correction Task
I/INFL	Inflection
ILG	Interlanguage Grammar
Indef / [-Def]	Indefinite
IP	Inflectional Phrase
L1	First language/mother tongue/native language

L2	Second language
L3	Third language
LI	Lower-intermediate
Masc	Masculine gender
MCT	Multiple Choice Translation
N	Noun
NL	Native language
NMP	Nominal Mapping Parameter
NNSs	Non native speakers
Non Spec /[-Spec]	Non Specific
NP	Noun phrase
NSs	Native speakers
Num	Number
NumP	Number phrase
O	Object
OEPT	Oxford English Placement Test
OFPT	Oxford French Placement Test
PF	Phonetic Form
Pl	Plural
PSP	Property-based Structural Proximity
RDH	Representational Deficit Hypothesis
S	Subject
SD	Standard deviation
Sg	Singular
Spec /[+Spec]	Specific

T	Tense
TL	Target language
TPM	Typological Proximity Model
UG	Universal Grammar
V	Verb
V2	Verb second
VP	Verb Phrase

# Chapter 1 Third Language Acquisition: Key Concepts and Previous Research

## 1.1 Introduction

The present study examines the adult non-native third language acquisition (henceforth L3A) of French within a Universal Grammar (UG) paradigm<sup>1</sup>. Recently, there has been a considerable growth in empirical studies investigating third and multilingual language acquisition. This increasing attention can be possibly ascribed to new ideological shifts in worldwide educational and political policies affected by globalisation. Nowadays, most decision makers and syllabus designers encourage the learning of languages, and as a result, we no longer speak about monolinguals or bilinguals only but also trilinguals and even multilinguals<sup>2</sup>.

However, interest in L3A as an independent field of research from within a generative approach has a short history, with the result that studies within this paradigm are generally in short supply compared to studies in first language acquisition (henceforth L1A) and second language acquisition (henceforth SLA/L2A), excluding some isolated exceptions such as Klein (1995). This lack of L3 studies has often been attributed to the “no-difference” assumption which claims that SLA can be used as an umbrella term to cover non-native languages (hereafter NNLs) in

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<sup>1</sup> Given that the scope of this study is to test prior linguistic knowledge effects on L3A, I will leave aside discussion of any issues related to UG and the various positions (i.e. no-access, partial access, full access) as these have been extensively discussed in several previous works in L1A, SLA and even L3A.

<sup>2</sup> Unless otherwise specified, I will forgo the “learning”-“acquisition” distinction advocated by Stephen Krashen (1981), opting instead to use the two terms interchangeably throughout this thesis. I personally agree with Krashen that the outcome of acquisition might slightly differ depending on the awareness of language that individuals could have, however, I also strongly disagree with his analysis and interpretation regarding the “no-interface” position on implicit and explicit knowledge. Besides, as the participants of this study have learned their L3 French via both formal instruction and a period of immersion (almost all participants spent some time two-four months in a French-speaking country), I would prefer not to use Krashen’s terminological distinctions, and therefore, these terms are used as virtual synonyms throughout this work.

general. Singh and Carroll (1979), for instance, argue that ‘there is, a priori, no reason to assume that L3 learning is any different from L2 learning. Learning a third language is [. . .] learning just another second language’ (p, 51). This non-distinction between L2 and L3 is also assumed in a typical definition by Sharwood-Smith (1994) who considers that NNLs refer to “any languages other than the first one irrespective of type of learning environment and the number of other languages the learner might know” (p. 7).

This attitude, however, did not last long because, from the 1990s onwards, generative L3A has begun to surface as an independent area of research. As a result, a number of academic associations and journals on L3A have emerged e.g. the International Association of Multilingualism (IAM) in 2003, the International Journal of Multilingualism (IJM) in 2004 in addition to the biannual Conference on Third Language Acquisition and Multilingualism. A number of publications have also consistently emerged within a fairly short period of time (Bardel & Falk, 2007, 2011; Cenoz & Jessner, 2003; De Angelis, 2007; Flynn et al., 2004; Hammarberg 2009; Jaensch, 2008, 2009a; Leung, 1998, 2002b, 2005a, 2005b, 2006, 2007a, 2007b, 2007c; Rothman & Cabrelli Amaro, 2010; Rothman, 2011; Rothman *et al.*, 2011, among others).

All these L3 researchers do not ignore the importance of SLA research. They are fully aware that SLA with its fruitful research and findings can help facilitate the understanding of the developmental paths of L3A (Cenoz *et al.*, 2001). However, they just claim that there are various aspects and questions that should be specifically tailored to L3 research to justify how the mind acquires, understands, treats, and stores a NNL when more than two languages are available in the brain of the learner (De Angelis, 2005, p. 70).

By asserting, therefore, that L3 is not the first NNL encountered, one should also accept the fact that there are certain variables that come into play when investigating L3A than when exploring SLA *per se*, such as *cross-linguistic influence* (henceforth CLI)<sup>3</sup>, *the role of typological proximity*, *psycho-typological proximity*, *the L2 proficiency level*, *the difficulty degree of the domain of testing* along with some other factors. All these variables point to the need for a theory that accounts for L3A in its own right that neither the study of L1 nor L2 alone can account for (Heidrick, 2006)<sup>4</sup>.

The main research questions addressed by most L3 studies in the domain of morpho-syntax are (i) which of the previously acquired linguistic systems (L1/L2) influences the developmental path in L3A, and (ii) in case both can be shown to have an effect, which specific variables are involved? The present study aims to answer these questions via empirically testing the acquisition of four morpho-syntactic properties (Gender, Number Concord, Definiteness and Verb Raising) by two groups of beginner L3 French learners: L1 Spanish natives and L1 Turkish natives, who both speak English as an L2.

The remainder of this chapter is organised as follows: Section 1.2 discusses the main concepts and issues raised by generative linguists when exploring L3A. Section 1.3 reviews a number of generative L3 studies which represent the baseline of the recent L3 studies/hypotheses. Section 1.4 summarises the main factors that could have led to divergent results amongst generative L3

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<sup>3</sup> Sharwood-Smith and Kellerman (1986); Kellerman (1979); Ringbom (1986); Corder (1983) as well as Sharwood-Smith (1994) state that CLI is an umbrella term that covers a broad range of words including “influence, transfer, interference, avoidance, borrowing and even L2 related-aspects of language loss” (p. 1). They considered the word CLI to be more inclusive than the word transfer or any other related terms. However, as several L2 and L3 studies used both terms interchangeably, throughout this thesis, both terms (CLI and transfer) will be used interchangeably, though the word CLI will appear more frequently than transfer in this work.

<sup>4</sup> The researcher is fully aware that some of these variables have also been explored in SLA and are perceived as important factors too. However, the role of these factors becomes more complex when investigating L3A because while in L2, there is only one possible source of influence (L1), in L3A, CLI can be derived either from L1, L2 or both.

studies in the domain of morpho-syntax. Based on this literature review, section 1.5 presents the hypotheses and research questions tested and section 1.6 explains the accuracy criterion used in this study to signify ‘failure’ versus ‘acquisition’ of a given property. Section 1.7 describes the organisation of this thesis while section 1.8 is a summary of this chapter.

## 1.2 Key concepts raised when exploring L3A

### 1.2.1 What is an L3?

There are some divergent definitions of what an L3 is. Some linguists define an L3 as any language acquired after the L2, but the question raised is whether this L2 simply refers to just *one* non-primary language acquired after the L1 or it rather extends to include all the NNL(s) acquired after the native language (NL). Hammerberg (2001), for example, provided a confusing definition of an L3 “the most recent language that is currently being acquired after L2” (p, 22). This definition is ambiguous for it does not specify precisely whether the L2 is the *only* first non-primary language acquired directly after the L1 or any NNL acquired after the L1. Given that the main interest of this study is to investigate the source of CLI at the outset of L3A, it is fair to say that investigating learners with more than one L2 would be challenging and intricate, simply because with each additionally learned L2, it becomes more difficult to decide on which of the background languages has been the source of CLI and which variables have brought about this influence (Na Ranong, 2009). Hence, the present study will adopt the literal and simple definition of an L3 learner who is a person who has already learned only *one* NNL (L2) and is learning a second one (L3) and only participants who meet this criterion have been included in this study.

### 1.2.2 What is an L3 initial state?

Providing a precise definition of the term *initial state* has never been a straightforward task. It is a vague concept which depends on the research questions being asked, different predictions and

assumptions as well as the framework within which the linguistic properties are investigated. To the best of my knowledge, barring the exception of Leung (2005a) and Rothman (2015), no generative L3 study has so far explicitly defined what an L3 initial state is and what it looks like. This is not surprising because defining an initial state of NNL learning has often been challenging even in SLA. The complexity of defining what an L3 initial state looks like could therefore explain why many generative L3 researchers have simply relied on years of immersion and exposure to the L3 or years of formal instruction in the L3 as tools to assume a beginning level for their participants (e.g. Bardel and Falk, 2007, 2011; Jin, 2009, Rothman, 2011). Only a few L3 studies have independently tested their participants' L3 proficiency levels through proficiency tests (Na Ranong, 2009; Jaensch, 2009a; Rothman, 2011). This lack of independent testing is probably one of the reasons behind the divergent findings in different generative L3 studies.

Leung (2005a, p. 40), for instance, in an attempt to define what an L3 initial stage is, argues that the most important issue concerning an L3 initial state is when a learner begins learning an L3 and what the grammar of that language looks like at the outset of the learning stage. This definition seems to be vague in that it has not specified precisely when an L3 learner can be described as being in his/her initial state nor did it mention what tools should be used to test the beginning level of such a learner. Similarly, Rothman (2015) defines an L3 initial state of learning as a stage when an L3 learner has access to both the L1 and L2 systems and after minimally having sufficient exposure to the L3 which would allow the parser to select one of the linguistic systems to serve as the source of L3 initial grammar (p. 1). This definition is also vague for it did not specify how sufficient the exposure should be because that is relative from one learner to another. Some learners might get it in some few months while some others might

spend some years and in this case, we might risk having different participants with different years of instruction/immersion.

Accordingly, in order to be as accurate as possible in selecting participants who are true beginners in L3 French, the present study relied on two criteria. First, participants should score as beginners in the online Oxford French Placement Test (OFPT)<sup>5</sup>. Second, their exposure to L3 French or their immersion in any French-speaking community should not have exceeded one year. In order to get information about their years of instruction/immersion, participants were asked to fill in a bio-data questionnaire prior to any testing. A copy of this questionnaire is provided in Appendix A.1.

### 1.2.3 Factors triggering CLI in L3A

#### 1.2.3.1 *Typological proximity*

Various L3 studies have proposed *typological proximity* as the most influential factor triggering CLI in L3A (Rothman and Cabrelli Amaro, 2010; Rothman *et al.*, 2011; Montrul *et al.*, 2011; Rothman 2011, 2013, 2015). This view proposes that the source of CLI in L3A largely depends on the extent to which the background languages are typologically similar or dissimilar to the L3. Rothman (2011) claims that “at least under certain conditions, it [CLI] is driven by the typological proximity of the target L3 measured against the other previously acquired linguistic systems” (p. 107)<sup>6</sup>.

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<sup>5</sup> The online Oxford French Placement Test (OFPT) is an online freely accessed French placement test, which is accessible through the website of Oxford Language Centre, University of Oxford. I have used this test to assess the L3 French level of the participants of the present study. The online website is: ([http://www.lang.ox.ac.uk/courses/tst\\_placement\\_french.html](http://www.lang.ox.ac.uk/courses/tst_placement_french.html).)

<sup>6</sup> Typological similarity has been supported in various studies in the *lexical domain* also (e.g. Weinreich, 1953; Cenoz, 2001; De Angelis and Selinker, 2001; Tremblay, 2006, among some others). However, as these are not of direct relevance to the scope of this work, only studies conducted within the morpho-syntax domain will be reported in this thesis.

When investigating the role of typological similarity in L3A, four scenarios emerged. In the first scenario, L1 and L3 are typologically similar while L2 is linguistically different (e.g. Na Ranong, 2009). Na Ranong investigated the case of L1 Thai–L2 English–L3 Chinese whereby L1 Thai and L3 Chinese are believed to be typologically more similar than L2 English. She found no empirical evidence for an effect of typological similarity in her study and argues that the domain of testing (i.e. null arguments) was unexpectedly affected by input salience rather than by prior linguistic knowledge (p. 203).

The second scenario is where L2 and L3 are linguistically similar but L1 is typologically different. This scenario has frequently occurred in several studies (Flynn *et al.*, 2004; Leung, 2005a, 2006a, b; Rothman and Cabrelli Amaro, 2010). None of these studies was originally designed to test the influence of typological proximity *per se* but rather the role of order of acquisition. Results of these studies demonstrated a privileged status for L2. Critiques of these studies, however, maintained that such findings were mainly attributed to the fact that in all of these studies, the L2 selected was typologically more similar to the L3 than the L1. A case in point is the study of Flynn *et al.*, (2004) of Kazakh speakers of L2 Russian learning L3 English. L2 Russian is linguistically more similar to L3 English than L1 Kazakh. Similarly, Rothman and Cabrelli Amaro (2010) used two L3 groups (group 1 with L1 English/L2 Spanish/ L3 French and group 2 with L1 English/L2 Spanish/L3 Italian). In both groups, the L2 is the one that is typologically the most proximate to the L3<sup>7</sup>.

The third scenario is the selection of two groups of L3 learners where in one group L1 and L3 are linguistically similar but L2 is divergent, and a second group with L2 and L3 that are typologically close but L1 is different (Bardel and Falk, 2007; Falk and Bardel, 2011; Rothman,

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<sup>7</sup> Noteworthy, although, Rothman and Cabrelli Amaro attributed their findings to a strong role played by the L2, they did not deny the possibility that the typological proximity between the L2 Spanish and the L3(s) in question could be a strong factor explaining the findings attained.

2011; Montrul *et al.*, 2011). Results of these studies were divergent. While Bardel and Falk (2007) and Falk and Bardel (2011) consider their findings in both studies to be strongly supportive of the “L2 status factor”, Rothman (2011) and Montrul *et al.*, (2011) found strong empirical evidence in favour of typological similarity<sup>8</sup>.

The fourth scenario is another alternative in which neither L1 nor L2 is typologically similar to the L3. Only very few studies used such scenario (e.g. Jaensch, 2009a). The present study also used this scenario when testing the features gender and verb raising whereby L1 Turkish and L2 English are both gender-free and non verb raising languages. Further details on Jaensch’s study are in chapter two (*section 2.2.2*).

The above four scenarios resulted in divergent findings and that could be attributed not only to the different languages tested but also to the divergence in researchers’ definitions of typological proximity. In fact, most definitions of typological proximity vary considerably from one work to another. In the domain of morpho-syntax, for example, typological similarity is often defined at the level of the property tested. Put in other words, most studies in the literature select groups with languages that are structurally similar or dissimilar at the level of the properties investigated and not on a holistic basis. For example, Leung (2005a) argues that the languages which are linguistically proximate are the ones that share the same syntactic properties, such as allowing null subjects and objects, being ‘rich’ in agreement or allowing similar word order. This definition shows clearly that typological similarity is defined at the level of the features/properties tested. Rothman (2011), nevertheless, considers that typological similarity is perceived by the parser on a holistic basis and not on a property-by-property basis. Most of the cases tested by Rothman were cases in which the two languages that are treated as typologically

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<sup>8</sup> These studies are reviewed in further details in the next chapter.

similar share the same family roots (Romance languages in most cases) and this is why they were perceived as being typologically similar on a holistic basis. In 2015, however, Rothman further elucidated his view concerning what holistic typological proximity means. He argues that the parser, at outset of learning, can identify two languages to be typologically similar on the basis of the following continuum in chronological order:

*Lexical similarity* → *phonological/phonotactic similarity* → *morphological similarity* → *syntactic similarity*

That means that languages that share a high degree of lexical similarity are generally selected by the parser as typologically very proximate on a holistic basis. Once the parser identifies the language that is typologically the closest to the L3 in the lexical domain, the parser will identify that language as being typologically the closest to the L3 and will, therefore, transfer all its properties into the initial state of L3 grammar on a holistic basis.

Despite these differences in defining typological proximity and whether it is holistic or property-specific, what emerges from these studies is that most of them often tested *just* one property. Bardel and Falk (2007), for example, tested the acquisition of the *placement of negation* while Falk and Bardel (2011) tested the placement of object pronouns (in main and subordinate clauses). Rothman (2011) also tested one syntactic property which was the placement of adjectives and the resulting semantic nuances that obtain in Romance languages and Montrul *et al.*, (2011) also tested *one* type of syntactic features; being object clitic pronouns<sup>9</sup>.

Keeping the aforementioned conceptual and methodological issues in mind, it seems important to define what is meant by typological proximity as used throughout this work. In so doing, this

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<sup>9</sup> Although we are fully aware that this study tested two different phenomena under two different conditions (viz. Study 1 tested the use of clitics and other objects in an oral production task while study 2 explored the knowledge of clitic placement in a written acceptability judgment task), both studies can be said to have tested one type of syntactic features, being namely object pronouns.

study will distinguish between two terms used to refer to linguistic similarity. The first is the so-called *typological proximity*. Following Rothman (2011, 2013, 2015), this term is used to refer to holistic linguistic similarity when the two languages in question share the same family root (origin) and also share several features in several domains (e.g. lexical, phonological, morphological and syntactic). The second is called *structural similarity* and it is used to refer to linguistic similarity between two languages on a property-by-property basis. In the present study, both terms are used because the background languages of the two groups fall within these two categories. Precisely, the Spanish subjects have Spanish as their NL which is a Romance language just like French and also shares with it many features in many domains. This is why Spanish and French are described throughout this work as being typologically similar/proximate on a holistic basis. English and Turkish, nevertheless, do not share the same family root with French and also differ from it regarding many properties. However, as each of these shares certain properties with French; English and Turkish are described as being *just* structurally similar to French vis-à-vis certain properties (i.e. similarity on a property-by-property basis). In order to tease apart the debate concerning whether holistic typological proximity or property-based structural proximity is the triggering factor of CLI in L3A, this study tests a variety of properties, three DP features (Gender, Number concord and Definiteness) and one VP feature (Verb raising), with the four languages in question are sometimes similar and sometimes different.

### 1.2.3.2 *Psychotypological proximity*

This variable has been ignored by many generative L3 studies while a good number of others have raised awareness to the fact that not only *typological similarity* is an interesting factor worth investigation; *psychotypology* is also an important variable. This concept has been termed ‘psychotypology’ by Kellerman (1983). Kellerman in a series of works (1977, 1978, 1979, 1983 and 1986) was at the forefront of researchers proposing that ‘psychotypology’ is an important

factor that plays a key role in the learning process because “the greater the distance, perceptually, between NL and TL, the lower the incidence of interference” (Kellerman, 1979, p. 38/39). In a similar vein, Rutherford (1982) states that whenever the perceived distance between the NL and the TL is small, the learner will be more willing to transfer, but if this perceived distance is large, the learner will be less inclined to transfer (p. 90).

However, while in SLA a multitude of studies focused on psychotypology (De Angelis & Selinker, 2001, Ecke, 2001; Herwig, 2001), none of the L3 studies have paid the due attention this factor deserves. Rothman *et al.*, (2011) and Montrul *et al.*, (2011), for example, strongly stressed the importance of ‘psychotypology’ in L3A, but none of these studies has specifically designed a measurement to pin down its role in L3A. This dearth of measurement could be attributed to the extreme subjectivity and relativity of such a notion. It is very difficult to design an instrument or a test that could directly target the assessment of psychotypology in L3A. Any attempt in this direction, however, will add much to the body of knowledge in L3A. This is why the present study designed a semi-closed questionnaire which assesses participants’ perception of the linguistic relatedness between their background languages and L3 French on a holistic level and vis-à-vis the four properties tested. Further details on this questionnaire and its results are discussed in chapter six.

Hence, it is worth clarifying from the beginning that this study, in light with various L2 and L3 studies in the literature, distinguishes between two interrelated terms that are believed to be important variables triggering CLI in L3A: (i) (i) typological proximity which refers to language relatedness and (ii) psychotypology which refers to learners’ perception of the typological proximity between their L1/L2 and the L3.

### 1.2.3.3 L2 proficiency level

Another key factor for which a few generative L3 studies have recently furnished support is the L2 proficiency factor and its effect on L3A. Two trends appeared in this regard. There are certain L3 researchers who confer a ‘privileged status’ to the L2 as a triggering source for CLI, especially when L3 learners have achieved a high L2 proficiency level. These strongly believe that there is a close relationship between the degree of influence of L2 and the amount of exposure L3 learners have had to their L2. That is to say, the more proficient learners are in the L2, the more likely they are to transfer properties from the L2 (Leung 2005b; Bardel and Falk, 2007). Another trend believes that L3 learners with a higher L2 proficiency level are likely to outperform those with lower L2 proficiency and therefore learning an L3 becomes easier when learners achieved high proficiency in L2 even if the property is not present in L2 (Jaensch, 2009a; Leung 2002b). Both trends are tested in the present study. The first trend is manifested via two comparisons. One comparison is between learners of an advanced proficiency level (in each L1 group). If the higher L2 proficiency is, the more likely L3 learners will transfer their L2 properties into the L3, both advanced sub-groups (of each L1 group) will show this trend. The other comparison is carried out between learners of lower-intermediate L2 proficiency, who normally should show weak/or no influence from their L2s; for most influence should be derived from their L1s. The second trend is manifested via comparing the performance of LI and Adv subjects within each L1 group to test whether the higher L2 proficiency is, the better the performance will be.

### 1.2.3.4 The difficulty level of the property

The difficulty level of each syntactic *property/feature* is normally an important factor that is worth investigation when addressing the sources of CLI in foreign language acquisition (White, 2008). To the best of my knowledge, a very few L3 studies in the field of morpho-syntax have drawn attention to the importance of this variable in L3A, barring some exceptions such as

Slabakova (2016). This could be traced back to the fact that most studies generally test *one* property (as stated above) and, therefore, this variable has no relevance. Syntactic properties are not all equal in terms of their difficulty levels nor with regard to the amount of time each property requires to develop. Some linguistic features are believed to be inherently more difficult than others and this might depend on the input and the availability of triggering evidence in that input (Ayoun, 2007)<sup>10</sup>.

In order to assess whether properties differ in terms of their difficulty levels and the amount of time they might require to develop, the present study investigated the learnability of four different morpho-syntactic features in L3 French through two types of instruments: quantitative instruments to show whether there is any difference between learners' performance on each of these properties and a qualitative instrument (a questionnaire) to assess learners' perception towards the difficulty level of each property tested (more details are in chapters six and seven).

### 1.3 Existing L3 studies in the domain of morpho-syntax

A number of generative L3 studies will be reviewed in this section. Their findings provided divergent explanations for the causes underlying CLI either at the initial state or at higher levels of L3 proficiency. Provided there is more than one possible source of CLI available to the L3 learner, there are at least four traditional logical hypotheses that can explain how CLI could manifest itself<sup>11</sup>. These four hypotheses make distinguishable predictions vis-à-vis the key

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<sup>10</sup> Ayoun (1999) argued that some properties are more difficult than others when comparing the acquisition of negation, inverted questions, adverb placement, quantification at a distance and floating quantifiers. She argued that compared to negation and inverted questions, 'adverb placement proved to be a difficult property to acquire' which requires longer time compared to the other features (p. 118).

<sup>11</sup> There are two other hypotheses; one is termed the No CLI model. This model denies any role background languages could play in L3A. To the best of my knowledge, no studies in the domain of morpho-syntax have corroborated this hypothesis with the exception of Klein, (1995). However, this study will not be reviewed in this chapter for two main reasons (i) it is not directly concerned with the source of CLI (ii) it did not test the *initial state* of L3A but rather learners with higher L3 proficiency levels, and both (i+ii) are not central to the investigation of this thesis. The other is the Scalpel model which will be reviewed in the 1.5.2.2 below, but for reasons of relevance, it is not included among the list of the four traditional models reviewed above.

factor(s) triggering CLI during the development of L3A. Some of these are opposites while some others overlap. The first is the “*L1 factor*” model which gives a privileged status to the L1 as the sole source of effect in L3A. Advocates of this hypothesis do not give any weight to the role of other variables discussed above because L1 is always the main source of influence (Jin, 2009; Hermas, 2014).

The second hypothesis is the “*L2 status factor*” which privileges the L2 as the only source of CLI (Bardel and Falk, 2007; Falk and Bardel, 2011). Bardel and Falk argue that normally the most recently acquired language before the L3 ‘blocks’ any direct access to the syntactic system of the L1.

The third view rejects the notion of ‘privileged’ transfer status for either of the two background languages. This view claims that features and functional properties can be transferred from either the L1 or L2. Two formal models fall under this view. The first is called the *Cumulative Enhancement Model* (CEM) by Flynn *et al.*, (2004). The CEM claims that transfer is either facilitative or remains neutral. The second hypothesis is the *Typological Primacy Model* (TPM) which was originally formulated in the work of Rothman (2011) and further elaborated in Rothman (2013; 2015). Rothman (2011) claims that both facilitative and non-facilitative influence can occur based on typological proximity between the previously acquired languages and the TL. Rothman came to the conclusion that what really constrains the selection of one background language over the other as a source of CLI is the typological proximity between the L1 and/or L2 and the L3 and that such typological proximity is generally perceived by the parser, early on in L3A, on a holistic-basis and not on a property-by-property basis (see section 1.2.3.1 above for further details).

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The next sub-section will review some studies of each of the four hypotheses described above and will then present the hypotheses that will be tested in this study along with their predictions vis-à-vis the four properties tested.

### 1.3.1 Studies supporting the L1 as a main source of CLI

The only L3 studies that support this hypothesis, in the domain of morpho-syntax, are those of Jin (2009) and Hermas (2014). Jin's work was carried out to investigate the acquisition of objects in L3 Norwegian by L1 Chinese-speaking advanced L2 learners of English. Chinese has an SVO word order and allows null objects in both matrix and embedded clauses. English also has an SVO word order but differs from Chinese in not allowing null objects in the standard variety. Norwegian has both SVO and V2 word orders, and generally does not allow null objects in its standard variety, yet there are three main exceptions in this language. First, in the case of topic-linked null objects, topics can be dropped only in the sentence initial position in a V2 structure. The second exception is where null objects have arbitrary reference as for the pronoun *one* in English. Finally, an object can drop if it is in a co-ordinate sentence.

Jin agrees with Huang (1984, 1989, 1991) and Zushi (2003) who claim that the mechanism responsible for the distribution of null/overt objects is the [ $\pm$ zero] setting of a *topic* parameter. In other words, whereas Chinese is a discourse-oriented language which allows the occurrence of null objects licensed by a zero topic (the [+zero] setting of the Topic parameter), English and Norwegian, in contrast, are sentence-oriented languages, and therefore do not allow null objects or zero-topic settings. They are [-zero] topic languages and are therefore treated as being structurally more similar than Chinese throughout Jin's study. The main research question addressed in this study is whether CLI derives from the L1 Chinese or from the L2 English?

A total of 54 participants took part in this study. 14 native speakers of L1 Norwegian served as a control group and 40 subjects L1 Chinese-L2 English (Adv)-L3 Norwegian. They were further divided into three groups based on their L3 proficiency levels: 14 beginners, 12 low intermediates, and 14 upper-intermediates. Participants were asked to do a grammaticality judgement task and a sentence correction task in both Norwegian and English.

Results show that the participants rejected the sentences with null objects in the English task more accurately (at a rate of 72%) than in the Norwegian task. Jin considered that the L3 learners failed to reset the Topic parameter in the L3 to the [-zero] setting, whereas in the L2 they succeeded to do so as a good indication that such learners transferred the [+zero] setting from their L1 to their L3 rather than from the L2 steady state grammar. Based on these findings, Jin presumed that her study corroborated the “L1 factor” hypothesis.

This study, nevertheless, was criticised for having certain limitations that call into question the conclusions reached. The first limitation lies in the experimental design of the work. The study included only five experimental test items, with only one to two tokens per condition (embedded/matrix clauses and animate/inanimate objects). Besides, the study involved only one L3 group and one Norwegian native control group. Ideally, having a second L3 group, for example, L1 English-L2 Chinese-L3 Norwegian or any second group whose L1 and L3 are linguistically different regarding the property tested whereas L2 and L3 are similar. Using this second group would help Jin test the effectiveness of the “L1 factor” hypothesis. A further weakness of this study was that Jin did not test participants for their L3 proficiency levels. She rather considered the length of residence and length of exposure to the TL as sufficient indicators of participants’ proficiency levels. Several studies, nonetheless, have shown that the length of

residence (or immersion) in the country of the TL and the level of proficiency are in many cases in conflict (Na Ranong, 2009).

The study of Hermas (2014) has also supported the L1 hypothesis. He investigated the acquisition of two properties of the null subject parameter: subject-verb inversion in declarative sentences and null expletive subjects by L1 Arabic natives advanced L2 French speakers who learnt L3 English in a formal foreign language context to a beginning level. Both English and French are structurally similar with regard to the properties tested whereas Arabic is different. Using an acceptability judgment task and a preference task, Hermas found evidence for L1 transfer from Arabic. This is why he considers such results to override the effect of language proximity, typology, and psychotypology which would have instigated the transfer of L2 French.

### 1.3.2 Studies supporting the L2 as a main source of CLI

Several works supported this hypothesis (e.g. Bardel and Falk, 2007; Falk and Bardel, 2011; Heidrick, 2006; Leung (2005b). For reasons of space, only two studies will be reviewed under this section.

Bardel and Falk (2007) tested the placement of sentential negation in main finite clauses in relation to main (thematic) verbs and auxiliary verbs (including copula). The target L3s are two ‘verb-second’ (V2) languages (respectively, Dutch and Swedish) in which all finite verbs (both main and auxiliary) precede negation and which itself precedes the remnant VP, as illustrated in the examples below (adopted from Bardel and Falk, 2007).

#### **Dutch**

1. *Ginger sprekt niet*

‘Ginger speaks not’

Ginger doesn’t speak

2. Ginger heft niet gesproken  
 ‘Ginger hasn’t spoken’  
 Ginger has not spoken.

### Swedish

3. Ginger pratar inte.  
 ‘Ginger speaks not’.  
 Ginger doesn’t speak
4. Ginger har inte prata.  
 ‘Ginger has not spoken’.

The L1s and L2s in this study are either verb-second V2 (such as German) or non-verb second (non-V2) where the sentential negator precedes main verbs but follows auxiliaries (e.g. English), or precedes all finite verbs (e.g. Albanian, Italian and Spanish). Nine participants took part in this study distributed across two groups, as shown in the table below.

**Table 1.1** L3 groups by L1 and L2 (adopted from Bardel and Falk, 2007)

	Number	L1	L2	L3
Group (a)	4	Non-V2	V2	V2
Group (b)	5	V2	Non-V2	V2

The results showed that group (a) produced target-like negated structures i.e. they placed negation after the thematic verb. By contrast, group (b) produced pre-verbal negation, especially with non-thematic verbs<sup>12</sup>. Given that in both cases, L2 was the only source of influence, Bardel and Falk assume that such findings corroborate the L2 transfer hypothesis; syntactic properties of the L3 grammar are more likely to be affected by L2 syntactic features than by those of the L1. They further argue that if typological similarity was a key factor triggering CLI, they would expect group (a) to be influenced by their L2 whereas group (b) would be influenced by their L1,

<sup>12</sup> Further details are on pages 475-9 of this study.

but this scenario did not occur in this study. In light of that, Bardel and Falk concluded that the most recently acquired language (i.e. the L2) is a “filter” that blocks direct access to the L1 morpho-syntactic features, even when linguistic typology and relatedness relationships exist between L1 and L3.

Falk and Bardel (2011) conducted a second study to provide further evidence supporting the L2 ‘status factor’ hypothesis. They examined learners’ knowledge of the placement of object pronouns in L3 German by two groups of L3 learners, a group with L1 English and L2 French, and a second group with L1 French and L2 English. However, unlike Falk and Bardel (2007) who tested beginners, in this study, they investigated L3A of learners with an intermediate L3 proficiency level. The cross-linguistic distribution across the three languages under investigation is presented in the table below.

**Table 1.2** The placements of object pronouns across English, German and French (adopted from Falk and Bardel, 2011)

Clause type	English	French	German.
Main clause	[verb pronoun]	[pronoun verb]	[verb pronoun]
Subordinate clause	[verb pronoun]	[pronoun verb]	[pronoun verb]

As shown in table 1.2, in main clauses, both English and German are structurally similar whereas French is different. As for subordinate clauses, German and French are structurally similar whereas English is different. Using a ‘time-controlled’ grammaticality judgment task and a correction task (GJCT), the study showed that in main and subordinate clauses, participants whose L2 is French seem to accept object pronouns in pre-verbal positions, whereas those whose L2 is English prefer pronouns in post-verbal positions. Falk and Bardel concluded that the

performance of both groups was influenced by their L2, which corroborated the tenability of the L2 ‘status factor’ hypothesis even at an intermediate proficiency level<sup>13</sup>.

### 1.3.3 Studies supporting both the L1 and L2 as sources of CLI

Studies under this category reject any ‘privileged’ status for either of the previously acquired languages. They rather assume that properties can be transferred from either the L1 or L2, provided some conditions are fulfilled. Two versions are proposed: the *Cumulative Enhancement Model* (CEM) (Flynn *et al.*, 2004) and the *Typological Primacy Model* (TPM) of Rothman (2011, 2013, 2015), for which evidence has also been advanced by Foote (2009) and Montrul *et al.*, (2011). A study of each version is reviewed below.

#### 1.3.3.1 *The Cumulative Enhancement Model (CEM)*

Flynn *et al.*, (2004) investigated the performance of an adult L3 group (L1 Kazakh, L2 Russian, L3 English) and a child L2 group (L1 Kazakh, L2 English) on three types of relative clauses as shown by the examples below (adopted from Flynn *et al.*, 2004).

Lexically headed relative clauses where the head has specific semantic content

Big Bird pushes the balloon [which bumps Ernie]

Lexically headed relative clauses where the head lacks specific semantic content

Ernie pushes the thing [which touches Big Bird]

Free (‘headless’) relative clauses

Cookie Monster hits [what pushes Big Bird].

Kazakh is head-final and is left-branching, which makes the relative clauses appear to the left of the head, unlike English and Russian which are head-initial and right-branching languages,

<sup>13</sup> Unlike in Bardel and Falk (2007), in this study, the researchers did not reject the possibility that typological proximity might have an effect on the results but for them L2 has a stronger role.

whereby relative clauses appear to the right of the head. In addition, there is no overt movement or overt complementiser (C) in relative clauses in Kazakh, contrary to English and Russian.

Using an elicited imitation task containing test items of the three types of relative clauses, results showed that the adult L3 learners were 60% accurate in imitating the English relative clauses they heard, while the child L2 learners were only 50% accurate, a statistically significant difference was found between the two groups. Flynn and her colleagues considered that the higher accuracy shown by the L3 learners was the result of them having acquired the complementiser phrase (CP) properties of L2 Russian, which enhanced their subsequent learning of this property in L3 English. The child learners, however, were less accurate because their learning of English relative clauses was not 'enhanced' by knowledge of a language with similar relative clause constructions, like Russian. They further argued that the L1 did not have a 'privileged' role in determining the patterns of L3 development; it either helped or simply remained neutral. In other words, transfer was either positive/facilitative or it did not occur at all.

This study, however, suffered from a major limitation which might question the results attained. Flynn and her colleagues compared child L2 and adult L3 learners. Normally adult L3 learners have fully established the syntactic properties in their L1 before experiencing the L2 and L3 in subsequent stages. In contrast, in the case of children, Flynn and her colleagues stated that they are not sure whether these children had fully developed their L1 prior to acquiring L2 English or not because learners might differ with respect to the extent to which the L1 was established before L2 learning began. That is why syntactic development in the two groups does not seem to be comparable and therefore results may not be overgeneralised.

### 1.3.3.2 The Typological Primacy Model (TPM)

Advocates of this model believe that what matters in L3A is the typological similarity between L1/L2 and the L3 (Foote, 2009; Montrul *et al.*, 2011; Rothman, 2011, 2013, 2015; Rothman *et al.*, 2011). The study by Rothman (2011) is reviewed below.

This study tested knowledge of adjectival placement and the ensuing semantic nuances by two groups: L1 Italian natives who speak English as an L2 and learning Spanish as an L3 and L1 English natives who speak Spanish as an L2 and are learning Portuguese as an L3. Both groups have an advanced L2 proficiency level and are at an intermediate level in L3.

The feature of grammatical gender is an inherent property in Italian, Spanish and Portuguese but is absent in English. Following Chomsky (1981b, 1995), Romance languages have grammatical gender which forms part of the set of so-called *phi*-features. Nouns are typically overtly inflected for gender and number, and so are modifying determiners (Dets) and accompanying adjectives (Adjs) as illustrated by the examples below (adopted from Rothman, 2011).

la	chica	gorda	<b>(Spanish)</b>
the.FEM.SG	girl.FM.SG	fat. FM.SG	
la	ragazza	grossa	<b>(Italian)</b>
the.FEM.SG	girl.FM.SG	fat. FM.SG	
a	menina	gorda	<b>(Portuguese)</b>
the.FEM.SG	girl.FM.SG	fat. FM.SG	

Although most attributive adjectives in Romance languages occur in a post-nominal position, some may appear pre- and post-nominally, carrying different semantic meanings depending on their position. English, on the contrary, does not mark the Dets, the head nouns nor the Adjs for grammatical gender; and Adjs almost always appear in pre-nominal positions.

Using a semantic interpretation task, and a context-based collocation task, results of this study were as follows. In task one, both groups were comparably alike with no significant difference; deriving the same number of correct interpretations for both pre-posed and post-posed adjectives. Results of task two also showed no significant differences between both groups and the control group. Almost all participants were able to produce adjectives in the correct corresponding position (either pre- or post-nominally) depending on the meaning that is most felicitous with the given context. Interestingly, participants were even able to intuit the semantic nuances signalled by the overt semantic position of the Adjs in Romance languages.

Rothman concluded that the overall results of this study showed that L1 Italian (in the L3 Spanish group) was the source of CLI whereas in the case of L3 Brazilian Portuguese speakers, the grammar of L2 Spanish appeared more influential than that of L1 English. That occurred irrespective of the chronological order or timing of their acquisition. In light of that, Rothman concluded that typological proximity is the “strongest factor that determines multilingual syntactic transfer” (p, 122) and he proposed a new hypothesis entitled ‘the typological primacy model’ (TPM) which assigns a strong role to typological proximity as a triggering factor of CLI in L3A. In another recent study, Rothman (2015) argues that typological proximity is perceived by the learner on a holistic basis and not on a property-by-property basis. Once the parser identifies which language is typologically the closest to the L3, (s)he transfers all the properties of that language holistically when learning L3<sup>14</sup>.

#### **1.4 Summary of existing generative L3 research: WHY divergent findings?**

Based on the above review of some L3 studies, two main areas of research have generally been the core of investigation but still need further empirical investigation. They are the following:

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<sup>14</sup> See section 1.2.3.1 for further details on the revisited version of the TPM model (Rothman, 2015).

- The source(s) of CLI in L3A
- Typological/psychotypological proximity

Despite this commonality of goals, such studies, within the domain of morphosyntax, have shown different findings. Seven major factors seem to be the reasons behind such divergent results<sup>15</sup>. The first reason is related to **the methodology** or the nature of the task adopted in each study as well as whether or not each task provides enough information on learners' competence or performance. The study of Jin (2009), for example, includes only five experimental test items, with only one to two tokens per condition (embedded/matrix clauses and animate/inanimate objects). Generalizations cannot be made on the basis of such a small number. Bardel and Falk (2007) is another study where the methodology used can be questioned. They collected data by recording the very beginning classes of the participants; whereby they recorded the whole class versus individual recording which recorded each individual separately in face to face meetings with the teachers. The classes in which recording took place were communicatively-based. That is to say, they involved only interactions between the teacher and the learners or between the learners themselves. Despite the efficiency of this method, as it tests learners' spontaneous production, such a communicative method is not always reflective of learners' competence or underlying knowledge for not all learners are extrovert (i.e. willing to participate). Accordingly, group records might not necessarily reflect an equal amount of communication across all learners. Some learners might be shy and introvert; even when they have a good answer, they may not expose it verbally just to avoid public conversations. It seems, therefore, that the non-occurrence of the property tested by Bardel and Falk (i.e. post-verbal negation) does not necessarily imply that learners failed to acquire this syntactic phenomenon. The experiment

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<sup>15</sup> Some of these reasons (variables) have already been introduced and defined in details in section 1.2.3 but are used for different purposes in this section.

could have been improved by adding some further written tests such as a grammaticality judgment task or a translation task. Data triangulation (i.e. the use of more than one sampling method) is important to ensure the credibility and certainty of findings.

Bohnacker (2006) is another study which has solely relied on oral production data *only* to examine the acquisition of V2 in L3 German by L1 Swedish-L2 English learners. This study found that transfer was derived from both L1 and L2. As argued above, the use of a wide variety of tasks is very useful because it allows for “confident interpretations” of findings which in its turn would strengthen the conclusions of the research. Leung’s study, for example, is a good piece of evidence that learners’ performance might differ from one task to another because her subjects performed differently in each type of task. While Leung’s participants seemed to have a problem with the feature [ $\pm$  definite] in the elicited oral and written production tasks, they had no problem in the multiple choice performance task. Data triangulation is, therefore, necessary to guarantee the credibility of the results attained.

A second variable that is believed to have contributed to the divergent results of generative L3 studies is **the variety of L3 groups** used in each study. While some studies relied on one L3 group some other studies used two or three L3 groups. Jin (2009), for instance, used *only* one L3 group of L1 Chinese-L2 English-L3 Norwegian where L2 English and L3 Norwegian are structurally closer than L1 Chinese at least regarding the domain of testing. Jin assumes that her findings corroborate a predominant effect from L1 (Chinese) whereas the structural similarity between L2 and L3 has no intervening effect on L3A. As stated above, ideally, Jin should not have drawn such a conclusion unless she added a second L3 group, whereby L2 and L3 were linguistically similar while L1 and L3 were different.

Rothman and Amaro (2010) used two L3 groups but with one common L1 (English) and a common L2 (Spanish) for both groups but different L3(s), respectively French and Italian. Although Rothman and Cabrelli Amaro consider their results to be supportive of the “L2 status factor” hypothesis, they do not deny the fact that (psycho)typological proximity could have had a strong role if they had included some L3 groups with different L1(s) or different L2(s). Rothman and Amaro (2010) argued that this variety of languages would help tease apart all the possibilities regarding the effects of background languages as well as the role of (psycho)typological relatedness in L3A. This indeed explains why Rothman carried out another study in 2011 but with two L3 groups which have *different* L1(s) as well as *different* L2(s) and even the L3(s) are *different*. This study found positive evidence for typological similarity as a key factor triggering CLI in L3A<sup>16</sup>.

Thus far, it can be concluded that the use of a variety of language groups especially those which follow these three scenarios (one group with L1 and L3 that are linguistically closer than L2 versus another group where L2 and L3 are syntactically much more similar than L1 and a third group with L1 and L2 that are structurally different from L3 with regard to the domain of testing) seems more informative than relying on just one language group. The present study also adopts the three scenarios but slightly different. Spanish is the language that is typologically similar to L3 French, whereas Turkish and English are sometimes structurally similar regarding certain properties but are different from French in others (see table 1.3 below for the distribution of the properties tested across the languages investigated).

In addition to the above factors, five more variables (already been discussed in section 1.2.3 above) are also considered as reasons behind the divergence of results among L3 studies. They

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<sup>16</sup> In one group, L1 and L3 are typologically similar (Italian and Spanish), while in the second group, L2 and L3 are typologically similar (Spanish and Portuguese).

are summed up as follows. (I) There have been some divergent definitions concerning what is meant by **typological proximity**, is it at the family root level, lexical level, phonological, syntactic or holistic level? (II) The other variable is the absence of focus on **psychotypological proximity** or learners' perception on typological proximity, and (III) the absence of a unique identifiable definition of what an L3 **initial state** looks like. (IV) A fourth variable is related to **L2 proficiency levels**. As stated above, only a very few studies in the literature have tested L3 learners with different L2 proficiency levels (Jaensch, 2009a, 2009b). (V) The final variable is the **inherent difficulty level of the property** in question.

The seven variables discussed above identify a coherent field of generative L3 enquiry but also provide some account for why there have been divergent findings in that field. They help us better discern what questions and which areas still need investigation within the field of L3A. The present study will take into account the aforementioned seven variables in order to provide as accurate and as reliable data as possible which might help provide some possible conclusions to the controversial debates in L3A regarding the source(s) of CLI (see the subsequent chapters for a detailed explanation on this).

## **1.5 A Gap in the literature and the scope of the present study**

### **1.5.1 A Gap in the literature**

In light of the above review of existing L3 studies, it seems that the following areas still need further research. These are summarised in points (a-c) below:

- a. There seems to be a need for studies which test various different properties to test whether or not CLI from L1 and/or L2 will vary from one property to another.

- b. The TPM model (Rothman, 2013, 2015), which states that the language that is detected by the parser to be typologically the closest to the L3, will be transferred to the L3 on a holistic basis, should be tested because it has not been tested by any L3 study yet.
- c. Learners' perception of language distance (both as a whole entity and on a property-by-property basis) has never been measured so far by any L3 study in the domain of morpho-syntax. Therefore, it would be beneficial to design a scale of measurement which provides information on participants' perceptions towards (i) the similarity/dissimilarity between their background language and the L3 on a holistic basis and also with regard to each of the properties tested. This will give a richer picture on the role of typological/structural similarity and how it is perceived (respectively, on a holistic basis or on a property-by-property basis).

## 1.5.2 The scope of the present study: Research questions and Hypotheses

### 1.5.2.1 Research Questions

The main two research questions that the present study aims to answer are as follows<sup>17</sup>:

- a. In the initial stages of acquiring four morpho-syntactic properties (Gender, Number Concord, Definiteness/Specificity and Verb Raising) by beginners L3 French learners L1 Spanish/L1 Turkish natives who learnt L2 English up to a lower-intermediate and advanced proficiency levels, is there evidence of L1 or L2 influence (or both)?
- b. Is holistic typological proximity or property-based structural proximity the determining factor triggering CLI in L3A?

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<sup>17</sup> Detailed research questions for each property will be raised in chapters 2-5.

### 1.5.2.2 Hypotheses and Predictions

Four hypotheses will be tested in the present study; three of them are the traditional models: The L1-model, The L2 ‘status factor’ model and the Typological primacy model (TPM) while the fourth is an original hypothesis proposed by the present study which believes that in the absence of holistic typological similarity, the parser would perceive linguistic similarity on a property-by-property basis. The predictions of each of these in relation to each of the four properties tested will be discussed in this sub-section<sup>18</sup>.

#### H<sup>1</sup>: The L1 Factor Model

According to this model (Jin, 2009; Hermas, 2014), L1 is the predominant source of CLI in L3A. In light of this, the performance of the Spanish group will be influenced by L1 Spanish while the Turkish group will transfer their Turkish grammar properties. This model, therefore, expects the performance of the two groups in the four properties tested to be as follows:

- Spanish has gender whereas Turkish is a gender-free language. This is why the Spanish group will be native-like while the Turkish group will fail to acquire this property.
- Both languages have number concord in their grammars, so both groups are expected to perform in a similar target-like manner.
- Spanish grammaticalises definiteness whereas Turkish is an article-less language. This model expects the Spanish group to behave in a native-like manner whereas the Turkish group will fail to do so.
- Spanish is a verb raising language in which manner and frequency adverbs predominantly occur post-verbally, whereas Turkish adverbs always occur before the object and the

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<sup>18</sup> Given that the CEM was originally invented to test cognates which are irrelevant to the scope of the present work, its predictions will not be tested in this study.

verb<sup>19</sup>. Thus, this model expects the Spanish group to outperform the Turkish group. The latter will fail to be target-like.

The L1 factor model makes no claims concerning the role of L2 proficiency.

### H<sup>2</sup>: The L2 Status factor Model

According to this model, CLI occurs only or dominantly from the L2 (Bardel and Falk, 2007; Falk and Bardel, 2011). This model would, therefore, expect L3 learners' performance on the four properties to be similar because both groups have one common L2 (English). Their performance should be as follows.

- Both groups will be nonnative-like in their treatment of gender in L3 French because English is a gender-free language.
- Both groups will be native-like in their treatment of number concord in L3 French because English is a language that has number concord. It inflects nouns (Ns) for plural.
- Both groups will be native-like in their treatment of the property definiteness/specificity in L3 French because English is a language that grammaticalises definiteness.
- Both groups will be nonnative-like in their treatment of adverb placement in L3 French because English is a non verb raising language whereby its frequency and manner adverbs always occur pre-verbally.

As far as L2 proficiency is concerned, this model should claim that learners with higher L2 proficiency would transfer L2 features more than those with lower L2 proficiency. In light of this, when the property is present in L2 such as number concord and definiteness, this model expects learners of an advanced proficiency level to outperform those of a lower-intermediate level. However, when the property tested is not present in L2 English (e.g. gender and verb raising), this model expects no difference on the basis of L2 proficiency.

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<sup>19</sup> Turkish is a verb-final language with an S-Adv-O-V word order (see chapter five for further details).

### H<sup>3</sup>: The Typological Primacy Model (TPM)

Rothman considers that typological similarity is the key factor that determines which language (between L1 and L2) is transferred at the initial stage of L3A. He considers that the language that is typologically the closest to the L3, on a holistic basis, is the one that is most influential. In 2015, Rothman elucidates his point concerning what holistic typological proximity means. He proposes an implicational hierarchy continuum: Lexicon→ Phonology/Phonotactics→Functional Morphology→Syntax that feeds the L3 parser, which is trying to make a judgement about which language to transfer holistically (L1 or L2). Where it can identify one of the languages as being lexically more similar to the L3 than the other one, the parser will transfer all of the properties of that language to the L3 grammar. Rothman argues that lexical similarity is the first trigger that helps the parser identify whether a language is typologically similar to the L3 or not<sup>20</sup>.

In the case of Spanish L1→ English L2 → French L3, Spanish will transfer as a whole because it is lexically more similar to French than English. In the case of Turkish L1→English L2→ French L3, it seems quite difficult to identify which one is lexically more similar to French because both languages hold certain words borrowed from French. However, English seems more lexically similar to French than Turkish because the former contains more words that are either borrowed (or similar) to the French ones. In order to verify this claim, two measurements were used. The first one is the use of some statistics that are freely available at the website of *Ethnologue: Languages of the world*<sup>21</sup> which states that English words that are borrowed from

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<sup>20</sup> The researcher is fully aware that this implicational hierarchy continuum was originally proposed in the work of Rothman (2013) but it is mainly in Rothman's (2015) that he elucidates clearly what he means by holistic typological proximity. This is why the researcher is citing the 2015 work here.

<sup>21</sup> *Ethnologue: Languages of the World* is a web-based publication that contains statistics for about 7,457 languages in its 19th edition, which was released in 2016. *Ethnologue* provides information on the number of speakers, location, dialects, linguistic affiliations and some other relevant features related to this language. The publication in this site is well respected and widely used by many linguists.  
<https://www.ethnologue.com/language/fra>

French represent 27% and also the data published by the *Turkish Language Association*<sup>22</sup> which state that the Turkish words that are borrowed from French represent just 4.76%<sup>23</sup>. The second measurement used was via identifying a list of the 500 most frequently used French words to find out how many of these words are present in English and in Turkish. This list was based on an original work of New & Pallier (2001). Out of 500 French words, there were around 114 words that were either the same (e.g. *arriver* vs. *arrive*, *personne* vs. *person*) or nearly similar to the English words (e.g. *juste* vs. *just*, *sauver* vs. *save*, *promettre* vs. *promise*, *mariier* vs. *marry* etc). This implies that about 22.8% of the English words are similar to the French words in this list. Conversely, only 16 Turkish words were found to be similar to the French words in this list making, therefore, a 3.2% only of lexical similarity between Turkish and French words<sup>24</sup>. Merging the findings of the two measurements together, this study will consider that there is about 24.5% of lexical similarity between English and French whereas the lexical similarity between Turkish and French is only around 3.9%. Thus, it seems, at least based on the two measurements above, that English is lexically more similar to French than Turkish to French. In light of this, the TPM would predict that the parser would identify English as the language that is typologically the closest to L3 French and would, therefore, holistically transfer all its properties into the L3 French grammar. That implies that the Turkish group, like the Spanish group, would behave in a native-like manner in number concord and definiteness because both features are present in L2 English but would be nonnative-like in their treatment of gender and verb raising because English is a gender-free and a non verb raising language, respectively.

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<sup>22</sup> **The Turkish Language Institution** (Turkish: *Türk Dil Kurumu*, TDK) is the official regulatory body of the Turkish language, founded on July 12, 1932 by the initiative of Atatürk and headquartered in Ankara, Turkey. This Institution acts as the official authority on the language (without any enforcement power). It contributes to linguistic research on Turkish and other Turkic languages, and is charged with publishing the official dictionary of the language, *Güncel Türkçe Sözlük*.  
[https://en.wikipedia.org/wiki/Turkish\\_Language\\_Association](https://en.wikipedia.org/wiki/Turkish_Language_Association)

<sup>23</sup> According to the *Turkish Language Association*, the total Turkish words are 104,481, of which about 86% are Turkish and 14% are of foreign origin (words borrowed from French are about 4,974 i.e. 4.76%).

<sup>24</sup> The list of the 500 most frequently used French words is downloaded from the following website:  
<http://french.languagedaily.com/wordsandphrases/most-common-words>  
 This list is in appendix H of this thesis.

The TPM makes no official claims with regard to performance linked to L2 proficiency<sup>25</sup>.

H<sup>4</sup>: The hypothesis of the present study

This is an original hypothesis that is inspired by the TPM in its belief that typological proximity is indeed a key factor triggering which between the L1 and L2 would be the source of CLI at the initial state of L3A. However, contra the TPM, this study argues that in the absence of a language that is clearly typologically very similar to the L3 on a holistic basis (e.g. Spanish vs. French)<sup>26</sup>, linguistic similarity would be perceived by the learner on a property-by-property basis, and in this case, one would speak about *structural similarity that is property-specific* and not *holistic typological proximity*. Thus, in the absence of a background language that is typologically similar to the L3 on a holistic basis, the language that shares property X with the L3 will be the source of CLI in the performance of learners on that particular property. If on the other hand, the property is present in neither L1 nor L2, L3 learners will fail to be native-like in that property. Consequently, in the case of Spanish L1→English L2→French L3, the PSP expects Spanish to be transferred as a whole because it is typologically the closest to L3 French on a holistic basis. In this case, the Spanish group will behave in a native-like manner in the features gender, number concord and definiteness. As for verb raising, though this group is expected to outperform the Turkish group, the behaviour of the former is expected to be characterised by variability, which is found in L1 Spanish regarding adverb placement (see chapter five for more details). In the case of Turkish L1→English L2→French L3, contra the TPM which would expect English to be the source of CLI, this study hypothesises that both languages to be the source of CLI, sometimes Turkish is the source of influence and sometimes English would transfer, depending on whether the property tested is present in L1, L2 or in both.

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<sup>25</sup> In a recent study, Rothman (2015) argues that having high proficiency in L2 might help L3 learners but as he did not test L2 proficiency through an independent measurement such as an English proficiency test, nor did he test different groups of different L2 proficiency levels, it is claimed above that the TPM makes no claim on this matter.

<sup>26</sup> Clear typological similarity as used here means two languages sharing the same family roots and having many common features in different domains e.g. lexical similarity, phonological similarity, syntactic similarity....etc.

As for the four properties tested, this study would expect the Turkish natives to behave as follows:

- Both Turkish and English are gender-free languages, so similar to the TPM, this study expects the Turkish participants to be nonnative-like in their treatment of this feature in L3 French.
- Both Turkish and English, similar to L3 French, inflect Ns for plural, so the Turkish group is expected to benefit from such similarity. However, unlike the TPM which might expect the Turkish group to be native-like, this study hypothesises that this group will not reach nativeness for neither language inflects the articles or adjectives for plural. This is why this study expects the Turkish group to be target-like but not to reach nativeness in number concord on the articles and the adjectives.
- L1 Turkish is an article-free language but English, similar to French, is a language that grammaticalises definiteness. This study predicts the Turkish natives to benefit from the similarity between English and French regarding this feature. However, contra the TPM which would expect the Turkish speakers to behave native-like, this does not expect them to reach nativeness. The absence of this feature in L1 Turkish would negatively affect the performance of this group.
- Finally, given that Turkish and English are both non verb-raising languages, similar to the TPM; this study expects the Turkish participants to be nonnative-like in their treatment of adverb placement in L3 French.

Regarding the role of L2 proficiency, the PSP argues that this variable might have an effect only if the L2 is the only language that is structurally similar to the L3 regarding the property tested. This implies that Turkish natives would benefit from their higher proficiency in L2 English in their treatment of definiteness/specificity only because it is the only feature in which English is the only language that is structurally similar to L3 French.

### 1.5.2.3 The domain of testing

The distribution of the four properties in question across the four languages tested is summarised in table 1.3 below.

**Table 1.3** Property distribution by language

Feature/property	L1		L2	L3
	Spanish	Turkish	English	French
Gender on nouns	√	X	X	√
Gender on articles	√	X	X	√
Gender on adjectives	√	X	X	√
Morphological number on articles	√	X	X	√
Morphological number on nouns	√	√	√	√
Morphological number on adjectives	√	X	X	√
Definiteness/Specificity	√	X	√	√
Main Verb raising	(√)	X	X	√

√: The property is present. X: The property is absent. (√) the property is optional (see chapter five for further details)

As the table above shows, both French and Spanish (Romance languages) are not only typologically alike as entire systems but also vis-à-vis the properties tested, except for verb raising which is optional in Spanish but obligatory in French. English and Turkish, on the contrary, are different from French except for plural marking on Ns, and definiteness which is a feature shared by English only.

## 1.6 "Failure" vs. "access": the criterion for "acquisition"

It is crucial at this point to set down the criterion to be used in this work for defining "failure" and "acquisition" of a given property. This thesis will consider 75% accuracy rate of performance in all the experimental tasks as the criterion of successful acquisition (averaging therefore the 60% criterion of Vainikka & young-Scholten, 1994, 1996a, 1996b, 1996c, 2002 and the 90% criterion of Brown, 1973). The researcher is fully aware that setting any percentage as an acquisition criterion is arbitrary which might question how much is enough for a given property to be considered as been acquired. However, in order to be as clear as possible to what is meant by failure vs. acquisition of a property in this study, some objective (though arbitrary)

criterion has to be established in assessing learners' performance. Leung (2002b) also used 75% as an accuracy criterion in her study.

## **1.7 Organisation of the thesis**

The rest of this thesis is organised as follows. Chapters two-five present the results of the four properties tested, respectively, Gender, Number Concord, Definiteness/Specificity and main Verb raising. Chapter six describes the results of a qualitative instrument (a semi-closed questionnaire) and compares its findings with those collected through quantitative instruments. Finally, a summary of the overall results obtained, along with a discussion and some concluding remarks are drawn up in chapter seven.

## **1.8 Summary of chapter 1**

In sum, this chapter served as a background framework to the present study. It has introduced and discussed the key concepts raised when investigating early L3A. It has also outlined some important variables that are believed to have an effect on the developmental processes of L3A. This chapter has also reviewed some existing generative L3 studies within the domain of morpho-syntax whose findings are of direct relevance to the scope of the current study.

The next chapter will present and discuss the results of the two experimental groups of this study (L1 Spanish and L1 Turkish groups) in their performance on the feature of gender.

## Chapter 2 L3 Learners' Acquisition of Gender in the French

### DP

#### 2.1 Introduction

This work investigates the acquisition of gender in L3 French within the framework of UG. The classification of nouns according to grammatical gender is largely independent of semantic or referential content. For this reason, it seems impossible to claim that the existence of a gender classification is bootstrapped from conceptual categories in the language (Carroll 1989). Instead, in accordance with generative theories, gender is an inherently available parameter of UG.

The property of gender has two interrelated concepts: *gender assignment* and *gender agreement (concord)*. The term *concord* is used in this work to refer to gender matching between the head noun (henceforth N) and its modifiers determiners (Dets) and adjectives (Adjs). In several studies (e.g. Carstens, 2000; Hawkins, 1998, 2001b; Keenan, 1978; Lehmann, 1982), the terms *agreement* and *concord* were used interchangeably. This is why this study will also treat the two terms as synonymous. However, to avoid any misconception with other types of agreement such as subject-verb agreement, only the term *concord* will be used throughout this work, unless the term *agreement* is mentioned in any of the original works reviewed.

Gender assignment is a mechanism for partitioning nouns into two classes: 'masculine' or 'feminine'. In some other languages, gender partition can involve more than three classes. In German, for example, nouns are divided into three classes: 'masculine', 'feminine' and 'neuter' while in some Bantu languages, nouns are partitioned into 10 or more classes. Discussing these issues in further details is far beyond the scope of the present study.

Additionally, whilst gender is central and pervasive in some languages (e.g. Romance languages such as French, Spanish, and Italian), it is totally absent in others (such as English and Turkish). Gender concord is a phenomenon that affects constituents in syntactic projections which modify the N such as Dets and Adjs. Bartning (2000) claims that gender is an idiosyncratic diacritic lexical feature of the noun whereby the value of each noun gender has to be acquired “individually for every lexical entry stored in the mental lexicon”, while gender concord is a property of specifiers such as Dets and Adjs that is triggered by the gender feature of the nouns (p. 226).

## 2.2 Gender: Cross-linguistic Variation

This section aims to describe in detail the cross-linguistic difference between the four languages in question (French, English, Spanish and Turkish) with regard to the property of gender (both assignment and concord).

### 2.2.1 Gender assignment

#### 2.2.1.1 French

French is a Romance language which has gender as an ‘inherent’ feature of nouns. Nouns can be classified into two gender classes, either ‘masculine’ or ‘feminine’ (Grevisse, 1964; Surridge, 1985, 1986, 1989, 1996, Shelton, 1996), as illustrated in (1-2) below. Gender is thereby an idiosyncratic diacritic feature of French nouns, the value of which has to be acquired individually for every lexical entry stored in the mental lexicon.

5. *porte* (fem) ‘door’,                      *table* (fem) ‘table’.
6. *papillon* (masc) ‘butterfly’,   *livre* (masc) ‘book’.

Gender is not reliably determined from the ending of a noun. Although certain types of ending are typically of one gender or another, there are always exceptions. For example, many nouns ending in *-e* are feminine (e.g. *porte* (fem) ‘door’, *chaise* (fem) ‘chair’). However, there are nouns ending in *-e* that are masculine (e.g. *livre* (masc) ‘book’, *cartable* (masc) ‘bag’, *fromage* (masc) ‘cheese’). Here are some suffixes that usually indicate masculine nouns but which have some important exceptions (*-age*, *-ble*, *-é*, *-f*, *--i*, *-m*, *-n*, *-ment*, *-or*). Some other suffixes usually indicate feminine nouns in French but have various important exceptions. Some of these are (*-ade*, *-ale*, *-be*, *-ee*, *-ie*, *-iere*, *-ire*, *-ise*).

These exceptions have led several linguists, investigating the acquisition of gender in non-native contexts, to claim that gender is an opaque feature in French for the form of the French N on its own cannot be a reliable cue to the class it belongs to. This fact makes the learning of a particular gender of any given noun a challenging task to NNSs (Hawkins & Franceschina, reported in Prévost & Paradis, 2004, p. 176). In a similar vein, Grevisse (1964) stated that in French, it is not always possible to detect the gender of a given noun but rather it is only through the use that one can learn to identify the gender of nouns<sup>27</sup>. In other words, gender is “an idiosyncratic diacritic feature of nouns that has to be acquired individually for every lexical entry stored in the mental lexicon” (DeWaele & Véronique 2001, p. 276). Corbett (1991) argued that the combination of semantic and formal properties makes the French gender attribution system opaque, and therefore it is not surprising that gender is a real challenge for NNSs.

### 2.2.1.2 Spanish

Similar to French, Spanish nouns are assigned masculine or feminine gender (Carroll, 1989; DeWaele & Véronique, 2000, 2001) as shown in the examples below.

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<sup>27</sup> This is just an English translation to the original French quotation which is “Ce n’est que par l’usage que l’on apprend à reconnaître le genre des noms” (Grevisse, 1964).

7. *mesa* (fem) ‘table’, *puerta* (fem) ‘door’.
8. *sombrero* (masc) ‘hat’, *clima* (masc) ‘climate’

It is claimed that, similar to French, due to the arbitrary nature of gender assignment of nouns in Spanish, one cannot predict the gender of a noun on the basis of its morphological form. While words ending in –o are usually masculine (e.g. *el sombrero* (masc) ‘the hat’) and those ending in –a are usually feminine (e.g. *la puerta* (fem) ‘the door’), there are exceptions, e.g. *clima* (masc) ‘climate’ and a few feminine ones end in –o (e.g. *mano* (fem) ‘hand’). Despite these several exceptional forms, nonetheless, it is commonly agreed that, unlike French, the canonical inflectional morphemes for gender are /-o/ for masculine nouns and /-a/ for feminine nouns (Green, 1988). Thus, although both French and Spanish have various exceptional rules; French has more exceptions in gender than Spanish. This is why it is generally believed that learning gender in French by NNSs is somewhat more challenging than in Spanish (Jaensch, 2012). Finally, in both languages (French and Spanish), there are nouns with no overt gender marking. Such words are not used in the present study and, therefore, discussing them is beyond the scope of this work (Further details can be found in White *et al.*, 2001, 2004).

### 2.2.1.3 English

Unlike French and Spanish, English is a completely gender-free language, and therefore English nouns cannot be classified in two classes of masculine or feminine (White *et al.*, 2004). In English, gender contrasts are semantic in nature, determined by the sex of the referent. Grammatically, a contrast is only realised between male and female on third person singular pronouns, such as *he/she him/her* and on certain [+animate] nouns, such as *actor/actress*.

#### 2.2.1.4 Turkish

Similar to English, gender is not realised in Turkish. Turkish is a gender-free language. It is “devoid” of grammatical gender and the sex of persons in this language does not have any effect on the forms of the nouns (Lewis, 2000, p. 23).

#### 2.2.2 The structure of nominals

Before going any further in our discussion, it is necessary to specify the assumptions that will be made about the structural properties of nominals. First, in various studies, it has been proposed that noun phrases (NPs) can be considered complements of a higher syntactic projection that of the determiner phrase (DP). In accordance with several generative linguists such as Abney (1987), Leung (2005a, 2007b), White (2003a), Hawkins (1998, 2001a, 2001b), among many others, we make the assumption that NPs are indeed DPs.

Second, following Pollock (1989) and Abney (1987), it is widely assumed that DPs are headed by a Det. This is especially true when the nominal expression is an argument, in contrast to a nominal predicate which is generally an NP (see Stowell (1989) for some complications with respect to nominal predicates).

Third, the DP tested in the present study consists of the following elements: a Det, a head N, and a post-modifier attributive Adj. The only Dets that are used in this study are the articles, no possessives, demonstratives or any other Dets are used in the DPs tested, as shown in the example below.

9. DP→	<b>Det</b>	+	<b>N</b>	+	<b>Adj</b>
	La		porte		verte
	The (fem)		door (fem)		green (fem)
	(The green door)				

Furthermore, concord within the DP is an early-acquired process. Most of the studies on the emergence of the DP in Spanish and French have focused on Det concord (e.g. Liceras, Diaz & Mongeon, 2000 for Spanish and Paradis & Crago, 2004, for French) whereas Adj concord has often been ignored in such studies. A very few L2 studies examined Adj concord within the DP (e.g. White *et al.*, 2004) while in L3A, Jaensch is the only study which tested gender concord on Adjs<sup>28</sup>. Royle, Vial and Valois (2006) argued that this could be probably due to the fact that while learners use Adjs at an early age, they do not see the pragmatic necessity to produce full DPs such as ‘the big white door’ when referring to the only door that is plainly in sight. This is why spontaneous speech corpora seem to offer very little data with which to study the acquisition of adjective concord. The present study, will examine gender concord on both Dets and Adjs to see which of these represent persistent difficulty to NNSs of French.

Fourth, following the minimalist program outlined in Chomsky (1995, later developed and modified by Carstens, 2000), this study considers concord (both for gender and number) within a DP to be achieved by means of a “checking” between two sets of features. More precisely, the head N has interpretable ( $\phi$ )  $\phi$ -features (features for person, number, and gender), which by assumption, must check parallel uninterpretable  $\phi$ -features of agreeing Adjs, and Dets. The valued uninterpretable features have morphological consequences (different forms of Dets and Adjs) but no semantic consequences. They are purely grammatical or formal features. Uninterpretable features are often represented as [uF] (Adger, 2003). In French, the interpretable features for gender are [ $\pm$ feminine] and for number [ $\pm$ plural]. The interpretable gender feature is included in the lexical entry of nouns. The choice of [feminine] and [plural] as the base features reflects the fact that masculine and singular appear to be the unmarked, ‘default’ values of gender and number (Karmiloff-Smith, (1979) for L1, and White *et al.*, (2004) for L2)).

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<sup>28</sup> She only tested gender concord on Ns and Adjs but not on Dets which is different from the present study which is testing gender concord on Dets and Adjs but not on Ns.

### 2.2.2.1 French

French DPs mark gender concord between the head N and dependent Adjs and Dets (Carstens, 2000). Dets in French are typically obligatory and precede the N. However, concord is only apparent on singular forms of Dets like *le, la, un, une, mon, ta*, etc, whilst plural forms such as *les, des, and ses* are uninformative regarding gender. Adjs in French can either occur pre-nominally (predicative Adjs) or post-nominally (attributive Adjs). In both cases, they agree with the gender of the N, but as stated earlier, only DPs containing attributive Adjs are included in this study.

Below are examples illustrating gender concord in French:

10. Le stylo vert

‘The-MS pen-MS vert-MS’

The green pen.

11. La voiture verte

‘The-FS car-FS green-FS’

The green car

### 2.2.2.2 Spanish

Similar to French, the Spanish DP also shows gender concord between the Ns, Dets and Adjs:

12. el sombrero negro

‘The-MS hat-MS black-MS’

The black hat.

13. la chaqueta negra

‘The-FS jacket-FS black-FS’

The black jacket.

### 2.2.2.3 English

Unlike French and Spanish, English lacks the property of gender concord within the DP (White *et al.*, 2001, 2004).

### 2.2.2.4 Turkish

Similar to English, Turkish is a gender-free language and has, therefore, no gender concord within its nominal phrase (Lewis, 2000).

The table below summarises the cross-linguistic differences between French, Spanish, English and Turkish regarding the property of gender.

**Table 2.1** The Distribution of the gender property by language

	French	Spanish	English	Turkish
Gender assignment	√	√	X	X
Gender concord (on Dets and Adjs)	√	√	X	X

√=the property exists; X=the property does not exist.

While all native speakers acquire gender (Carroll, 1989; Clark, 1985; Müller, 1990, 1994; Perez-Pereira, 1991), various studies consider that this feature presents some difficulty to non-native speakers (henceforth NNSs) especially those whose L1 and/or L2 lack(s) this feature (Hawkins and Franceshina, 2004; Hawkins, 2005; Myles, 1995; Shelton, 1996, among others).

## 2.3 Review of existing (L2 and L3) studies on gender acquisition

### 2.3.1 Existing L2 studies on the acquisition of gender

The feature of gender has been examined by a good number of SLA studies, providing different and controversial findings. White *et al.*, (2004), for instance, tested the acquisition of gender in L2 Spanish by L1 French and L1 English natives. French is a language that has gender in its grammar whereas English does not. Participants were adult learners at three L2 proficiency

levels (Low, Intermediate, and Advanced). For some of the English speakers ( $n = 14$ ), Spanish was an L2, whereas for some others ( $n = 54$ ) it was an L3, L2 being French.

Four tasks were devised in this study: two elicited production tasks, a picture identification task and a vocabulary task (to test gender assignment). White *et al.* found no significantly different results between English and French natives. They were both performing in a near native-like manner, but their performance differed across the L2 proficiency groups. The Advanced subjects were almost native-like in their performance and so were the intermediates, but the low proficiency group differed significantly from native speakers. White and her colleagues argue that their results strongly support the claim that postpuberty learners are able to acquire gender concord regardless of the status of gender features in the L1. They also state that such findings favour some kind of full access account, but could not be supportive of the full transfer account, which would predict that low proficiency anglophones would perform less well on gender than low proficiency francophones, a prediction which was not borne out in this study. White and her colleagues also found that the accuracy was generally lower when the adjective was present in the determiner phrase (henceforth DP). Furthermore, results also showed some preference for one gender over the other, masculine as a 'default' gender, but in the picture identification task that was slightly less apparent than in the production tasks (p. 120-121).

Some critics, however, considered that the English natives benefited from learning French as an L2; a possibility that White and her colleagues rejected because when dividing their English speakers into three groups: early exposure to French, late exposure to French, and no prior exposure to French, they found no significant difference between these groups; those with no exposure to French were performing as accurately on Spanish gender as those with early or late exposure to French (p.120).

A good number of other SLA studies tested the acquisition of gender and also found similar results to those of White *et al.*, (2004). Sagarra and Herschensohn (2011), for instance, compared the acquisition of gender and number concord in L2 Spanish by L1 English natives and French natives using online (self-paced reading) and offline (grammaticality judgment) tasks. The findings revealed no differences between the two groups in the offline task but in the online task, only lower proficiency English groups were found to be sensitive to gender violations.

Some other SLA studies, nevertheless, support a different account; the so-called representational deficit hypothesis (henceforth RDH) (Hawkins and Franceshina, 2004; Hawkins, 2005)<sup>29</sup>. This approach suggests that native speakers of an L1 lacking the syntactic gender feature (e.g. English, Turkish, Chinese...etc), acquiring an L2 or L3 (Ln) that has it, might fail to establish the syntactic representations of this property. Hawkins and Franceshina (2004) compared the L2 acquisition of gender by two advanced L2 Spanish learner groups: one group of three subjects whose L1 (English) does not have gender and a second group of three native speakers of a language with grammatical gender (Italian). The Italian group scored 100% of accuracy on gender concord for 95 contexts of Det+N, whereas the English group showed only 92% of accuracy. Given that gender is an absent feature in L1 English syntax, the researchers analysed English participants' nonnative-like treatment of gender in L2 Spanish as being supportive of the RDH.

### 2.3.2 Existing L3 studies on the acquisition of gender

Although the gender property has been extensively explored by SLA researchers, there is still a dearth of studies which tested this property in L3. Jaensch (2007, 2009a) is one of the few researchers who conducted a good number of studies on the acquisition of gender in the L3

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<sup>29</sup> The RD account is a new version of the traditional Failed Functional Feature hypothesis (FFFH) originally found in the work of Hawkins and Chan (1997).

context. Jaensch (2009a) carried out a study to investigate the effect that L2 proficiency level can have on the acquisition of grammatical gender<sup>30</sup> on (Dets and Adjs) in L3 German by L1 speakers of Japanese who had already learned English as an L2.

There are three gender classes in German; masculine, feminine and neuter (Jaensch, 2007). In English and Japanese, in contrast, gender is not an inherent feature on nouns and thus nouns cannot be classified into gender classes. The encounter with gender for the participants of this study was neither through L1 Japanese nor L2 English but only through L3 German. The absence of the gender feature in L1 and L2, and the choice of participants at three different L2 proficiency levels would enable the researcher to assess whether L2 proficiency has influence on the acquisition of gender in L3 German.

A total of 49 (adult) participants took part in this study: eight German natives served as the control group and 41 experimental participants (L1 Japanese, L2 English, and L3 German). The subjects were further divided into three groups according to their L2 proficiency (elementary, lower-intermediate and upper-intermediate) and also into three groups based on their L3 proficiency levels (lower-intermediate, upper-intermediate and advanced)<sup>31</sup>. All non-native subjects completed three written tasks in German. The overall results of the three tasks revealed that though gender concord is neither marked on Dets nor on Adjs in either English and Japanese, participants of equivalent L3 German proficiency, but higher L2 English proficiency, generally established the gender of the relevant nouns in their grammars and also managed to

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<sup>30</sup> In the original study, the features investigated are grammatical gender and case marking. However, as this chapter is only concerned with the property of gender, no results on case marking will be further discussed.

<sup>31</sup> Although Jaensch's study is relevant to the present study for it tested the acquisition of gender in L3, it differs from the present work concerning the L3 proficiency levels tested. Jaensch relied on three L3 proficiency levels (lower-intermediate, upper-intermediate and advanced) but participants of the present study are beginners only. Our focal interest is to assess the role of prior linguistic knowledge at the initial state of learning and not the end-state.

mark the relevant gender concord on Dets and Adjs much more accurately than their counterparts of lower L2 English proficiency levels (Jaensch, 2007)<sup>32</sup>.

Jaensch considered her results not to be due to transfer effects, but rather to the key role of L2 proficiency level. She argued that learners who acquired an L2 to a relatively high level might have become more aware that different features exist in other languages and therefore they would become more sensitive to new features in the L3. She termed such a phenomenon the ‘enhanced feature sensitivity’<sup>33</sup>.

In 2012, Jaensch expanded this work in another study by adding a second L1 group (a Spanish group). She investigated the acquisition of gender in L3 German by two groups of L1 speakers (Spanish and Japanese) who were also L2 English speakers, divided into three L2 proficiency sub-groups. Spanish, similar to German, is a [+gender] language whereas Japanese is [-gender] language. However, unlike German which has three different gender classes, Spanish nouns can only be partitioned into two gender classes (feminine or masculine). The same three written tasks in her (2007; 2009a) studies were used in this study and the results were also quite similar to her previous findings. In fact, apart from the unexpected results of novel nouns whereby Japanese informants were more successful than the Spanish ones, both L1 Japanese and L1 Spanish participants of a higher L2 proficiency level outperformed those of a lower L2 proficiency level within each L1 group. Jaensch considered her results to have shown partial support for the L2 ‘Status factor’ model, though she did not deny the possibility that they could also partially support the TPM in the case of the Spanish group.

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<sup>32</sup> Japanese is an article-less language.

<sup>33</sup> Jaensch did not deny the fact that her findings could be possibly described in terms of the ‘threshold hypothesis’ if extended to adult non-native language acquisition (for further details on this concern refer back to the original works by Jaensch, 2007, 2009a).

The two studies reviewed above, similar to other generative L3 studies, were carried out mainly to investigate the source of CLI from prior linguistic knowledge in the acquisition of an L3. This chapter is also concerned with investigating the source of CLI at the initial state of gender acquisition in L3 French.

## 2.4 The study

### 2.4.1 Participants

A total of 48 participants took part in this study; 16 Turkish native speakers (mean age = 25.5, age range = 19-34) and 22 native speakers of Spanish (mean age = 24.1, age range= 19-38). A group of 10 French native speakers who originated from different parts of France served as the control group (mean age = 21.2, age range = 19-24). All participants were (male and female) students at the University of Essex at the time of testing (either undergraduate or postgraduate students), and were recruited from a variety of disciplines<sup>34</sup>. The table below shows the distribution of the L3 groups by division of L1.

**Table 2.2** Linguistic profile of the participant groups

	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>N*</b>
<b>Group 1</b>	Spanish	English	French	22
<b>Group 2</b>	Turkish	English	French	16
<b>Control Group</b>	French	N/A	N/A	10

\*N=Number

#### *L3 French Proficiency groups by L1*

In order to be as accurate as possible in recruiting *beginners only* in L3 French, the present study relied on two criteria. First, participants' exposure to L3 French (i.e. immersion in any French-speaking community or instruction in French) should not exceed one year. In order to get information about their years of immersion and the number of years of instruction in French,

<sup>34</sup> All participants found to be enrolled in any course at the Language and Linguistics department were excluded from this study; this is to avoid the risk of having students answering based on linguistic awareness rather than spontaneous competence.

participants were asked to fill in a bio-data questionnaire prior to any testing. Alongside date of birth and gender, participants were also asked at which age and for how long they had studied L2 English and L3 French; the length of immersion (if any) for each language. All participants whose linguistic profile proved to be non-beginners were excluded from the study. Participants who were reported speaking a language other than L2 English and L3 French were not selected. Similarly, Spanish-English or Turkish-English bilinguals were excluded. Second, participants needed to be classified as beginners by the online Oxford French Placement Test (OFPT)<sup>35</sup> in order to take part in this study. All participants took the OFPT which consists of 50 questions (all in French). There was no time limit for this test but all participants finished the test within 40-60 minutes<sup>36</sup>. A copy of the bio-data questionnaire and the OFPT are shown in Appendix (A.1) and (A.2), respectively.

The table below shows the total number of participants in each group (Turkish/ Spanish), their mean, range, and their standard deviation of their OFPT scores.

**Table 2.3** French Proficiency groups divided by L1

L1	N	Mean	Range	SD
Spanish	22	6.86	5-10	1.320
Turkish	16	6.75	5-9	1.125
French Native speakers	10	49.10	48-50	0.876

An independent samples t-test was carried out and results showed no significant difference between the two L1 groups concerning their proficiency scores in L3 French [ $t=.192$ ,  $df=36$ ,  $p=.849$ ;  $p>.05$ ]. Figures of native speakers in table 2.3 are shown for comparison purposes only.

<sup>35</sup> Reminder, the online Oxford French Placement Test (OFPT) is an online French placement test which is freely accessible through the website of Oxford Language Centre, Oxford University. The online website of this test is ([http://www.lang.ox.ac.uk/courses/tst\\_placement\\_french.html](http://www.lang.ox.ac.uk/courses/tst_placement_french.html)). Normally for this test, there are two levels of beginners: *complete beginners* who score (1-3) and *false beginners* who score (4-10); however, for the purpose of this study, we merged the two levels together and consequently; any participant who scores (1-10) is considered as a beginner in this study.

<sup>36</sup> The quickest finished the test in 40 minutes while the longest finished the test in one hour.

*L2 English Proficiency groups*

Participants of each L1 group were further divided according to their L2 proficiency levels into two groups based on their scores in the Oxford English Placement Test (OEPT). This test consisted of 60 multiple choice questions. There was no time limit for this test but all participants finished the test within 30 to 50 minutes.

Although the original goal was to divide the two experimental groups (L1 Turkish/L1 Spanish) into beginners, intermediates, and advanced, but due to the practical difficulty of finding any Turkish or Spanish natives who are beginners in L2 English and who are also learning L3 French as a beginner, only two groups took part; one group with a LI level versus a group with an Adv L2 proficiency level.

The division of participants by L1 and L2 (English) proficiency scores is shown in table 2.4 below. Further statistics related to the participants, such as age, length of tuition, age tuition began and length of immersion for both L2 English and L3 French can be found in Appendix B.

**Table 2.4** English proficiency groups (OEPT) means divided by L1 and L2

L1	L2 proficiency level	N	Mean	Range	S.D
Spanish	Advanced	13	50.15	48-54	2.115
	Lower-intermediate	9	32.78	31-39	2.774
Turkish	Advanced	10	49.90	48-53	1.969
	Lower-intermediate	6	33.00	31-37	2.280

An independent samples t-test was carried out for each L1 group (Spanish and Turkish) divided by their L2 proficiency (LI and Adv) and results showed highly significant differences between the two L2 proficiency groups within each L1 group; Spanish [ $t=16.693$ ,  $df=20$ ,  $p=.001$ ] and Turkish [ $t=15.691$ ,  $df=14$ ,  $p=.001$ ].

No participants with an upper intermediate L2 level were recruited in this study so as to get two clearly distinct groups for L2 English proficiency.

#### 2.4.2 Ethical approval

Before the testing sessions began, each participant was informed about the environment of testing (i.e. the place in which the testing would take place) in addition to some other essential facts<sup>37</sup>. First, participants were informed that the study was to run over two days: on the first day, they would fill in the bio-data questionnaire and take the French placement test (OFPT), while the second day would consist of the experimental tasks<sup>38</sup>. There was a two day-gap between the first session (questionnaire and OFPT) and the rest of the experimental tasks. This was mainly to leave some time for the researcher to calculate participants' scores in the OFPT and gather their answers' in the bio-data questions to determine whether a participant was a beginner or not in L3 French and therefore would participate in the rest of the study or not<sup>39</sup>. This resulted in the removal of seven participants from the study as they were found not to be beginners in L3 French while 38 subjects were called again to continue the rest of the tasks.

On day two of the experiment, participants who were deemed beginners were called again for the rest of the experimental tasks. They were informed that they could withdraw from the experiment at any time and that they could ask for clarification at any time. They were also told that their personal data would be kept anonymous and would be used for data analysis purposes only and therefore would not be published or used in any other manner. In addition, they were told that in the oral task they would be video recorded, but also for data analysis purposes only.

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<sup>37</sup> All sessions took place in a room which is located in a very quiet area. The choice of this particular place was to make sure that participants were feeling comfortable and also to guarantee that there would be no noise disruption that could affect participants' performance in tasks.

<sup>38</sup> Throughout this thesis, the words *experimental task* and *experimental test* will be used interchangeably.

<sup>39</sup> Following the completion of the two tasks, each participant was rewarded with £3 and was told that (s)he might be called for the next experimental tasks after two days.

Finally, they were told that they would be receiving payments upon completion of all tasks<sup>40</sup>. These instructions were written in English in an ethical approval form which was first read aloud and explained by the researcher and then signed by the participant after agreeing to take part in the experiment. All this happened 10-15 minutes before the experimental session began.

### 2.4.3 Experimental Tasks

A total of five experimental tests were used:

- Multiple Choice Translation (MCT) Task (in three versions English, Spanish or Turkish)
- Oxford English Placement Test (OEPT)
- Acceptability Sentence Correction (ASC) Task.
- Picture Description Task.
- Vocabulary Task (on gender assignment)

These tasks were administered as follows. Two experimental sessions separated by a half an hour break were run. Each session consisted of three experimental tasks. The first session began with an MCT task in Spanish undertaken by the Spanish group and one in Turkish for Turkish natives. The choice of a translation task that is written in the mother tongue of participants at the outset of the experimental session was *intentional*. The belief was crucially that starting with such a task would probably elude any kind of fear or anxiety participants might face at the beginning of a testing session, which in its turn would affect their performance<sup>41</sup>. This task was not limited by time, but participants were told not to think too long and to guess in case they did not know the answer.

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<sup>40</sup> £7<sup>40</sup> for L1 Turkish/ Spanish natives and £3 for French natives.

<sup>41</sup> The researcher has come up to this conclusion following a pooling test made prior to these testing sessions which was followed by a short interview. During that time, participants started with the ASC Test, followed with the MCT English Task, while the Spanish/Turkish versions of the MCT were sat for last. When asked, participants said that they preferred to have started with a task in their mother language because that would have reduced any feeling of worry, stress or anxiety they might face at the very first moment of any experiment.

The second task was the OEPT; a test that is used to assess participants' L2 proficiency level. This task was run second to separate the MCT task and the ASC task which was taken third. Running the OEPT in between the two aforementioned tasks aimed to avoid having participants priming from one task to another; that is to prevent them singling out the specific goals of these tasks and therefore not being able to speculate what properties the researcher was testing. It was also meant to reduce some possible effects of fatigue, since participants were likely to find the English test much easier than the other two tests.

Following the OEPT, participants had a five-minute break and then took the ASC task. This task was quite long compared to the rest tasks. It should be normally finished in approximately 40 minutes or so; this is why it was kept till the end of the first experimental session. The second session started with the English version of the MCT task; all participants from both groups (Spanish and Turkish) undertook this test, and then after a five-minute break, they sat for the picture description task. Finally, after having a five-minute break, participants sat for the vocabulary task.

It is worth pointing out that, with the exception of the picture description task (testing gender and number concord only) and the vocabulary task (testing gender assignment only), the remaining tasks tested all the four properties in question, (i) *Gender (assignment/concord)*, (ii) *Number Concord*, (iii) *Definiteness* and (iv) *Verb Raising*. Testing all these properties in the same test was intentional. It was mainly meant to prevent participants guessing what properties the study was investigating, and for that reason, the sentences were randomly ordered so that participants would not encounter adjacent sentences testing the same property. Thus, it would be very difficult to say that participants could pay attention or guess what feature(s) the task was testing. Further details on each task and the distribution of the properties will be supplied in the next sub-

sections. The tasks described and discussed in each sub-section are presented according to their chronological order in the experimental sessions.

#### 2.4.4 Rationale for the methodology

This study has relied on a number of experimental tasks which are believed to be appropriate to the level of the participants (beginners in L3 French) and also to the research questions addressed in this study. First, the study relied on a translation test in the form of a multiple choice test. It is true that multiple-choice testing can have some disadvantages when used in SLA/L3A research. Good and reliable multiple-choice tests are difficult to construct. In addition, such tests give participants different options to choose between, which possibly imply that some of their responses will be based on guessing rather on knowledge of a given property. However, the choice of a multiple choice test in this study is because it has certain advantages that are of direct relevance and benefit to this study. First, such a test is easy to answer i.e. participants do not need to construct long or complex sentences nor do they need to have rich lexical background knowledge in the TL. This is very important because the subjects of this study are beginners in L3 French and such tests will be suitable to their level. Second, this test has allowed the researcher to test four different morpho-syntactic properties in one single test which makes the possibility of having participants singling out the goal of the task or the feature(s) tested very difficult.

However, there can be negative consequences of relying exclusively on multiple-choice tests in a study in language acquisition in which the credibility and reliability of results are of great importance. It is very difficult to provide overgeneralisations on results collected via a multiple choice test only; another test is added, an acceptability sentence correction task. It is at the same time a grammaticality judgment test and a sentence correction task; whereby participants are told

to judge a sentence as being either grammatically acceptable or not in French. In case a sentence is found incorrect, participants are also told to correct it. Judgment tasks are frequently used in various language acquisition studies (Gass, and Selinker, 2008). Some studies, use two tests separately i.e. a grammaticality judgment task and a sentence correction task as in (Falk & Bardel, 2011; Jin, 2009, among others). In some other studies (e.g. Hermas, 2014; Sagarra and Herschensohn, 2011), only a grammaticality judgement task is used, whereas some others use both tests in one test called a Grammaticality Judgment/Correction (GJC) task (e.g. Judy *et al.*, 2008). This test also used both tests in one test called an acceptability sentence correction (ASC) task. The question is, how valid are judgment data as measures of what a learner's grammar at a given point in time is capable of generating? The main disadvantage of this test is that sometimes participants correct the non target item. That is to say, a sentence like this (*\*Je veux acheter une voiture vert*)<sup>42</sup> is incorrect, as shown by the asterisk, because the adjective (*vert=green*) is masculine, and therefore, has no gender concord with the gender of the head noun (*voiture=car*) which is feminine. There is no guarantee that a participant will correct the gender concord on the adjective, (s)he may correct another property such as the tense of the sentence or the definiteness of the article (i.e. substitute the indefinite article with the definite) or any other features. This is why, it is best to make sentences as precise and direct as possible. Researchers using such a task should avoid the use of any complex sentences or any distracters that might prevent the participant from being able to notice the mistake. The primary reason for selecting a judgment task over an alternative in this study is that it is easier for beginners to complete; they do not have to produce a long sentence but rather to react towards the grammaticality of that sentence. Moreover, grammaticality judgment tasks seem to be the only suitable way to investigate whether a learner considers a particular utterance to be ungrammatical and how they react towards the grammatical sentences (i.e. they will accept or reject the grammatical ones).

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<sup>42</sup> *\*Je veux acheter une voiture vert*  
 I want to buy a (fem Indef sg) car (fem sg) green (masc sg)  
 (I want to buy a green car),

Production tasks, for instance, are not suitable because, a learner may not produce a correct utterance but this does not constitute evidence that (s)he considers it to be ungrammatical (Gass, and Selinker, 2008). This is why the use of such an acceptability sentence correction task will give an idea on how learners react towards grammatical and ungrammatical sentences. In the Verb raising property, for instance, the goal is not just to see whether participants produce sentences with the target S-V-Adv-O order, but also how they react towards the ungrammatical S-Adv-V-O word order. This is why, this test is believed to be an appropriate test for beginners that maps directly the different goals and research questions of this study.

In addition to the above two tests, two more tests are used. A picture description task which tests two properties only (Gender and Number concord) and a vocabulary task which is used to test gender assignment. Both tests are used in various L2/L3 studies (e.g. Jaensch, 2009a; White *et al.*, 2004, among others). In these two tests, it was practically very difficult to test properties like Definiteness and Verb raising. First, the vocabulary test can only be used to test gender assignment and, therefore, cannot be used to test other features. It was designed to identify whether learners have difficulties in gender assignment or gender concord. Second, the picture description task is a simple task that asks participants to describe a picture in terms of its colour to identify, whether learners have problems in gender assignment/concord and whether they have problems in number concord. Such a test does not require learners to have rich linguistic background. Vantages of test, learners should have a rich linguistic system to enable them produce certain expressions in context, which is practically difficult for the beginners of this study. This is why these two features were only tested in the multiple choice translation (MCT) test and the acceptability sentence correction (ASC) test.

Despite the few disadvantages of some of the tests constructed in the present study, the use of these experimental tasks together is believed to strengthen the credibility and reliability of this study. Data triangulation (i.e. the use of different tasks in one study) is very important to ensure the credibility of the findings attained, which in its turn would lead to the overgeneralisation of the results attained.

#### 2.4.4.1 Multiple Choice Translation Task (MCT)

##### *Goals of the Task*

The MCT test aims to elicit information about participants' acquisition of gender assignment and gender concord in the L3 French DP. This was mainly done via examining the choice(s) that participants would make between sentences in which gender assignment or gender concord is target-like and those in which it is not. There were three versions of this task: one in which the main sentence is in Spanish (undertaken by the Spanish group), one in Turkish (for the Turkish group) and one in English (undertaken by both groups). Using three versions of the same task was mainly to see whether participants would perform differently when the stimulus sentences are written in their L1 and L2. That might give us an idea on the effect of L1 or L2 in L3A. The sentences in the Spanish and Turkish translation tests were identical to guarantee that both groups were being assessed on the same sentences, but the sentences in the English test were not the same but were of the same type. Examples of a test item (examining the feature of gender) in the English version is illustrated below.

##### MCT (English version)<sup>43</sup>

14. *Every Sunday, they visit an ancient temple.*

- a. Chaque dimanche, ils visitent un temple ancien.
- b. Chaque dimanche, ils visitent une temple ancienne.

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<sup>43</sup> In the Spanish version of this test, the equivalent main sentence would be *Cada mañana abro la puerta verde del garaje* (=every day, I open the green door of the garage).  
In the Turkish version of this test, the equivalent main sentence would be *Hergün, ben garajın yeşil kapısını açarım* (=every day, I open the green door of the garage).

- c. Chaque dimanche, ils visitent un temple ancienne.
- d. Chaque dimanche, ils visitent une temple ancien.

### *Procedure*

In each version of this task, a total of 44 sentences were used, divided as follows: 12 sentences testing gender, 6 testing number concord, 12 testing definiteness and 6 testing verb raising and 8 sentences served as distracters. Our focus in this chapter will be on the property of gender only.

Under each of the tested sentences, there were four possible equivalent translations in French. Participants were told to read the sentences carefully and tick (✓) every sentence they found to be grammatically acceptable in French. Participants were also told that in some cases more than one sentence would be a possible translation whereas in others, only one sentence would be possible. As for the property of gender, only one possible answer is correct in each test item. Instructions were written in English at the beginning of each task but the researcher further clarified them verbally. Two illustrating examples were given at the beginning of the task to help participants better understand the requirements of the test. In total, there were four contexts depending on the types of gender (masculine vs. feminine) and definiteness (definite vs. indefinite), three sentences for each context. An example of each context is shown below:

- **A definite article + Noun + Adjective (all of them are singular feminine)**<sup>44</sup>

<i>la</i>	<i>couleur</i>	<i>grise</i>
the	colour	grey
Det (Def, masc sg)	N (masc sg)	Adj (masc sg)
<i>(=the grey colour)</i>		

- **A definite article + Noun + Adjective (all of them are singular masculine)**

<i>le</i>	<i>chapeau</i>	<i>noir</i>
a	hat	black
Det (Def, masc sg)	N (masc sg)	Adj (masc sg)

<sup>44</sup> As we are testing only cases of attributive adjectives in L3 French, we are only concerned with this order (Det+N+Adj) rather than (Det+Adj+N) but either order might be seen in the English, Spanish or Turkish sentences. It is also important to note that only singular nouns (and no plural nouns) are used in these sentences. Plural nouns are used in this test BUT to test another property which is number concord (further details can be found in chapter three of this thesis).

(=*the black hat*)

- **A indefinite article + Adjective+ noun (all of them are singular feminine)**

une	agence	française
a	agency	French
Det (Indef, masc sg)	N (fem sg)	Adj (fem sg)

(=*a French agency*)

- **A indefinite article + Adjective+ noun (all of them are singular masculine)**

<i>un</i>	instrument	délicat
the	instrument	delicat
Det (Indef, masc sg)	N (masc sg)	Adj (masc sg)

(=*a delicat instrument*)

Under each English sentence, there were four translated sentences in French, each displaying a different property:

- Correct option
- Problem in gender assignment
- No gender concord on Adj
- No gender concord on Det

Sentence (a) is the correct answer in which the Det and the Adj both agree with the gender of the head N. The second case tests *gender assignment*. The other two cases test gender concord i.e. whether participants are able to make the correct gender concord between the head N and (the Det and the Adj). Two options were given: one sentence in which the Det and N agree on gender but the Adj does not and a second sentence in which the head N and the Adj agree but the Det does not. An illustrative example of each case is provided below.

15. *Every Sunday, they visit an ancient temple.*

- Chaque dimanche, ils visitent un temple ancien.
- Chaque dimanche, ils visitent une temple ancienne.
- Chaque dimanche, ils visitent un temple ancienne.
- Chaque dimanche, ils visitent une temple ancien.

It is worth noting that all nouns used in this task refer to [-animate] objects; this was mainly based on the belief that the referents of [+animate] nouns are easier to identify than [-animate]

ones, especially if these words are the same in participants' L1. This is mainly the case of Spanish in which most [+animate] objects have the same gender as in French. Hence, in order to give equal chances to both groups, only nouns of [-animate] objects were used in this test and also in the rest of the other tests too. A copy of the MCT test English version, Spanish version and Turkish version can be found in Appendices, A.4, A.5, A.6, respectively.

#### Research Questions<sup>45</sup>

RQ<sup>1</sup>: Is there any evidence of L1 and/or L2 influence in the target-like performance of Spanish and Turkish participants?

RQ<sup>2</sup>: Is there any L2 proficiency effect on the performance of each L1 group?

RQ<sup>3</sup>: Are Spanish and Turkish participants more target-like in gender assignment or gender concord?

RQ<sup>4</sup>: Is there any difference across the two L1 groups in their treatment of gender in Masc DPs vs. Fem DPs. Is there a 'default' gender in which participants are often more target-like?

#### ➤ MCT task results (English Version)

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the MCT test showed a strong reliability coefficient.

Cronbach's alpha = .950 L3 learners & NS/ .823 for L3 learners only.

Reminder, the present study set 75% as an accuracy criterion rate for the acquisition of a given property.

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<sup>45</sup> These are the same research questions for the MCT task (in its three versions), the ASC task and the Picture description task. Specific research questions will be formulated for the Vocabulary task as it is only testing gender assignment.

Overall Results**Table 2.5** Mean percentage of Target-like performance by L1

Performance	L3 learners divided by L1		Native speakers (N=10)
	Spanish (N=22)	Turkish (N=16)	
*Target-like use	257/264 (97.34 %)	121/192 (63.02 %)	120/120 (100%)
*Non Target-like use	7/264 (2.65%)	71/192 (36.97%)	0/120 (0 %)

\* Target-like use means the correct choice i.e. the Det and Adj both agree with the head N on the correct gender of this noun.

\* Non Target-like use means the participant chose one of the three other (incorrect options)<sup>46</sup>

Table 2.5 shows that the Spanish group behaved in an almost native-like way in their treatment of gender (97%) unlike the Turkish group who behaved in a far less target-like manner (63%). The significance of this difference was tested using a one-way ANOVA [dependent variable= target-like use; independent group variable= Experimental groups divided by L1] which showed a significant effect for L1 group [ $F(2, 45) = 91.782, p=.0001$ ]. A post-hoc test using Bonferroni adjustments was carried out and showed a significant difference between the French and Turkish groups ( $p=.001$ ), also between the Spanish and Turkish groups ( $p=.0001$ ), but no significant difference between the Spanish group and the French control group ( $p=1.000$ ).

L1 influence/L2 influence

In order to test whether the performances of the Spanish and Turkish groups are influenced by L1 or L2, two comparisons are made. First, the performances of the L1s of the Spanish and Turkish groups are compared. Participants with lower L2 proficiency are supposed to be highly influenced by their L1. Second, in order to determine if there is any influence from L2, a comparison should be made between Turkish speakers and Spanish speakers who learnt L2 English to a higher proficiency level (Adv). Results of both comparisons are illustrated in tables 2.6 and 2.7, respectively.

<sup>46</sup> The three incorrect options are: (1) wrong gender assignment, (2) Wrong gender concord on Adjs and (3) Wrong gender concord on Dets (articles). Additionally, for the purpose of this study, if a participant ticked the correct option and also ticked one of these incorrect options, the answer is counted as wrong.

**Table 2.6** Target-like performance of LI sub-groups in each L1 group by gender type and definiteness

Prof level by language Property	LI Spanish (N=9)	LI Turkish (N=6)	French Natives (N=10)
Target-like use on gender concord on Adj in Def DPs	53/54 (98.14)	32/36 (88.88%)	60/60(100%)
Target-like use on gender concord on Adj in Indef DPs	54/54 (100%)	33/36 (91.66%)	60/60(100%)
Target-like use on gender concord on Det in Def DPs	54/54 (100%)	35/36 (97.22%)	60/60(100%)
Target-like use on gender concord on Det in Indef DPs	53/54 (98.14)	36/36 (100%)	60/60(100%)
Target-like use on gender assignment in Def DPs	54/54 (100%)	25/36 (69.44%)	60/60(100%)
Target-like use on gender assignment in Indef DPs	52/54(96.29%)	27/36 (75%)	60/60(100%)

As it can be seen from table 2.6, overall the LI Spanish participants were performing in a native-like way with over 96% of target-use in all types of gender. LI Turkish speakers, on the contrary, were less target-like. Besides, the latter seemed to find gender assignment more challenging than gender concord and in gender concord; concord on Adjs appears more challenging than on Dets. No difference was found across the two sub-groups in their treatment of gender in Def vs. Indef contexts.

In order to see whether such differences are statistically significant or not, a mixed factorial ANOVA was carried out (within-subjects variable 1 = gender type (target use of gender concord on Adj, target use of gender concord on Det and target use of gender assignment), within-subjects variable 2=definiteness context (target use of gender in Def contexts versus target use of gender in Indef contexts), and between-subjects factor = LI group).

Results showed a main significant effect of gender type (i.e. a significant difference between the three types of gender: gender concord on Adj, gender concord on Det and gender assignment),  $[F(2,26)=16.027, p=.001]$  and a significant interaction between gender type and L2 group,  $[F(2,26)=13.783, p=.001]$ , but no statistically significant main effect was found for definiteness, i.e. there is no significant difference between gender treatment in Def and Indef contexts,  $[F(1,13)=1.342, p=.268]$ . A significant interaction was found between definiteness and L2 groups  $[F(1,13)= 5.368, p=.037]$ , but no significant interaction was revealed between gender type

and definiteness [ $F(2,26)=.207, p=.814$ ] nor any significant interaction found between gender-definiteness-L2 proficiency group, [ $F(2,26)=.973, p=.391$ ]. However, there was a significant difference between the LI Spanish and LI Turkish groups [ $F(1,13)=150.176, p=.0001$ ].

Such statistical results indicate a significant difference between Turkish speakers and Spanish speakers when they effectively learn French without much intervening L2 knowledge. This difference could be attributed to a strong effect of L1 Spanish; Spanish is a [+gender] language whereas Turkish is a [-gender] language. These results will be compared with the results of the Adv sub-groups to come up with a conclusion as to which of the previously acquired languages (L1 or L2) might be the source of CLI in the acquisition of gender in L3 French.

**Table 2.7** Target-like performance of Adv sub-groups in each L1 group by gender type and definiteness

Prof level by language Property	Adv Spanish (N=13)	Adv Turkish (N=10)	French Natives (N=10)
Target-like use on gender concord on Adj in Def DPs	78/78 (100%)	57/60 (95%)	60/60 (100%)
Target-like use on gender concord on Adj in Indef DPs	77/78(98.71%)	56/60 (93.33%)	60/60 (100%)
Target-like use on gender concord on Det in Def DPs	78/78 (100%)	59/60 (98.33%)	60/60 (100%)
Target-like use on gender concord on Det in Indef DPs	78/78 (100%)	59/60 (98.33%)	60/60 (100%)
Target-like use on gender assignment in Def DPs	76/78(97.43%)	45/60 (75%)	60/60 (100%)
Target-like use on gender assignment in Indef DPs	78/78 (100%)	41/60 (68.33%)	60/60 (100%)

The results of table 2.7 show that the Adv Spanish group was more target-like than the Adv Turkish group in almost all the properties. The Adv Spanish sub-group was native like with over 97% of target-use on all types of gender whereas Turkish Adv speakers were clearly less target-like than their Spanish counterparts, especially regarding gender assignment. Descriptive results showed that the Adv Turkish sub-group was slightly less target-like, particularly in gender assignment and gender concord on Adjs. Finally, no difference was found across the two sub-groups in their treatment of gender in Def vs. Indef contexts.

These differences were tested statistically using a mixed factorial ANOVA (within-subjects variable 1 = gender type (target use of gender concord on Adj, target use of gender concord on Det and target use of gender assignment), within-subjects variable 2=definiteness context (target use of gender in Def contexts versus target use of gender in Indef contexts), and between-subjects factor = Adv groups). Results showed a main effect of gender type,  $[F(2,42)= 39.660, p=.0001]$ . Results also showed a significant interaction between gender type and L2 groups,  $[F(2,42)=33.588, p=.0001]$ . No statistically significant main effect was found for definiteness,  $[F(1,21)=.448, p=.511]$  and no significant interaction was found between definiteness and L2 groups  $[F(1,21)=.833, p=.372]$ . No significant interaction was found between gender types and definiteness  $[F(2,42)=.095, p=.909]$  and similarly no significant three-way interaction between gender-definiteness-L2 proficiency group was found,  $F(2,42)=.581, p=.564, p>.05$ . Finally, a between subject comparison showed a significant difference between the Adv Spanish and Adv Turkish groups  $[F(1,21)=48.640, p=.0001]$ .

The statistical results of the Adv sub-groups indicate a significant difference between Turkish and Spanish speakers when they effectively learn French with a lot of intervening L2 knowledge. As the Adv Spanish group outperformed the Adv Turkish group, this suggests that the L2 did not play a role in their treatment of gender, otherwise both groups would be non target-like, for English is a [-gender] language. Accordingly, comparisons between the LI of each L1 group and between the Adv sub-groups within each L1 revealed that L2 English was not the source of influence nor L1 was the main source of influence. It was rather the typological similarity between Spanish and French that made the Spanish group at advantage compared to the Spanish group.

L2 proficiency

As shown from the descriptive results in tables 2.6 and 2.7, L2 proficiency does not seem to be a significant factor for there is no difference between LIs and Adv of each L1 group. An independent samples t-test was carried out for the above data and results showed no significant difference between the LIs and Adv of each L1 group ( $p>.05$ ). Participants with higher L2 proficiency did not outperform those of lower L2 proficiency, implying therefore that L2 proficiency could not be a significant factor in this test<sup>47</sup>.

Default Gender: Masc vs. Fem**Table 2.8** Mean percentage of Target-like performance by target gender and L1

Gender	L3 learners divided by L1	
	Spanish (N=22)	Turkish (N=16)
Feminine	128/132 (96.96 %)	52/96 (54.16 %)
Masculine	129/132 (97.92%)	69/96 (70.83%)

Table 2.8 shows the extent of target-like performance by the L2 groups in gender assignment and gender concord in feminine versus masculine DP contexts. Paired samples t-tests showed a significant difference in the performance of the Turkish group [ $t= -3.597$ ,  $df=15$ ,  $p=.003$ ], but no significant difference was found for the Spanish group [ $t= -.439$ ,  $df=21$ ,  $p=.665$ ]. This suggests that the Turkish group might be treating masculine as the ‘default’ gender which is not the case of the Spanish group.

<sup>47</sup> Results of the Spanish group were as follows: Target-like use on gender concord on Adj in Def DPs,  $p=.238$ ; Target-like use on gender concord on Adj in Indef DPs,  $p=.419$ ; Target-like use on gender concord on Det in Indef DPs,  $p=.238$ ; Target-like use on gender assignment in Def DPs,  $p=.237$ ; Target-like use on gender assignment in Indef DPs,  $p=.081$ .

Results of the Turkish group were as follows: Target-like use on gender concord on Adj in Def DPs,  $p=.174$ ; Target-like use on gender concord on Adj in Indef DPs,  $p=.770$ ; Target-like use on gender concord on Det in Def DPs,  $p=.719$ ; Target-like use on gender concord on Det in Indef DPs,  $p=.458$ ; Target-like use on gender assignment in Def DPs,  $p=.609$ ; Target-like use on gender assignment in Indef DPs,  $p=.510$ .

➤ **MCT task results (Spanish version)**

*Overall Results by L2 proficiency*

This task was undertaken by Spanish participants only, so only results of this group are analysed in this section.

**Table 2.9** Mean percentage of Target-like performance by L2 proficiency

Performance	L1 Spanish group divided by L2 proficiency	
	Advanced (N=13)	Low-Intermediate (N=9)
Target-like use	153/156 (98.07 %)	105/108 (97.22%)
Non Target-like use	3/156 (1.92 %)	3/108 (2.77%)

Table 2.9 reveals that both the Adv and LIs of the Spanish group were almost native-like in their treatment of gender in L3 French. Such descriptive figures reveal no difference between Spanish learners with a higher proficiency level and those with a lower L2 proficiency level. A one-way ANOVA is carried out to see if there is any statistical difference between these two sub-groups [dependent variable= target-like use of gender; independent group variable= L2 proficiency groups in L1 Spanish] and results showed no significant effect for L2 proficiency level [ $F(1, 20) = .260, p=.616$ ]. In light of both the descriptive and statistical results, it could be claimed that L2 English did not have a strong role in Spanish participants' treatment of gender in L3 French. In order to further test the effect of L1 and L2 in the performance of Spanish speakers, the target-like performance is further split according to two contexts: gender types (gender concord on Adj, gender concord on Det and gender assignment) and definiteness (Def vs. Indef contexts), as shown in table 2.10.

*L1 influence/L2 influence*

**Table 2.10** Mean percentage of Target-like performance by target gender and Definiteness among L2 proficiency groups in L1 Spanish

L2 prof groups	Adv (N=13)	LI (N=9)
Types of gender		
Gender concord on Adj in Def DP	77/78 (98.71%)	54/54 (100 %)
Gender concord on Adj in Indef DP	78/78 (100%)	54/54 (100 %)
Gender concord on Det in Def DP	77/78 (98.71%)	54/54 (100 %)
Gender concord on Det in Indef DP	78/78 (100%)	53/54 (98.14 %)
Gender assignment in Def DP	78/78 (100%)	54/54 (100 %)
Gender assignment in Indef DP	77/78 (98.71%)	52/54 (96.29%)

Table 2.10 shows no difference between the Adv and LI Spanish speakers in their treatment of gender assignment and gender concord, nor was there any difference between their treatment of gender in Def and Indef contexts. Both sub-groups were native-like. These results are verified statistically using a mixed factorial repeated measures ANOVA [Within subjects variable 1= gender types (target use of Gender concord on Adj, target use of gender concord on Det and target use of Gender assignment), Within subjects variable 2= definiteness contexts (target use of gender in Def contexts versus target use of gender in Indef contexts), and between subjects factor= L2 proficiency groups in L1 Spanish]. Results showed no main effect of gender type (concord vs. assignment) [ $F(2,40)=.695, p=.505$ ]. No significant interaction between gender type and L2 proficiency group [ $F(2,40)=.695, p=.505$ ] and no significant main effect of definiteness (Def context vs. Indef context) [ $F(1,20)= 1.420, p=.247$ ]. Results also showed no significant interaction between definiteness and L2 proficiency group, [ $F(2,40)=3.636, p=.071$ ], no significant interaction was found between gender type and definiteness [ $F(1,20)=2.223, p=.122$ ] and no significant three-way interaction between gender type, definiteness and L2 proficiency group was found [ $F(2, 40) = .187, p=.830$ ]. A between-subjects comparison also showed no significant difference between the Adv and LI sub-groups [ $F(1,20)= .260, p=.616$ ].

Thus, both Spanish sub-groups seem to treat all types of gender (gender assignment vs. gender concord) in a similar target-like manner. An independent samples t-test was carried out to compare the performance of both sub-groups across all the gender types. Results showed no significant effect of L2 proficiency, ( $p>.05$ )<sup>48</sup>.

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<sup>48</sup> Results were as follows: Target-like use on gender concord on Adj in Def DPs,  $p=.419$ ; Target-like use on gender concord on Det in Def DPs,  $p=.419$ ; Target-like use on gender concord on Det in Indef DPs,  $p=.238$ ; Target-like use on gender assignment in Indef DPs,  $p=.353$ .

*Default Gender: Masc vs. Fem***Table 2.11** Mean percentage of Target-like performance by target gender and L1

Gender	Spanish (N=22)
Feminine	128/132 (96.96 %)
Masculine	130/132 (98.48%)

According to table 2.11, Spanish participants seem to treat Masc DPs and Fem DPs in a similar target-like manner. These descriptive results are further supported by statistical results using a paired samples t-test and results showed no significant difference between the treatment of gender in Masc DPs and Fem and DPs [ $t = -.810$ ,  $df=21$ ,  $p = .427$ ].

➤ **MCT task results (Turkish version)**

This task was undertaken by Turkish participants only, so only results of this group are reported and analysed in this section.

*Overall Results by L2 proficiency***Table 2.12** Mean percentage of Target-like performance by L2 proficiency

Performance	L1 Turkish group divided by L2 proficiency	
	Advanced (N=10)	Low-Intermediate (N=6)
Target-like use	62/120 (51.66 %)	35/72 (48.61%)
Non Target-like use	58/120 (48.33%)	37/72 (51.38%)

As table 2.12 shows, the Adv and LI Turkish sub-groups behaved in a similar non-target-like manner, scoring respectively 51.66 % and 48.61%. Such descriptive figures reveal no big difference between Turkish learners with a higher proficiency level and those with a lower L2 proficiency level. A one-way ANOVA [dependent variable=target-like use of gender; independent group variable = L2 proficiency groups in L1 Turkish] showed no significant effect of L2 proficiency level [ $F(1, 14) = .248$ ,  $p = .626$ ]. In light of both the descriptive and statistical results, it could be claimed that L2 English proficiency did not seem to have a strong role in the acquisition of gender in L3 French in this test. In order to further test the effect of L1 and L2 in the performance of Turkish speakers, the target-like performance is further split according to two

contexts: gender types (gender concord on Adj, gender concord on Det and gender assignment) and definiteness (Def vs. Indef contexts), as shown in table 2.13.

L1 influence/L2 influence

**Table 2.13** Mean percentage of Target-like performance by target gender and definiteness among L2 proficiency groups in L1 Turkish

L2 prof groups	Adv (N=10)	LI (N=6)
Types of gender		
Gender concord on Adj in Def DP	57/60 (95%)	35/36 (97.22%)
Gender concord on Adj in Indef DP	56/60 (93.33%)	33/36 (91.66%)
Gender concord on Det in Def DP	58/60 (100%)	35/36 (97.22%)
Gender concord on Det in Indef DP	60/60 (96.66%)	35/36 (97.22%)
Gender assignment in Def DP	38/60 (63.33%)	22/36 (61.11%)
Gender assignment in Indef DP	33/60 (55%)	19/36 (52.77%)

According to the percentages displayed above, both the Adv and LI Turkish subjects are performing in a similar way; they seem to be more target-like in gender concord on (Adj and Det) than in gender assignment. There seems also to be no effect of definiteness in their treatment of gender. To verify these results, a mixed factorial repeated measures ANOVA was carried out (within-subjects variable 1=gender types (target use of gender concord on Adj, target use of gender concord on Det and target use of gender assignment), within-subjects variable 2 = definiteness contexts (target use of gender in Def contexts versus target use of gender in Indef contexts), and between-subjects factor =L2 proficiency groups in L1 Turkish). Results showed a main effect of gender type (concord vs. assignment) [ $F(2,28)=79.930, p=.0001$ ], but no significant interaction between gender type and L2 proficiency group [ $F(2,28)=.065, p=.937$ ] and no significant main effect of definiteness (Def context vs. Indef context) was found [ $F(1,14)=2.557, p=.132$ ]. Results also showed no significant interaction between definiteness and L2 proficiency group [ $F(1,14)=.316, p=.583$ ], no significant interaction was found between gender type and definiteness [ $F(2,28)=1.380, p=.268$ ] and no significant three-way interaction between gender type, definiteness and L2 proficiency group [ $F(2,28)=.061, p=.941$ ]. A between-subjects

comparison showed no significant difference between the Adv and LI sub-groups [ $F(1,14)=.248$ ,  $p=.626$ ] indicating that L2 proficiency is not a significant factor.

Both Turkish sub-groups treated all types of gender (gender assignment vs. concord) in a similar non target-like manner. An independent samples t-test was carried out to compare the performance of both sub-groups across all the gender types. Results showed no significant effect of L2 proficiency, ( $p>.05$ )<sup>49</sup>.

*Default Gender Masc vs. Fem*

**Table 2.14** Mean percentage of Target-like performance by target gender and L1

Gender	Turkish (N=16)
Feminine	40/96 (41.66 %)
Masculine	63/96 (65.62%)

According to table 2.14, Turkish participants' treatment of gender seems to be more target-like in Masc DPs (65.62%) than in Fem DPs (41.66%). These descriptive results are further supported by using a paired samples t-test which showed a significant difference between the treatment of gender in Masc DPs and Fem DPs [ $t= -3.524$ ,  $df=15$ ,  $p=.003$ ]. This seems to indicate that Turkish participants might be treating masculine as the 'default gender'. These results were similar to those of the English version of this same test.

*Summary of MCT task results*

Results of the three versions of the MCT task were nearly similar. They revealed that the Spanish participants outperformed the Turkish ones, mainly in gender assignment. Additionally, the role of previously acquired languages was tested, in the three versions, via comparing learners with

<sup>49</sup> Target-like use on gender concord on Adj in Def DPs,  $p=.582$ ; Target-like use on gender concord on Adj in Indef DPs,  $p=.719$ ; Target-like use on gender concord on Adj in Indef DPs,  $p=.879$ ; Target-like use on gender concord on Det in Indef DPs,  $p=.207$ ; Target-like use on gender assignment in Def DPs,  $p=.836$ ; Target-like use on gender assignment in Indef DPs,  $p=.774$ .

lower L2 proficiency within each L1 group (to test L1 influence) and then via comparing learners with higher L2 proficiency (to test L2 influence). In both comparisons, the Spanish subgroups outperformed the Turkish ones, whereby the latter behaved below the 75% accuracy criterion set by this study.

Such results were taken as non supportive of the ‘L2 Status factor’. Moreover, although at a surface level, these results seem to be indicative of L1 influence, a deeper examination of certain cross-linguistic details between the four languages in question reveal that such results are not due to CLI from L1 nor L2 but rather due to whether participants are exposed to a language that is typologically proximate to the L3 or not. Given that gender is an inherent feature in L1 Spanish syntax but is absent in both L1 Turkish and also L2 English (a common L2 for both L1 groups), that explains why Spanish participants (LIs and Adv) outperformed their Turkish counterparts.

There was an interest in this test to explore whether Spanish and Turkish participants are more target-like in gender assignment or gender concord. Overall, results of the Spanish group showed that they treated both types in a similar target-like manner. However, Turkish participants were less target-like in gender assignment than gender concord. Participants were further tested on their performance on gender concord (on Dets and Adjs). While the Spanish group treated both types in a native-like manner, Turkish speakers were less accurate in assigning the correct gender concord to Adjs than to Dets.

Another comparison was made between the treatment of gender in Masc DPs vs. Fem DPs. Results showed no significant difference for the Spanish group, for they were treating both types in a similar way close to ceiling, with no evidence of a ‘default gender’. Turkish participants,

nonetheless, treated gender in Masc DPs in a more target-like than in Fem DPs. This was taken as a possible indication of masculine being the ‘default gender’ for the Turkish subjects.

Finally, there was no statistically significant main effect of definiteness in the performance of either group as there was no significant difference between their treatment of gender in Def and Indef contexts. Discussion of all these findings in relation to current L2 and L3 studies is provided in chapter seven (discussion and conclusion).

#### 2.4.4.2 Acceptability Sentence Correction (ASC) Task

##### *Goals of the Task*

The ASC task was run after the MCT test and the OEPT. The aim of this test was to elicit information about participants’ knowledge of gender assignment and gender concord in the L3 French DP. It is a semi-productive task which requires participants to identify whether a sentence is acceptable or not and if a sentence is perceived as incorrect, they should correct it.

##### *Procedure*

The same participants who sat for the previous tasks undertook this task too. A total of 16 sentences testing gender concord and 12 distracters were used in this test<sup>50</sup>. Participants were told that some sentences were grammatically accepted in French while some others were not. They should write acceptable under the acceptable ones and correct the unacceptable sentences. Two completed illustrative examples were given at the beginning of the task. Instructions were written in English and were simple and clear but the researcher further clarified them verbally. There was no time limit to complete the task. However, participants were told not to think too

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<sup>50</sup> Similar to the MCT task, the ASC task also tests four properties (i.e. Gender/Number concord/Definiteness/Verb Raising), only results of gender will be reported in this section.

long and to guess in case of doubt. There were four contexts tested in this task, two contexts testing gender type (Masc DP vs. Fem DP) and two contexts testing definiteness (Def vs. Indef), as shown in table 2.15 below.

**Table 2.15** Number of tokens divided by types of gender and definiteness in the ASC test

Property: Gender type	Number of tokens per type
Def Art - N- Adj (Feminine singular)	(N=4)
Def Art - N- Adj (Masculine singular)	(N=4)
Indef Art - N -Adj (Feminine singular).	(N=4)
Indef Art- N-Adj (Masculine singular).	(N=4)
	Total=16

For each context there are four sentences, each dealing with one case:

- a. Correct option
- b. Problem in gender assignment
- c. No gender concord on Adj
- d. No gender concord on Det

Participants are supposed to correct sentences with cases (b, c and d) but should write acceptable under sentences with case (a). Participants are told that they should correct the sentences they find grammatically incorrect otherwise, their answers will be counted wrong. It is worth pointing out that if a participant considers a sentence with wrong gender assignment but correct gender concord on both Dets and Adjs to be acceptable in French, that answer will be counted as wrong because it contains wrong gender assignment but at the same time, gender concord will be counted as correct. That is to say, the participant will be considered to have a problem in gender assignment but not in gender concord. An example of such sentences is (*la pantalon grise= the grey trousers*). The word ‘pantalon’ masculine but both the article and the adjective are assigned feminine inflection which shows that the participant has a problem with gender assignment but not gender concord. A copy of the ASC test is in appendix A.7.

*Results of the ASC task*

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the ASC test showed a strong reliability coefficient.

Cronbach's alpha = .913 L3 learners & NS/ .798 for L3 learners only.

Overall Results**Table 2.16** Mean percentage of Target-like performance by L1

Performance	L3 learners divided by L1		Native speakers (N=10)
	Spanish (N=22)	Turkish (N=16)	
Target-like use	340/352 (96.59 %)	144/256 (56.25%)	159/160 (99.37%)
Non Target-like use	12/352 (3.40%)	112/256 (43.75%)	1/160 (0.62%)

The data in table 2.16 reveal that the Spanish group performed in a near native-like trend unlike the Turkish participants who were far less target-like. These differences were compared using a One-way ANOVA [dependent variable=target-like use; independent group variable= Experimental groups divided by L1]. Results showed a significant effect of L1 group [ $F(2, 45)=207.832, p=.0001$ ]. These results were further adjusted using a post hoc Bonferroni test and results revealed a significant difference between the French control group and Turkish participants ( $p=.0001$ ), between the Spanish and Turkish groups ( $p=.0001$ ), but no significant difference between the control group and the Spanish group ( $p=.826$ ).

L1 influence/L2 influence

In order to test the influence of L1 and L2 in the treatment of gender of both L1 groups, the experimental groups were divided by their L2 proficiency into two sub-groups each. Those who had a LI proficiency level in L2 were predicted to be strongly affected by their L1 while those with advanced L2 proficiency should be highly affected by their L2, to test L1 influence and/or L2 influence, respectively. Results are displayed in table 2.17 below.

**Table 2.17** Mean percentage of Target-like performance by gender type and definiteness by L2 proficiency within L1 groups

Prof level by language Property	Spanish		Turkish		French Natives (N=10)
	Adv (N=13)	LI (N=9)	Adv (N=10)	LI (N=6)	
Target-like use on gender concord on Adj in Def DPs	25/26 (96.15%)	18/18 (100%)	14/20 (70%)	7/12 (58.33%)	20/20 (100%)
Target-like use on gender concord on Adj in Indef DPs	25/26 (96.15%)	18/18 (100%)	12/20 (60%)	6/12 (50%)	19/20 (95%)
Target-like use on gender concord on Det in Def DPs	25/26 (96.15%)	18/18 (100%)	15/20 (75%)	7/12 (58.33%)	20/20 (100%)
Target-like use on gender concord on Det in Indef DPs	25/26 (96.15%)	17/18(94.44 %)	15/20 (75%)	6/12 (50%)	20/20 (100%)
Target-like use on gender assignment in Def DPs	25/26 (96.15%)	16/18 (88.88%)	7/20 (35%)	4/12 (33.33%)	20/20 (100%)
Target-like use on gender assignment in Indef DPs	24/26 (92.30%)	17/18 (94.44%)	5/20 (25%)	5/12 (41.66%)	20/20 (100%)

Overall, LI Spanish participants were almost native-like with more than 92% of target-like use in all types of gender. LI Turkish speakers, on the contrary, were less target-like as they scored less than 60% of target-like use in all the types. The percentages in the table above also show that while no difference was found between the three types of gender across the Def and Indef contexts in the Spanish speakers' performance, LI Turkish behaved in a least target-like manner in gender assignment. Furthermore, they were less target-like in gender concord on Adjs than on Dets. Besides, there seems no difference between the treatment of gender in Def and Indef contexts in the performance of both sub-groups.

To investigate further, a mixed factorial repeated measures ANOVA was carried out (within-subjects variable 1=gender type (target use of gender concord on Adj, target use of gender concord on Det and target use of gender assignment), within-subject variable 2=definiteness context (target use of gender in Def contexts versus target use of gender in Indef contexts), and between-subjects factor=LI groups). Results showed no significant effect of gender type,  $[F(2,26)=1.957, p=.162]$ , no significant interaction between gender type and L2 groups,  $[F(2,26)=1.348, p=.709]$ , no significant effect of definiteness,  $[F(1,13)=.269, p=.613]$ , i.e. there

is no significant difference between gender treatment in Def and Indef contexts across the two LI groups. There was also no significant interaction between definiteness and L2 groups [ $F(1,13)=.269$ ,  $p=.613$ ], no significant interaction between gender type and definiteness [ $F(2,26)=.758$ ,  $p=.497$ ], and similarly no significant three-way interaction between gender-definiteness-L2 group, [ $F(2,26)=.081$ ,  $p=.898$ ]. However, a between-subject comparison showed a highly significant difference between the LI Spanish and LI Turkish groups [ $F(1,13)=138.610$ ,  $p=.0001$ ].

In order to test the role of the L2 in L3 acquisition, two sub-groups of Adv learners were compared (Spanish Adv vs. Turkish Adv). According to table 2.17, the Spanish Adv participants behaved in almost native-like manner in the three types tested with a target-use exceeding 90% (except for gender assignment in Indef contexts, 88% of target-use). Turkish Adv speakers, nevertheless, were clearly far less target-like; as they scored less than 65% in almost all types. Besides, while no difference was found between the three types of gender in the Spanish speakers' performance, Adv Turkish subjects were more target-like in gender concord than in gender assignment, but within gender concord, they were least target-like in gender concord on Adjs than on Dets. Both sub-groups showed no difference between their treatments of gender in Def and Indef contexts.

A second mixed factor ANOVA was carried out and results showed a significant effect of gender type, [ $F(2,42)=10.834$ ,  $p=.003$ ], a significant interaction between gender type and L2 group, [ $F(2,42)=9.015$ ,  $p=.001$ ]. However, there was no statistically significant main effect definiteness, [ $F(1,21)=1.266$ ,  $p=.273$ ], no significant interaction between definiteness and L2 groups [ $F(1,21)=.581$ ,  $p=.454$ ], and no significant interaction between gender types and definiteness [ $F(2,42)=.180$ ,  $p=.836$ ], and no significant three-way interaction between gender-

definiteness-L2 group,  $[F(2,42)=.089, p=.915]$ . However, a between-subjects comparison, showed a highly significant difference between the Adv Spanish and Adv Turkish sub-groups  $[F(1,21)= 103.873, p=.0001]$ .

These statistical results indicate a highly significant difference between the Adv Spanish speakers' treatment of gender and their counterparts Adv Turkish speakers. This indicates that the L2 does not seem to play any significant role in the performance of either group. Spanish participants have effectively learnt gender in L3 French despite their higher proficiency in L2 English, a language in which the feature of gender is totally absent. Add to this, given that the Spanish LIs also outperformed the Turkish LIs, that implies that L2 English does not play strong role on the performance of both groups. The Spanish group (both Adv and LIs) seem to have benefited from the typological similarity between their L1 Spanish and L3 French (particularly regarding gender) whereas the Turkish group failed to be native like because their L1 Turkish and L2 are both [-gender] languages.

### L2 proficiency

As shown from the descriptive results in table 2.17, L2 proficiency does not seem to be a significant factor as there is no difference between LIs and Adv of each L1 group. Paired samples t-test was carried out for the above data and results showed no significant difference between the LIs and Adv of each L1 group ( $p>.05$ )<sup>51</sup>.

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<sup>51</sup> Results of the Spanish group were as follows: Target-like use on gender concord on Adj in Def DPs,  $p=.419$ ; Target-like use on gender concord on Adj in Indef DPs,  $p=.419$ ; Target-like use on gender concord on Det in Def DPs,  $p=.419$ ; Target-like use on gender concord on Det in Indef DPs,  $p=.796$ ; Target-like use on gender assignment in Def DPs,  $p=.353$ ; Target-like use on gender assignment in Indef DPs,  $p=.787$ .  
Results of the Turkish group were as follows: Target-like use on gender concord on Adj in Def DPs,  $p=.472$ ; Target-like use on gender concord on Adj in Indef DPs,  $p=.607$ ; Target-like use on gender concord on Det in Def DPs,  $p=.388$ ; Target-like use on gender concord on Det in Indef DPs,  $p=.110$ ; Target-like use on gender assignment in Def DPs,  $p=.919$ ; Target-like use on gender assignment in Indef DPs,  $p=.388$ .

*Default gender: Masc vs. Fem***Table 2.18** Mean percentage of Target-like performance by target gender and L1

Gender	L3 learners divided by L1	
	Spanish (N=22)	Turkish (N=16)
Feminine	169/176 (96.02%)	62/128 (48.43%)
Masculine	171/176 (97.15%)	82/128 (64.06%)

The percentages displayed in table 2.18 reveal that the Spanish group treated gender in both masculine DPs and feminine DPs in a similar near native-like manner with more than 96% of target-use in both types. This is not the case for Turkish participants who appeared more target-like in masculine DPs than in feminine DPs. These differences were tested statistically using a paired samples t-test for each L1 group. Results showed no significant difference for the Spanish group [ $t = -.624$ ,  $df=21$ ,  $p=.540$ ], but there was a significant difference for the Turkish group [ $t = -3.371$ ,  $df=15$ ,  $p=.004$ ]. Turkish participants seem to treat masculine as the ‘default’ gender, the same result was also found in the previous tests.

*Summary of ASC task results*

Results of the ASC task were similar to those of the MCT task i.e. the Spanish group outperformed the Turkish group, with the former treating gender (in L3 French) in a near native-like pattern, while the latter behaved in a far less target-like trend. A division of the two L1 groups into two sub-groups by their L2 proficiency (Adv and LI) and a comparison between each sub-group revealed no main effect for L2. The LIs of the Spanish group outperformed the LIs of the Turkish group, and similarly Adv Spanish participants outperformed Adv Turkish participants. Such results presumably indicate that due to the typological similarity between Spanish and French, the Spanish participants, regardless of their L2 proficiency, outperformed the Turkish ones.

Results of the Spanish group revealed no significant differences between gender assignment and gender concord (both on Dets and Adjs). Results of the Turkish participants, however, showed that they performed better in gender concord than gender assignment, and similar to the MCT results, the Turkish subjects seem to find assigning the correct gender concord to Adjs more challenging than to Dets.

Furthermore, the comparison made concerning the treatment of gender in Masc DPs vs. Fem DPs showed no significant difference for the Spanish group, but Turkish speakers were more target-like in Masc DPs than in Fem DPs, which could be indicative of Masc being the ‘default gender’ in the Turkish subjects’ L3 grammar.

Finally, there was no significant difference across the two groups between gender in Def and Indef contexts. Detailed discussion of all these findings in relation to current L2 and L3 studies is provided in chapter seven.

#### 2.4.4.3 *Oral Picture description task (Part One)*

##### *Goals of the Task*

The aim of this test was to elicit the oral production of DPs which contained a Det+N+Adj, in which the Det and Adj should agree with the gender of the head N. The test consisted of a set of pictures (one object in each picture) and participants had to describe it orally in terms of its colour. The goal is to assess participants’ knowledge of gender assignment and gender concord in French DPs<sup>52</sup>.

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<sup>52</sup> It is worth noting, this task consisted of a second part (a written part) testing participants’ knowledge of number concord. However, only data of the oral part will be reported here. More details on this second part are presented in chapter three.

### *Procedure*

The same participants who took part in the previous experimental tasks (MCT and ASC tasks) also sat for this test. 24 pictures were used in this task, divided as follows: 10 pictures containing objects (of masculine nouns) and 10 pictures containing objects (of feminine nouns). Four extra pictures were used as distracters and not counted in this test. Generally, these distracters are pictures where the DPs consist of Adjs that do not change their endings with the change of the gender of the head N (e.g. *un sac marron* =a brown handbag or *une veste mauve*=a purple blouse).

This task was computer-based. Participants were told that their answers would be recorded for data collection only and for no other purposes. They were told to briefly describe each picture orally in one sentence in terms of its colour. The instructions were stated clearly in English, but the researcher also explained them through an illustrative example. All pictures used were of [-animate] objects, and were also of a medium size and coloured. Each participant was given about three minutes for each picture and was told to guess in case (s)he did not know the answer. Data were then recorded and transcribed. A copy of this task (part one) is provided in Appendix A.8.

### *Results of the Oral Picture Description Task*

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the Oral Picture Description test showed a strong reliability coefficient. Cronbach's alpha = .978 L3 learners & NS/ .851 for L3 learners only.

### *Overall Results*

**Table 2.19** Mean percentage of Target-like performance by L1

Performance	L3 learners divided by L1		Native speakers (N=10)
	Spanish (N=22)	Turkish (N=16)	
Target-like selection	426/440 (96.81%)	147/320 (45.93%)	200/200 (100%)
Non Target-like selection	14/440 (3.18%)	173/320 (54.06%)	0/200 (0 %)

According to table 2.19, the Spanish group was more target-like than the Turkish group. The former behaved in a near native-like way with a percentage of 96.81% of target-like use unlike the Turkish participants who were far less target like, scoring just 45.93% of correct use. To test these differences statistically, a one-way ANOVA [dependent variable= target-like use; independent group variable= Experimental groups divided by L1] was conducted on the aggregated data and showed a significant effect for L1 group [ $F(2, 45)=1100.644, p=.0001$ ]. A post-hoc test using Bonferroni adjustments was carried out and showed a significant difference between the French and Turkish groups ( $p=.0001$ ) and also between the Spanish and Turkish groups ( $p=.0001$ ), but no significant difference between the Spanish group and the French control group ( $p=.077$ ). Given that some participants were describing pictures using Def articles while others used Indef articles, definiteness was not a tested variable in this test.

### L1 influence/L2 influence

In order to test whether there is L1 or L2 influence on the performance of both L1 groups; participants are divided by their L2 proficiency into two sub-groups each. Those who have a LI proficiency level in L2 are predicted to be strongly affected by their L1 while those who are advanced in L2 should be highly affected by their L2. Results are displayed in table 2.20 below.

**Table 2.20** Mean percentage of target-like performance by gender type and L2 proficiency groups within L1 groups

Group performance	L3 learners divided by L1				French Natives (N=10)
	L1 Spanish		L1 Turkish		
	Adv (N=13)	LI (N=9)	Adv (N=10)	LI (N=6)	
Gender assignment	257/260 (98.84%)	175/180 (97.22%)	128/200 (64%)	76/120 (63.33%)	200/200 (100%)
Gender concord on Dets	259/260 (99.61%)	180/180 (100%)	196/200 (98%)	118/120 (98.33%)	200/200 (100%)
Gender concord on Adjs	257/260 (98.84%)	178/180 (98.88%)	171/200 (85.5%)	98/120 (81.66%)	200/200 (100%)

According to the data displayed above, the LI Spanish subjects were more target-like than the LI Turkish ones and similarly the Adv Spanish participants outperformed the Turkish ones, especially with regard to gender assignment. Besides, while both Spanish sub-groups treated all gender types in a similar native-like manner, the Turkish LIs and Adv were least target-like in gender assignment than gender concord. Additionally, the Turkish subjects seem to be less target-like in gender concord on Adjs than on Dets.

A mixed factor repeated measures ANOVA was used to compare the findings (within-subjects variable 1 = gender type (target use of gender concord on Adj, target use of gender concord on Det and target use of gender assignment), within-subject variable = and between-subjects factor = LI groups). Results showed a significant effect of gender type,  $[F(2,26)=110.088, p=.0001]$ , a significant interaction between gender type and L2 group,  $[F(2,26)=80.029, p=.0001]$ , and a between-subjects comparison also showed a highly significant difference between the Adv Spanish and Adv Turkish groups  $[F(1,13)= 478.878, p=.0001]$ .

A second mixed factor ANOVA was carried out (within-subjects variable 1 = gender type (target use of gender concord on Adj, target use of gender concord on Det and target use of gender assignment), within-subject variable=and between-subjects factor =Adv groups). Results showed a significant effect of gender type,  $[F(2,42)=152.303, p=.0001]$ , a significant interaction between gender type and L2 group,  $[F(2,42)=140.506, p=.0001]$  and a between-subjects comparison showed a highly significant difference between the Adv Spanish and Adv Turkish groups  $[F(1,21)=1210.432, p=.0001]$ .

These results show that both Spanish sub-groups outperformed the Turkish ones. This might be because both Spanish sub-groups were highly influenced by L1 Spanish, a language in which

gender is present in its grammar unlike Turkish and English which are [-gender] languages. Thus, given that both LIs and Adv sub-groups within each L1 group behaved in a similar manner, L2 English does not seem to have a main effect on the performance of each L1 group.

### L2 proficiency

An independent samples t-test was carried out to compare between the Adv and LIs of each L1 group and results revealed no significant difference between the Spanish sub-groups nor any significant difference was there between the Turkish sub-groups, ( $p > .05$ ), implying that L2 proficiency does not seem to be a significant factor in this test<sup>53</sup>.

### Default gender: Masc vs. Fem

**Table 2.21** Mean percentage of Target-like performance by target gender within L1 groups

Target Gender	L1 groups		
	Spanish (N=22)	Turkish (N=16)	French Natives (N=10)
Feminine	212/220(96.36%)	67/160 (40.11%)	100/100 (100%)
Masculine	214/220 (97.27%)	80/160 (50%)	100/100 (100%)

Table 2.21 above shows that the Spanish participants were near native-like in both Masc DPs and Fem DPs. The Turkish participants, however, seem to be more target-like in assigning the correct gender to Masc DPs than to Fem DPs. These results were analysed, using a paired samples t-test within each L1 group and results revealed no significant difference for the Spanish group [ $t = -.526$ ,  $df = 21$ ,  $p = .605$ ], but there was a significant difference for the Turkish group [ $t = -4.961$ ,  $df = 15$ ,  $p = .0001$ ]. Turkish participants seem to treat masculine as a ‘default’ gender. The results of the control group are displayed above for comparison purposes only.

<sup>53</sup> Results of the Spanish group were as follows: Gender assignment,  $p = .131$ ; Gender concord on Dets,  $p = .419$ ; Gender concord on Adjs,  $p = .965$ .  
Results of the Turkish group were as follows: Gender assignment,  $p = .818$ ; Gender concord on Dets,  $p = .806$ ; Gender concord on Adjs,  $p = .073$ .

*Summary of Oral Picture Description task results*

Similar to the previous tests, this test showed that the Spanish subjects outperformed the Turkish ones. A comparison between participants with a LI L2 proficiency level within each L1 group showed that the LI Spanish sub-group outperformed the Turkish one. Such sub-groups are presumably influenced by their L1. A second comparison held between learners with an Adv L2 proficiency level also revealed that the Adv Spanish sub-group outperformed the Turkish one. These two groups are supposed to be influenced by their L2. Though these results seem to be indicative of L1 influence and no effect of L2 influence, a deeper examination of the results show that the Spanish group benefited from the typological similarity between Spanish and French with regard to the feature gender unlike Turkish which is a [-gender] language.

Moreover, unlike the Spanish group who treated the three gender properties (gender assignment, gender concord on Dets and gender concord on Adjs) in a similar native-like manner, Turkish participants appeared least target-like in gender assignment. Most errors committed by Turkish participants are cases where they assigned the wrong gender to a given noun which resulted in assigning the wrong gender concord to Dets and Adjs. A further comparison between the rates of target-like performance in gender concord on Adjs and Dets revealed that Turkish participants seemed to find gender concord on Adjs more challenging than on Dets (a possible explanation to this fact is provided below in the discussions sections of this chapter).

Finally, while the Spanish participants treated gender in both Masc and Fem DPs in a similar native-like pattern, the Turkish participants were more successful in assigning the right gender to Masc DPs than to Fem DPs. Results seem to indicate that the Turkish group treat masculine as the 'default' gender, a similar result is also found in the previous other tests.

#### 2.4.4.4 Vocabulary Task on gender assignment

##### *Goals of the Task*

The Vocabulary test aims to shed light on whether learners have problems in assigning the appropriate gender to a given noun. There are two possible results that this test could lead us to: participants would assign the target-like gender to nouns, or they would assign the opposite gender (i.e. masculine for feminine or feminine for masculine). Such a test is important because its results (when compared with the findings of the other tests) will help us identify whether learners have difficulties in *gender assignment* or *gender concord*.

##### *Procedure*

Participants are asked to tick (√) the *masculine* column if they think the word is masculine and to put a tick (√) in the *feminine* column if they consider the word to be feminine. A total of 56 words are used (25 feminine nouns and 24 masculine nouns). Most of these are the nouns used in the MCT, ASC and the picture description oral production tasks, in addition to seven other words (3 Fem and 4 Masc) which are not counted but used as distracters<sup>54</sup>. The instructions of this test were in English, but the researcher further explained them through illustrative examples. There was no time limit, but participants were told not to think too long and to answer by guessing in case of doubt. A copy of this task is presented in Appendix A.10. Samples of the test items are shown in the table below.

**Table 2.22** Samples of tokens (from the Vocabulary Test)

French Nouns	Masculine	Feminine
Jardin	√	
Montagne		√
Sac	√	
Crayon	√	
Robe		√

<sup>54</sup> In order to avoid the possibility of having learners answering by guessing based on hints seen in previous tasks (MCT, ASC or the Oral production task), some other nouns which did not occur in any of the aforementioned tests were also used in this test and were counted in the scoring. However, the seven extra words added were used as distracters and therefore not counted in the scoring.

*Research Questions*

RQ<sup>5</sup>: Is there any evidence of L1 and/or L2 influence in the target-like performance of the Spanish and Turkish participants?

RQ<sup>6</sup>: Are participants more target-like in assigning the correct gender to Masc nouns than to Fem nouns, or vice versa?

*Results of the Vocabulary task*

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the Vocabulary test showed a strong reliability coefficient.

Cronbach's alpha = .946 L3 learners & NS/ .814 for L3 learners only.

*Overall Results*

**Table 2.23** Mean percentage of Target-like performance by L1

performance	L3 learners divided by L1		Native speakers (N=10)
	Spanish (N=22)	Turkish (N=16)	
Target-like selection	1048/1078 (97.21%)	468/784 (59.69%)	490/490 (100%)
Non Target-like selection	30/1078 (2.78%)	316/784 (40.30%)	0/490 (0 %)

According to table 2.23 above, the Spanish group seems to treat gender assignment in a near native-like way (with 97.21% of target-use) unlike the Turkish group whose performance is far less below the 75% accuracy criterion set by this study. In order to see if such results were statistically significant, a One Way ANOVA [dependent variable = Total target-like performance in gender assignment; independent group variable = Experimental groups divided by L1] was conducted and showed a significant effect for L1 group [ $F(2,45)= 430.237, p=.0001$ ]. A post-hoc test using Bonferroni adjustments showed a significant difference between French native speakers and the Turkish group ( $p=.0001$ ) and also between the Spanish and the Turkish groups ( $p=.001$ ), but no significant difference between the Spanish and the French groups ( $p=.286$ ). This

indicates that only the Turkish participants were treating gender assignment significantly different from the control group.

*L1 influence-L2 influence*

**Table 2.24** Mean percentage of Target-like performance by L2 proficiency

Performance	L3 learners divided by L1 and L2 proficiency				Native speakers (N=10)
	Spanish		Turkish		
	Adv (N=13)	LI (N=9)	Adv (N=10)	LI (N=6)	
Target-like Masc DPs	308/312 (98.71 %)	211/216 (97.68%)	161/240 (67.08 %)	93/144 (64.58 %)	240/240 (100%)
Target-like Fem DPs	316/325 (97.23 %)	213/225 (94.66 %)	142/250 (56.8%)	72/150 (48%)	250/250 (100 %)

In order to test the effect the L1 or L2 had on the target use of gender assignment, two steps of comparison were made. The first was between LI sub-groups within each L1 group (to test the effect of L1 influence) and then a second comparison was between the Adv sub-groups of each L1 group (to test L2 influence). According to table 2.24, Spanish learners with LI L2 proficiency outperformed Turkish LI participants in both Masc and Fem DPs. Results of learners with higher L2 proficiency also showed that the Spanish Adv outperformed the Turkish Adv.

A two-way ANOVA was used to compare the findings (within-subjects variable 1 = gender type (target use of gender concord on Adj, target use of gender concord on Det and target use of gender assignment), within-subject variable=and between-subjects factor= LI groups). Results showed a significant interaction between gender type and L2 group,  $[F(2,13)= 22.316, p=.0001]$ . A between-subjects comparison also showed a highly significant difference between the LI Spanish and LI Turkish sub-groups  $[F(1,13)= 308.262, p=.0001]$ .

A second two-way ANOVA was used to compare the findings (within-subjects variable 1= gender type (target use of Gender concord on Adj, target use of Gender concord on Det and

target use of Gender assignment), within-subject variable = and between-subjects factor= Adv groups). Results showed a significant interaction between gender type and L2 group, [F(2,21)=11.383,  $p=.003$ ]. A between-subjects comparison showed a highly significant difference between the Adv Spanish and Adv Turkish sub-groups [F(1,21)= 350.482,  $p=.0001$ ].

All these results indicate both Spanish sub-groups appeared at advantage compared to the Turkish group. That is mainly because the former benefited from the presence of gender in L1 Spanish while the latter was exposed to two languages (Turkish and English) that are gender-free. Besides, given that L2 proficiency did not seem to have any significant effect on the performance of neither L1 group, further statistical verifications were carried out through an independent samples t-test, but no significant effect of L2 proficiency was found ( $p<.05$ ). Thus, L2 English did seem to not have any role on the performance of both L1 groups<sup>55</sup>.

*Default gender Masc vs. Fem*

**Table 2.25** Mean percentage of Target-like performance by target gender and L1

Gender	L3 learners divided by L1	
	Spanish (N=22)	Turkish (N=16)
Feminine	528/550 (96%)	214/400 (53.5 %)
Masculine	520/528 (98.48%)	254/384 (66.14%)

The percentages displayed in table 2.25 show that the Spanish participants are treating gender assignment in both Masc nouns and Fem nouns in a similar target-like manner whereas the Turkish participants seem to be more target-like in assigning the correct gender to Masc nouns (66%) than to Fem nouns (53%). Such results are tested statistically using a paired samples t-test within each L1 group. Results of the Spanish participants revealed no significant difference [ $t=1.$

<sup>55</sup> Results of the Spanish group were as follows: Fem DPs,  $p=.162$ ; Masc DPs,  $p=.345$ .  
Results of the Turkish group were as follows: Fem DPs,  $p=.061$ ; Masc DPs,  $p=.607$ .

139,  $df=21$ ,  $p=.268$ ] whereas Turkish results showed a significant, difference [ $t= -4.564$ ,  $df=15$ ,  $p=.0001$ ].

#### *Summary of the Vocabulary test results*

Similar to the above three tests, results of the vocabulary test also showed that the Spanish group was more accurate than the Turkish group in gender assignment. Besides, it was shown that L2 proficiency did not appear to have a main effect on the performance of neither L1 group. This is first because there was no difference between the LI and Adv within each L1 group and second because a comparison between participants with higher L2 proficiency levels of both Spanish and Turkish (Adv sub-groups) and between LIs of each L1 group revealed that Adv and LI Spanish sub-groups outperformed the Turkish ones. This might lead to the assumption that it is indeed the linguistic similarity between Spanish and French (regarding the property of gender) that is the key factor triggering the success of the Spanish participants, regardless of their L2 proficiency.

Finally, results of the Spanish participants revealed that they were treating gender assignment to both Masc and Fem nouns alike whereas the Turkish participants appeared more target like in masculine than feminine nouns, suggesting that they might be treating masculine as a 'default gender', a similar result was also found in the previous tests.

## **2.5 Summary and discussion of chapter 2**

This chapter discussed results from four different tasks which tested the acquisition of gender assignment and gender concord in L3 French DP by two groups of L1 speakers (Spanish and Turkish) who speak English as an L2 up to two proficiency levels (LI and Adv). Results of the four tasks were almost similar. The Spanish group was near native-like while the Turkish group

failed to be so. Such findings are in line with certain L2 studies which have found that learning the property of *gender* in an L2 seems to be challenging for NNSs whose L1 and/or L2 lack(s) this property (Hawkins and Franceschina, 2004; Price, 2003). These results, however, are inconsistent with some other studies which argue that learners with an L1 and/or L2 that has/have no gender are able to acquire this feature in L2/L3 (White *et al.*, 2004; Jaensch, 2009a). Jaensch (2012), for instance, found that learners of an L1 Japanese and L2 English which are both [-gender] were able to learn gender in L3 German just like their Spanish counterparts whose L1 is a [+gender] language.

### **Discussion of findings in relation to certain linguistic facts**

#### *Gender assignment vs. Gender concord*

The results showed that while the Spanish participants did not seem to show any difference between gender assignment and gender concord, Turkish participants, appeared less target-like in gender assignment than in gender concord, a fact that was further confirmed by their non target-like performance in the gender assignment (vocabulary) test, where they performed below the chance level. While the Spanish results are in line with several studies in the literature which find that NNSs of language that have the feature gender do not seem to find difficulty when learning this property in L2 (e.g. White *et al.*, 2004) and even in L3 (Jaensch, 2012), Results of the Turkish subjects (who were more accurate on gender concord than on gender assignment) were inconsistent with certain studies. Sabourin *et al.*, (2006), for example, investigated (L2) knowledge of Dutch grammatical gender by adult speakers of German, English, and a Romance language (French, Italian or Spanish). German and the Romance languages all have grammatical gender (though slightly differently) while English is a [-gender] language. Their results showed

that all L2 groups performed on average above 80% on gender assignment<sup>56</sup>. However, on gender concord; the German and the Romance groups performed more accurately than the English group. In light of that, they argued that while acquiring lexical gender knowledge (assignment knowledge) seems possible even for those whose L1 does not include this feature, the syntactic-level concord knowledge seems considerably more difficult and might be even impossible to learn.

#### *Gender concord on Dets vs. Gender concord on Adjs*

All tasks showed that the Spanish participants treated gender concord on both modifiers (Dets and Adjs) in a similar target-like manner while the Turkish participants seemed to find gender concord on Adjs more challenging than on Dets. Jaensch (2009a, 2012), on the contrary, found no difference between gender concord on Dets and Adjs.

#### *Gender in Masc DPs vs. Gender in Fem DPs*

While the Spanish participants treated gender assignment/concord in Masc and Fem DPs in a similar target-like manner, The Turkish subjects were more accurate on Masc DPs than on Fem DPs which would imply that for Turkish natives Masc might be the ‘default gender’, a common view that has been advocated by certain L2 studies (e.g. Cain *et al.*, 1987; White *et al.*, 2004; Hawkins and Franceschina, 2004) but not by some other L2 studies such as (McCowen *et al.*, 2006; Menzel (2005) and L3 studies (e.g. Jaensch, 2009a) who both found that Masc Ns were causing more problems to NNSs than Fem Ns.

#### *Definiteness*

There was no significant difference between gender treatment in Def and Indef contexts in the performance of both L1 groups. Such findings are inconsistent with those of Rule and Myles

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<sup>56</sup> Noteworthy, the German and Romance language groups showed higher accuracy rates compared to the English group, particularly when the nouns were very similar to their L1s, but none of them reached nativeness.

(2007) and Jaensch (2009a) who noted some differences between the treatment of gender in Def and Indef contexts.

### **Discussion of findings in relation to L3A hypotheses**

Detailed summary of the predictions of the four L3A hypotheses is provided in chapter 1 (section 1.5.2.2), briefly repeated once again below.

*H<sup>1</sup>: The L1 Factor Model:* L1 is always the most predominant source of influence in L3A.

*H<sup>2</sup>: The L2 Status factor Model:* CLI occurs only or most predominantly from the second acquired language (L2).

*H<sup>3</sup>: The Typological Primacy Model (TPM):* The language that is lexically the most similar to the L3, will be perceived by the parser as typologically the closest to the L3 and learners will transfer all its properties into the L3 grammar (on a holistic basis).

*H<sup>4</sup>: The hypothesis of this study:* The language that is typologically the closest to the TL is the source of influence in L3A, but in the absence of holistic typological proximity, the parser will rely on structural property-specific similarity.

Although at a surface level, results seem to be indicative of L1 influence especially for the Spanish group, a deeper examination of the findings, however, reveals that typological proximity seems to be the triggering factor for the results attained. Such a conclusion was drawn from the fact that the Spanish subjects, regardless of their L2 proficiency level, were nearly native-like in their treatment of gender in L3 French whereas the Turkish subjects were non target-like regardless of their L2 proficiency. This is mainly because the feature gender is present in L1 Spanish but absent in both L1 Turkish and L2 English which means that the linguistic similarity between L1/L2 and the L3 seems to be the triggering factor of CLI in the acquisition of L3 French i.e. the assumption of the TPM seems to be supported by the findings of this chapter.

However, the main question of this study that is raised is whether the holistic linguistic similarity i.e. typological proximity as proposed by the (TPM) or the property-by-property-based structural similarity that is the trigger for CLI in L3A as proposed by the present study?

In order to answer this question, let us have a deeper examination of the Spanish and Turkish results on the property gender. The TPM would predict the Spanish group to be influenced by L1 Spanish while the Turkish group to be influenced by L2 English because English is lexically much closer to French (than Turkish to French), and therefore, the parser would identify it as being typologically the closest to French (see chapter 1 for further details on the TPM predictions). Results of the Spanish group support the predictions the TPM model, because Spanish is lexically the closest to L3 French and it has been the source of influence on the performance of the Spanish group. That was mainly evidenced by the fact that both Spanish subjects with advanced proficiency in L2 English and those of lower-intermediate proficiency behaved in a near native-like manner.

Turkish results, on the contrary, showed no strong influence of L2 English. Such interpretation was evidenced by the fact that both Turkish subjects of advanced L2 proficiency and lower-intermediate L2 proficiency level showed no significant difference, they were both non target-like in their treatment of gender in L3 French. That means that learning L2 English to a higher L2 proficiency level or a lower level did not make a difference. Despite these facts, it seems logical to claim that at this point, it would be practically impossible to answer the question regarding whether holistic typological proximity or property-based structural similarity that is a triggering factor for CLI in L3A. This is mainly because both Turkish and English are [-gender] languages, and therefore, identifying which is the source of CLI will be very difficult. It is only

after gathering the data of the other three properties, that one could affirm which of the two predictions has been corroborated. Further details can be found in chapter seven of this thesis.

In addition to typological similarity, this study investigates the role of L2 proficiency. The L1 factor model makes no claims regarding the role of L2 proficiency while the L2 status factor believes that L2 is the most dominant source of influence, and therefore, L2 proficiency would play a role on the performance of L3 learners, whereas the TPM makes no official claims with regard to the role of L2 proficiency<sup>57</sup>. The present study hypothesises that if L2 is the only language that is structurally similar to the L3 concerning the *property tested* (gender in this case); L2 proficiency will have an effect. Given that English is a gender-free language; this study expects no significant role for L2 proficiency on the performance of both groups, a scenario that was attained in almost all tasks.

Chapter 3 presents and discusses results on the property number concord.

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<sup>57</sup> See note 23 of chapter 1.

## Chapter 3 L3 learners' acquisition of Number Concord in the French DP

### 3.1 Introduction

The aim of this chapter is to shed light on learners' performance on number concord (plural marking) in the L3 French DP. Although a number of studies have explored this property in L1A and L2A, such studies are still rare within the domain of L3A (barring some isolated exceptions such as Jaensch (2010)). This is why more L3 studies are needed to tease apart issues relating to the role of the L1 and L2 and the role of typological proximity.

The experimental tasks presented in this chapter test the acquisition of plural marking morphology by L1 Spanish learners and L1 Turkish learners who speak English as an L2 and who are beginner L3 French learners. Although number is part of the syntactic representations of the four languages in question (i.e. Spanish, Turkish, English and French), it is manifested differently in each language. More precisely, in each of these languages, the head N is marked for plural, but they differ in whether specifiers of the DP (i.e. the Det and Adj) are also marked for plural. In Spanish and French, Dets and Adjs agree with the head N in number, in English and Turkish, they do not<sup>58</sup>. The distribution of this property across these four languages will help to answer several research questions and tease apart the predictions of the hypotheses tested.

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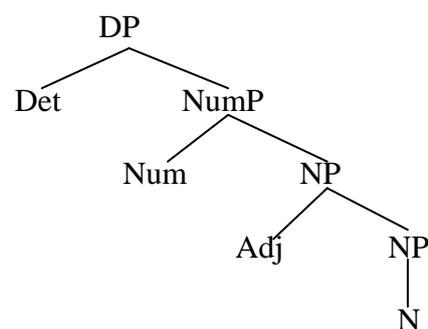
<sup>58</sup> The researcher is fully aware that in English, certain determiners such as demonstrative (this/that) are marked for plural (these/those), but as this study is only concerned with Def/Indef articles (a/an/the) as determiners and as these are not marked for plural, it is claimed above that Dets in English are not morphologically marked for plural.

## 3.2 Number concord: theoretical assumptions

### 3.2.1 Related concepts

Following the recent Minimalist work by Chomsky (1995, 2000) which was later developed and modified by Carstens (2000), this work considers number concord within a DP to be achieved by means of a “checking” mechanism. Dets and Adjs have “uninterpretable” number features which have to be removed as a result of “checking” in the course of a derivation by interpretable number features on a head noun. It is generally accepted that checking is implemented by moving the category with an uninterpretable feature to the specifier (Spec) of a head with a relevant interpretable feature (Carstens, 2000; White *et al.*, 2004).

In addition, we will follow Bernstein’s (1993) analysis according to which the functional category number phrase (NumP) is a separate functional head (Bernstein, 1993; Ritter, 1993) which is located between DP and NP ([<sub>DP</sub> Det [<sub>NumP</sub> Num [<sub>NP</sub> N]]) where number ([±plural]) features are checked, valued and deleted (Bernstein, 1993; Ritter, 1993). Number has an interpretable number feature, and N, Det and Adj have uninterpretable number features that must agree with that feature, as shown by the tree below:



### 3.2.2 Cross-linguistic variation

#### 3.2.2.1 French

It is generally claimed that the plural in French is formed by adding the suffix -(s) to the singular N. The addition of -s is almost exclusively a feature of the written language i.e. the -s is not

pronounced in the spoken language. However, this is not a one-to-one correspondence, as there are certain irregular forms (or exceptions) which require different endings when changed into the plural form. The irregulars are distinguished from the singulars in the spoken language by their different pronunciations and different forms, as illustrated in the examples below.

14. un journal (sg) —————→ des journaux  
*a newspaper* *newspapers*
15. un accord international —————→ des accords internationaux  
*an international agreement* *international agreements*

However, as this study is not testing plural marking on Ns, but testing it on Dets and Adjs only, and given that the adjectives tested in the present study are only colour adjectives (e.g. *vert* ‘green’, *blanc* ‘white’ etc) which all take (-s) as a plural ending, discussion of any irregular forms whether on Ns or Adjs in L3 French is irrelevant to the present work. Only regular forms taking the regular (default) plural from–s are discussed in this chapter.

Dets and Adjs in French always show concord with the number of the head N. There are four Dets (articles) in French divided by their gender (Masc/Fem) and their definiteness (Def/Indef): *le* (Def.masc), *la* (Def.fem), *un* (Indef. masc) and *une* (Indef.fem). In plural, there are only two articles (one plural Def article for both Fem and Masc (*les*) and one plural Indef article (*des*)). An example of each type is shown in table 3.1 below.

**Table 3.1** Distribution of French Dets by gender and definiteness

		Singular	Plural
Definite	Masculine	Le	Les
	Feminine	La	Les
Indefinite	Masculine	Un	Des
	Feminine	Une	Des

Similar to Dets, Adjs in French agree with the head N in number. Barring some exceptional irregular forms, most Adjs add the suffix –s when changed into plural. The examples below show number concord within a French DP (between the Det, N and Adj).

16. le stylo vert —————> les stylos verts  
*the pen green*                      *Def.pl pens (pl) green (pl)*  
 (the green pen)                      (the green pens)
17. une maison blanche —————> des maisons blanches  
*a house white*                      *Indef.pl house(pl) white (pl)*  
 (a white house)                      (∅ white houses)

It is important to note that in French, plural marking on nouns is inaudible (i.e. only written French marks it) unlike in Spanish which is audible in written and spoken Spanish. However, as this study does not test plural marking on French nouns, but rather it tests plural marking on the modifying Dets and Adjs of the head noun, discussing this detail further is beyond the scope of this study.

However, it is worth pointing out that number concord on Adjs in French is functionally different from number concord on Dets. On Dets, there is a morphological reflex both in the spoken and written language. On Adjs, there is a morphological reflex only in the written language. There is no audible reflex in the spoken language. This means that input cues for learners about number concord on Dets are likely to be greater than for Adjs, and may mean that target-like performance on number concord on Adjs lags behind that on Dets. Nevertheless, the key question is the comparative performance of the Spanish and Turkish learners on number concord on Adjs, regardless of the input (which is the same for both groups), and what this might tell us about the role of the L1, the L2 and typological proximity.

## 3.2.2.2 Spanish

Similar to French, plurality in Spanish is generally marked by adding (-s) or (-es) depending on the ending of the N (Alcina 1975, Alarcos 1994, Bosque & Demonte 1999, Seco 2001, Gómez Torrego 2002, RAE, 2009, Bosque 2010). However, unlike in French, the plural ending in Spanish is pronounced. Some of the rules of plural formation in Spanish are summed up as follows:

- If a N ends in unstressed vowels /a/, /o/ or /e/, -s is added to the word (e.g. *pluma* ‘pen’, *plumas* ‘pens’)
- If a N ends in a consonant, -es is added to the word (e.g. *universidad* ‘college/university’, *universidades* ‘colleges/universities’)
- If a N ends in a -z sound, z changes to c before adding -es (e.g. *lapis* ‘pencil’, *lápices* ‘pencils’)
- If a N ends in ión, the written accent is dropped before adding -es (e.g. *Avión* ‘plane’, *aviones* ‘planes’)

Similar to French, Spanish Dets and Adjs always show concord with the head N on number. There are four singular determiners (articles) in Spanish divided by their gender (Masc/Fem) and their definiteness (Def/Indef), namely: *el* (Def.masc), *la* (Def.fem), *uno* (Indef. masc) and *una* (Indef.fem). Unlike French, however, Spanish has four Dets in the plural form divided by their gender (masc/fem) and definiteness (Def/Indef): *los* (Def.masc), *las* (Def.fem), *unos* (Indef. masc) and *unas* (Indef.fem). A summary of these Dets is provided in table 3.2 below.

**Table 3.2** Distribution of Spanish Dets by gender and definiteness

		Singular	Plural
Definite	Masculine	El	Los
	Feminine	La	Las
Indefinite	Masculine	Uno	Unos
	Feminine	Una	Unas

Spanish Adjs show number concord with the head N by means of /-s/, as can be seen in the examples below:

18. los                   sombreros    negros  
       the(masc.pl) hat(masc.pl) black(masc.pl)  
       (the black hats)

19. las                   chaquetas   negras  
       the(fem.pl) jacket(fem.pl) black(fem.pl)  
       (the black jackets)

### 3.2.2.3 English

Similar to French and Spanish, most English Ns are marked for plural, typically by means of the morpheme /-s/ (and /-es/ in some Ns). There are, however, some irregular Ns which do not follow these rules. Some of these irregular Ns involve partial changes when changed to plural (example Ns ending in -y end in -ies), while some others might involve the change of one/two consonants such as (half/halves) or vowel changes as in (woman/women) while some irregular Ns do not change their form from singular to plural (e.g. fish/fish). For some linguists, given that new Ns in English receive the -(e)s form when changed into plural (e.g. emails/texts), the plural marker -s should be treated as the *default* plural marker in English (Jaensch, 2009a, p. 54).

Concerning number concord in English; there is limited number concord within the DP in the case of certain Dets. In fact, only demonstratives agree with the head N (*this/these* and *that/those*). English articles (*the/a/an*), nevertheless, are not inflected for plural. Adjectives in English also do not agree in number with the head N, as illustrated by the examples below.

20. a. a black shirt                   (singular/Indefinite)  
       b. Ø black shirts               (plural/Indefinite)
21. a. the blue pen                   (singular/Indefinite)

b. the blue pens (plural/Indefinite)

#### 3.2.2.4 Turkish

In Turkish, a N is made into an indefinite plural via adding either the suffix (-lar) or (-ler) according to vowel harmony rules (Lewis, 2000). These rules could be summarised as follows. If a singular N contains in its last syllable one of the following vowels (a, ı, o, u), the plural is formed by adding the suffix (-lar) to the root of this word (e.g. *araba* (car)/ *arabalar* (cars)). If the last syllable of a singular N contains one of these vowels (e, i, ö, ü), its plural is formed by adding the suffix (-ler) to the root word (e.g. *gün* (day)/*günler* (days)). Moreover, if plurality is shown by a numeral greater than one (e.g. two, three...etc) or a word like *çok* (many), or *kaç* (how many), no plural suffix is added to the N as in (*iki kitap* (\*two book) not \**iki kitaplar* (two books)).

Plural inflection is only attached to the N in Turkish; for Turkish is often defined as an article-less language (Underhill 1976)<sup>59</sup>. In addition, Adjs do not show any concord with the head N on number. They take the singular form even when modifying plural Ns (e.g. *güzel arabalar* (beautiful cars)). Hence, there is no Number concord inside the nominal in Turkish (Parodi *et al.*, 2004).

In light of the cross-linguistic variations presented above, it seems that while Spanish and French are linguistically alike; their Ns are inflected for plural and so are the modifying Dets and Adjs, English and Turkish, have the feature number concord in a different form. Their Ns are inflected for plural, but neither their Dets nor Adjs show any Number Concord with the head N, as shown in table 3.3 below.

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<sup>59</sup> See chapter four for further discussion on this matter.

**Table 3.3** Crosslinguistic Distribution of the property number concord in French, English, Spanish and Turkish

	French <sup>60</sup>	English	Spanish	Turkish
Plural inflection on Ns	√	√	√	√
Plural Inflection on Dets (articles)	√	X	√	X <sup>61</sup>
Plural Inflection on Adjs	√	X	√	X

### 3.3 Review of existing (L2 and L3) studies on number acquisition

#### 3.3.1 Existing L2 studies on the acquisition of number concord

Several studies have been conducted on adult L2A to examine the presence of new functional features related to the DP in the L2 grammar of learners whose L1 lacks such features compared to learners whose L1 has such features. Of particular interest are those studies which test competing hypotheses concerning parameter resetting in the L2, such as the debate between the RDH (Hawkins, 1998, 2001a; Franceschina, 2001, 2005; Hawkins and Franceschina, 2004) and the FTFA hypothesis (Schwartz and Sprouse, 1994, 1996; White, 1989; White *et al.*, 2004). The RDH claims that if certain uninterpretable syntactic features are not present in the L1 grammar, L2 learners will never fully acquire them. The RDH maintains therefore that L2 learners only have access to linguistic features that are instantiated within their L1 grammar (Hawkins 1998, 2001a; Franceschina 2001, 2005; Hawkins and Franceschina 2004). The FTFA, on the other hand, proposes an L2 initial state grammar that consists of the entire L1 end-state grammar, but maintains that the L2 is fully UG-constrained, and, therefore, L2 learners are able to acquire any features even those which are not instantiated in their L1 grammar (e.g. White, 1989; White *et al.*, 2004).

<sup>60</sup> A brief reminder, plural marking in French (nouns and adjectives) is only on written forms. This study is only testing plural inflection on French adjectives and not on nouns.

<sup>61</sup> A brief reminder, Turkish is an article-free language.

Among the studies which compared the predictions of the RDH and the FTFA are those which focused on the acquisition of new functional features such as gender, number concord, and/or Case. However, as this chapter is only concerned with the property of number concord, only studies addressing this property will be reviewed below.

The first study to be considered is that of White *et al.*, (2004). This study examined the acquisition of number concord in L2 Spanish by two groups of participants: L1 English speakers versus L1 French speakers<sup>62</sup>. Participants were adult learners at three L2 proficiency levels (Low, Intermediate, and Advanced)<sup>63</sup>. Number is present in all three languages (English, French, and Spanish), but it is manifested differently across these languages. Nouns in English are typically marked for plural by means of the morpheme /-s/, and so are nouns in Spanish and French (barring a handful of exceptions)<sup>64</sup>, but only Spanish and French Dets and Adjs show number concord with the head N. With the exception of English demonstrative pronouns which show number concord with the head N (*this* vs. *these* and *that* vs. *those*), English Dets and Adjs are not inflected for plural, as shown in the examples below (extracted from White *et al.*, 2004).

### English

- 22. this black hat
- 23. these black hats

### Spanish

- 24. los           sombreros    negros  
   the-masc.pl hat-masc.pl  black-masc.pl  
   “the black hats”
- 25. las           chaquetas    negras  
   the-fem.pl  jacket-fem.pl  black-fem.pl  
   “the black jackets”

<sup>62</sup> Along with number concord, the original study also tested the feature of gender; but data on this property will not be reported in this chapter, see chapter two for more details on the results of the feature of gender.

<sup>63</sup> For some of the English speakers ( $n = 14$ ), Spanish was an L2, whereas for others ( $n = 54$ ) it was an L3, L2 being French. However, as this fact was showed to have no effect on number, but rather on gender, it will not be discussed further in this chapter.

<sup>64</sup> As these cases were not addressed in the original work, we will not address them in this work either.

The distribution of number on Det, N and Adj across the three languages under consideration is summarised in the table below.

**Table 3.4** Distribution of Number inflection on Det, N and Adj by L1 (White *et al.*, 2004)

	English	French	Spanish
<b>Overt number on the N</b> (interpretable number features)	+	+	+
<b>Overt/covert number concord (Det/Adj)</b> (uninterpretable number features)	-	+	+

In light of these linguistic facts, the researchers wanted to examine whether English and Spanish participants would be target-like in plural marking on French DPs. Two types of DPs were tested in this study, Det+N, and Det+N+Adj. Three experimental tasks were devised: two elicited production tasks and a picture identification task. White and her colleagues claimed that their findings did not show any difference between the Spanish control group and the two groups (L1 English and L1 French) concerning number concord. They considered that number did not cause any problem even for those at a lower L2 proficiency level<sup>65</sup>. Moreover, results of both groups were target-like in DPs with and without Adjs. Results of the Picture Identification task also showed no significant difference between the tested groups. Both were target-like in number concord on Spanish DPs, but only DPs containing Adjs were tested in this test.

Another L2 study which investigated the acquisition of number concord is that by Judy, Fuentes and Rothman (2008)<sup>66</sup>. This study also tested the predictions of the RDH approach versus those of the FTFA approach by examining the acquisition of number features (and gender) of Dets, Ns

<sup>65</sup> These results were compared with the performance of learners on gender. For DPs with no Adjs, a repeated measures analysis of variance (ANOVA) was carried out and results showed a highly significant effect for proficiency,  $F(2, 110) = 20.08, p < .0001$ , a highly significant effect for feature (gender vs. number),  $F(1, 110) = 52.08, p < .0001$ , a highly significant interaction between proficiency and feature,  $F(2, 110) = 11.2, p < .0001$ , and no interaction between L1 and feature. As for DPs containing Adjs, results showed no effect for L1 although it borders on significance,  $F(1, 109) = 3.6, p < .06$ , a highly significant effect for proficiency,  $F(2, 109) = 19.71, p < .0001$ , a highly significant effect for feature (gender vs. number),  $F(1, 109) = 12.78, p < .001$ , a significant interaction between proficiency and feature,  $F(2, 109) = 4.98, p < .01$ , and no interaction between L1 and feature. These results were taken as supportive of the FTFA proposals, but not those of the FFFH.

<sup>66</sup> Henceforth, Judy *et al.*, (2008).

and Adjs by L1 English learners of adult L2 Spanish at two proficiency levels (intermediate and advanced). In order to test learners' knowledge of plural marking, a Grammaticality Judgment/Correction (GJC) task was designed<sup>67</sup>. The task consisted of tokens containing ungrammatical Det-N number concord (n=5) which were counterbalanced by tokens containing grammatical Det-N number concord (n=5 each). Tokens containing ungrammatical N-Adj number concord (n=5) were counterbalanced by grammatical N-Adj number concord (n=5) and 20 tokens were used as fillers to disguise the purpose of the task. Judy *et al.* (2008) found that learners of both-sub groups performed in a target-like manner and consequently number concord did not cause any problem to these learners.

### 3.3.2 Existing L3 studies on the acquisition of number concord

Jaensch (2009a) looked at number concord between German nouns and attributive adjectives by L1 Japanese natives L2 English speakers. Number concord on Dets was not a tested variable in this study. Participants were divided into three L3 proficiency groups (lower intermediate, upper intermediate and advanced) and into three different L2 proficiency levels (elementary, lower intermediate, and upper intermediate). A description of the experimental groups of this study is displayed in table 3.5 below.

**Table 3.5** L1 Japanese participants divided by L3 German and L2 English proficiency (Jaensch, 2010)

L3 French Proficiency level	L2 English proficiency level
L3 German Lower Intermediate (N=9)	Elementary (N=3)
	lower Intermediate (N=3)
	Upper- Intermediate (N=3)
L3 German Upper- Intermediate (N=12)	Elementary (N=5)
	lower Intermediate (N=3)
	Upper- Intermediate (N=4)
L3 German Advanced (N=16)	Elementary (N=5)
	lower Intermediate (N=7)
	Upper- Intermediate (N=4)

<sup>67</sup> Along with this test, a Context-based Collocation Task was designed to test for semantic knowledge of pronominal and postnominal adjectives. However, this is irrelevant to the scope of the present study.

This study wanted to investigate whether L1 Japanese learners would be successful in assigning plural inflection to attributive Adjs in L3 German given that neither their L1 nor L2 English has such a feature. As part of the study, two potentially contrasting proposals in relation to L3A are tested; the first is the Cumulative Enhancement Model (CEM, Flynn *et al.*, 2004), which proposes that previously learned languages either positively affect the acquisition of an L3 or remain neutral. The second proposal is the ‘L2 status factor’ hypothesis (Bardel and Falk, 2007), which proposes that the dominance of the L2 will block any positive effect that could be transferred from the L1. In order to test the predictions of these hypotheses, two oral production tasks and one written elicitation (Gap-Filling) task were designed.

Results revealed that participants who were more proficient in L3 German were more target-like than those who were less proficient in L3. However, there were no significant effects of L2 English proficiency on accuracy (which would contradict the claims of the strong version of the CEM) and there were also no signs of an L2 proficiency effect on omission rates of adjectival inflection in the oral data (contra the strong L2 transfer proposal). In the written task, learners were significantly more target-like in adjectival inflection in singular than in plural contexts (contra the strong L2 transfer proposal). In the Oral tasks, however, participants showed no difference between singular and plural contexts (also contra the strong L2 transfer proposal). Finally, learners’ performance on plural inflection was not affected by task, but their performance on singular inflection was.

Overall, Jaensch considers that the two models do not make the correct predictions, either because the features examined are not present in the same form in the L1 and L2, or because the phenomenon of adjectival inflection involves both syntax and morphology, or possibly due to a combination of both factors. Jaensch considers that her results could be rather accounted for by

the feature valuation proposal of a hypothesis in the L2 literature known as Distributed Morphology (Halle and Marantz, 1993), supplemented by the claim that learners do not obey the Subset Principle (Halle, 1997). She considers her findings to provide support for such a feature-based model which can be extended from SLA to account for the variation found in the production of L3 learners.

Thus far, in light of the review of the existing studies, the following conclusions can be drawn. Number concord does not seem to cause any problem to NNSs as most languages have this feature either fully (i.e. on the Det, N and Adj) or partially (i.e. the N is marked for plural while Dets and Adjs are not). The present study tests two groups whose L1 realises number differently. The first is the L1 Spanish group whose L1 shows number on Det, N and Adj and an L1 Turkish whose L1 shows Number on N only. English is an L2 for both groups which, similar to Turkish, shows no number concord on Dets and Adjs. Such partial differences will be tested to see if they will have an effect on the two groups' acquisition of Number in L3. A cross-linguistic variation section is provided below to further describe the distribution of number in the four languages tested.

### **3.4 The study**

#### **3.4.1 Participants**

The participants mentioned in this chapter are the same subjects who took part in all the experimental tasks (described and discussed in chapter two, *section 2.4.1*).

### 3.4.2 Tasks and Results

#### 3.4.2.1 MCT task

##### *Procedure of task administration*

This task consisted of three versions: English, Spanish and Turkish. Each group sat for two versions: one in English and one in the NL (either Spanish or Turkish). In each version, there were a total of six sentences testing Number concord (the rest tested other properties). Two contexts were tested in each version of this task, as shown below:

- **A definite article + N + Adjective (all of them are masculine plural)**

26. les                                      pommes                                      rouges  
       the (Def, masc pl)    apples (N masc pl)    red (Adj masc pl)  
       (=*the red apples*)

- **A indefinite article + Adjective+ N (all of them are masculine plural)**

27. des                                      cafés                                      noirs  
       ∅ (Indef, masc pl)    coffees (N masc pl)    black (Adj masc pl)  
       (=*black coffees*)

All Ns used in this task and in the rest tasks are [-animate] objects and are also masculine<sup>68</sup>. For each of the two contexts described above, there are three sentences, under each sentence there are four possible translations in French; each one is testing one case:

- Correct option (pl.Art-pl.N-pl.Adj)
- No overt Number concord on Det (sg.Det-pl.N-pl.Adj)
- No overt Number concord on Adj (pl.Det-pl.N-sg.Adj)
- No overt Number concord on Det and Adj (sg.Art-pl.N-sg.Adj)

<sup>68</sup> Refer to chapter three for further explanations on why only [-animate] noun objects were used. Also, only masculine Ns are used in this test in order to test the property of number concord devoid of gender. The property of gender is already tested in this same test using other types of sentences (containing singular Masc and Fem DPs).

The example below summarises the aforementioned four cases:

28. They love the green curtains

- a. Ils aiment les rideaux verts.
- b. Ils aiment le rideaux verts.
- c. Ils aiment les rideaux vert.
- d. Ils aiment le rideaux vert.

Option (a) is the correct option: the Det (*les*-the masc/pl), the N *rideaux* ‘curtains’ masc/pl) and the Adj (*verts* ‘green’ masc/pl) are all inflected for plural. Option (b) is a case of ‘No overt Number inflection on Det’, the Det (*le*-the masc/sg) while the N and Adj are masc/pl. Option (c) is a case of ‘No overt Number concord on Adj’, the Det and N are both masc/pl whereas the Adj is masc/sg (*vert* ‘green’ masc/sg). Finally, option (d) is a case of ‘No overt Number inflection on both Det and Adj’ in which only the head N is inflected for plural while the Det and Adjs are both masc/sg.

*Research Questions*<sup>69</sup>:

RQ<sup>1</sup>: Is there any evidence of L1 and/or L2 influence in the target-like performance of Spanish and Turkish participants?

RQ<sup>2</sup>: Is there any L2 proficiency effect on the performance of each L1 group?

### ➤ MCT task results (English version)

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach’s alpha, were conducted. The item analysis of the MCT test showed a good reliability coefficient.

Cronbach’s alpha = .905 L3 learners & NS/ .783 for L3 learners only.

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<sup>69</sup> These are the same research questions for the MCT task (in its three versions), the ASC task and the written picture description task.

Overall results**Table 3.6** Mean percentage of Target-like performance by L1

Performance	L3 learners divided by L1		Native speakers (N=10)
	Spanish (N=22)	Turkish (N=16)	
Target-like use	126/132 (95.45 %)	83/96 (86.45%)	60/60 (100%)
Non Target-like use	6/132 (4.54%)	13/96 (13.54%)	0/60 (0%)

According to table 3.6, the Spanish group treated number concord in a near native-like way. Turkish participants were also target-like with more than 86% of target-use, but they were less target-like than the Spanish and the control groups.

A one-way ANOVA [dependent variable = mean target-like use; independent group variable = Experimental groups divided by L1] was conducted and results showed a significant effect for L1 groups [ $F(2,45)= 7.111, p=.002$ ]. Adjustments using post-hoc test Bonferroni showed a significant difference between French native speakers and the Turkish group ( $p=.003$ ), and also between the Spanish and the Turkish groups ( $p=.019$ ), but no significant difference between the French and the Spanish groups ( $p=.657$ ).

L1 influence/L2 influence

In order to test L1 and L2 influence in the target-like performance of the Spanish and Turkish participants, two steps were followed. First, the performances of LI sub-groups of each L1 group were compared (to test if there is L1 influence on their performance). Second, the performances of learners who have learnt L2 English to a higher proficiency level (Adv sub-groups) were compared to test L2 influence. For so doing, the performances of both sub-groups are divided according to two variables: *number property types* (i) number concord on Dets (ii) number concord on Adjs and (iii) number concord on Dets and Adjs and *definiteness* (Def vs. Indef DPs). Results are displayed in table 3.7 below.

**Table 3.7** Mean percentage of Target-like performance by property type and Definiteness by L2 proficiency within L1 groups

Prof level by language Property	Spanish		Turkish		French Natives (N=10)
	Adv(N=13)	LI (N=9)	Adv (N=10)	LI (N=6)	
Target-like use on Number concord on Dets in Def DPs	39/39 (100%)	26/27 (96.26%)	30/30 (100%)	18/18 (100%)	30/30 (100%)
Target-like use on Number concord on Dets in Indef DPs	39/39 (100%)	27/27 (100%)	30/30 (100%)	18/18 (100%)	30/30 (95%)
Target-like use on Number concord on Adjs in Def DPs	37/39 (94.87%)	26/27 (96.26%)	26/30 (86.66%)	16/18 (88.88%)	30/30 (100%)
Target-like use on Number concord on Adjs in Indef DPs	38/39 (97.43%)	26/27 (96.26%)	28/30 (93.33%)	16/18 (88.88%)	30/30 (100%)
Target-like use on Number concord on Dets and Adjs in Def DPs	39/39 (100%)	27/27 (100%)	28/30 (93.33%)	18/18 (100%)	30/30 (100%)
Target-like use on Number concord on Dets and Adjs in Indef DPs	39/39 (100%)	27/27 (100%)	30/30 (100%)	17/18 (94.44%)	30/30 (100%)

As it can be seen from table 3.7, overall all groups were performing target-like in almost all properties of number concord. The LI Spanish group and the LI Turkish performed alike in most properties. However, LI Turkish participants were slightly less target-like than the LI Spanish ones in number concord on Adjs (both in Def and Indef contexts). The results of the Adv groups were nearly similar. Both Adv Turkish and Adv Spanish participants were target-like in most properties of number concord, though the Adv Turkish subjects appeared less target-like than the Spanish ones, particularly regarding number concord on Adjs. It seems therefore that though Turkish participants were overall target-like in number concord in L3 French, they seemed to find number concord on Adjs more challenging than on Dets (see the section ‘*Summary of MCT Task result*’ of this chapter page 116 for possible justifications).

These results were tested statistically using a mixed factorial ANOVA for each of the two L2 sub-groups [Within subjects variable 1= number property (target use of number concord on Det, target use of number concord on Adj and target use of number concord on both Det and Adj),

Within subjects variable 2= definiteness contexts (target use of number concord in Def contexts versus target use of number concord in Indef contexts), and between subjects factor=L1 groups]. Results showed a significant main effect of number property,  $[F(2,26)=4.067, p=.029]$ , no significant interaction between number concord types and L2 groups,  $[F(2,26)= 1.667, p=.208]$ , and no statistical significant main effect for definiteness,  $[F(1,13)=.019, p=.893]$ . No significant interaction was found between definiteness and L2 groups  $[F(1,13)=.468, p=.506]$ , no significant interaction was revealed between number concord types and definiteness  $[F(2,26)=.581, p=.566]$ , and similarly no significant three-way interaction between number concord-definiteness-L2 groups was found,  $[F(2,26)=.214, p=.809]$ . A between-subject comparison showed no significant difference between the L1 Spanish and L1 Turkish groups  $[F(1,13)=1.712, p=.213]$ . Such statistical results indicate no significant difference between L1 Turkish speakers and L1 Spanish speakers when they effectively learn French without much intervening L2 knowledge.

In order to test the role of L2 in L3 acquisition, two sub-groups of Adv learners are compared (Spanish Adv vs. Turkish Adv). A second mixed factor ANOVA was carried out. Results showed a significant effect of number concord types,  $[F(2,42)=7.869, p=.001]$ , no significant interaction between number concord types and L2 groups,  $[F(2,42)=1.430, p=.251]$ , no statistical significant main effect for definiteness,  $[F(1,21)=2.026, p=.169]$ , and no significant interaction between definiteness and L2 groups  $[F(1,21)=.930, p=.34]$ . Moreover, no significant interaction was revealed between number concord types and definiteness  $[F(2,42)=.631, p=.537]$ , and similarly no significant three-way interaction between number concord-definiteness-L2 proficiency group by language,  $[F(2,42)=.315, p=.732]$ . However, a between-subject comparison showed a significant difference between the Adv Spanish and Adv Turkish groups  $F(1,21)= 4.864, p=.039$ . Such results indicate that there is indeed a significant difference between Adv Spanish speakers' treatment of number concord and their counterparts Adv Turkish speakers,

which imply that L2 does not really play any significant role in the performance of both sub-groups; otherwise both groups would have performed in a similar target-like manner. Adv Spanish participants have effectively learnt number concord in L3 French despite their higher proficiency in L2 English, a language in which the feature of number concord is only partially present<sup>70</sup>.

### L2 proficiency

As shown from the descriptive results in table 3.7, L2 proficiency does not seem to be a significant factor for there seems no difference between the performance of the LIs and Adv of each L1 group. An independent samples t-test is carried out for the above data and results showed no significant difference between the LIs and Adv of each L1 group ( $p > .05$ ), implying that L2 proficiency is not a significant factor in the acquisition of number concord in this test<sup>71</sup>.

### ➤ MCT task results (Spanish version)

#### Overall results

**Table 3.8** Mean percentage of Target-like performance in L1 Spanish

	Spanish (N=22)
*Target-like use	127/132 (96.21%)
*Non Target-like use	5/132 (3.78%)

<sup>70</sup> The researcher is fully aware that in various studies (L2 and L3), having a head N that gets inflected for plural in a given language (while its Dets and Adjs do not) signifies that the feature of Number does exist in that language, and, therefore, it is similar to any language that holds this feature on Dets, N and Adjs. However, the present study believes that having no plural inflection on Dets and Adjs in an L1/L2 means that this language is structurally different from an L3 that shows plural inflection on Dets, Ns and Adjs and therefore that could affect the performance of the NSs of that language when learning the full feature in the TL.

<sup>71</sup> Results of the Spanish group were as follows: Number on Dets in Def DP ( $p = .238$ ), Number on Adjs in Def DP ( $p = .787$ ) and Number on Adjs in Indef DP ( $p = .796$ ),  
Results of the Turkish group were as follows: Number on Adjs in Def DP ( $p = .843$ ), Number on Adjs in Indef DP ( $p = .582$ ), Number on Dets and Adjs in Def DP ( $p = .271$ ), Number on Dets and Adjs in Def DP ( $p = .271$ ) and Number on Dets and Adjs in Indef DP ( $p = .207$ ).

The percentages displayed in table 3.8 reveal that the Spanish participants were target-like in number concord with more than 96% of target-use. This indicates that this group did not face any problem in number concord.

### L1 influence/L2 influence

In order to test the effect(s) of L1 and/or L2 on the acquisition of number concord in L3 French, the target-like performances of both Spanish sub-groups (Adv and LI) are further divided according to two variables: *number property types* (i) number concord on Det (ii) number concord on Adj and (iii) number concord on Det and Adj and *definiteness* (Def vs. Indef DPs). Results of each sub-group are displayed in table 3.9 below.

**Table 3.9** Mean percentage of Target-like performance by property type, definiteness and L2 proficiency within L1 Spanish

Prof level by language Property	Spanish	
	Adv(N=13)	LI (N=9)
Target-like use on Number concord on Det in Def DPs	38/39(97.43%)	27/27 (100%)
Target-like use on Number concord on Det in Indef DPs	39/39(100%)	27/27 (100%)
Target-like use on Number concord on Adj in Def DPs	38/39(97.43%)	26/27 (96.26%)
Target-like use on Number concord on Adj in Indef DPs	38/39(97.43%)	26/27 (96.26%)
Target-like use on Number concord on Det and Adj in Def DPs	39/39(100%)	27/27 (100%)
Target-like use on Number concord on Det and Adj in Indef DPs	39/39(100%)	27/27 (100%)

As shown above, there seems no difference between the Adv and the LI Spanish sub-groups in their treatment of number concord across the different properties. No difference could also be noted for definiteness; both sub-groups are treating number concord in both Def and Indef DPs in a similar target-like manner.

A mixed factorial ANOVA is carried out [Within subjects variable 1= number property (target use of number concord on Dets, target use of number concord on Adjs and target use of Number concord on both Dets and Adjs), Within subjects variable 2= definiteness contexts (target use of number concord in Def contexts versus target use of number concord in Indef contexts), and between subjects factor=L2 proficiency groups]. Results showed no significant main effect for the number property, [ $F(2,40)= 3.788, p=.066$ ], no significant interaction between number concord types and L2 proficiency groups, [ $F(2,40)=.507, p=.606$ ], no statistical significant main effect for definiteness, [ $F(1,20)= .215, p=.648$ ]. A between-subject comparison showed no significant difference between the Adv and LI Spanish sub-groups [ $F(1,20)= .001, p=.971$ ]<sup>72</sup>.

Such statistical results reveal that both Spanish sub-groups seem to treat number concord in a target-like way, with no difference in their performance across the three types of number concord. Definiteness did not seem to be a significant factor in this test as there was no significant difference between the treatment of number concord in Def DPs and Indef DPs. Thus, given that the Spanish participants of both sub-groups were alike, the assumption would be that L2 English does not seem to play a significant role on the performance of the Spanish participants. Their performance seems to be mainly influenced by L1 Spanish.

As for the property types of number concord, results showed no main effect for this feature, this corroborates the descriptive data in table 3.9; both sub-groups treat the different types of number concord in a similar target-like manner. This difference was further confirmed by adjustments using Bonferroni post-hoc test and results showed no significant difference across the three types,  $p>.05$ . The rest of the results are displayed in table 3.10 below.

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<sup>72</sup> There was also no significant interaction between definiteness and L2 proficiency groups [ $F(1,20)=.215, p=.648$ ], no significant interaction between number concord types and definiteness [ $F(2,40)=.106, p=.899$ ], and similarly no significant three-way interaction between number concord-definiteness-L2 proficiency group was found, [ $F(2,40)=.106, p=.899$ ].

**Table 3.10** Target-like use of Number concord by property (Post-hoc results)

	No number concord on Adj	No number concord on Det & Adj
No number concord on Dets	p=.192	p=1.000
No number concord on Adjs		
No number concord on Dets & Adjs	p=.131	

➤ **MCT task results (Turkish version)**

Overall results

**Table 3.11** Mean percentage of Target-like performance in L1 Turkish

	Turkish (N=22)
*Target-like use	80/96 (83.33%)
*Non Target-like use	16/96 (16.66%)

The percentages displayed in table 3.11 reveal that the Turkish participants were overall target-like in number concord, but their target-like performance (83%) was less target-like than that of the Spanish participants who scored over 96% of target-use in the Spanish version of this test.

L1 influence/L2 influence

In order to investigate L1 and L2 effects on the performance of the Turkish natives on number concord, the target-like performances of Turkish Adv and LIs are further compared in terms of two variables: *number property types* (i) number concord on Dets, (ii) number concord on Adjs and (iii) number concord on both (Dets and Adjs) and *definiteness* (Def vs. Indef DPs). Results of each sub-group are displayed in the table below.

**Table 3.12** Mean percentage of Target-like performance by property type, definiteness and L2 proficiency within L1 Turkish

Property	Prof level by language	
	Turkish	
	Adv(N=10)	LI (N=6)
Target-like use on Number concord on Dets in Def DPs	30/30 (100%)	17/18(94.44%)
Target-like use on Number concord on Dets in Indef DPs	29/30(96.66)	18/18 (100%)
Target-like use on Number concord on Adjs in Def DPs	27/30(90 %)	15/18 (83.33%)
Target-like use on Number concord on Adjs in Indef DPs	26/30(86.66)	16/18 (88.88%)
Target-like use on Number concord on Dets and Adjs in Def DPs	29/30(96.66)	18/18 (100%)
Target-like use on Number concord on Dets and Adjs in Indef DPs	30/30(100%)	17/18 (94.44%)

Table 3.12 shows no difference between the Adv and the LI sub-groups in their treatment of number concord across the different properties; they are target-like in all types with more than 93% of target-like use, except for number concord on Adjs (around 84%). This means that the Turkish participants seem to find number concord on Adjs more challenging than number concord on Dets. Definiteness does not seem to be a significant factor for this test as the target-like performance of both sub-groups in Def and Indef DPs is very similar. Similar results were also found in the English version of this test.

To test these descriptive figures statistically, a mixed factorial ANOVA was carried out [Within subjects variable 1=number property (target use of number concord on Dets, target use of number concord on Adjs and target use of number concord on both Dets and Adjs), Within subjects variable 2=definiteness contexts (target use of number concord in Def contexts versus target use of number concord in Indef contexts), and between subjects factor=L2 proficiency groups].

Results showed a main effect of number property, [ $F(2,28)=8.817, p=.001$ ], but no significant interaction between number concord types and L2 proficiency groups, [ $F(2,28)=.234, p=.793$ ]. There was also no statistical significant effect for definiteness, [ $F(1,14)=.059, p=.812$ ]. A between-subject comparison showed no significant difference between the Adv and LI Turkish sub-groups [ $F(1,14)=.963, p=.343$ ]<sup>73</sup>.

Such statistical results reveal that both Turkish sub-groups treat number concord in a similar way. As there was no significant difference between Turkish subjects who have an Adv L2

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<sup>73</sup> There was also no significant interaction between definiteness and L2 proficiency groups by language [ $F(1,14)=.059, p=.812$ ] and no significant interaction between number concord types and definiteness [ $F(2,28)=.072, p=.931$ ], and similarly no significant three-way interaction between number concord-definiteness-L2 proficiency group, [ $F(2,28)=.686, p=.512$ ].

proficiency level and those who have a LI proficiency level, the assumption would be that L2 English does not seem to play a strong role on performance of this group on the acquisition of number concord. In other words, English might have helped the Turkish group learn number concord but it is not the only dominant source of influence; Turkish is more influential.

In addition, as the results above showed a main effect of number property types, that means that the Turkish sub-groups were treating the different types of number concord differently. In order to see which types were treated differently, adjustments using Bonferroni post-hoc test were carried out. Results are displayed in the table below.

**Table 3.13** Target-like use of Number concord by property (Post-hoc results)

Error types	No number concord on Adjs	No number concord on Dets & Adjs
1. No number concord on Dets	$p=.024$	$p=1.000$
2. No number concord on Adjs		
3. No number concord on Dets & Adjs	$p=.012$	

.05 is the significant level for this test.

As shown in the table above, error type 2 (No number concord on Adjs) is the error that has occurred most as its rate of occurrence is significantly different from the other two types. This suggests, once again, that the Turkish participants seem to be facing difficulties with assigning plural inflection to Adjs more than to Dets, similar results were also found in the English version of this test.

#### *Summary of MCT Task results*

Results of the three versions of the MCT task were almost similar. They showed that both groups were successful in their treatment of number Concord with over 80% of target-like use. However, the Turkish participants were significantly less target-like than their Spanish counterparts.

When investigating the source of influence in participants' performances, i.e. which of the previously acquired languages could be the source of transfer, two comparisons were made. The first compared the LI sub-groups of each L1 group (to test L1 influence). Results showed no significant difference between the two sub-groups. These were taken as pointing to L1 influence, particularly for the Spanish group whose L1 is a language which, similar to French, shows number concord on both Dets and Adjs. The second comparison was conducted between the Adv sub-groups of each L1 group (to test L2 influence). However, as results showed a main difference between the two sub-groups, the assumption made was that L2, a common language for both groups, is not a significant factor, otherwise the performance of both groups would be alike.

The second comparison was made between three types of errors that learners committed in their treatment of number concord in L3 French (i) *No plural inflection on Dets* (ii) *No plural inflection on Adjs* and (iii) *No plural inflection on both Dets and Adjs*). Results of the Spanish group showed no difference between the three error types whereas the Turkish subjects were more likely to drop number inflection on Adjs than on Dets. They were selecting sentences which contained *No plural inflection on Adjs* than any other types of errors. A possible explanation to such results could be that number concord on French adjectives is only realised in written French and not in spoken French. Thus, the French input that Turkish learners are exposed to is misleading. Moreover, given that Turkish and English adjectives do not get inflected for plural, the Spanish group seem to be at advantage because number concord in adjectives is realised in both spoken and written Spanish. Furthermore, it might also be due to the fact that assigning the correct concord to DPs containing Adjs are often more challenging than doing so with DPs without Adjs. Another further possibility could be derived from the fact that Turkish is an article-less language, so Turkish participants are generally exposed to DPs

consisting of Ns and Adjs only, Ns are inflected for plural and Adjs are not inflected for plural but not exposed to Dets that are not inflected for plural. Briefly, the input on Number concord on Adjs that Turkish natives are exposed to is not sufficient this is why they perform on Dets better than on Adjs. Finally, there was no difference between the treatment of number concord in Def and Indef DPs across the two L1 groups.

### 3.4.2.2 ASC task

#### *Procedure*

In this task, participants are told that some sentences are acceptable in French while some others are not. They should write correct under the acceptable sentences and correct the unacceptable ones. A total of eight sentences were designed for this task<sup>74</sup>, divided into two contexts by definiteness, as shown below.

- **A definite article + N + Adjective (all of them are masculine plural)**

<i>les</i>	<i>produits</i>	<i>italiens</i>
the	<i>products</i>	<i>Italian</i>
Det (Def, masc pl)	N (masc pl)	Adj (masc pl)
(= <i>the Italian products</i> )		
  
- **A indefinite article + Adjective+ N (all of them are masculine plural)**

des	bijoux	chers
Ø	jewels	expensive
Det (Indef, masc pl)	N (masc pl)	Adj (masc pl)
(= <i>expensive jewels</i> )		

Each of the two contexts above consists of four sentences, whereby each sentence is testing one of the following four cases. Case (a): correct option i.e. there is plural inflection on the Det, N and Adj. In Case (b), there is no overt Number Concord on the Det while the N and Adj are both inflected for plural. In Case (c), the Det and N are both inflected for plural but the Adj is not, and in case (d), only the head N is inflected for plural while both the Det and Adj are not.

<sup>74</sup> The rest sentences will not be discussed here as they are testing other properties.

Participants are supposed to correct sentences with cases (b, c and d) but should write acceptable under sentences with case (a).

#### *Results of the ASC Task*

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the ASC test showed a strong reliability coefficient.

Cronbach's alpha = .936 L3 learners & NS/ .823 for L3 learners only.

#### Overall results

**Table 3.14** Mean percentage of Target-like performance by L1

Performance	L3 learners divided by L1		Native speakers (N=10)
	Spanish (N=22)	Turkish (N=16)	
Target-like use	169/176 (96.02 %)	114/128 (89.06%)	78/80 (96.66%)
Non Target-like use	7/176 (3.97%)	14/128 (10.93%)	2/80 (2.08%)

According to the table above, the Spanish group treated the property of number in a near native-like manner (with 96.02 % of target-like use). The Turkish participants were also target-like, scoring over 89% of target-like use, but were less target-like than the Spanish group and the French natives. A One-way ANOVA was carried out [dependent variable= target-like use; independent group variable Experimental groups divided by L1] and results corroborated the descriptive percentages above. There was a significant effect for L1 group [ $F(2,45) = 6.144$ ,  $p = .003$ ] and a significant difference between the three experimental groups. Adjustments using post hoc Bonferroni test revealed a significant difference between the French control group and the Turkish group ( $p = .012$ ), and also between the Spanish and Turkish groups ( $p = .014$ ), but no significant difference between the French control group and the Spanish group ( $p = 1.000$ ).

L1 influence/L2 influence

In order to test if there is any evidence of L1 and/or L2 influence on the target-like performance of both L1 groups, two comparisons are made (i) between the LI sub-groups and (ii) between the Adv sub-groups, to test L1 influence and L2 influence, respectively. Descriptive results are displayed in table 3.15 below.

**Table 3.15** Mean percentage of Target-like performance by Number property and L2 proficiency levels within L1 groups

Performance	L3 learners divided by L1 and L2 proficiency				French Natives (N=10)
	Spanish		Turkish		
	Adv (N=13)	Low-Inter (N=9)	Adv (N=10)	Low-Inter (N=6)	
Plural inflection on Det in Def DP	52/52 (100 %)	36/36 (100%)	39/40 (97.5%)	24/24 (100%)	40/40 (100%)
Plural inflection on Det in Indef DP	52/52 (100 %)	36/36 (100%)	40/40 (100%)	23/24 (95.83%)	40/40 (100%)
Plural inflection Adj in Def DP	51/52 (98.07 %)	33/36 (91.66%)	38/40 (95%)	22/24 (91.66%)	39/40 (97.5%)
Plural inflection Adj in Indef DP	52/52 (100 %)	34/36 (94.44%)	38/40 (95%)	21/24 (87.5%)	39/40 (97.5%)
Plural inflection on Det and Adj in Def DP	52/52 (100 %)	35/36 (97.22%)	40/40 (100%)	23/24 (95.83%)	40/40 (100%)
Plural inflection on Det and Adj in Def DP	52/52 (100 %)	36/36 (100%)	39/40 (97.5%)	23/24 (95.83%)	40/40 (100%)

Overall, all groups seem to be performing target-like in almost all types of number concord, scoring over 80% of target-like use. No difference can be noticed between the two sub-groups of each L1 group, suggesting that L2 proficiency does not seem to have a strong role on the performance of these sub-groups in this test. A comparison between LI Spanish and LI Turkish reveals that both sub-groups performed target-like in all types, however, it can also be noticed that LI Turkish participants were less target-like, particularly concerning plural inflection on Adjs. Similar results were noticed between Adv Spanish and Adv Turkish sub-groups whereby the latter performed less target-like than the former mainly concerning plural inflection on Adjs. To combat such descriptive results statistically, a mixed factorial repeated measures ANOVA

[Within subjects variables= number property, between subjects factor= LI group] was carried and results showed a significant effect for the number property [ $F(2,26)= 5.489, p=.010$ ], but no significant interaction between the property and L2 groups [ $F(2,26)=.041, p=.960$ ], no significant effect for definiteness [ $F(1,13)= .065, p=.803$ ]. Unlike, in the MCT test (English version), a between subjects comparison revealed a significant difference between the LI Spanish group and the LI Turkish group [ $F(1,13) = 6.240, p=.027$ ]<sup>75</sup>.

Results of the Adv group were slightly similar to the LI ones. There was a significant effect for the number property [ $F(2,42)=3.357, p=.044$ ], but no significant interaction between the number property and L2 groups [ $F(2,42)=1.176, p=.318$ ] and no significant effect for definiteness [ $F(1,21)=.143, p=.709$ ]. However, a between subjects comparison revealed a significant difference between the Adv Spanish group and the Adv Turkish group [ $F(1, 21)=6.101, p=.022$ ], which suggests that L2 cannot be a significant factor for this test; otherwise the two sub-groups would show similar results<sup>76</sup>.

### L2 proficiency

As shown from the descriptive results in table 3.14, L2 proficiency does not seem to be a significant factor in the performance of both L1 groups. The performance of Adv and LIs of each L1 group was comparable. An independent samples t-test was carried out and results showed no significant difference between the LIs and Adv of each L1 group across all types of number

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<sup>75</sup> There was also no significant interaction between definiteness and L2 groups [ $F(1,13)= 1.625, p=.225$ ], no significant interaction between definiteness and the number property [ $F(2,26)= .216, p=.807$ ] nor any significant three-way interaction between the number property, definiteness and L2 groups [ $F(2,26)= .079, p=.924$ ].

<sup>76</sup> There was also no significant interaction between definiteness and L2 groups [ $F(1,21)=.143, p=.709$ ] and no significant interaction was between definiteness and the number property [ $F(2,42)=.589, p=.576$ ] and also no significant three-way interaction between the number property, definiteness and L2 groups [ $F(2,42)=.589, p=.576$ ].

concord ( $p > .05$ ), implying indeed that L2 proficiency may not be a significant factor in the acquisition of number concord in this test<sup>77</sup>.

#### *Summary of ASC Task results*

Results of this test were similar to those of the MCT test (except for the results of the LIs in the English version). Overall, both Spanish and Turkish participants behaved in a target-like manner vis-à-vis the property of number concord with accuracy rates exceeding our 75% accuracy criterion. However, the Turkish subjects were significantly less target-like than the Spanish ones.

Comparisons between LI participants of each L1 group showed a significant difference between the two sub-groups. Spanish participants were much more target-like than their Turkish counterparts, especially concerning number concord on Adjs. Similar results were also found when comparing the Adv sub-groups of the Spanish and Turkish groups. Results showed that the Spanish Adv were significantly more accurate than the Turkish one. The assumption made was that L2 English did not seem to have a significant effect on the performance of both groups. That assumption was further ascertained when comparing the Adv and LIs of each L1 whereby no significant difference was found between the two sub-groups.

In light of such findings, it seems that the results of the Spanish group should be attributed to the typological similarity between this language and L3 French. Both languages show number concord on Dets and Adjs. As for the Turkish subjects, their results showed that they were least target-like in number concord on Adjs. Both Turkish and English do not inflect Adjs for plural.

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<sup>77</sup> Results of the Spanish group were as follows: Number on Adjs in Def DP ( $p = .138$ ), Number on Adjs in Indef DP ( $p = .081$ ) and Number on Dets and Adjs in Def DP ( $p = .238$ ).

Results of the Turkish group were as follows: Number on Dets in Def DPs ( $p = .458$ ), Number on Dets in Indef DPs ( $p = .207$ ), Number on Adjs in Def DP ( $p = .582$ ), Number on Adjs in Indef DP ( $p = .237$ ), Number on Dets and Adjs in Def DP ( $p = .207$ ), and Number on Dets and Adjs in Indef DP ( $p = .719$ ).

However, given that no significant difference was found between Turkish participants of LIs and Adv L2 English proficiency levels, the performance of these participants are believed to be due to transfer from L1 Turkish and not L2 English.

Moreover, the fact that Turkish participants failed to acquire number concord on Adjs more than on Dets was explained above by the fact that Turkish is an article-less language i.e. Turkish natives are exposed to Adjs that are not inflected for plural but not to Dets that are not inflected for plural. Thus, the input, they are exposed to consists of an NP that contains a N that is inflected for plural and an Adj that is not inflected for plural.

Finally, results of this task revealed no difference between the treatment of number concord in Def and Indef DPs across the two groups.

### 3.4.2.3 *Written Picture description task (Part Two)*

#### *Procedure of task administration*

The written part of this task contains 10 pictures, with each picture containing many objects of the same item (e.g. many chairs, many tables...etc)<sup>78</sup>. This is to guarantee that participants will use DPs that are plural and not singular. This test is computer-based and participants were told to describe each picture in one sentence maximum in terms of its colour and to write this description underneath each picture. The instructions were stated clearly in English, but the researcher further explained them verbally through an illustrative example. The example was uttered orally (*des pantalons noirs*=black trousers), just to make sure that all learners would use articles and not other determiners for each DP. All pictures were of [-animate] objects, and were also of a medium size, coloured. The scoring criteria used in this test were as follows:

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<sup>78</sup> A brief reminder, this task has two parts, an oral part which tests the property of gender and a written part which tests the property of number concord.

- a. **Correct option** (the participant used a DP with correct plural inflection on the Det, N and Adj).
- b. **No Number concord on Det** (the participant used a DP with no plural inflection on the Det).
- c. **No Number concord on Adj** (the participant used a DP with no plural inflection on the Adj).
- d. **No Number concord on both Det and Adj** (the participant used a DP with no plural inflection on both the Det and Adj).
- e. **No plural inflection on the head N** (the participant used a DP with no plural inflection on the head N).

This test had no time limit, but participants were told not to think too long and to answer by guessing in case of doubt. A copy of this task (part two) is found in Appendix A.9.

#### *Results of the picture description Task*

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the written picture description test showed a good reliability coefficient.

Cronbach's alpha = .894 L3 learners & NS/ .775 for L3 learners only.

#### Overall results

**Table 3.16** Mean percentage of Target-like performance by L1

Performance	L3 learners divided by L1		Native speakers (N=10)
	Spanish (N=22)	Turkish (N=16)	
Target-like use	216/220 (98.18%)	139/160 (86.87%)	99/100 (99%)
Non Target-like use	4/220 (1.81%)	21/160 (13.13%)	1/100 (1%)

Both L1 groups were target-like in their treatment of number concord, but the Turkish speakers seemed less target-like than the Spanish ones. A one-way ANOVA was conducted [dependent variable = target-like use; independent group variable = Experimental groups divided by L1] and results showed a significant effect for L1 group [ $F(2,45) = 20.621, p = .0001$ ]. Adjustments using post-hoc test Bonferroni showed that the significant difference was between the French natives and the Turkish group ( $p = .0001$ ), and also between the Spanish and the Turkish groups

( $p=.0001$ ), but no significant difference between the French control group and the Spanish group ( $p=1.000$ ).

### L1 influence/L2 influence

To investigate whether the performance of both groups is influenced by their L1 and/or L2, two comparisons are made. The first is between the LI sub-groups to see whether or not there is L1 influence. The second comparison is between the Adv sub-groups which will help identify if there is any influence from L2 English. Descriptive results are displayed in the table below.

**Table 3.17** Mean percentage of Target-like performance by Number property and L2 proficiency levels within L1 groups

Performance	L3 learners divided by L1 and L2 proficiency				French Natives (N=10)
	Spanish		Turkish		
	Adv (N=13)	Low-Inter (N=9)	Adv (N=10)	Low-Inter (N=6)	
Target-like Number concord on Det	130/130 (100 %)	90/90 (100%)	99/100 (99%)	59/60 (98.33 %)	100/100 (100%)
Target-like Number concord on Adj	127/130 (97.69 %)	90/90 (100%)	91/100 (91%)	55/60 (91.66 %)	99/100 (99%)
Target-like Number concord on Det and Adj	130/130 (100 %)	89/90 (98.88%)	97/100 (97%)	59/60 (98.33 %)	100/100 (100%)
Target-like Plural inflection on head N	130/130 (100 %)	90/90 (100%)	100/100 (100%)	59/60 (98.33 %)	100/100 (100%)

According to table 3.17, overall all sub-groups were target-like in almost all properties of number concord. The LI Spanish and the LI Turkish sub-groups were performing in a similar target-like manner, and so were the Spanish Adv and Turkish Adv sub-groups. However, the Turkish sub-groups appeared less target-like than their Spanish counterparts. These results were further ascertained by a mixed factorial repeated measures ANOVA [Within subjects variables= Number property, between subjects factor= LI group] and results boarded significance for the number property [ $F(3,39)= 2.768, p=.055$ ], but a significant interaction between the property and L2 group was found [ $F(3,39)= 3.439, p=.029$ ]. A between subjects comparison revealed a

significant difference between the LI Spanish group and the LI Turkish group [ $F(1,13)= 16.558$ ,  $p=.001$ ].

A second mixed factorial repeated measures ANOVA was carried out [Within subjects variables= Number property, between subjects factor= Adv group]. Results were almost similar to those of the LIs. There was a significant effect for the property number [ $F(3, 63)= 9.797$ ,  $p=.001$ ], and also a significant interaction between the number property and L2 group [ $F(3,63)=3.238$ ,  $p=.028$ ]. A between subjects comparison also revealed a significant difference between the Adv Spanish group and the Adv Turkish group [ $F(1, 21) =13.038$ ,  $p=.002$ ].

These results corroborate the assumptions above, i.e. although the Turkish participants were target-like in number concord; they were less target-like than the Spanish participants. This difference cannot be attributed to L2 influence because both Turkish sub-groups (LIs and Adv) performed in a similar way and were both less target-like than their Spanish counterparts. The assumption was therefore that the Turkish group negatively transferred some properties of L1 Turkish, particularly the no plural inflection on Adjs.

### L2 proficiency

The descriptive figures in table 3.17 show that L2 proficiency does not seem to be a significant factor in the performance of both L1 groups. An independent samples t-test is carried out, and results showed no significant difference between the LIs and Adv of each L1 group on the four types of number concord ( $p>.05$ ), implying that L2 proficiency did not have a significant role on the performance of neither L1 group<sup>79</sup>.

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<sup>79</sup> Results of the Spanish group were as follows: Number on Adjs ( $p=. 133$ ), Number on Dets and Adjs ( $p=. 238$ ). Results of the Turkish group were as follows: Number on Dets ( $p=. 719$ ), Number on Adjs ( $p=.879$ ), Number on Dets and Adjs ( $p=. 582$ ), Number on N ( $p=. 207$ ).

*Summary of written picture description task results*

Results of this task showed that both groups were successfully target-like (reaching over 75% of accuracy rates), but the Spanish group outperformed the Turkish group, especially with regard to number concord on Adjs. In addition, L2 did not seem to have a significant effect on the performance of both L1 groups. That was mainly concluded from the fact that Spanish participants of both LI and Adv proficiency levels outperformed their Turkish counterparts (see summaries of the MCT and ASC tasks for further details and justifications on similar results).

### **3.5 Summary and discussion of chapter 3**

This chapter investigated the acquisition of number concord in L3 French in the performance of L1 Spanish and Turkish speakers who learnt English as an L2 (LIs and Adv). Three experimental tasks were used: an MCT task in three versions (English, Spanish and Turkish), an ASC task and a written picture description task. Their findings are summarised and discussed below in relation to some linguistic findings, certain L2/L3 studies. Finally, the predictions of four L3 hypotheses will be tested with regard to the results attained.

#### **Summary and discussion of findings in relation to certain linguistic concepts**

*Number concord on French DPs*

Both groups surpassed the 75% accuracy criterion (set by this study) in their treatment of number concord in the L3 French DP. However, the Spanish group was more target-like than the Turkish one, especially regarding number concord on Adjs. Such results are inconsistent with some L2 and L3 studies. White *et al.*, (2004), for example, found no significant difference between L1 English and L1 French natives when learning number concord in L2 Spanish. Judy *et al.* (2008)

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also found that English native speakers were near native-like in number concord in L2 Spanish. In an L3 study, Jaensch (2009a) found that L1 Japanese natives who speak English as L2 did not face any problem when learning number concord in L3 German. They managed to assign plural inflection to Ns and Adjs, though L1 Japanese is an article-less language and does not inflect Adjs for plural and similarly their L2 English does not inflect neither its articles nor Adjs for plural. Further discussions on these findings are in chapter seven.

*Plural inflection on Det vs. Plural inflection on Adj vs. Plural inflection on N*

While the Spanish participants treated number concord on Dets, Ns and Adjs in a similar target-like manner, Turkish participants seemed to find number concord on Adjs more challenging than the other types of plural inflection. It was said above that the Turkish participants might have failed to acquire number concord on Adjs more than on Dets due to the fact that Turkish is an article-less language and therefore Turkish natives are exposed to Adjs that are not inflected for plural but not to Dets that are not inflected for plural. The input they are exposed to consists *only* of Ns that are inflected for plural and Adjs that are not inflected for plural. L2 English could not be the reason because though both Turkish and English do not inflect Adjs for plural, given that no significant difference was found between Turkish participants of L1s and Adv L2 English proficiency levels, the performances of these participants are believed to be due to negative transfer from L1 Turkish and not L2 English.

*Definiteness*

There was no significant difference between Spanish and Turkish participants' treatment of number concord in Def and Indef contexts. The researcher is aware of no previous studies that tested the variable of definiteness when investigating number concord in L2/L3.

### **Summary and discussion of findings in relation to L3A hypotheses**

Four L3 models were tested in this study: The L1 factor model, the L2 Status factor model, the TPM and an original hypothesis proposed by the present work. See chapter one section (1.5.2.2) for further details on their predictions.

Findings of the three experimental tasks discussed in this chapter seem to show no effect for L2 in the acquisition of number concord in L3 French. That was concluded through a comparison carried out between participants of an Adv L2 proficiency level of the Spanish and Turkish groups and another comparison was carried out between the L1s of each L1 group. Results showed that the Spanish sub-groups outperformed the Turkish ones, regardless of their L2 proficiency.

Such results were taken as indicative of no significant role of L2, and therefore, the L2 Status factor hypothesis was not supported. In addition, although at a surface level, results might seem to point to an L1 transfer, but a deeper examination of certain details reveal that typological similarity is the key factor. If we compare the performance of the Turkish group in number concord and gender (chapter two), one will notice that this group failed to acquire the latter but was above (the 75% accuracy criterion set by this study) in number concord. That clearly implies that the Turkish group benefited from the presence of number concord in their L1 and/or L2, but failed to be native-like in gender because both Turkish and English are gender-free languages. Accordingly, these findings are neither due to the L1 effect (the L1 factor model) nor L2 effect (the L2 status factor), but rather due to typological/structural (dis)similarity between L1 and/or L2 and the L3. Again the main research question of the present study is whether holistic typological similarity or property-based structural similarity should be considered as the triggering factor of CLI in L3A?

As it was stated above, the fact that the Spanish group outperformed the Turkish one in number concord could be due to the fact that the Spanish participants had the privilege of having been exposed to L1 Spanish, a language which is typologically similar to French but is also structurally similar to French concerning the property of number concord (i.e. they both show plural inflection on Dets, N and Adjs). Turkish and English, on the contrary, though both hold the feature number on the head noun, are slightly different from French and Spanish because their Dets and Adjs do not get inflected for plural. Unlike various L2 studies which found that partial similarity was enough so that participants behave target-like in number concord (see for example White *et al.*, 2004), results of the present study have shown that the Turkish group was less target-like than the Spanish group, especially on number concord on Adjs. This could imply that in the absence of holistic typological similarity, structural similarity between the L1/L2 and the L2 is perceived by the parser on a property-by-property basis. In light of that, it seems that if one of the background languages is only partially structurally similar to the L3, that partial similarity will result in partial acquisition of a given property in L3 which might explain why the Turkish participants were not fully successful in number concord on Adjs, unlike the Spanish participants who seemed to have faced no acquisitional problems in number concord neither on Dets nor Adjs.

Another possible reason that might justify why Turkish subjects failed to be native-like in number concord on Adj is the fact that plural inflection on Adjs in French is only realised in written forms, which means that Spoken French might provide insufficient input for the Turkish subjects at the initial stages of learning L3 French. However, this misleading input did not seem to cause any acquisitional problems for the Spanish subjects who were near native-like in their treatment of plural inflection on Adjs. Such results could be the result of positive L1 transfer because plural marking on Adjs is realised in both spoken and written Spanish.

So far, these results seem to point to the existence of two phenomena that need to be distinguished: holistic typological similarity which makes the parser transfer all the properties of that language into the L3 and structural similarity which results in property-by-property based transfer. The case of the Spanish group is a case of holistic transfer because Spanish and French are typologically similar, but in the case of the Turkish participants, though both English and Turkish are typologically different from L3 French, they are structurally similar to L3 French regarding the property of number concord. That structural similarity made the Turkish subjects behave in a target-like manner in this property compared to their poor performance on the property of gender (chapter two) but were non target-like in number concord on Adjs compared to their target-like performance on number concord on Dets.

The Spanish results seem to be supportive of the TPM predictions; for Spanish was the main source of influence on the performance of the Spanish group. This was mainly evidenced by the fact that both Spanish subjects of Adv L2 proficiency and those with LI proficiency in L2 English were near native-like in their treatment of number concord on both Dets and Adjs in L3 French, even though the French input and the English input are relatively misleading because plural inflection in adjectives is only audible in written French but not in spoken French while in English Adjs are not inflected for plural.

Turkish results, nevertheless, do not seem to support the TPM predictions which would expect this group to be influenced by L2 English, given that English is lexically the closest to L3 French, and therefore, Turkish natives are expected to transfer the properties of L2 English grammar on a holistic basis (at their initial state of learning L3 French grammar) according to the TPM model (Rothman, 2015). Such an interpretation was concluded from the fact that Turkish subjects of advanced proficiency in L2 English did not outperform those of lower-intermediate

L2 proficiency which means that, English did not seem to be the source of influence on the performance of the Turkish group but rather L1 Turkish which was most influential. Such findings do not seem to be supportive of the TPM model which always advocates holistic transfer from the language that is perceived by the parser as being typologically the closest to L3 on the basis of lexical similarity, but rather seems to be supportive of the prediction of the present study which argues that in the absence of holistic typological similarity, structural similarity on a property-by-property basis is the triggering factor for CLI in L3A. One again, it should be noted that one can only be affirmative as to whether the predictions of the TPM or those of the present study are corroborated or not after gathering the data of the four properties under investigation (see chapter seven for further discussion on this model and its predictions). Only then, one can draw conclusions on which of the two hypotheses is corroborated.

In addition to the role of typological proximity, this study also tests the role of L2 proficiency, the L1 model claims no role for the L2 while the L2 status factor argues that L2 proficiency is always the source of transfer and therefore L2 proficiency level should play a role on the performance of L3 learners, whereas the TPM makes no official claims with regard to this. The present study argues that if L2 is the only language that is typologically/structurally similar to the L3 concerning the *property tested*, L2 proficiency will have an effect. Given that Spanish and Turkish both hold the feature number concord, English is, therefore, not the only language that has this property. Accordingly, this study expects no difference between Spanish subjects of different L2 proficiency levels and also expects no difference between Turkish subjects with higher L2 proficiency and those with lower L2 proficiency. These predictions were corroborated by the findings of this study.

The next chapter presents and discusses data on article choices (i.e. the definiteness/specificity property) in the L3 French DP.

## Chapter 4 L3 learners' Acquisition of Articles in the French DP

### 4.1 Introduction

This chapter aims to explore learners' ability to distinguish between DPs in a definite context and DPs in indefinite contexts in L3 French. Learners are also tested on their ability to distinguish between specific and non-specific contexts, so as to see whether they fluctuate on the basis of definiteness and/or specificity. It is well documented that NSs of article-less (henceforth [-ART]) languages which have no morphological marker for definiteness face difficulties in acquiring an L2 or L3 (Ln) in which articles are present and which is marked for definiteness (Hawkins *et al.*, 2006; Ionin *et al.*, 2004; Jaensch, 2009a; Sarko, 2008; Snape, 2006; Snape *et al.*, 2006; White, 2003a, 2008).

The variability in article choices exhibited by NNSs has resulted in a considerable body of research. There are two separate aspects that researchers have investigated when examining learners' acquisition of articles. The first is their distribution (i.e. when an article can be used and when it cannot) and the second is their semantic/pragmatic force (i.e. what they mean and how that meaning relates to the context of a given utterance). Two existing accounts of each are presented in the next two sub-sections.

#### 4.1.1 Article distribution: the Nominal Mapping Parameter

In relation to the distribution of articles, Chierchia (1998) proposed the Nominal Mapping Parameter (henceforth NMP). This account distinguishes different types of languages on the basis of articles. According to Chierchia, languages differ in whether their NPs can function directly as arguments in syntactic expressions or not, i.e. whether they are [ $\pm$  argument]

languages. Furthermore those languages which have NPs that require a Det of some kind to license them are [+predicate] languages, while those that do not are [-predicate] languages. Such an account divides languages into three categories, briefly summarised below:

- (a) [+arg, -pred] languages which have no articles and lack number marking on nouns – any bare noun can be an argument (e.g. Japanese, Chinese).
- (b) [-arg, +pred] languages which have definite/indefinite articles and number marking on nouns and determiners – all nouns need to be licensed (e.g. Spanish, French).
- (c) [+arg, +pred] languages which have definite/indefinite articles but also have a count/mass distinction for nouns – some nouns need licensing but count plurals and some mass nouns do not (e.g. English, German).

However, it has been found that the predictions of the NMP do not straightforwardly apply to a number of languages such as Brazilian Portuguese (Schmitt & Munn, 1999), Chinese (Li, 1998, Cheng & Sybesma, 1999, Sio, 2006), Japanese (Tomioka, 2003 and Kurafuji, 2004), Korean (Choi, 2005), Turkish (Oztuk, 2005) and Greek (Tsoulas, 2005), among others. As the present study will not test the NMP nor use it in its distinction of languages according to their article systems, no additional details on this account will be further discussed.

#### 4.1.2 Article semantics/pragmatics: the Article Choice Parameter

The second aspect of articles that has attracted the interest of various studies, especially in recent years, is the semantic/pragmatic force of articles. Within the generative paradigm, for instance, much attention has been paid to the role of semantic universals (namely definiteness and specificity) in the acquisition of L2/L3 articles. Ionin (2003) assumes that 'languages use articles to encode either specificity or definiteness' (p. 85). Ionin *et al.*, (2004), and in accordance with Lyons (1999), claim that certain languages such as English, German, French and Spanish have

article systems that are definiteness-based, that is to say, they have morphological markers (e.g. *the* and *a/an* in English) that encode, amongst other things, definiteness [ $\pm$  Def] but not specificity [ $\pm$  Spec]. Articles in some other languages (e.g. Samoan, Sango and Salish, among others) encode, in contrast, specificity and not definiteness (Garcia Mayo and Hawkins, 2009; Kim and Lakshmanan, 2009). Ionin (2003) suggests that this discrepancy between languages can be captured through parametric variation, whereby languages vary on whether they use their article systems to encode the definite feature, specific feature or both (p. 30). Table 4.1 below shows two different article systems of two languages, one which is definiteness-based (English) and one which is specificity-based (Samoan).

**Table 4.1** Article grouping Cross-linguistically: Two-article languages (taken from Ionin *et al.*, 2004, p.13).

Article grouping by specificity (e.g. Samoan)

	[+Def]	[-Def]
[+Spec]	<i>Le</i>	
[-Spec]	<i>Se</i>	

Article grouping by definiteness (e.g. English)

	[+Def]	[-Def]
[+Spec]	<i>The</i>	<i>A</i>
[-Spec]		

This variability led Ionin and her colleagues to suggest the presence of a parameter in UG governing article choice which distinguishes two settings: the definiteness setting and the specificity setting. This parameter was termed the Article Choice Parameter (henceforth ACP). Proponents of the ACP consider that in the absence of L1 transfer effects, NNSs of a [-ART] L1 have full access to UG and can access any of the possible settings. In addition, they will fluctuate between the definiteness and the specificity settings when acquiring articles in an L2 until adequate input allows them to set the value of this parameter correctly, as illustrated for L2 English in table 4.2 below.

**Table 4.2** Article grouping Cross-linguistically: Two-article languages (taken from Ionin *et al.*, 2004, p.19).

	[+Def] (target: <i>the</i> )	[-Def] (target: <i>a</i> )
[+Spec]	correct use of <i>the</i>	<b><i>overuse of the</i></b>
[-Spec]	<b><i>overuse of a</i></b>	correct use of <i>a</i>

The account that was proposed to explain this phenomenon was termed the Fluctuation Hypothesis (henceforth FH) (Ionin *et al.*, 2004). The FH is based on two main assumptions, briefly summarised below:

- a. L2-learners have full access to UG principles and parameter settings.
- b. L2-learners fluctuate between different parameter settings until the input leads them to set the parameter to the appropriate value. (Ionin *et al.*, 2004)

In order to test the predictions of the FH, Ionin and her colleagues conducted a series of studies on the acquisition of L2 English articles (a language that has a definiteness-based system) by NNSs of [-ART] L1s, namely Russian and Korean. They found that participants were selecting articles based on specificity, as well as definiteness. Specifically, they sometimes treated *the* as a specificity marker and at other times, they treated *the* as a definite marker, and similarly, they sometimes treated *a* as a marker of non specificity while sometimes they treated it as a marker of indefiniteness.

Although the ACP and the predictions of the FH were initially proposed to test L2 article acquisition, in this study, part (b) of the FH will also be tested in the context of L3 article acquisition<sup>80</sup>.

<sup>80</sup> This work is conducted within a generative paradigm, but given that our focal concern is to identify the source of transfer/CLI at the initial state of L3A; discussion of assumption (a) is not relevant to the present study.

### 4.1.3 Linguistic Concepts: Definiteness and Specificity

Before investigating article acquisition, it is important to define the terms ‘definiteness’ and ‘specificity’ as used throughout this work. Several definitions have been proposed to define these two terms (see Givon, 1978; Lyons, 1999; Ko *et al.*, 2008; Trenkic, 2007; among others). However, for the purposes of the present study, the definitions adopted are those of Ionin *et al.*, (2004a, p. 5, example 3), which are based on Heim (1991), as stated informally below:

If a Determiner Phrase (DP) of the form [D NP] is ...

- a. [+Def], then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP.
- b. [+Spec], then 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>81</sup>.

## 4.2 Cross-linguistic Variation

### 4.2.1 French

French is a definiteness-based language. French articles lexicalise the distinction [ $\pm$ Def] and not the distinction [ $\pm$ Spec]. In addition to definiteness, French also marks articles on the basis of gender (Masc vs. Fem articles) and number (singular vs. plural articles) (Hawkins & Towell, 1996). In total, there are six articles in French, three definite articles (*le/la/les*) and three indefinite ones (*un/une/des*); four of these are singular (*le, la, un, une*) and the other two are plural (*les, des*). As this study will only examine article suppliance with reference to the appropriateness of definiteness and not the appropriateness of article inflection, all the target French DPs used are singular only. Besides, although the articles used are both Masc and Fem,

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<sup>81</sup> There has been a considerable debate concerning the definition of specificity, especially concerning the role of scope in determining the specificity of a DP. However, as the present study does not deal with the role of scope, this issue will not be further discussed (for more detailed discussions on the different views on scope interactions, see Lyon, 1999 and Ionin, 2003).

gender inflection is not tested in this chapter. A summary of article distribution in French is displayed in table 4.3 below.

**Table 4.3** Article distribution in French, by definiteness, gender and number

		[+Def]	[-Def]
singular	Masc	Le	Un
	Fem	La	Une
Plural		Les	Des

As shown in table 4.3, French articles encode definiteness but not specificity. This means that although a singular DP consisting of *le* and *la* is interpreted as being definite and a singular DP co-occurring with *un* or *une* is always interpreted as being indefinite, both are consistent with a specific and a non-specific reading, depending upon context, as shown in the examples below:

### Definite

29. J'ai pris le roman de ma cousine. Elle n'a que ce roman. **[+Def, +Spec]**

I have taken the novel of my cousin. She neg has only this novel

'I took the novel of my cousin. She has only this novel'

30. Il attend le professeur de math, mais il ne le connaît pas d'avance. **[+Def, -Spec]**

He waits the professor of-the math, but he neg him know not in advance

'He is waiting for the math professor, but he does not know him yet.'

### Indefinite

31. Je veux acheter un stylo de la librairie de monsieur Alex. Je l'ai vu hier **[-Def, +Spec]**

I want to-buy a pen from the book store of Mr Alex. I it have seen yesterday.

I want to buy a pen from Mr Alex's book store. I saw it yesterday'.

32. Je veux acheter un stylo aujourd'hui. **[-Def, -Spec]**

I want to-buy a pen today

'I want to buy a pen today'.

### 4.2.2 Spanish

Similar to French, Spanish has an article system that encodes definiteness but not specificity (Butt & Benjamin, 2000). In Spanish, a Det is a projection in which the feature definiteness is checked (Montrul, 2004; Zagona, 2002). Besides, similar to French, Spanish articles also agree with the noun in gender (Masc vs. Fem) and number (Sing vs. pl). Spanish has four plural articles: a Masc pl. Def. article (*los*), a Fem pl. Def. article (*las*), a Masc pl. Indef. article (*unos*) and a Fem pl. Indef. Article (*unas*). The distribution of Spanish articles by definiteness, gender and number is displayed in table 4.4 below.

**Table 4.4** Article distribution in Spanish, by definiteness, gender and number

		[+Def]	[-Def]
singular	Fem	La	Una
	Masc	El	Un
plural	Fem	las	Unas
	Masc	los	Unos

### 4.2.3 English

Similar to French and Spanish, the English article system encodes definiteness but not specificity. Lyons (1999), nevertheless, argues that there are two other possible ways of expressing definiteness in English, namely via the tense-aspect distinction and the structural position of determiners. However, for reasons of scope, these will not be discussed further in this study.

English has two articles, *the* and *a(n)*, which are used in [+Def] and [-Def] contexts, respectively. That means that though the definite article *the* is always interpreted as being definite, it can be used in both [+spec] and [-spec] contexts depending on the interpretation, and similarly although *a* is always interpreted as being indefinite, it can be used in both [+spec] and [-spec] contexts depending on the interpretation, as illustrated by the following (much-quoted) examples from Lyons (1999) below:

33. Joan wants to present the prize to *the* winner

a. ... but he doesn't want to receive it from her. (*specific*)

b. ... so she'll have to wait around till the race finishes. (*non-specific*)

(Example from Lyons, 1999, p. 167)

34. Peter intends to marry *a* merchant banker

a. ... even though he doesn't get on at all with her. (*specific*)

b. ... though he hasn't met one yet. (*non-specific*)

(Example from Lyons, 1999, p. 167)

#### 4.2.4 Turkish

Although in various studies Turkish is often referred to as a [-ART] language, there have been several debates concerning this assumption. Kornfilt (1997), for instance, claims that the numeral *bir* "one" can be used in indefinite contexts, and it is, therefore, the equivalent of an indefinite article. Lyons (1999) refers to it as a *Quasi Indefinite Article*. Underhill (1976), nonetheless, argues that *bir* is a numeral and cannot be treated as an indefinite article due to the optionality in its presence. That is to say, given that *bir* is used in certain contexts while in others it is not, it cannot be treated as an indefinite article simply because indefinite articles are known for their compulsory presence.

Similarly, some demonstrative pronouns (*bu* 'this', *o/şu* 'that') are used in combination with a N to signal specificity (e.g. (*bu*) kitap/this book). This is why they are treated by some linguists as definite articles, but as their occurrence is optional, they cannot not be treated as genuine definite articles. Turkish, therefore, does not seem to have definite articles (Underhill 1976). White (2003a) argues that while there is no definiteness distinction expressed in terms of determiners (unlike English), Turkish does realize specificity. If the DP is marked with accusative case, the interpretation must be specific, as in (36), whereas if there is no overt case morphology, the reading is nonspecific, as in (37) below (quoted from Enç, 1991, cited in White 2003a, p. 133).

35. Ali bir piyano-yu kiralamak istiyor.

Ali one piano-ACC to-rent wants

‘Ali wants to rent a certain piano’.

36. Ali bir piyano kiralamak istiyor.

Ali one piano to-rent wants

‘Ali wants to rent a (nonspecific) piano’.

Some other linguists, on the other hand, treat the use of *bir* as related to specificity in Turkish. Lyons (1999, p. 96), for instance, argues that *bir* is used when a specific indefinite is intended, as shown in (37); whereas in the case of a non specific indefinite reading, a bare noun is preferred, as shown in (38):

37. Dün bir mektup yazıdım.

Yesterday one letter write-PAST-1SG

‘Yesterday I wrote a letter.’

38. Dün mektup yazıdım.

Yesterday letter write-PAST-1SG

‘Yesterday I wrote a letter/letters.’

(examples quoted from Lyons, 1999, cited in White 2003a, p. 133)

However, as it can be seen from (37), there is an absence of a case marker which is supposed to be present in order for the reading to be considered specific, but despite that Lyons still treats it as specific. Enç (1991), nevertheless, considered this interpretation to be ambiguous and, therefore, the use of *bir* in (37) cannot be treated as significant of a specific interpretation.

In summary, in light of the above discussions, it seems that there is disagreement as to whether Turkish encodes definiteness and/or specificity or not. As the focus of this study is on the appropriate use of articles, and as Turkish does not seem to have articles (at least not in the way

English, French, and Spanish do), this work will adopt the assumption that Turkish does not have an article system (Yilmaz, 2006). The difference in article systems between the four languages in question is summarised in the table below.

**Table 4.5** Cross-linguistic variation for articles

Languages	[+Def]	[-Def]
French	√	√
English	√	√
Spanish	√	√
Turkish	X	X

√=feature exists; X = feature does not exist

The distribution displayed above shows that French, English and Spanish are similar. They all have an article system that is definiteness-based while Turkish is a [-ART] language. In light of such assumptions, the main questions that the present study aims to answer are whether this lack of an article system in L1 Turkish will prevent Turkish natives, whose L2 English is [+ART], from acquiring the feature of definiteness/specificity in L3 French? Similarly, will Spanish speakers whose L1 is an [+ART] language and whose L2 English is also an [+ART] language outperform the Turkish group in acquiring the feature definiteness/specificity in L3 French? Will any of them fluctuate on the basis of definiteness or specificity?

The next sub-section reviews some existing L2 and L3 studies on article acquisition which are of direct relevance to the present work.

### **4.3 Review of existing (L2 and L3) studies on article acquisition**

This sub-section reviews some generative L2 and L3 studies (testing the acquisition of articles in [+ART] and [-ART] target languages) whose results are of direct relevance to the present study.

### 4.3.1 Existing L2 studies on the acquisition of articles

Various studies have been conducted to investigate the L2 acquisition of articles. Two different lines of research can be distinguished: studies that test the FH and the ACP by studying the acquisition of English articles by L2 learners of [-ART] L1s (e.g. Ionin and Wexler, 2003; Ionin *et al.*, 2003; Ionin *et al.*, 2004; Ko *et al.*, 2008; Kim and Lakshmanan, 2009; among others), and studies that test the interaction between fluctuation and L1 transfer (e.g. Ionin *et al.*, 2007; Guella *et al.*, 2008; Sarko, 2009; Snape, 2005; Hawkins *et al.*, 2006; Snape *et al.*, 2006). Some of these studies support the L1 transfer account (e.g. Ionin *et al.*, 2007; Sarko, 2008) while others propose an alternative feature-based account of article acquisition (e.g. Hawkins *et al.*, 2006; Jaensch and Sarko, 2006; among others). Some studies of each account will be reviewed in the next sub-section<sup>82</sup>.

- **The FH account**

Ionin *et al.* (2003) examined the predictions of the FH among two groups of adult English L2 learners whose L1s are [-ART]: 50 L1-Russian and 38 L1-Korean natives. They used a forced-choice elicitation task consisting of 56 short dialogues containing singular as well as plural target NPs. They investigated article use in three contexts: [+Def, +Spec], [-Def, +Spec] and [-Def, -Spec]. The two groups showed similar patterns of performance. Both groups overused *the* in singular [-Def, +Spec] and also in plural [-Def, +Spec] contexts. Ionin *et al.* (2003) concluded that in the absence of L1 transfer, the similar patterns of the two groups were a result of direct access to a UG parameter (the ACP) and that both groups were fluctuating between selecting articles on the basis of specificity and on the basis of definiteness, supporting therefore the FH predictions.

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<sup>82</sup> The researcher is fully aware that there are different proposals related to L2 acquisition of articles, but these do not study articles from a semantic paradigm, this is why reviewing such studies is beyond the scope of this work.

Ionin *et al.* carried out another empirical study in 2004 to further test the FH. What is different about this study is that it examined the specific versus the non-specific distinction in definite contexts. Two groups of participants took part in this study: 30 Russians and 40 Koreans who were divided into three groups according to their L2 English proficiency: beginners, intermediates, and advanced. The study relied on two experimental tasks: a forced-choice elicitation task and a free production task. The first one was used to control the types of contexts concerned while the second was used to test the unconscious knowledge of L2 learners when using articles. Results of the forced-choice task indicated that both L1 groups performed in almost similar trends, though the Korean group was slightly more target-like. Ionin and her colleagues attributed this to the relatively high proficiency level of the Korean group compared to that of the Russian group<sup>83</sup>. Besides, both groups were more accurate in [+Def, +Spec] and [-Def, -Spec] contexts than in [+Def, -Spec] and [-Def, +Spec] contexts. More precisely, results of both groups showed a pattern of overuse of the article *the* with [+Spec] indefinite DPs than with [-Spec] indefinite DPs and an overuse of the article *a* in [-Spec] definite contexts than in [+Spec] definite contexts. Results of the production task were nearly similar to these. This led the researchers to suggest the presence of a parameter in UG (the ACP) and consider the fluctuation of the participants between definiteness and specificity settings as supportive of the FH account.

- **The Feature-based account**

This account was originally proposed by Hawkins *et al.*, (2006) as an alternative to the FH account. Hawkins *et al.*, (2006) tested the acquisition of L2 English articles by two groups of L1 natives: Japanese, whose L1 is a [-ART] language, and Greek, whose L1 is a [+ART] language. Using a forced choice elicitation task similar to the one used in the study of Ionin *et al.*, (2004),

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<sup>83</sup> The Russian speakers selected *a* in [+Def, -Spec] 33% of the time, whilst Korean speakers selected the same article in 14% of cases. Overuse of *the* in [-Def, +Spec] was even higher, 36% for Russian and 22% for Korean participants.

Hawkins *et al.*, found no fluctuation among the Greek group but the Japanese group fluctuated. However, closer scrutiny of individual results revealed that individual Japanese learners did not fluctuate either. The researchers argued that individual variation among the Japanese participants cannot be explained by the FH account. They offered an alternative account which stated that L2 article acquisition has UG-access and it is feature-based. According to this account, which is based on the Distributed Morphology model (Halle and Marantz, 1993), Japanese speakers had identified either definiteness or specificity or both as necessary for the insertion of an article, but their choices might differ from those of a native speaker (and from each other). However, individual speakers had stable vocabulary item representations and were not fluctuating. That is to say, the insertion of a phonological exponent (an article) of the syntactic category Det involves feature-matching between the vocabulary item and the terminal node for Det. Hawkins *et al.*, (2006) assume that the ILGs of the Japanese participants could be due to their misdetermining the relevant features for the English article system, such as choosing [ $\pm$ Spec] rather than [ $\pm$ Def]. This feature-based account has gained support in several L2 studies which found in this account a plausible justification for the errors committed by NNSs of [-ART] languages when acquiring articles in an L2 (e.g. Sarko, 2009; Jaensch and Sarko, 2006; among others).

- **The L1 transfer account**

In a more recent study, Ionin *et al.*, (2007) examined the predictions of the FH but also addressed the question of L1 transfer that was left open for further research in their previous studies. They investigated the acquisition of the English article system by 23 adult Russian speakers and 24 adult Spanish speakers. Russian is a [-ART] language while Spanish, similar to English, is a [+ART] language, and therefore grammaticalises definiteness. The data were collected through a forced choice elicitation task consisting of short dialogues. The two groups showed two different patterns of performance. The Russian group exhibited fluctuation between [ $\pm$ Spec] and [-Spec]

in both [+Def] and [-Def] contexts while the Spanish speakers were more target-like with no effect of specificity on their performance. The researchers considered such a difference between the two groups to be due to L1 transfer rather than to fluctuation. They further stated that L2 acquisition of articles is the result of interaction between three sources of linguistic knowledge: UG, L1 transfer and L2 input. In the absence of L1 transfer, L2 learners have full UG access and at that point L2 input is supposed to play its role to trigger learners to the correct setting of the TL.

Sarko (2008) is another study which was conducted to test the predictions of the FH but her findings found support for L1 transfer. She tested the acquisition of L2 English articles by two groups: 51 L1 Syrian Arabic (SA) and 18 L1 French speakers, further divided into four sub-groups according to their L2 proficiency (Lower Intermediate, Upper Intermediate, Advanced, and Very Advanced). French, like English, is a [+ART] language which marks definiteness, while spoken SA has a phonologically overt definite article *al* which is a bound morpheme (prefix) attached to the noun it defines, but has no indefinite article. The indefinite article with singular NPs in SA is phonologically absent and indefinite singular nouns are bare. Thus, a bare NP in SA is interpreted as either indefinite specific or indefinite non-specific (Sarko, 2008).

A forced choice elicitation task similar to the one used by Ionin *et al.* (2004) was used in this study. The test consisted of 88 short dialogues. The results were divided by noun type (singular, plural and mass) and per context (def vs. indef) and per proficiency groups<sup>84</sup>. Both L1 groups responded in a target-like way across all proficiency groups in [+Def] contexts in both [+Spec] and [-Spec] settings. In the [-Def] contexts, on the contrary, the French group behaved in a target-like way, whereas the SA participants were non native-like in both specific and non specific settings. Sarko (2008) concluded that the fact that SA participants were target-like in

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<sup>84</sup> This study will not review results of plural and mass nouns as they are beyond the scope of this study (for more details on these, see Sarko (2008)).

[+Def] contexts but failed in [-Def] contexts both in [+Spec] and [-Spec] settings, that cannot be the result of fluctuation but rather due to negative transfer from L1 SA (p. 216).

#### 4.3.2 Existing L3 studies on the acquisition of articles

To the best of my knowledge, despite the large number of generative studies that have investigated the acquisition of articles in L1 and L2, only two have been conducted, so far, within the domain of L3A: Leung (2005a) and Jaensch (2009a).

Leung (2005a) tested the L2 and L3 acquisition of articles by two groups of early French learners: L1 Vietnamese → L2 French and L1 Cantonese → L2 English → L3 French. Both Cantonese and Vietnamese are [-ART] languages and have no marking on the DP for the [ $\pm$  Def] feature. Leung used two types of tests: oral and written ones. In both tasks, participants were tested on the correct suppliance of articles in three contexts [+Def], [-Def, +Spec] and [-Def, -Spec] (specificity was not a variable tested in the Def context). Results of the written production task showed that the L3 group outperformed the L2 group in all three areas tested; in the [+Def] context (target-like suppliance of correct articles was 33% for L3 learners versus 14% for L2,  $p < .05$ ), [-Def, +Spec] (81% for L3 and 45% for L2,  $p < .0001$ ) and in [-Def, -Spec] contexts (L3 reached 83% of target-like suppliance versus 50% only for the L2 group,  $p < .0001$ ). In the written multiple choice task there was a significant difference between L3 and L2 learners' accuracy in all 3 contexts; [+Def] context (suppliance of correct articles 94% for the L3 group versus 67% for the L2,  $p < .0001$ ), [-Def, +Spec] (89% for L3 and 54% for L2,  $p < .0001$ ) and [-Def, -Spec] (L3 learners achieved 80% of accuracy versus 56% for L2,  $p < .0001$ ). Leung considered that L3 learners whose L1 was [-ART] benefited from learning a [+ART] L2 (being English in this case); and this is why they outperformed the L2 group with a [-ART] L1.

Jaensch (2009a) investigated the acquisition of the feature [ $\pm$ Def] in L3 German by L1 Japanese speakers who learnt English as an L2, but differs somewhat from Leung (2005a), in that it also tested the influence of L2 proficiency on this feature. With regard to the feature definiteness, German and English are similar; they both exhibit definite and indefinite articles which may receive a specific or non-specific reading, depending upon the context. Japanese, on the contrary, is a [-ART] language, but definiteness is present in other forms (Jaensch, 2008). Jaensch conducted this study to test (i) the predictions of the FH, i.e. whether Japanese learners whose L1 is [-ART] will fluctuate in their article choices in L3 German when they acquired a definiteness-based L2 and also (ii) to examine whether proficiency in the L2 had any effect on the appropriate selection of articles in the L3.

A forced choice elicitation task similar to the one used by Ionin *et al.*, (2004) was used to obtain information about definiteness and specificity. Results did not support the FH for learners appeared not to fluctuate between selecting articles on the basis of specificity but selecting them on a definiteness basis. More precisely, the three L3 groups showed higher overuse of the definite article in indefinite contexts more than overuse of the indefinite article in definite contexts. Moreover, while in the [ $+$ Def] contexts, inappropriate use of the indefinite article was higher where the noun had a non-specific reference than when it was specific, in the [-Def] context, definite articles were overused more when the noun had a non-specific interpretation than when it was specific. Jaensch considered this to be inconsistent with the predictions of the FH account. The results of this study also showed that L3 learners of higher L2 proficiency (above LI) outperformed those of a lower L2 proficiency, though the advanced group did not reach nativeness in their performance.

Thus far, the accounts proposed by L2 and L3 researchers to justify the inability of NNSs of [-ART] L1s to acquire the features definiteness and specificity reveal that NNSs of an L1 that is [-ART] find the property of definiteness quite challenging when learning article choices in the L3. The present study will contribute to this debate by addressing the question regarding which of the previously acquired languages (L1/L2) is the source of CLI when acquiring article choices in L3 French by learners whose L1 is [+ART] and learners whose L1 is [-ART], both groups have a common L2 English that is [+ART].

## 4.4 The study

### 4.4.1 Participants

The participants mentioned in this chapter are the same subjects who took part in all the experimental tasks (described and discussed in chapter two, *section 2.4.1*).

### 4.4.2 Tasks and Results

To test the property of definiteness in the L3 French DP, two experimental tasks were devised. The first is the MCT task in three versions (English, Spanish and Turkish groups), and the second is the ASC task.

#### 4.4.2.1 MCT task

##### *Procedure*

In each version of the MCT task, a total of 12 sentences were devised. The rest were either fillers or testing other properties. There was no time limit given but participants were told not to think too long and to answer by guessing in case of doubt. Four contexts were examined in each version; three sentences for each context. An example of each context is shown below.

- **[+Def, +Spec]**

They like the building next to the Town Hall.

**They like the building.**

- a. Ils aiment le bâtiment.
- b. Ils aiment un bâtiment.
- c. Ils aiment bâtiment.
- d. Ils aiment du bâtiment.

- **[+Def, -Spec]**

The police are looking for the burglar who broke into the professor's house. They have no idea who it might be.

**They are looking for the burglar.**

- a. Ils cherchent le voleur.
- b. Ils cherchent un voleur.
- c. Ils cherchent voleur.
- d. Ils cherchent du voleur.

- **[-Def, +Spec]**

The student has ordered a book about the history of English. It is by John Smith and was published last year.

**The student is waiting for a book.**

- a. L'étudiant attend un livre.
- b. L'étudiant attend le livre.
- c. L'étudiant attend livre.
- d. L'étudiant attend du livre.

- **[-Def, -Spec]**

Do you have a pencil? I need one to complete this form.

**I need a pencil.**

- a. Je veux le crayon.
- b. Je veux un crayon.
- c. Je veux crayon.
- d. Je veux du crayon.

For each of the four contexts described above, there are four possible options in French (distributed in a random way in the test). Each option tests one case as shown below:

- a. Correct option
- b. Substitution Error (Def for Indef or vice versa)
- c. The use of zero ( $\emptyset$ ) article (article omission error)
- d. The use of partitive article ('du'=some instead of 'the' in Def contexts, or 'a' in Indef contexts).

*Research Questions*<sup>85</sup>:

RQ<sup>51</sup>: In their treatment of articles in L3 French, do Spanish and/or Turkish participants fluctuate? If so, do they do so on the basis of Definiteness or Specificity?

RQ<sup>52</sup>: Is there any evidence of L1 and/or L2 influence in the target-like performance of Spanish and Turkish participants?

RQ<sup>53</sup>: Is there any L2 proficiency effect on the performance of each L1 group?

#### ➤ MCT task results (English version)

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the MCT test showed a strong reliability coefficient.

Cronbach's alpha = .922 L3 learners & NS/ .804 for L3 learners only.

#### Overall Results

**Table 4.6** MCT (English version): Mean percentage of Target-like performance by L1

	Spanish (N=22)	Turkish (N=16)	French Natives (N=10)
Target-like use	249/264 (94.31%)	155/192 (80.72%)	119/120 (99.16%)
Non Target-like use	15/264 (5.68%)	37/192 (19.27%)	1/120 (0.83%)

As shown in table 4.6, Spanish natives appear near native-like in their treatment of articles in French DPs. Turkish natives were also target-like, reaching over 80% of target-use, but they

<sup>85</sup> These are the same research questions for the three versions of the MCT task as well as the ASC task.

were less target-like than the Spanish natives and the control group. A one way ANOVA was carried out [dependent variable=mean target-like use; independent group variable=Experimental groups divided by L1] and results showed a significant difference between these experimental groups [ $F(2,45)=20.452$ ,  $p=.0001$ ]. Adjustments using a post-hoc Bonferroni test showed a significant difference between the French native speakers and the Turkish group ( $p=.0001$ ), and also between the Spanish and the Turkish groups ( $p=.0001$ ), but no significant difference between the French natives and the Spanish group ( $p=.352$ ).

*Fluctuation by definiteness or specificity?*

In order to test whether each L1 group is fluctuating on the basis of definiteness or specificity, data are divided into four contexts by definiteness and specificity as shown in table 4.7 below.

**Table 4.7** MCT (English version): Article choices by definiteness, specificity and L1 groups

Target article	Context	L1 Spanish (N=22)	L1 Turkish (N=16)
Def ('the')	[+Def, +Spec]	65/66 (98.48%)	44/48 (91.66%)
	[+Def, -Spec]	61/66 (92.42%)	43/48 (89.58%)
Indef ('a')	[-Def, +Spec]	61/66 (92.42%)	41/48 (85.41%)
	[-Def, -Spec]	62/66 (93.93%)	24/48 (50%)

Overall, the conflated results indicate no interaction between definiteness and specificity in the selection of articles by Spanish speakers; they were near native-like in all settings (though they were slightly less target-like in [-Def, +Spec] contexts). The Turkish participants, however, seem to be more target-like in Def contexts than in Indef contexts, i.e. there is an interaction between definiteness and specificity in Indef contexts only. To determine whether these differences are statistically significant, a paired samples t-test for each L1 group was used. Results revealed no significant interaction between definiteness and specificity in the performance of the Spanish group, but Turkish results showed a significant interaction between these two conditions in the Indef context only. A summary of these statistical results is given in table 4.8 below.

**Table 4.8** MCT (English version): Interaction between definiteness and specificity (paired samples t-test results)

Definiteness and Specificity settings	L1 Spanish (N=22)			L1 Turkish (N=16)		
	T	df	Sig(p-value)	T	df	Sig(p-value)
[+def, +spec] vs. [+def, -spec]	1.702	21	.104	.368	15	.718
[-def, +spec] vs. [-def, -spec]	-.439	21	.665	3.782	15	.002

*L1 influence/L2 influence*

In order to investigate whether the performance of participants of both groups is influenced by their L1 or L2, two comparisons are made. First, the target-like performances of the LI sub-groups of each L1 group are compared. Comparing two groups who have learned L2 English to a lower proficiency level will help tease apart questions about L1 influence. A second division will compare the target-like performances of participants who have learned L2 English to a higher proficiency level in order to investigate whether there is influence of L2. Descriptive results are displayed in table 4.9 below.

**Table 4.9** MCT (English version): Article choices by definiteness, specificity and L2 proficiency within L1 groups

Context	L3 learners divided by L1 and L2 proficiency				French Natives
	L1 Spanish		L1 Turkish		
	Adv (N=13)	LI (N=9)	Adv (N=10)	LI (N=6)	
[+Def, +Spec]	39/39 (100%)	26/27(96.29%)	29/30 (96.66%)	15/18 (83.33%)	30/30 (100%)
[+Def, -Spec]	35/39 (89.74%)	26/27(96.29%)	29/30 (96.66%)	14/18 (77.77%)	30/30 (100%)
[-Def, +Spec]	37/39 (94.87%)	24/27(88.88%)	30/30 (100%)	11/18 (61.11%)	29/30 (96.66%)
[-Def, -Spec]	35/39 (89.74%)	27/27(100%)	19/30 (63.33%)	7/18 (27.77%)	30/30 (100%)

As shown in table 4.9, overall all sub-groups are performing in a target-like way in the Def context. However, Turkish participants, particularly the LI group appeared much less target-like than the Spanish natives and the control group, mainly in the Indef context. These results are further confirmed by a mixed factorial repeated measures ANOVA carried out for each L2 sub-group [within subjects variable 1=definiteness, within subjects variable 2=specificity, between subjects factor=L2 sub-groups]. Results of the LI sub-groups showed a significant main effect

for definiteness,  $[F(1,13)=65.233, p=.0001]$ , and a significant interaction between definiteness and L2 sub-groups,  $[F(1,13)=53.125, p=.0001]$ . However, there was no significant main effect for specificity,  $[F(1,13)=1.054, p=.323]$ , no significant interaction between specificity and L2 groups,  $[F(1,13)= 3.415, p=.087]$ , and no significant interaction between definiteness and specificity  $[F(1,13)= 1.712, p=.213]$ , but there was a three way significant interaction between definiteness, specificity and L2 groups  $[F(1,13)=9.322, p=.009]$ . A between subjects comparison revealed a significant difference between the LI Spanish and the LI Turkish sub-groups,  $[F(1,13)= 94.292, p=.0001]$ .

Results of the Adv group in a mixed factorial repeated measures ANOVA were somewhat different from those of the LIs. There was no significant main effect for definiteness  $[F(1,21)=4.957, p=.770]$ , no significant interaction between definiteness and L2 groups  $[F(1,21)=2.485, p=.130]$ , but there was a significant main effect for specificity  $[F(1,21)=14.377, p=.001]$ , and no significant interaction between specificity and L2 groups,  $[F(1,21)=2.403, p=.136]$ . However, there was a significant interaction between definiteness and specificity  $[F(1,21)=4.703, p=.042]$ , and a three way significant interaction between definiteness, specificity and L2 groups  $[F(1,21)=8.260, p=.009]$ . A between subjects comparison also revealed no significant difference between the Adv Spanish group and the Adv Turkish group  $[F(1, 21) = 3.213, p=.087]$ , implying that both sub-groups of higher L2 proficiency levels are performing alike unlike the results of the LIs whereby the Spanish LIs outperformed the Turkish ones. Such results indicate that L2 English seems to have an effect on the performance of the Turkish subjects who have an advanced L2 proficiency level but not on the performance of the Spanish group of a comparable L2 proficiency level<sup>86</sup>.

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<sup>86</sup> That is mainly because both Spanish groups (LIs and Adv) performed in a near native-like manner whereas for the Turkish group, only subjects of Adv L2 proficiency were near native-like, especially in the Def contexts.

L2 proficiency

As shown from the descriptive results in table 4.9, L2 proficiency does not seem to have a significant effect on the performance of the Spanish group, but the performance of the Turkish subjects seems to be influenced by their L2 proficiency for those with advanced L2 proficiency outperformed those of lower L2 proficiency. An independent samples t-test was carried out for the above data and results showed no significant difference between the LIs and Adv of the Spanish group ( $p > .05$ ), but there was a significant difference between Turkish Adv and LIs ( $p < .05$ ) in almost all contexts except for the Def Spec context, as shown in the table below.

**Table 4.10** MCT (English version): Interaction between L2 proficiency, definiteness and specificity (Independent samples t-test results)

	L1 Spanish	L1 Turkish
[+Def, +Spec]	$p = .238$	$p = .082$
[+Def, -Spec]	$p = .302$	$p = .054$
[-Def, +Spec]	$p = .347$	$p = .0001$
[-Def, -Spec]	$p = .162$	$p = .041$

➤ **MCT task results (Spanish version)**

Overall results

**Table 4.11** MCT (Spanish version): Mean percentage of Target-like performance in L1 Spanish

	Spanish (N=22)
Target-like use	250/264 (94.69 %)
Non Target-like use	14/264 (5.30%)

Results displayed in table 4.11 reveal that the Spanish participants were target-like in their article choices in L3 French, scoring over 94% of target-like use. This indicates that they do not seem to find article choices in L3 French challenging. The native-like performance of the Spanish subjects in this test was similar to their performance in the English version of this task.

*Fluctuation by definiteness or specificity?***Table 4.12** MCT (Spanish version): Article choices by definiteness and specificity

Target article	Context	Spanish (N=22)
Def ('the')	[+Def, +Spec]	64/66(96.96%)
	[+Def, -Spec]	61/66 (92.42%)
Indef ('a')	[-def, +Spec]	62/66 (93.93%)
	[-Def, -Spec]	63/66 (95.45%)

The results displayed above do not show fluctuation neither on the basis of definiteness nor specificity, with an accuracy percentage over 92% in all contexts and settings. A paired samples t-test was carried out to compare between the [ $\pm$ Spec] settings in Def and Indef contexts. Results showed no significant interaction between definiteness and specificity in Def contexts [ $t=1.142$ ,  $df=21$ ,  $p=.266$ ], and in Indef contexts [ $t= -.370$ ,  $df=21$ ,  $p=.715$ ].

*L1 influence/L2 influence*

In order to test the effect of L1 and/or L2 influence, a division of this group into two L2 proficiency sub-groups was performed, as shown below.

**Table 4.13** MCT (Spanish version): Article choices by definiteness, specificity and L2 proficiency

Target article	Context	Adv (N=13)	LI (N=9)
Def ('the')	[+Def, +Spec]	38/39 (97.43%)	(26/27) 96.29%
	[+Def, -Spec]	36/39 (92.30%)	(25/27) 92.59%
Indef ('a')	[-Def, +Spec]	37/39 (94.87%)	(25/27) 92.59%
	[-Def, -Spec]	38/39 (97.43%)	(25/27) 92.59%

As shown above, there is no difference between the Adv and the LIs of the Spanish group in their treatment of definiteness and specificity. A mixed factor repeated measures ANOVA was conducted [Within subjects variable 1=definiteness; Within subjects variable 2=specificity; independent group variable=L2 English proficiency groups). Results indicated no significant main effect of definiteness [ $F(1,20)=.013$ ,  $p=.911$ ], no significant interaction between definiteness and L2 proficiency [ $F(1,20)=.383$ ,  $p=.543$ ], no significant main effect of specificity [ $F(1,20)=.550$ ,  $p=.467$ ] and no significant interaction between specificity and L2 English

proficiency [ $F(1,20)=.009$ ,  $p=.925$ ]. Similarly, there was no significant interaction effect between definiteness and specificity [ $F(1,20)=.942$ ,  $p=.343$ ], nor any significant three-way interaction between definiteness, specificity and L2 proficiency [ $F(1,20)=.115$ ,  $p=.738$ ]. Finally, a between subject comparison showed no significant difference between the Adv and LI subgroups [ $F(1,20)=.693$ ,  $p=.415$ ].

Thus, the fact that both Adv and LI Spanish participants performed in a near native-like manner implies that the Spanish Adv did not benefit much from their higher proficiency in L2 English, though English is a [+ART] language. That means, therefore, that the performance of this group was mainly influenced by L1 Spanish and not L2 English.

#### ➤ MCT task results (Turkish version)

##### Overall results

**Table 4.14** MCT (Turkish version): Mean percentage of Target-like performance in L1 Turkish

	Turkish (N=16)
Target-like use	160/192 (83.33%)
Non Target-like use	32/192 (16.66%)

Results displayed in table 4.14 show that the Turkish participants were overall target-like in their selection of articles in the L3 French DP. However, when comparing their target-like percentage (83.33%) to that of the Spanish group in the Spanish version of this test (96.21% of target-use), the Spanish group appeared relatively more target-like.

##### Fluctuation by definiteness or specificity?

**Table 4.15** MCT (Turkish version): Article choices by definiteness and specificity

Target article	Context	Turkish (N=16)
Def ('the')	[+Def, +Spec]	46/48(95.83%)
	[+Def, -Spec]	42/48 (87.5%)
Indef ('a')	[-Def, +Spec]	32/48 (66.66%)
	[-Def, -Spec]	40/48 (83.33%)

The results displayed above show that the Turkish group was more target-like in Def contexts than in Indef contexts and the fluctuation on the basis of specificity was in the Indef context only. A paired samples t-test was carried out to compare between the [ $\pm$ Spec] settings in Def and Indef contexts. Results showed no interaction between definiteness and specificity in the Def context [ $t=1.464$ ,  $df=15$ ,  $p=.164$ ], but there was a significant interaction in the Indef context [ $t=-2.236$ ,  $df=15$ ,  $p=.041$ ].

#### L1 influence/L2 influence

In order to test if there is any interaction between L2 proficiency, definiteness and specificity, the aggregated data above are further divided into two L2 English proficiency sub-groups. Results are displayed in table 4.16 below.

**Table 4.16** MCT (Turkish version): Article choices by definiteness, specificity and L2 proficiency

Target article	Context	Adv (N=10)	LI (N=6)
Def ('the')	[+Def, +Spec]	30/30 (100%)	16/18 (88.88%)
	[+Def, -Spec]	29/30 (96.66%)	13/18 (72.22%)
Indef ('a')	[-Def, +Spec]	25/30 (83.33%)	7/18 (38.88%)
	[-Def, -Spec]	29/30 (96.66%)	11/18 (61.11%)

Overall results show that the Adv participants are much more target-like than the LIs. Furthermore, there seems to be no interaction between definiteness and specificity in the performance of the Adv participants, but there is an interaction between the two contexts in the performance of the LIs. That means that the higher the L2 proficiency is, the less fluctuation there is.

In order to test such results statistically, a mixed factor repeated measures ANOVA was conducted [Within subjects variable 1= Definiteness; Within subjects variable 2=Specificity; independent group variable = L2 English proficiency group). Results showed a significant main

effect for definiteness [ $F(1,14)=12.250$ ,  $p=.004$ ], no significant interaction effect between definiteness and L2 proficiency [ $F(1,14)=4.000$ ,  $p=.065$ ], no significant effect of specificity [ $F(1,14)=.884$ ,  $p=.363$ ], no significant interaction effect between specificity and L2 English proficiency [ $F(1,14)=.072$ ,  $p=.792$ ]. The interaction effect between definiteness and specificity was significant [ $F(1,14)=6.250$ ,  $p=.025$ ], but the three-way interaction between definiteness, specificity and L2 proficiency was non-significant [ $F(1,14)=1.000$ ,  $p=.334$ ]. Finally, a between-subject effect showed a significant effect of L2 proficiency [ $F(1,14)=48.784$ ,  $p=.0001$ ].

L2 proficiency seems to be indeed a significant factor on the performance of the Turkish participants; the higher the L2 proficiency, the more accurate the performance is and the less fluctuation there is. The performance of the Turkish group on article choices in L3 French seems to be therefore influenced by L2 English a language that grammaticalises definiteness in the same way French and Spanish do unlike Turkish which is an article-less language.

#### *Summary of MCT Task results*

- ✓ Results of the three versions of the MCT test showed that both groups reached high accuracy percentages in article choices in L3 French but the Spanish participants were more native-like than the Turkish ones.
- ✓ Results of the three versions also revealed that while the Spanish group performed in a near native-like way in both Def and Indef contexts and also in Spec and Non Spec settings, the Turkish participants, on the contrary, seemed more target-like in the Def context than in the Indef context, and were fluctuating between a definiteness setting and a specificity setting in the Indef context only.
- ✓ In order to investigate L1 and/or L2 influence in L3 French acquisition of articles, a comparison was carried out between the Adv sub-groups of each L1 group (to test L2

influence) and between the LI sub-groups of each L1 group (to test L1 influence). There was no significant difference between the Spanish Adv sub-group and the Turkish one. However, the Spanish LIs outperformed the Turkish LIs. Such results were interpreted to be indicating that L2 English seemed to have an effect on the performance of the Turkish subjects but not the Spanish ones. Turkish subjects with higher L2 proficiency behaved in a near native-like way, similar to the Spanish Adv sub-group, which would imply that the former benefited from learning an L2 (English) that is definiteness-based. The Turkish LIs, on the contrary, failed to be as target-like as their Spanish counterparts because they were supposed to be influenced by their L1 Turkish which is a [-ART] language. One possible justification for why the Spanish Adv subjects did not benefit much from their higher L2 proficiency is that Spanish is generally typologically much closer to French than English to French; this is why Spanish was more influential than English on the performance of this group. The same result was also attained in the other previous chapters regarding the other properties.

#### 4.4.2.2 ASC Task

##### *Procedure*

This is the second experimental task devised to test article choices in the L3 French DP. Participants are told that some sentences are grammatically acceptable in French while some others are not. They should write acceptable under the grammatical sentences and correct the ungrammatical ones. No time limit was given but participants were told not to think too long and to answer by guessing in case of doubt.

A total of 16 sentences were used divided into four contexts by definiteness and specificity. Each of the four contexts were realised by four sentences whereby each sentence tests one of the

following four cases. Case (a) is a correct option. In Case (b), there is a substitution error (either using Def article instead of Indef or vice versa). In Case (c), there is an omission error (the use of a zero article  $\emptyset$  instead of either a Def or Indef article, depending on the context), while case (d) contains a DP consisting of a partitive article (instead of either a Def or Indef article, depending on the context).

Participants are supposed to correct all sentences containing cases (b, c and d) but should maintain sentences with case (a). Illustrative examples of two different contexts are shown below:

- **[+Def, +Spec]**

- a. Elle va chercher le mécanicien. Il est mon cousin. **Correct option.**
- b. Il décrit une maison de mon frère. Mon frère n'a qu'une seule maison. **Substitution error** (the use of the Indef article 'a' instead of the Def article 'the').
- c. Elle va acheter boulangerie de monsieur Patrick. **Omission error** (the use of  $\emptyset$  article instead of the Def article 'the').
- d. Je veux savoir de la solution de cet exercice. **The use of the partitive Det 'du/de la'** (instead of the Def article 'the').

- **[-Def, +Spec]**

- a. Il conduit une voiture de son ami. Son amie a plusieurs voitures. **Correct option.**
- b. Demain, tu dois acheter le livre de Maths qui contient des exercices d'algèbre et géométrie. **Substitution error** (the use of the Def article 'le'/'the' instead of the Indef article 'un'/'a').
- c. Nous avons passer test de physique bientôt. **Omission error** (the use of  $\emptyset$  article instead of the Indef article 'un').
- d. Je vais fabriquer du jouet de carton. **The use of the partitive Det 'du'** (instead of the Indef article 'un'/'a').

*Results of the ASC task*

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the ASC test showed a strong reliability coefficient.

Cronbach's alpha = .944 L3 learners & NS/ .810 for L3 learners only.

*Overall results*

**Table 4.17** ASC task: Mean percentage of Target-like performance by L1

	Spanish (N=22)	Turkish (N=16)	French Natives (N=10)
Target-like use	340/352 (96.59%)	219/256 (85.54%)	157/160 (98.12%)
Non Target-like use	12/352 (3.40%)	37/256 (14.45%)	3/160 (1.87%)

According to table 4.17, Spanish natives seem to be near native-like in their treatment of articles in French DPs. The Turkish natives, were also target-like way, reaching over 85% of accuracy rates, but were still less target-like than the Spanish natives and the control group. A one way ANOVA was carried out [dependent variable = mean target-like use; independent group variable=Experimental groups divided by L1] and results showed a significant difference between these experimental groups [ $F(2,45)=12.697$ ,  $p=.0001$ ]. Adjustments using a post-hoc Bonferroni test showed a significant difference between the French control group and the Turkish group ( $p=.0001$ ), and also between the Spanish and the Turkish groups ( $p=.0001$ ), but no significant difference between the French group and the Spanish one ( $p=1.000$ ).

*Fluctuation by definiteness or specificity?*

In order to test whether each L1 group is fluctuating on the basis of definiteness or specificity, data are divided into four contexts as shown in table 4.18 below.

**Table 4.18** ASC task: Article choices by definiteness and specificity

Target article	Context	L1 Spanish (N=22)	L1 Turkish (N=16)
Def ('the')	[+Def, +Spec]	87/88 (98.86%)	59/64 (92.18%)
	[+Def, -Spec]	84/88 (95.45%)	57/64 (89.06%)
Indef ('a')	[-Def, +Spec]	84/88 (95.45%)	47/64(73.43%)
	[-Def, -Spec]	85/88 (96.59%)	56/64 (87.5%)

The conflated results above indicate no interaction between definiteness and specificity in the performance of the Spanish speakers; they were near native-like in all settings. The Turkish results, nonetheless, were different. They were more target-like in Def contexts than in Indef contexts. Added to that, they seem to be fluctuating on the basis of specificity in the Indef context only. The results of each group were tested for statistical significance using a paired samples t-test. There was no significant interaction between definiteness and specificity in the performance of the Spanish group, but Turkish results showed a significant interaction between these two settings in the Indef context only, as shown in the table below.

**Table 4.19** ASC task: Interaction between definiteness and specificity (paired samples t-test results)

Definiteness and Specificity settings	L1 Spanish (N=22)			L1 Turkish (N=16)		
	T	df	Sig(p-value)	T	Df	Sig(p-value)
[+Def, +Spec] vs. [+Def, -Spec]	1.368	21	.186	.808	15	.432
[-Def, +Spec] vs. [-Def, -Spec]	-.370	21	.715	-3.093	15	.007

### L1 influence/L2 influence

In order to investigate whether the performance of participants of both groups is influenced by their L1 and/or L2, two comparisons are made. First, the target-like performances of the LI subgroups (of each L1 group) are compared to test L1 influence. Second, the target-like performances of participants who have learned L2 English to a higher proficiency level (Adv) were compared to test whether there is L2 influence on the performance of both L3 groups. Descriptive results are displayed in table 4.20 below.

**Table 4.20** ASC task: Article choices by definiteness and specificity and L2 proficiency within L1 groups

Context	L3 learners divided by L1 and L2 proficiency				French Natives
	L1 Spanish		L1 Turkish		
	Adv (N=13)	LI (N=9)	Adv (N=10)	LI (N=6)	
[+Def, +Spec]	52/52 (100%)	35/36 (97.22%)	38/40 (95%)	21/24 (87.5%)	40/400 (100%)
[+Def, -Spec]	50/52 (96.15%)	34/36 (94.44%)	37/40 (92.5%)	20/24 (83.33%)	39/40 (97.5%)
[-Def, +Spec]	48/52 (92.30%)	36/36 (100%)	36/40 (90%)	11/24 (45.83%)	39/40 (97.5%)
[-Def, -Spec]	50/52 (96.15%)	35/36 (97.22%)	39/40 (97.5%)	17/24 (70.83%)	39/40 (97.5%)

As shown above, Spanish Adv and Turkish Adv sub-groups behaved in almost similar target-like manner in both [ $\pm$ Def] and [ $\pm$ Spec] settings. However, such results are not the same for the LIs because the Spanish LIs appeared more target like than the Turkish LIs. These results were statistically tested using a mixed factorial repeated measures ANOVA for each L2 sub-groups [Within subjects variable 1=definiteness, Within subjects variable 2=specificity, between subjects factor= L2 groups]. Results of the LIs showed a significant main effect for definiteness [ $F(1,13)= 12.297, p=.004$ ], and a significant interaction between definiteness and L2 groups [ $F(1,13)= 18.561, p=.001$ ], but no significant main effect for specificity [ $F(1,13)=1.4682, p=.217$ ]. There was a significant interaction between specificity and L2 groups [ $F(1,13)=5.019, p=.043$ ], a significant interaction between definiteness and specificity [ $F(1,13)=5.880, p=.031$ ], and also a three way significant interaction between definiteness, specificity and L2 groups [ $F(1,13)=5.880, p=.031$ ]. A between subjects comparison also revealed a significant difference between LI Spanish group and the LI Turkish group [ $F(1,13)= 206.797, p=.0001$ ] which implies that the Spanish subjects with lower L2 proficiency outperformed the Turkish subjects of a comparable L2 proficiency level.

Results of the Adv group in a mixed factorial repeated measures ANOVA were somewhat different from the LI ones. There was no significant main effect for definiteness [ $F(1,21)=.761, p=.393$ ], no significant interaction between definiteness and L2 groups [ $F(1,21)=.761, p=.393$ ], no significant main effect for specificity [ $F(1,21)=.758, p=.529$ ], no significant interaction between specificity and L2 groups [ $F(1,21)=.758, p=.529$ ]. There was a significant interaction between definiteness and specificity [ $F(1,21)= 4.514, p=.046$ ], but no three way significant interaction between definiteness, specificity and L2 groups [ $F(1,21)=.077, p=.784$ ]. Unlike the LIs' results, a between subjects comparison revealed no significant difference between the Adv Spanish group and the Adv Turkish group [ $F(1, 21) = 1.343, p= .260$ ].

Such results indicate that the Turkish Adv participants seem to have benefited from their higher proficiency level in L2 English (a language which grammaticalises definiteness); this is why there was no significant difference between them and the Spanish Adv subjects. Similar results were also found in the MCT test.

### L2 proficiency

As shown from the descriptive results in table 4.20 above, L2 proficiency does not seem to be a significant factor on the performance of the Spanish group but it is so for the Turkish group since the Turkish participants of an Adv L2 proficiency level appeared more target-like than their LI counterparts within this same L1 group. An independent samples t-test was carried out, and results showed no significant difference between the LIs and Adv of the Spanish group ( $p > .05$ ), but there was a significant difference between Turkish Adv and LIs, mainly in the indefinite context ( $p < .05$ ).

**Table 4.21** ASC task: Interaction between L2 proficiency, Definiteness and Specificity (Independent samples t-test results)

	L1 Spanish	L1 Turkish
[+Def, +Spec]	$p=.238$	$p=.237$
[+Def, -Spec]	$p=.700$	$p=.174$
[-Def, +Spec]	$p=.071$	$p=.0001$
[-Def, -Spec]	$p=.787$	$p=.001$

### *Summary of the ASC task results*

Results of the ASC task were similar to those of the MCT task.

- ✓ Both groups reached high accuracy rates over 80% of target-like performance, but the Spanish group was much more native-like than the Turkish one.
- ✓ Spanish participants did not fluctuate either on the basis of definiteness nor specificity, as they performed near native-like in both contexts (Def/Indef) and both settings (Spec/Non Spec). Turkish participants, nonetheless, were more target-like in the Def context than in

the Indef context, and their results indicated an interaction between definiteness and specificity in Indef contexts ONLY. This implies that the Turkish group did not seem to fluctuate between a definiteness setting and a specificity setting in the Def context, but they did so in the Indef context.

- ✓ L2 proficiency does not seem to play a significant role on the performance of the Spanish group, for both L2 proficiency sub-groups (Adv and LI) performed in a similar target-like manner. However, the Turkish Adv sub-group was more target-like than the LIs, especially in the Indef context. That was attributed to the fact that the former benefited from their higher proficiency level in L2 English, a language which grammaticalises definiteness while the latter was transferring the properties of L1 Turkish (an article-less language).

## 4.5 Summary and discussion of chapter 4

This chapter investigated article acquisition in L3 French by L1 Spanish/Turkish speakers who learnt English as an L2 (up to LI and Adv proficiency levels). Two experimental tasks were devised: an MCT task in three versions (English, Spanish and Turkish) and an ASC task. Results of these tasks are summarised below in relation to some linguistic concepts and also in relation to some L2 and L3 hypotheses.

### **Summary of findings in relation to certain linguistic concepts**

#### *Fluctuation: Definiteness vs. Specificity*

Both tasks showed that the Spanish group behaved in a near native-like way in [ $\pm$ Def] contexts and in [ $\pm$ Spec] settings and did not fluctuate either on the basis of definiteness nor specificity. The Turkish participants, on the contrary, were more target-like in [+Def] contexts (both Spec

and Non Spec) than in [-Def] contexts. Such results have also been attained in previous studies (e.g. Jaensch, 2008, 2009a). This could be attributed to the fact that NNSs generally acquire the definite marker before the indefinite one which might be due to the wide variety of usage and higher frequency of use of definite markers compared to indefinite ones (For further details on similar interpretations, see Master, 1993, cited in Lu, 2001).

Additionally, the Turkish natives were also fluctuating on the basis of specificity in the Indef context *only*; specifically, they were more target-like in Indef Non Spec, than in Indef Spec contexts. The Turkish speakers' overuse of the definite marker *le/la* in the [-Def, +Spec] contexts versus the infrequent overuse of *un/une* in [+Def, -Spec] contexts supports the claim that for some learners' ILGs, the definite articles might mark specificity, whereas the indefinite articles do not seem to be used as markers of non specificity (See Snape, 2006, for similar results and similar interpretations)<sup>87</sup>.

#### *L2 proficiency*

Results of the Spanish group showed no significant difference between Spanish subjects with higher L2 proficiency and those with lower L2 proficiency. Turkish subjects with advanced L2 proficiency, in contrast, outperformed the L1s, especially in the Indef contexts. Such results are in line with Leung (2005a) and Jaensch (2008) who both found an effect of L2 proficiency on the performance of NNSs of a [-ART] L1 and a [+ART] L2. Master also found similar results to those of the Turkish subjects. He found that the overall accuracy rates of L2 article use continuously increased as the L2 proficiency level advanced. Master tested the acquisition of English articles by both [+ART] and [-ART] L1 groups, and found an L2 proficiency effect on the performance of both groups. These findings are relatively different from the present study

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<sup>87</sup> Noteworthy, Snape (2006) tested the acquisition of article in L2 English and not French, this is why he was talking about the English definite article *the* versus the indefinite article *a(n)*.

which found no effect for L2 proficiency on the performance of the Spanish group but L2 proficiency had an effect on the performance of the Turkish group.

### **Summary of findings in relation to L2 hypotheses**

The predictions of three L2 hypotheses were tested in this study: *The FH model vs. The feature-based model vs. The L1 transfer hypothesis* (see above for further details on their predictions).

In this study, the Spanish group whose L1 is [+ART] outperformed the Turkish group whose L1 is [-ART]. Both groups learnt L2 English (a definiteness-based language). At a surface level, such findings could be indicative of L1 transfer (i.e. supporting the *The L1 transfer hypothesis*). Results might also be in support of the *FH account* because the Turkish natives (and not the Spanish ones) were found to be fluctuating between definiteness and specificity settings. However, a deeper scrutiny of the results revealed that the Turkish natives were only fluctuating on the basis of specificity in the Indef context which implies that for the Turkish participants, the definite article marks specificity, whereas the indefinite article does not seem to mark non specificity. This interpretation could be more in line with the *feature-based account* than the *L1 transfer hypothesis* or the *FH proposal*. Specifically, the behaviour of the Turkish participants could be due to their mis-analysing the relevant features of the French article system, such as choosing [ $\pm$ specific] rather than [ $\pm$ definite], rather than due to fluctuation between definiteness and specificity settings (for further similar interpretations, see Hawkins *et al.*, 2006).

### **Summary of findings in relation to L3 hypotheses**

The proposals of four L3 models were tested in this study: *the L1-model, the L2-Status factor, the TPM* and an original hypothesis proposed by the present study (see chapter one, section 1.5.2.2, for further details on their predictions).

Both the Spanish and Turkish groups performed above the 75% accuracy criterion set by this study. However, the Spanish participants reached nativeness in almost all tasks and outperformed the Turkish participants in all settings. (i) Such results cannot be attributed to L1 transfer because if so, Turkish subject will negatively transfer the properties of L1 Turkish (an article-less language) and, therefore, behave in a non target-like manner, which was not the case. (ii) Besides, if L2 was the only source of CLI, the Spanish subjects with advanced L2 proficiency should outperform those of LI proficiency, but that was also not the case. Thus, for both (i+ii), neither the L1 factor hypothesis nor the L2 status factor model is corroborated in this study. Then how can these results be accounted for?

If we compare the Turkish natives' target-like performance of correct article choices (over 80% of target use) to their target-like performance on the feature gender (less than 60%), one can claim that the Turkish speakers found the acquisition of the property definiteness/specificity less challenging than the acquisition of gender in L3 French<sup>88</sup>. This raises the question as to why there is this discrepancy in the performance of this group, though both properties are absent in the grammar of L1 Turkish. The answer is possibly that while gender is absent in L2 English, English is definiteness-based, and therefore the Turkish group benefited from the structural similarity between L2 English and L3 French regarding the feature definiteness/specificity. That is the reason why Turkish subjects with advanced L2 proficiency outperformed those with lower L2 proficiency.

Thus far, it seems that the order of acquisition is not the triggering factor for CLI in L3A but rather it is typological similarity that is a triggering factor for CLI in L3A. However, while the TPM believes in a holistic typological similarity, the present study hypothesises that in the

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<sup>88</sup> Further details on the results of *gender* are found in chapter 2.

absence of a language that is typologically similar to the L3 on a holistic basis, the language that is structurally similar to the L3 on a property-by-property basis should be the source of influence. As stated in chapter one (section 1.5.2.2), the TPM would expect the Spanish group to be influenced by their L1 Spanish while the Turkish group to be influenced by their L2 English because English is the language that is lexically the closest. The present study would also predict that the Spanish group would be influenced by L1 Spanish and the Turkish group would be influenced by L2 English because it is the only background language (for this group) that shares the property of definiteness with L3 French because Turkish is an article-less language. That means that the proposals of the two hypotheses regarding the property of definiteness are similar and were both corroborated in this chapter.

It is worth noting that though the predictions of the TPM and the hypothesis adopted in this study seemed to have been corroborated in this chapter, an examination of the other results showed that holistic typological similarity (The TPM) is not always the only triggering factor for CLI. Turkish results showed that structural similarity on a property-by-property basis is a possible factor driving CLI in L3A. As good evidence, while in the feature definiteness, L2 English was the only source of influence on the performance of the Turkish group, in the property number concord, Turkish was more influential. Such results would not be predicted by the TPM which argues that once the parser identifies one language as being typologically the closest to the L3 (based on lexical similarity, initially), the grammar of that language *only* will be transferred on a holistic basis (see chapter three and chapter seven for a detailed discussion on these predictions).

It should be noted, however, that both the TPM and the hypothesis proposed by this study fails to explain why Turkish speakers were more target-like in [+Def] contexts than in [-Def] contexts (though English grammaticalises definiteness and both contexts are present in this language), and

also why they were fluctuating on the basis of specificity in the Indef context only. A possible answer to this could be that though Turkish participants benefited from article knowledge acquired via their L2 English, the absence of this feature in their L1 Turkish might have negatively affected their performance; this is why though they reached over 75% of target use, they were still far from being native-like, contra the Spanish group. This interpretation remains pure speculation and is left open for further future research.

In addition to typological similarity, this study tests the role of L2 proficiency. While the L1 factor model believes in no role for L2 proficiency in L3A, and the TPM makes no claims in this regard, the L2 status factor and the present study both believe that L2 proficiency could be a significant factor affecting the performance of learners when acquiring a given property in L3. However, the two proposals have different arguments on this concern. The L2 status factor hypothesis always advocates a strong role for L2 and L2 proficiency when a given property is present in L2, however, the present study argues that if L2 is the only language that is structurally similar to the L3 concerning the *property tested* (definiteness/specificity in this case), L2 proficiency will have an effect, but if both L1 and L2 share this property with L3, L2 proficiency may not be a significant factor. In this study, Spanish is typologically similar to French, so English will not have an effect on the performance of this group. As for the Turkish group, L2 English is the only background language that is similar to French regarding article suppliance; this is why this study expects an effect of L2 proficiency on the performance of the Turkish group only, which is the scenario attained by the results of this study.

To sum up, results of the Spanish group showed that they have benefited from the typological proximity between their L1 Spanish and L3 French more than from the property-based similarity between L2 English and L3 French. Such results were concluded from the fact that both Spanish

with higher L2 proficiency (Adv) and those with lower L2 proficiency (LI) performed alike. Turkish natives, on the other hand, seem to have benefited from the property-based structural proximity between L2 English and L3 French. This is true because Turkish participants with Adv L2 learners were as target-like as the Spanish Adv whereas Turkish LIs were much less target-like than the Spanish LIs. Such findings do not support the predictions of the TPM completely. The findings of the present study seem to be supportive of the hypothesis adopted in this study, which predicts precisely that in the absence of holistic typological similarity between an L1/L2 and the L3, property-based structural similarity is a solution i.e. the language that shares the same property with the L3 regarding a given property will positively influence the performance of L3 learners on that property. Further details on the four hypotheses tested and their predictions vis-à-vis the findings attained are in chapter seven.

Chapter 5 discusses L3 learners' knowledge of main verb raising (adverb placement) in L3 French, a feature which is present in L1 Spanish but absent in L1 Turkish and L2 English.

## Chapter 5 L3 learners' Acquisition of Verb-Raising in the French VP

### 5.1 Introduction

This chapter discusses the use of adverb placement in the L3 French VP by two groups of NNSs; Spanish and Turkish natives who learned English as an L2 (LI and Adv). The experiments examined in this study aim to empirically test the role of L1 and L2 in the acquisition of main verb raising through adverb placement in L3 French. Verb raising is tested in this study via manner and frequency adverb placements only. Other functional categories such as negation, quantifiers...etc are not included.

### 5.2 Theoretical assumptions

#### 5.2.1 Syntactic approaches

There is general agreement that adverb placement is a word order property and that it is an indicator for thematic verb-raising. The parametric differences in adverb placement are attributed to the 'richness' or strength of verbal features versus the weakness of such features. Following Emonds (1978, 1985), Pollock (1989) and Chomsky (1991), adverb placement is related to whether the thematic verb is raised to T or remains *in situ*. It is maintained that v-to-T raising is triggered by the morphological strength of verbal features on T. Following a proposal from Pollock (1989), the parametric difference between French and English is argued to be the result of the verb raising from VP (verb phrase) to IP (inflectional phrase) in French but not in English. Within this account, word order variations across languages are explained in terms of the presence or non-presence of verb raising, which occurs when an inflection feature IP attracts the verb. That is to say, if a language is morphologically 'rich' or strong (e.g. French and Spanish),

its thematic verbs raise up for feature checking overtly at Phonetic Form (PF), resulting, therefore, in the surface word order of S-V-Adv-O<sup>89</sup>, as in the example below:

41. Elle regarde souvent cette émission. (French)  
 She watches often this program  
 ‘She often watches this program’

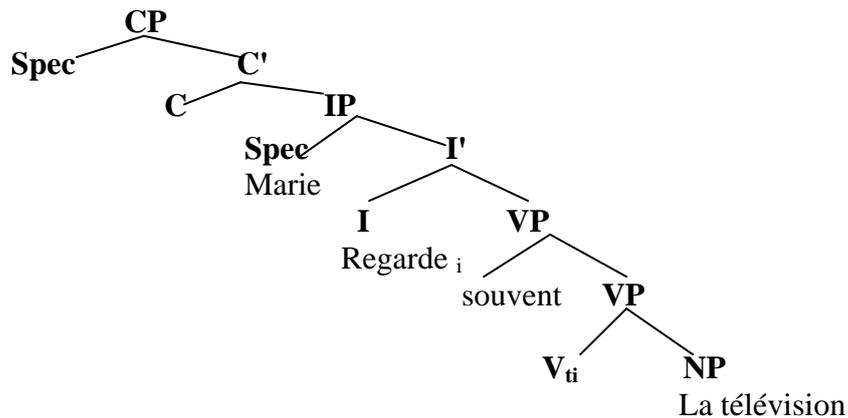
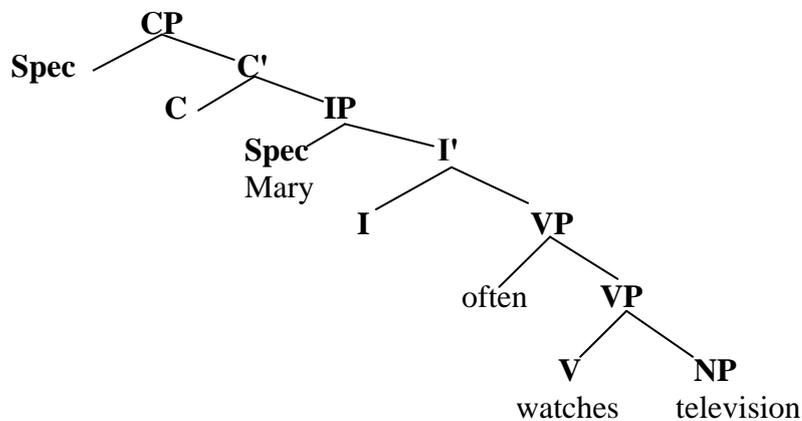
Languages, which are morphologically ‘poor’ or weak, do not allow verb raising; that is to say, thematic verbs remain *in situ* within VP. Feature checking is only done covertly at the Logic Form (LF) after affix lowering, leading therefore to a surface word in which the adverb occurs pre-verbally (i.e. S-Adv-V-O) as in the example below:

42. They often read books. (English)

It should be noted that in recent Minimalist work (Chomsky, 1993), the functional features that trigger whether thematic verbs raise up to T or remain *in situ* are described as uninterpretable verbal features ((*uFs*)) on T, which include tense (henceforth T) and agreement (henceforth AGR) inflectional features. The difference between verb raising languages (e.g. French) and non verb-raising languages (e.g. English) in terms of adverb placement is illustrated in the syntactic trees below (examples adopted from White, 2003a, p. 13):

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<sup>89</sup> In the original work of Pollock (1989), the functional category INFL is split into Tense (T) and Agreement (AGR). The verb raises following two steps; it first raises to AGR and then it raises to T. However, as this distinction is beyond the scope of this study, it is assumed that verb raising proceeds in one step (from v-to-T).

(1) French(2) English

Thus far, in light of such parametric variation, it seems that there are two types of languages with regard to adverb placement: those which allow verb raising and therefore their adverbs occur post-verbally (e.g. French and Spanish) and languages which are non verb raising and their adverbs occur pre-verbally (English). This phenomenon has been given different names: the verb movement parameter, the V-raising parameter (Culicover, 1997), the V-to-I parameter (Deprez, 1994), or the strength of AGR parameter (Williams, 1994). Throughout this study, two terms will be used interchangeably to refer to this concept the verb movement and the verb raising parameter.

## 5.2.2 Cross-linguistic Variation

### 5.2.2.1 French

French is a language which has a strong ('rich') morphological AGR, this is why it allows thematic verbs to raise up to T and, therefore, its manner and frequency adverbs are placed post-verbally. French has an S-VAdv-O word order, as shown in the example below:

43. Ils visitent souvent l'église  
 They visit often the church  
 'They often visit the church'

### 5.2.2.2 Spanish

Similar to French, Spanish is a verb raising language. Spanish has an even richer morphological paradigm than French (Suñer, 1994). Its adverbs are placed to the right of the verb as in the sentence below:

44. Juana habla correctamente el griego  
 Juana speaks perfectly Greek  
 'Juana perfectly speak Greek'

example adopted from Hawkins (2001a, p. 94).

However, unlike French, Spanish does not exhibit verb raising consistently (Ayoun, 1999a, 1999b). Spanish is described as 'a mixed language [rather] than a strictly verb movement language, in the sense that it instantiates surface structures both with and without movement' (Ayoun, 2005, p. 147). Ayoun (2005) further argues that "in spite of their morphological strength or richness, Spanish verbs do not necessarily raise out of their initial position [...]. Verb movement with respect to adverb placement in (non)finite contexts [...] is only optional" (p. 147). This implies that in finite contexts, manner and frequency adverbs in Spanish can occur

pre-verbally or post-verbally as shown in the examples below (adopted from Ayoun, 2007, p. 145)<sup>90</sup>:

45. a. John always reads books.  
b. Juan siempre lee libros.
46. a. \*John reads often novels.  
b. Juan lee siempre libros.

Thus, Spanish has a predominantly S-V-Adv-O word order but an S-Adv-V-O word order is also allowed in Spanish (Ayoun, 2005, 2007).

### 5.2.2.3 English

English has a weak morphological AGR; this is why its thematic verbs remain *in situ*. English verbs do not move up to T and thus its manner and frequency adverbs do not occur post-verbally. Sentences with an S-V-Adv-O word order are, therefore, ungrammatical in English as shown by the asterisk (\*) in the sentences below.

47. She always visits the church on Sunday  
\*She visits always the church on Sunday *Frequency adverbs*
48. They carefully replied to the email.  
\*They replied carefully to the email. *Manner adverbs*

English thematic verbs do not raise up to T, but non thematic verbs move up to T for feature checking, resulting in auxiliaries/modals (have, do and be) been placed before the adverb, as in the following examples:

49. She is always happy.
50. She has usually been known for her hard work.

<sup>90</sup> Ayoun (1999b, 2005) assumes that Spanish non-finite verbs also exhibit optionality in verb raising. However, as we are only testing finite verbs, discussion of this is irrelevant to the scope of the present work.

However, given that this study focuses on thematic verbs only, for the purpose of this study English is referred to as a non verb-raising language.

#### 5.2.2.4 Turkish

Similar to English, Turkish has a weak morphological AGR. It is, therefore, described as a non verb-raising language. Thematic verbs in Turkish do not move up to T, but rather remain *in situ*.

Thus, the canonical position for adverbs in Turkish is before the verb phrase (VP) (Wilson and Pınar Saygın, 2003). Turkish is a verb-final language with an S-Adv-O-V word order, as shown

by the examples below:

51. O bazen şiirler yazıyor  
she sometimes poems writes (frequency adverb)  
'she sometimes writes poems'
52. Adam koşarak içeriye girdi  
Adam running inside came (manner adverb)  
'Adam came inside running'

A summary of the similarities/differences between French, Spanish, Turkish and English with regard to adverb placement is presented in table 5.1.

**Table 5.1** Adverb placement: Cross-linguistic distribution

	<b>Adv-S-V-O</b>	<b>S-Adv-V-O</b>	<b>S-V-Adv-O</b>	<b>S-V-O-Adv</b>
French	√	√	X	√
Spanish	√	(√)	(√)	√
Turkish <sup>91</sup>	√	X	√	√
English	√	X	√	√

<sup>91</sup> Turkish is a verb final language with an S-Adv-O-V word order but for the sake of this study, we are including it under the column of the S-Adv-V-O word order meaning that Turkish is non verb raising language. However, throughout this study, it is explicitly mentioned that Turkish is a verb final language with an S-Adv-O-V word order.

It is worth pointing out that this study is not directly concerned with testing adverbs in initial and final positions as they are not relevant for the verb raising parameter. However, as the MCT test, consists of four options including (adverbs in initial positions, in pre-verbal positions, in post-verbal positions and in final positions), results on these two positions will only be used for descriptive purposes.

### **5.3 Review of existing (L2 and L3) studies on Verb raising acquisition**

Adverb placement in the ILGs of NNSs has been extensively studied in the recent decades, in theoretical linguistics from a generative perspective to a minimalist perspective (Chomsky, 1995; Pollock, 1997a, b), in applied linguistics, precisely in L1 acquisition (Deprez, 1994; Deprez & Pierce, 1990, 1993; Meisel, 1992; Pierce, 1992; Verrips & Weissenborn, 1992; Weissenborn, 1988, 1992; Weissenborn, Verrips & Berman, 1989), in L2 acquisition (Ayoun, 2005, 1999a; Antes *et al.*, 1995; Downey-Vanover, 1994; Hawkins *et al.*, 1993; Herschensöhn, 1998; Hulk, 1991; Mandell, 1998; Trahey & White, 1993; White, 1991a, 1991b, 1992a). Most of these studies investigated the treatment of adverbs by Francophone learners of English or Anglophone learners of French. Few studies have investigated the verb-raising parameter by other L1 natives (e.g. Chu and Schwartz (2005) who examined this parameter in L2 English by L1 Chinese speakers or Antes *et al.*, 1995; Ayoun, 2005 and Mandell, 1998 who studied adverb placement in L2 Spanish).

Even fewer studies have tested verb raising in L3 acquisition (e.g. Leung, 2002b, 2006). The main question of interest in these L3 studies has been which of the previously acquired languages (L1/L2) would be the source of CLI if the word order of these languages is similar to or different from that in the L3? Given the dearth of L3 studies investigating adverb placement in L3, more research is needed. The present study aims to contribute to the L3 literature by

examining verb raising (adverb placement) in the ILGs of beginning L3 French learners by two groups of L1 speakers: one whose L1 allows verb raising (Spanish) and one with a non verb-raising language (Turkish). Both groups speak English as an L2, a non verb-raising language<sup>92</sup>.

Such cross-linguistic difference raises two questions that are of direct relevance to the present study: (i) are NNSs whose L1 has an S-Adv-O-V and an L2 with an S-Adv-V-O word orders able to acquire the S-V-Adv-O word order of L3 French (the case of the Turkish group), and (ii) do NNSs whose L1 has an (S-V-Adv-O) word order but an L2 with an S-Adv-V-O word order transfer their L1 or L2 word order when acquiring adverb placement in L3 French (the case of the Spanish group)?

The next sub-sections will review existing L2 and L3 studies on adverb placement.

### 5.3.1 Existing L2 studies on adverb placement

Ayoun (1999b) tested 83 English speaking intermediate-advanced learners of French on negation, inverted questions, adverb placement, quantification at a distance and floating quantifiers in two tasks: a production task and a grammaticality judgment task (GJT). For the scope of this study, only results on adverb placement in finite contexts will be reported. Results showed that no parameter resetting occurred. In fact, with the exception of the advanced group (group 4 who scored over 70% of correct responses), the highest percentage for ungrammatical sentences correctly rejected was just 50% for the two intermediate groups. Similarly, the total percentage for grammatical sentences being correctly accepted was just 61%. Similar results

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<sup>92</sup> Noteworthy, verb movement is 'optional' in Spanish. That is, unlike in French in which the adverb is always placed after the verb, in Spanish, the adverb may occur pre- or post-verbally (Ayoun, 1999b, 2005). This syntactic fact will be explained in further details in the theoretical and discussion parts of this chapter.

Besides, Turkish is a non verb raising language but it is a verb final language with an S-Adv-O-V word order and not S-Adv-V-O order like English.

were also found in the production task whereby participants (again with the exception of the advanced group) scored less than 65% of correct responses. Ayoun argued that ‘adverb placement proved to be a difficult property to acquire’ (p. 118) and she attributed the difficulty of this property to two main reasons. First, certain long manner adverbs such as those formed by adding the suffix *-ment*, adverbs of time and place are often placed at the beginning or end of a sentence and not after a verb. Thus, learning such adverbs might require learning them on an item-by-item basis or with the help of some additional rules (p. 120). Second, Ayoun considers adverb placement to be a property that might take longer time to be acquired compared to other properties; this is why *only* the advanced group performed in a near native-like way (over 75 % of target like performance). She further argued that although English learners might have been exposed to ample cases of adverb placement in French, the complexity of this property and the wide range of possibilities of adverb placement resulted in no parametric resetting (p. 118)<sup>93</sup>.

In another recent study (2005), Ayoun investigated adverb placement in the ILG of L1 English speakers learning Spanish as an L2. Ayoun considered testing Anglophone learners of L2 Spanish to be an interesting case from a learnability perspective because Spanish is described as a “mixed language” with respect to the verb raising parameter (Ayoun, 1999b). In other words, although Spanish is primarily a verb raising language as its verbs raise up to T for feature checking, resulting in adverbs occurring post-verbally, it also sometimes allows pre-verbal placement of certain adverbs in both finite and non finite contexts. English, in contrast, is consistently a non verb raising language. English and Spanish, therefore, mismatch but also overlap with regard to adverb placement. Ayoun conducted this study to examine whether such mismatch and overlap cause any learnability challenges to English native speakers?

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<sup>93</sup> Ayoun said this when comparing adverb placement with the other properties tested in this study. She argued that adverb placement is quite challenging compared to negation, inverted questions and quantification at a distance. Floating quantifiers are also described to be difficult to learn in L2 Spanish.

15 English natives took part in this study majoring in a variety of disciplines in a North American university where they were enrolled in second or third year Spanish classes. The study used a wide variety of computerized elicitation tasks to test four syntactic properties subsumed under the verb movement parameter (namely negation, adverb placement, floating quantifiers and inverted questions) in finite and non finite contexts. Only results related to adverb placement in *finite* contexts will be reported here. Group results of this study showed that participants have acquired the placement of adverbs in finite contexts with an overall mean percentage of target-like performance over 77% (this percentage slightly differed from one task to another). Ayoun argued that her participants demonstrated that they could accept, reject and produce structures which were not part of their L1 grammar (adverbs in post-verbal positions in this case) which she considered to be evidence against the possibility of positive transfer from the L1.

Antes *et al.* (1995) is another study which tested the acquisition of adverb placement (in addition to negation and inversion) in the ILG of L1 English speakers learning Spanish as an L2 and another group of L1 English native speakers who learnt French as an L2. Results of French L2 learners showed a moderate acceptance of the target order forms (SVAO). The rates of acceptance increased as the proficiency increased, with the advanced group reaching near native-like performance. Spanish L2 learners, on the other hand, showed a slightly lower moderate acceptance of the target (SVAO) order, and the advanced group, unlike those of the French group, did not attain near native-like performance. Antes *et al.* concluded that the French learners performed significantly much better than the Spanish learners. They attributed such differential performance to the fact that French data consistently provide evidence for overt verb raising unlike Spanish which is characterized by *optionality*. Spanish has two surface orders, only one of which provides evidence for verb movement. This means that the input that English natives learning French were exposed to was characterized by consistency (French has overt verb

movement), whereas L1 English speakers learning Spanish as an L2 were exposed to two settings (one with overt verb movement and one with no verb movement). This *optionality* in the Spanish input might have slowed down the resetting of the verb movement parameter by English natives.

It is worth noting that although both studies i.e. Ayoun (2005) and Antes *et al.*, (1995) agree that Spanish does not exhibit verb raising consistently which means that verb raising in Spanish is optional, they slightly differ concerning whether Spanish is being so with regard to adverb placement or not. In fact, Ayoun considers Spanish to be a ‘mixed language’ regarding adverb placement. Spanish adverbs, though predominantly occur in post-verbal positions, are also allowed in pre-verbal positions. Antes *et al.*, (1995), nonetheless, argued that Spanish adverbs predominantly occur post-verbally and only a very limited number of adverbs occur pre-verbally. This is why the input in relation to this feature is not *misleading*; adverb placement cannot categorise Spanish as being a ‘mixed language’. For the purpose of the present study, the assumptions of Ayoun (2005) will be adopted in both the theoretical and discussion parts of this chapter (for further details on the two views, see Ayoun (2005) and Antes *et al.*, (1995)).

Various other L2 studies were carried out to examine the acquisition of the verb raising parameter in L2 and found some similar results but offered different interpretations from those of Ayoun (1999b, 2005). Hawkins *et al.*, (1993), for example, investigated the performance of two groups of adult English-speaking learners of L2 French (intermediate (N=75) and advanced (N=29)) on adverb placement (in addition to negation and placement of the subject quantifier ‘tous’). Results showed that the majority of the intermediate (I) group behaved in a non target-like way as 40% of them allowed both the French and English location of thematic verbs with manner and frequency adverbs. The advanced (A) group, however, behaved in a near native-like way. Hawkins *et al.*, (1993) interpreted such results as indicative of L1 influence followed by

input leading to rapid restructuring of specific properties. That could explain why the A-group performed significantly better than the I-group. Hawkins *et al.* provided an argument different from that of Antes *et al.*, (1995) to justify the no-resetting of the verb movement parameter in the early stages of acquisition. They argued that once I is established, it is subject to L1 influence; this means that ‘weak’ I could be the ‘default’ setting that English speakers started with when learning adverb placement in L2 French, this is why they started with no verb movement structures. Then, with continued exposure to French, they came to recognize that French finite thematic verbs should raise up to I over manner/frequency adverbs, which could possibly lead to their acquiring the appropriate strength of the inflection of French I (Hawkins, 2003, p. 112-113). Such an interpretation was also evidenced by the fact that the English L1 speakers were able to acquire verb raising in negated structures in French, but were not able to master this with VPs containing adverbs. Hawkins *et al.*, (1993) argued that such results did not suggest that L2 learners had acquired the obligatory verb raising in French, but only appeared to have done so on the basis of their performance on negation, which was not based on verb raising, but rather on a ‘misanalysis of *pas*’ (p. 219).

All the studies reviewed above had one thing in common; they all investigated the possibility of transfer by including one language that allows verb raising (French) and one that prohibits verb raising (English). A review of their findings is relevant to the present study for two main reasons. First, they are testing adverb placement in languages that are the target languages in the present study, namely English, French, and Spanish. Second, they tested languages with different linguistic profiles with respect to adverb placement i.e. languages that are solely non verb-raising (e.g. English), languages that are predominantly verb-raising (e.g. French) and ‘mixed’ languages (e.g. Spanish). Such diversity is also tested in the present study. This is why extending their interpretations to explain the non native performance of NNSs on adverb placement in L3 is

of direct relevance to this study (Further and different arguments on the verb movement parameter in L2 could also be found in White (1991a, 1992a), Trahey & White (1993).

### 5.3.2 Existing L3 studies on Verb raising

The only study that tested adverb placement in the ILG of L3 learners, the researcher is aware of, is that of Leung (2007b)<sup>94</sup>. This study was carried out to investigate the formal features of finiteness, agreement, and [ $\pm$ past], and the feature strength of T(ense) (mainly adverb placement) in the ILG of L1 Cantonese-English bilingual L3 French learners<sup>95</sup>. All participants were advanced in L2 English, further divided into three levels of proficiency in L3 French: 44 beginners, 30 intermediates and 10 advanced. 30 French native speakers and 31 English natives served as control groups. English, French and Chinese (Cantonese) exhibit different word orders with regard to adverb placement. In French, T features are strong, and thus induce the verb to raise up to T, resulting in adverbs placed after the verb. English T features are weak; this is why adverbs are placed before the verbs. Chinese language is assumed to share similar characteristics of adverb placement with English, for Chinese verbs are also placed to the left of the adverb. In light of such cross-linguistic differences, Leung carried out this study to answer the following question: Will Cantonese English bilinguals whose L1 and L2 have an S-Adv-V-O word order be able to accept the S-V-Adv-O word order in L3 French?

In so doing, two experimental tasks were devised: an elicited written production (sentence completion) task and a preference task. The sentence completion task was adopted from Herschensohn (1998), and the preference task was adopted from White (1991a, 1991b). Each task had two versions (French and English). Overall results of the sentence completion task

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<sup>94</sup> In reality, Leung conducted three studies testing adverb placement in L3 French (2002b, 2006, 2007b). These three studies, nevertheless, are interrelated in that two of these studies (2006, 2007b) are revised parts of her PhD thesis (Leung 2002b), and therefore, the same participants, the same tasks and even the same results were reported in these studies. This is why only one of the three studies is reviewed above, namely the (2007b) study.

<sup>95</sup> Only results on adverb placement will be reported here as they are of direct relevance to the present study.

revealed that the advanced and intermediate groups outperformed the beginners, but in the English version, all experimental groups were native-like. Results of the preference task in the French version also showed that the advanced and intermediate groups were more target-like than the beginners, though there were still some differences between the advanced group's performance and that of the control group, mainly in frequency adverbs. Leung argued that the difference between the advanced group and the control group was not significant, suggesting that the advanced French learners were 'approaching nativeness with respect to adverb placement' (Leung, 2007b, p. 401). Leung provided an interpretation similar to that of Hawkins (2001a, p.112–113) on the interaction between transfer and input. More precisely, Leung argued that given that her participants were native-like in the formal features of agreement and past tense but were non-native like in adverb placement, that suggests that participants (mainly beginners) have transferred their L2 English steady-state grammars to the L3 French initial state (providing them with tense and agreement features and the weak feature strength). As a result, learners displayed 'optionality' in the treatment of adverb placement (allowing both French and English word orders, respectively SVAdvO and SAdvVO). Leung argued that this variability at the initial state of L3 French learning might be the consequence of competition between L2 transfer (suggesting nonmovement) and L3 input (suggesting movement). This was mainly evidenced by the fact that as subjects' L3 French proficiency increased, the extent of variability decreased, which demonstrated that L2 transfer effects were gradually diminishing with increased exposure to the L3 input.

## 5.4 The study

### 5.4.1 Participants

The participants mentioned in this chapter are the same subjects who took part in all the experimental tasks (described and discussed in chapter two, *section 2.4.1*).

## 5.4.2 Tasks and Results

### 5.4.2.1 MCT task

#### *Procedure*

In each version of the MCT test, a total of six sentences were used to test verb raising (adverb placement) in L3 French, while eight sentences served as fillers. Three sentences were used to test the placement of manner adverbs and three others were used to test frequency adverbs. Each of these six sentences was followed by four sentences which served as possible French translations to the tested sentence. Participants are told to tick (✓) all the sentences they think are grammatically acceptable in French. In all tested sentences, there was more than one possible correct sentence. No time limit was set for this test but participants were told not to think too long and to answer by guessing when in doubt. The example below is of the English version of the MCT task, testing frequency adverb.

53. Martin often visits the church.

- a. Martin visite souvent l'église. S-V-Adv-O **correct option**
- b. \*Martin souvent visite l'église. S-Adv-V-O **incorrect option**
- c. Martin visite l'église souvent. S-V-O-Adv **correct option**
- d. Souvent, Martin visite l'église Adv-S-V-O **correct option**

Noteworthy, when verifying the tested sentences with five French native speakers, they mentioned the fact that in some examples, the word orders with an adverb occurring sentence-initial or sentence-final are considered as non acceptable in French (mainly semantically rather than grammatically). However, as the aim of this study is to investigate whether NNSs accept the ungrammatical S-Adv-V-O word order as opposed to the grammatical S-V-Adv-O order in French and in order to make scoring easier, and given that adverbs in initial and final positions are used for descriptive purposes only, the only option that is treated as non acceptable is the one

that holds an S-Adv-V-O word order. Thus, if any participant ticks this option only or ticks this option with any other option(s), his/her answer is counted wrong, but if (s)he ticks any of the rest three options, the answer is counted correct.

### *Research Questions*<sup>96</sup>

RQ<sup>1</sup>: Will Turkish natives (L2 English speakers) whose L1 has an S-Adv-O-V word order and L2 with an S-Adv-V-O word order be able to accept the S-V-Adv-O word order in L3 French?

RQ<sup>2</sup>: Will Spanish natives (L2 English speakers) whose L1 has the target S-V-Adv-O word order but whose L2 who has an S-Adv-V-O word order transfer their L1 or L2 word order when learning the S-V-Adv-O word order in L3 French?

RQ<sup>3</sup>: Does L2 proficiency have any effect on the performance of the Spanish and/or Turkish natives?

### ➤ **MCT task results (English version)**

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the MCT test showed a strong reliability coefficient.

Cronbach's alpha = .963 L3 learners & NS/ .821 for L3 learners only.

### Overall Results

**Table 5.2** MCT (English version): Mean percentage of total choices by L1 and adverb position

	Spanish (N=22)	Turkish (N=16)	Fr. Natives(N=10)
Total choices of Adv-S-V-O word order	108/132 (81.81%)	61/96 (63.54%)	56/60(93.33%)
Total choices of S-Adv-V-O word order	45/132 (34.09% )	55/96 (57.29%)	0/60 (0%)
Total choices of S-V-Adv-O word order	85/132 (64.39%)	29/96 (30.20%)	60/60 (100%)
Total choices of S-V-O-Adv word order	112/132 (84.84%)	85/96 (88.54%)	60/60 (100%)

Overall results indicate that the Spanish participants behaved in a more target-like way than the Turkish ones but the former did not score within the range score of the French control group. The Spanish group selected the incorrect S-Adv-V-O word order option with an average of 34%

<sup>96</sup> These will be the same research questions for the MCT test (in its three versions) and the ASC task. However, for reasons of space, these questions will NOT be repeated under each task in this chapter.

versus 57% for the Turkish group. Besides, the Spanish group selected the correct S-V-Adv-O word order with an average of 64% versus 30% for the Turkish group. Such results imply that while the Spanish group showed some variability between options with pre-verbal and post-verbal positions, the Turkish group tended to select options with the non-target pre-verbal adverbs.

These results were tested statistically using a One-Way ANOVA for each of the two options [dependent variable = mean selection of option; independent group variable=Experimental groups divided by L1]. Results showed a significant difference between these experimental groups in options (b) and (c), as shown in table 5.3 below.

**Table 5.3** MCT (English version): Selection of options (One Way ANOVA results)

Option b: Total choices of S-Adv-V-O word order	[ $F(2,45)=71.528, p=.0001$ ]
Option c: Total choices of S-V-Adv-O word order	[ $F(2,45)=107.692, p=.0001$ ]

Adjustments using a post hoc Bonferroni test revealed a significant difference between the Spanish and Turkish group ( $p=.0001$ ), between the French and the Turkish group ( $p=.0001$ ) and also between the Spanish and French group ( $p=.0001$ ) in options (b) and (c). Further statistics using paired samples t-test for each L1 group were carried out to examine whether there is any significant difference between participants' selection of sentences containing the ungrammatical S-Adv-V-O word order and their correct alternatives with a grammatical S-V-Adv-O word order. Results of the Spanish group revealed a significant difference between the two options [ $t= -6.401, df=21, p=.0001$ ] and similar results were found for the Turkish group [ $t= 4.333, df=15, p=.001$ ]. Although there was a significant difference between the two options in the performance of both groups, it is worth pointing out that at least descriptively, results have shown that while the Turkish natives were more likely to select sentences with adverbs in pre-verbal positions, the

Spanish group showed a trend of variability between the grammatical S-V-Adv-O word order and the ungrammatical S-Adv-V-O word order.

L1 influence/L2 influence

**Table 5.4** MCT (English version): Mean percentage of total choices by adverb type, adverb position and L2 proficiency

Performance by adverb position		L1 Spanish		L1 Turkish	
		Adv (N=13)	LI (N=9)	Adv (N=10)	LI (N=6)
Manner Adverbs	Total choices of S-Adv-V-O word order	13/39 (33.33%)	10/27(37.03%)	16/30(53.33%)	11/18(61.11)
	Total choices of S-V-Adv-O word order	24/39 (61.53)	17/27(62.96%)	9/30 (30%)	5/18(27.77%)
Frequency Adverbs	Total choices of S-Adv-V-O word order	11/39(28.20%)	11/27(40.74%)	18/30 (60%)	10/18(55.55)
	Total choices of S-V-Adv-O word order	28/39 (71.79)	16/27(59.25%)	8/30 (26.66%)	6/18(33.33%)

As shown in the table above, both Spanish sub-groups showed variability between sentences with S-Adv-V-O word orders and those with S-V-Adv-O word orders. Such results were different from those of the Turkish sub-groups which showed that both sub-groups were more likely to accept sentences with S-Adv-V-O order. In order to test whether the performance of each group is influenced by L1 or L2, two comparisons were carried out. The first between the LIs of both L1 groups (these groups are supposed to be mainly influenced by their L1). A second comparison was carried out between the two Adv sub-groups to see if their high proficiency in L2 English influenced their performance in L3 French.

For so doing, a mixed factor repeated measures ANOVA was carried out for the LIs of the two L1 groups [Within subjects variable 1=adverb type, Within subjects variable 2= adverb position; independent group variable=L2 English groups]. Results showed no significant main effect of adverb type [ $F(1,13)=.000$ ,  $p=1.000$ ], no significant interaction effect between adverb type and L2 groups [ $F(1,13)=.000$ ,  $p=1.000$ ], no significant main effect of adverb position [ $F(1,13)=.300$ ,

$p=.593$ ], but there was a significant interaction effect between adverb position and L2 groups [ $F(1,13)=24.300, p=.0001$ ]<sup>97</sup>. However, a between subject effect showed a significant difference between the two L2 groups [ $F(1,13)=6.240, p=.027$ ], implying that the Spanish LIs outperformed the Turkish LIs.

A second mixed factor repeated measures ANOVA was carried out for the Adv of the two L1 groups [Within subjects variable 1= adverb type, Within subjects variable 2 = adverb position; independent group variable=L2 English groups]. Results of the Adv sub-groups revealed no significant main effect of adverb type [ $F(1,21)=.722, p=.405$ ], no significant interaction effect between adverb type and L2 groups [ $F(1,21)=.032, p=.859$ ], and no significant main effect of adverb position [ $F(1,21)=.491, p=.491$ ], but there was a significant interaction effect between adverb position and L2 groups [ $F(1,21)=35.405, p=.0001$ ]<sup>98</sup>. However, a between subject effect showed a significant difference between the two L2 group [ $F(1,20)=6.239, p=.021$ ], implying that the Spanish Adv subjects outperformed the Turkish ones.

These results showed no difference on the basis of adverb type (i.e. manner and frequency adverbs), but these two sub-groups differ with regard to adverb position. That confirms what was said earlier that while the Spanish Adv group showed some *optionality* in their choices between pre-verbal and post-verbal adverbs, the Turkish Adv group consistently selected pre-verbal adverbs much more frequently than post-verbal adverbs.

Additionally, the fact that Turkish LIs and Adv were both less target-like than their Spanish counterparts could be attributed to the fact that both L1 Turkish and L2 English are structurally

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<sup>97</sup> There was also no significant interaction effect between adverb type and adverb position [ $F(1,13)=.023, p=.881$ ], and no three-way interaction between adverb type, adverb position and L2 proficiency [ $F(1,13)=.580, p=.460$ ].

<sup>98</sup> There was also no significant interaction effect between adverb type and adverb position [ $F(1,21)=.079, p=.782$ ], and also no three-way interaction between adverb type, adverb position and L2 proficiency [ $F(1,21)=1.750, p=.200$ ].

different from L3 French regarding adverb placement. This is why having learnt English to a lower level or to a higher proficiency level did not have any effect on the performance of the Turkish subjects. The Spanish LI and Adv sub-groups, on the contrary, benefited from the typological similarity between their L1 Spanish and L3 French. This is why both groups, regardless of their L2 proficiency, behaved in a comparable target-like manner, though showed some variability which was attributed to negative transfer from L1 Spanish.

### L2 proficiency

An independent samples t-test was carried out and results showed no significant difference between the LIs and Adv of each L1 group ( $p > .05$ ), implying that L2 proficiency was not a significant factor in this test<sup>99</sup>.

### ➤ MCT task results (Spanish version)

#### Overall Results

**Table 5.5** MCT (Spanish version): Mean percentage of total choices by adverb position

	Spanish participants (N=22)
Total choices of Adv-S-V-O word order	113/132 (85.60%)
Total choices of S-Adv-V-O word order	59/132 (44.69% )
Total choices of S-V-Adv-O word order	72/132 (54.54%)
Total choices of S-V-O-Adv word order	117/132 (88.63%)

As shown in the table above, the Spanish subjects reached high accuracy percentages in their selection of the grammatical word orders (i.e. adverbs in initial positions and in final positions compared to their selection of the ungrammatical word order (i.e. adverbs in pre-verbal

<sup>99</sup> Results of each group in the independent samples t-test were as follows:

The Spanish group: Manner Adv (S-Adv-V-O)  $p = .610$ ; Manner Adv (S-V-Adv-O)  $p = .865$ ; Frequency Adv (S-Adv-V-O)  $p = .054$ ; Frequency Adv (S-V-Adv-O)  $p = .054$ .

The Turkish group: Manner Adv (S-Adv-V-O)  $p = .472$ ; Manner Adv (S-V-Adv-O)  $p = .843$ ; Frequency Adv (S-Adv-V-O)  $p = .719$ ; Frequency Adv (S-V-Adv-O)  $p = .458$ .

positions). Similarly, these participants' selections of sentences with adverbs in post-verbal positions were slightly more than their selections of sentences with adverbs in pre-verbal positions, implying that they accept the S-V-Adv-O as the target word order in French, but they sometimes also accept sentences with S-Adv-V-O word order as being grammatical in French.

Such findings were tested statistically using a paired samples t-test and results showed no significant difference between this group's selection of S-V-Adv-O and S-Adv-V-O word orders [ $t = -1.572$ ,  $df = 21$ ,  $p = .131$ ]. Surprisingly, these results were different from those in the MCT test (English version) in which there was a significant difference between the two word orders in the performance of the Spanish group<sup>100</sup>.

### L1 influence/L2 influence

**Table 5.6** MCT (Spanish version): Mean percentage of total choices by adverb position, adverb type and L2 proficiency

Adverb Type	Adverb position	Spanish participants	
		Adv (N=13)	LI (N=9)
Manner Adverbs	Total choices of S-Adv-V-O word order	17/39 (43.58%)	12/27 (44.44%)
	Total choices of S-V-Adv-O word order	21/39 (53.84%)	15/27 (55.55%)
Frequency Adverbs	Total choices of S-Adv-V-O word order	18/39 (46.15%)	11/27 (40.74%)
	Total choices of S-V-Adv-O word order	22/39 (56.41%)	16/27 (59.24%)

Results displayed above showed that the Spanish participants (both Adv and LIs) behaved in a comparable manner. There was a behaviour characterised by *optionality* in their treatment of sentences with pre-verbal and post-verbal adverbs which means that though both sub-groups consider adverbs in post-verbal positions to be the correct option in L3 French they sometimes accept sentences with pre-verbal adverbs. These results were further tested statistically using a mixed factor repeated measures ANOVA [Within subjects variable 1= adverb type, Within subjects variable 2=adverb position; independent group variable=L2 English proficiency

<sup>100</sup> Results on sentences with adverbs in initial and final positions of this test are used for descriptive purposes only and will not be discussed further.

groups]. Results revealed no significant main effect of adverb type [ $F(1,20)=1.488, p=.237$ ], no significant interaction between adverb type and L2 proficiency [ $F(1,20)=1.488, p=.237$ ], no significant main effect of adverb position [ $F(1,20)=3.440, p=.078$ ], no significant interaction between adverb position and L2 proficiency [ $F(1,20)=.114, p=.739$ ]<sup>101</sup>. A between subject effect also showed no significant difference between the two L2 proficiency sub-groups [ $F(1,20)=.000, p=1.000$ ].

These results show therefore that the Spanish Adv participants did not benefit from their high proficiency in L2 English for their performance was similar to that of the LIs. There was no difference between the treatment of adverbs of manner and frequency adverbs in the performance of both the Adv and LIs. In addition, there was no difference on the basis of adverb position in the performance of each sub-group. These results were similar to the results of the Spanish sub-groups in the English MCT test in which it was said that the behaviour of the Spanish was characterised by variability between sentences with pre-verbal and post-verbal adverbs. Such findings were attributed to negative transfer from L1 Spanish that is described by *optionality* with regard to adverb placement.

### ➤ MCT task results (Turkish version)

#### Overall Results

**Table 5.7** MCT (Turkish version). Mean percentage of total choices by adverb position

	Turkish participants (N=16)
Total choices of Adv-S-V-O word order	70/96 (72.91%)
Total choices of S-Adv-V-O word order	59/96 (61.45%)
Total choices of S-V-Adv-O word order	28/96 (29.16%)
Total choices of S-V-O-Adv word order	88/96 (91.66%)

<sup>101</sup> There was also no significant interaction effect between adverb type and adverb position [ $F(1,20)=.064, p=.802$ ], and similarly no three-way interaction between adverb type, adverb position and L2 proficiency [ $F(1,20)=.064, p=.802$ ].

Results of the Turkish group in this test were similar to their results in the English version of this test. More precisely, they appeared to select sentences with ungrammatical word orders (pre-verbal adverbs) more than those with a grammatical word order (i.e. post-verbal adverbs). The difference between the selection percentages of S-Adv-V-O sentences and S-V-Adv-O sentences was tested statistically using a paired samples t-test. Results showed a significant difference between the two options [ $t= 3.725$ ,  $df=15$ ,  $p=.002$ ] which implies that the Turkish group seems to treat S-Adv-V-O sentences as acceptable in French while S-V-Adv-O sentences as being ungrammatical in French<sup>102</sup>.

### L1 influence/L2 influence

**Table 5.8** MCT (Turkish version). Mean percentage of total choices by adverb type, adverb position and L2 proficiency

Adverb type	Adverb position	Turkish participants	
		Adv (N=10)	LI (N=6)
Manner adverbs	Total choices of S-Adv-V-O word order	21/30 (70 %)	12/18 (66.66%)
	Total choices of S-V-Adv-O word order	6/30(20% )	5/18 (27.77%)
Frequency adverbs	Total choices of S-Adv-V-O word order	15/30 (50%)	12/18 (66.66%)
	Total choices of S-V-Adv-O word order	10/30 (33.33%)	5/18 (27.77%)

Results displayed above show that the Turkish participants (both Adv and LIs) behaved in a comparable way. They were both more likely to select sentences with an S-Adv-V-O word order than sentences with an S-V-Adv-O word order. A mixed factor repeated measures ANOVA [Within subjects variable 1=adverb type, Within subjects variable 2=adverb position; independent group variable =L2 English proficiency groups] revealed no significant main effect of adverb type [ $F(1,14)=.219$ ,  $p=.647$ ] and similarly no significant interaction between adverb type and L2 proficiency [ $F(1,14)=.219$ ,  $p=.647$ ]. There was a significant main effect of adverb position [ $F(1,14)=16.073$ ,  $p=.001$ ], but no significant interaction between adverb position and

<sup>102</sup> Results on sentences with adverbs in initial and final positions are used for descriptive purposes only and will not be discussed further.

L2 proficiency [ $F(1,14)=.095, p=.762$ ]<sup>103</sup>. A between subject effect showed no significant difference between the two L2 proficiency sub-group [ $F(1,14)=.499, p=.492$ ].

These results show no difference between the two sub-groups either on the basis of adverb type or L2 proficiency. That is to say, both sub-groups treated adverbs of manner and frequency in a similar manner. Besides, the advanced participants of this group did not seem to benefit from their high proficiency in L2 English as their performance was similar to that of the LIs. However, there was a difference on the basis of adverb position in the performance of both sub-groups which corroborates the descriptive results (above) stating that the Turkish group seems to select sentences with adverbs in pre-verbal positions much more frequently than sentences with post-verbal adverbs. Similar results were also found in the English version of this test.

#### *Summary of MCT Task results*

Results of the three versions of the MCT test showed comparable results. Their findings are summed up below:

- Overall results showed that the Spanish participants outperformed their Turkish counterparts in adverb placement in L3 French, but the former did not reach nativeness.
- While most errors committed by the Turkish group were cases of accepting sentences with adverbs in pre-verbal positions (i.e. with an S-Adv-V-O word order), the Spanish group showed a pattern of *optionality* between pre-verbal and post-verbal adverbs. They predominantly accepted S-V-Adv-O word order, but they sometimes allowed sentences with an S-Adv-V-O word order as acceptable sentences in French. Such results were

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<sup>103</sup> There was also no significant interaction effect between adverb type and adverb position [ $F(1,14)=1.641, p=.221$ ], and similarly no three-way interaction between adverb type, adverb position and L2 proficiency [ $F(1,14)=1.641, p=.221$ ].

attributed to a negative transfer from L1 Spanish, a language that is described to be a ‘mixed language’ with regard to adverb placement (Ayoun, 1999b; 2005).

- There seems no difference the basis of adverb type in the performances of both L1 groups; each group treated manner and frequency adverbs in a comparable manner.
- L2 proficiency did not seem to have any main effect on the target-like performance of neither L1 group. This is why it was concluded that in both groups, the main effect was possibly due to transfer from L1.

#### 5.4.2.2 ASC task

##### *Procedure*

A total of eight sentences testing adverb placement was used in this test, four containing frequency adverbs and four containing manner adverbs. Participants were told to write acceptable under the correct sentences and correct the unacceptable ones. As the main concern was to see if NNSs will recognise that French is a verb raising language, there were two types of sentences tested: type one are sentences with an S-V-Adv-O word order (grammatical order) and type two sentences with an S-Adv-V-O word order (ungrammatical order). Participants are supposed to write acceptable under sentences of type one and correct sentences of type two by changing them into an S-V-Adv-O word order. The researcher orally explained to the participants that if they think a sentence is unacceptable, they are supposed to write unacceptable and also correct it; otherwise their answer will not be counted. There was no time limit but participants are told not to think too much and to answer by guessing in case of doubt. The two sentences below are examples of how the ASC test would be implemented:

54. Elle regarde souvent ce programme.  
Acceptable
55. Elle bien explique la leçon.  
Unacceptable. The correct answer is ‘Elle *explique bien* la leçon’.

*Results of the ASC test*

Prior to running any statistical tests in SPSS, reliability analyses, using Cronbach's alpha, were conducted. The item analysis of the ASC test showed a strong reliability coefficient.

Cronbach's alpha = .925 L3 learners & NS/ .813 for L3 learners only.

Overall Results**Table 5.9** ASC task: Mean percentage of target-like performance by L1

	Spanish (N=22)	Turkish (N=16)	French Natives (N=10)
Target-like use	133/176 (75.56%)	51/128 (39.84%)	77/80 (96.25%)
Non Target-like use	43/176 (24.43%)	77/128 (60.15%)	3/80 (3.75%)

According to the results displayed in table 5.9, the Spanish group outperformed the Turkish group. However, the Spanish group was also far from being native-like (75% vs. 96%). A one way ANOVA is carried out to see if such differences are significant or not [dependent variable = mean target-like use; independent group variable = Experimental groups divided by L1]. Results showed a significant difference between these experimental groups [ $F(2,45)=79.945, p=.0001$ ]. Adjustments using post-hoc test Bonferroni showed a significant difference between French native speakers and the Turkish group ( $p=.0001$ ), between the Spanish and the Turkish groups ( $p=.0001$ ), and also between the French group and the Spanish one ( $p=.0001$ ).

Performance by adverb types, error types and L1 group**Table 5.10** ASC task: Mean percentage of inappropriate adverb choices by adverb type and L1 group

Performance by adverb position and error type		L1 Spanish (N=22)	L1 Turkish (N=16)
Manner Adverbs	Error type 1: treating the SAdvVO order as correct	17/44 (38.63%)	21/32 (65.62%)
	Error type 2: treating the SVAdvO order as incorrect	7/44 (15.90%)	18/32(56.25%)
Frequency Adverbs	Error type 1: treating the SAdvVO order as correct	13/44(29.54%)	19/32 (59.37%)
	Error type 2: treating the SVAdvO order as incorrect	8/44(18.18%)	19/32 (59.37%)

A deep scrutiny of the errors committed by each L1 group revealed that while most errors committed by the Spanish subjects were type one (i.e. they treated sentences with an S-Adv-V-O word order as acceptable in French), Turkish participants committed both error types (1 and 2) to a comparable degree. Such findings are indicative. They imply that the Spanish participants seem to treat post-verbal adverbs as correct in French. This is why S-V-Adv-O sentences were not mistakenly corrected to S-Adv-V-O. However, this group seems to consider also sentences with S-Adv-V-O word order to be correct in French, and this is the area where they made the big number of errors. Turkish participants on the contrary, seem to consistently reject the S-V-Adv-O order for the S-Adv-V-O order. They consider the latter to be the grammatical order in L3 French, this is why their errors were in the form of either treating the S-Adv-V-O order as correct (error type one) or treating the S-V-Adv-O order as incorrect (error type two).

These results were tested statistically using a paired samples t-test for each adverb type. Results of the Spanish group showed no significant effect of adverb types but there was a significant difference between error types in both adverb types, respectively: manner [ $t=2.215$ ,  $df=21$ ,  $p=.038$ ] and frequency [ $t=2.160$ ,  $df=21$ ,  $p=.042$ ]. Turkish results, however, showed no significant effect of adverb types and no significant difference between error types in both adverb types, respectively: manner [ $t= .676$ ,  $df=15$ ,  $p=.509$ ] and frequency [ $t=.000$ ,  $df=15$ ,  $p=1.000$ ].

#### L1 influence/L2 influence

In order to investigate whether L1 and/or L2 had an effect on the performance of the two L1 groups, and whether having a high proficiency level in L2 English plays a role in the acquisition of adverb placement in L3 French, the aggregated data in table 5.10 above are further divided by

L2 proficiency. A comparison between the LIs will help answer the question about L1 influence and a comparison between the Adv subgroups will tease apart questions about the role of L2.

**Table 5.11** ASC task: Mean percentage of inappropriate adverb choices by adverb type and L2 proficiency

Performance by adverb position and error type		L1 Spanish		L1 Turkish	
		Adv (N=13)	LI (N=9)	Adv (N=10)	LI (N=6)
Manner Adverbs	Error type 1: treating the SAdvVO order as correct	10/26(38.4%)	7/18(38.88)	12/20 (60%)	9/12(75%)
	Error type 2: treating the SVAdvO order as incorrect	3/26 (11.53%)	4/18(22.22%)	11/20 (55%)	7/12(58.33%)
Frequency Adverbs	Error type 1: treating the SAdvVO order as correct	10/26(38.46%)	5/18(27.77%)	12/20 (60%)	7/12(58.33%)
	Error type 2: treating the SVAdvO order as incorrect	4/26(15.38%)	3/18(16.66%)	14/20 (70%)	5/12(41.66%)

Statistical results using a repeated measures ANOVA of the LIs of both L1 groups showed no significant main effect for adverb types [ $F(1,13)=1.595$ ,  $p=.229$ ], no significant interaction between adverb type and L2 groups [ $F(1,13)=.177$ ,  $p=.681$ ], no significant main effect for error types [ $F(1,13)=2.537$ ,  $p=.135$ ], no significant interaction between error type and L2 groups [ $F(1,13)=.021$ ,  $p=.887$ ], no significant interaction between adverb types and error types [ $F(1,13)=.023$ ,  $p=.881$ ] and similarly no three way interaction between adverb type, error type and L2 groups [ $F(1,13)=.023$ ,  $p=.881$ ]. However, a between subjects comparison revealed a significant difference between the LI Spanish group and the LI Turkish group [ $F(1,21)=59.785$ ,  $p=.0001$ ].

Results of the Adv sub-groups were similar to those of the LIs. There was no significant main effect for adverb types [ $F(1,21)=.544$ ,  $p=.469$ ], no significant interaction between adverb type and L2 groups [ $F(1,21)=.190$ ,  $p=.667$ ], no significant main effect for error types [ $F(1,21)= 2.050$ ,  $p=.167$ ], no significant interaction between error type and L2 groups [ $F(1,21)=3.062$ ,  $p=.095$ ], no significant interaction between adverb types and error types [ $F(1,21)=.481$ ,  $p=.495$ ] and

similarly no three way interaction between adverb types, error types and L2 groups [ $F(1,21)=.169$ ,  $p=.685$ ]. However, a between subjects comparison revealed a significant difference between the Adv Spanish group and the Adv Turkish group [ $F(1,21)=59.785$ ,  $p=.0001$ ].

The fact that Turkish LIs and Adv were both less target-like than their Spanish counterparts might be attributed to the fact that both L1 Turkish and L2 English are structurally different from L3 French with regard to adverb placement. That is why having learnt English to a lower level or to a higher proficiency level did not have any effect on the performance of this group. The Spanish LI and Adv sub-groups, on the other hand, benefited from the typological similarity between their L1 Spanish and L3 French, this is why both groups, regardless of their L2 proficiency, behaved in a comparable target-like manner. In light of that, it seems therefore that both groups (for two different reasons) did not benefit from L2 English, the same result has also been found in the MCT test (in its three versions).

### L2 proficiency

An independent samples t-test was carried out for the above data and results showed no significant difference between the LIs and Adv of each L1 group ( $p>.05$ ), implying that L2 proficiency does not seem to be a significant factor on the performance of both groups in this test<sup>104</sup>.

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<sup>104</sup> Results of each group in the independent samples t-tes were as follows:  
The Spanish group: Manner Adv (S-Adv-V-O)  $p=.978$ ; Manner Adv (S-V-Adv-O)  $p=.313$ ; Frequency Adv (S-Adv-V-O)  $p=.505$ ; Frequency Adv (S-V-Adv-O)  $p=.905$ .  
The Turkish group: Manner Adv (S-Adv-V-O)  $p=.352$ ; Manner Adv (S-V-Adv-O)  $p=.890$ ; Frequency Adv (S-Adv-V-O)  $p=.925$ ; Frequency Adv (S-V-Adv-O)  $p=.094$ .

*Summary of ASC Task results*

Results of the ASC task were as follows:

- The Spanish group was more target-like than the Turkish group but less native-like than the control group.
- Results of the Spanish group showed that most errors they were cases of treating sentences with an S-Adv-V-O word order as acceptable in French. That is to say, they rarely treated sentences with post-verbal adverbs as incorrect but they allowed sentences with pre-verbal adverbs to be grammatical in French. The Turkish participants, on the contrary, committed both types of errors i.e. they rejected sentences with post-verbal adverbs and accepted sentences with pre-verbal adverbs. Results of both groups were explained in terms of negative transfer. It was claimed that the Spanish subjects transferred the *optionality* in their L1 Spanish; this is why though they successfully accepted sentences with post-verbal adverbs, they were sometimes accepting sentences with pre-verbal adverbs. The Turkish subjects, on the other hand, were transferring the S-Adv-V-O word order (which is the order of L1 Turkish and L2 English). This is why they rejected sentences with the grammatical S-V-Adv-O word order while they accepted the ungrammatical S-Adv-V-O word order<sup>105</sup>.
- There was no difference on the basis of L2 proficiency in the performance of both L1 groups, this is why it was claimed that English, a language that has an S-Adv-V-O word order, does not have any effect on the performance of neither L1 group.
- There was also no difference between the target-like performance of each L1 group on the basis of adverb type i.e. each group treated frequency and manner adverbs in a comparable manner.

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<sup>105</sup> Reminder, results showed that L2 English was not the main source of influence on the performance of neither L1 group.

## 5.5 Summary and discussion of chapter 5

To sum up, this chapter tested Spanish and Turkish natives' knowledge of adverb placement in L3 French. French and Spanish are both verb raising languages whereas English and Turkish are non verb raising. Results of an MCT task and an ASC task showed that the Spanish group outperformed the Turkish one. The rest of the results of these tasks are summarised and discussed below in relation to certain linguistic properties and also in relation to L2 and L3 predictions.

### **Summary and discussion of findings in relation to linguistic properties**

*Performance by word order: S-Adv-V-O versus. S-V-Adv-O*

While the overall results of both tests showed that the Spanish group accepted the *S-V-Adv-O* word order more frequently than the Turkish group, detailed scrutiny of these findings revealed the behaviour of the Spanish participants was characterised by *optionality* between sentences with an *S-V-Adv-O* word order and those with an *S-Adv-V-O* order. Such 'bouncing' behaviour was attributed to negative transfer from Spanish which is also characterised by *optionality* in the placement of manner and frequency (Ayoun, 1999b). The Turkish participants, on the contrary, did not show any pattern of *variability* as their behaviour was more towards accepting the ungrammatical *S-Adv-V-O* word order while rejecting the grammatical *S-V-Adv-O* French word order. Such results were attributed the fact that these participants were exposed to manner and frequency adverbs in pre-verbal positions in both L1 Turkish and L2 English, and thus the results were due to negative transfer.

These findings are consistent with certain L2 and L3 studies, for example Antes *et al.* (1995) tested the acquisition of adverb placement by Anglophone native learners of L2 French and Spanish. Results of the French group showed a moderate acceptance of the target order forms

(SVAO) with the advanced group reaching a near native-like level whereas Spanish L2 learners showed a slightly lower moderate acceptance of the target (SVAO) word order, and the advanced group, unlike the French advanced, did not attain nativeness. Antes *et al.* concluded that the French learners performed significantly better than the Spanish learners because French data consistently provide evidence for overt verb raising whereas the Spanish input is characterised by *optionality*.

The present study slightly differs from Leung's (2007b) study which tested adverb placement in early L3 French by L1 Cantonese- L2 English bilinguals. Her participants have background languages that are similar to those of the Turkish group (i.e. L1 and L2 that are non verb raising). However, unlike the Turkish group of this study who showed consistent rejection of the S-V-Adv-O word order, Leung's participants showed variability between pre-verbal and post-verbal sentences.

*Performance by Adverb type: Manner adverbs vs. Frequency adverbs*

As stated above, adverb type had no main effect on the performance of the Spanish and Turkish groups. Both groups were treating adverb placement in frequency and manner adverbs in a similar way. Similar results were also found in several L2 studies (e.g. Hawkins *et al.*, 1993; Antes *et al.*, 1995; Ayoun, 2005; Al Thubaiti, 2010, among others (*cf.* Leung (2002b)).

**Summary and discussion of findings in relation to L3 hypotheses**

Four L3 models are tested in this study: *the L1-model, the L2-status factor, the TPM and the hypothesis proposed by this study*. Detailed description of their predictions is in chapter 1 (section 1.5.2.2).

The results attained in this chapter showed that though the Spanish natives outperformed the Turkish natives, the former did not reach the native level. At a surface level, such results might be indicative of a strong L1 effect and therefore the L1-model is corroborated. However, a deeper inspection revealed that order of acquisition is not the triggering factor for CLI; it is rather the typological proximity factor. This interpretation is evidenced by various facts. First, Spanish is typologically similar to French (both are Romance languages and share several features in many different domains). This is why the Spanish participants outperformed the Turkish ones. Second, English is a common L2 for both groups, but because it is typologically different from French, it did not play any role on the performance of both groups. A third index that typological proximity is the triggering factor for CLI is the *variability* in the behaviour of the Spanish group regarding adverb placement, that *optionality* between pre-verbal and post-verbal positions was believed to be due to transfer from L1 Spanish and not to any other factors. These facts imply therefore that neither the L1 model nor the L2-status factor could be truly justified by the results of this study.

Results of the Spanish group, therefore, seem to be supportive of the TPM model which argues for typological similarity, precisely holistic typological similarity. The question raised here is whether the Turkish results are also supportive of the TPM model? Precisely, whether the language that is perceived by the parser as being lexically the closest to be perceived as being typologically the closest to the L3, and will be thereby holistically the source of influence in L3A as suggested by Rothman (2015)? Or is it rather the property-by-property-based structural similarity that is the triggering factor for CLI as proposed by this study?

In order to answer this question, let us have a deeper examination of the Turkish results on the property verb raising. The TPM would predict the Spanish group to be influenced by L1 Spanish

while the Turkish group to be influenced by L2 English because English is lexically much closer to French (than Turkish to French), and therefore, the parser would identify it as typologically the closest to French. This means that this group would transfer all the properties of the English language on a holistic basis (see chapter 1 for further details on the TPM predictions).

Results of the Spanish group support the predictions of the TPM hypothesis, however, the Turkish results showed no strong influence of L2 English. Such interpretation was concluded from the fact that the Spanish participants of advanced L2 proficiency outperformed the Turkish participants with advanced L2 proficiency. Furthermore, a comparison between Turkish Adv and Turkish LIs showed no significant difference which means that learning L2 English to a higher L2 proficiency level or a lower level did not make a difference. However, given that the feature of verb raising is absent in Turkish and English but is present in Spanish, it seems difficult to decide whether the TPM predictions or those of the present studies were corroborated fully or not. That could only be possible when comparing the results of the four properties in question (see chapter seven for detailed discussion on this matter).

Chapter 6 presents and discusses the results of a qualitative instrument (a semi-closed questionnaire).

## Chapter 6 Learners' Perception of Typological Proximity

### 6.1 Introduction

This chapter presents and discusses the results of a semi-closed questionnaire that was mainly devised to investigate learners' perception of the typological proximity (or language relatedness) between their background languages (L1 Spanish/Turkish, L2 English) and L3 French. More precisely, this chapter is intended to investigate how L1 Spanish/Turkish natives who speak English as an L2 perceive the typological similarity/dissimilarity between their L1/L2 and L3 French (psychotypology) on a holistic basis or on a property-by-property basis<sup>106</sup>. The findings of this questionnaire will be used to complement the results obtained from the quantitative experimental tasks (already described in chapters 2-5).

The combination between qualitative and quantitative tasks in research is generally termed the 'mixed methods approach' (Dörnyei, 2007, p. 26). There has been an increased use of such an approach in applied linguistics research in recent years and this is mainly because the 'mixed methods approach' is generally believed to provide more valid and reliable data. In this regard, Dörnyei (2007) argues that the combination of quantitative and qualitative data 'helps reduce the inherent weaknesses of individual methods by offsetting them by the strength of another, and therefore maximising the internal and external validity of research' (p. 43-44).

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<sup>106</sup> Reminder, this study, in line with various L3 studies (e.g. Rothman, 2013, 2015) distinguishes between two interrelated terms when investigating CLI in L3A. These terms are (i) typological proximity which refers to language relatedness and (ii) psychotypology which refers to learners' perception of the typological proximity between their L1/L2 and the L3.

For this reason, the present study has used a ‘mixed methods approach’; quantitative experimental tasks which give us an idea of how successful participants are in the properties tested and a qualitative instrument which investigates participants’ perception of these properties. The combination of the two methods offers a more comprehensive picture of the role of background linguistic knowledge in L3 acquisition as well as learners’ perception towards the typological/structural proximity between their L1/L2 and the L3. A copy of the questionnaire is in appendix A.11.

In light of this, the rest of this chapter is organised as follows. Section 6.2 describes the questionnaire in terms of its goal and the procedure of administration. Section 6.3 presents the research questions and hypotheses tested and section 6.4 presents the results of each property. Section 6.5 compares the qualitative results of each property in the questionnaire with the findings of the same property in the quantitative experiments. Section 6.6 discusses the proposals of the TPM and an original hypothesis proposed by this study in light of these findings. Finally, some concluding remarks are made in section 6.7.

## **6.2 Experiment: Semi-closed Questionnaire**

### **6.2.1 Goals of the Task**

The main goal behind using this questionnaire is to test the proposals of two hypotheses in generative L3A, specifically the TPM (Rothman, 2011, 2013, 2015) and the PSP (an original hypothesis proposed by the present study). While both models agree that typological proximity is the core factor that determines which of the previously acquired language(s) will have more effect on the acquisition of an L3, the main difference between the two models lies in whether typological similarity is perceived holistically (the TPM) or on a property-by-property basis.

### 6.2.2 Procedure

Participants were asked to fill in this semi-closed questionnaire when they finished all the quantitative experimental tasks. This questionnaire consists of two types of questions: closed questions (rating questions), where participants were provided with a scale as a single line with two edges (e.g. very easy-very difficult) and were asked to mark the scale at some point on the continuum. There were 5 questions in total divided as follows: (I) question one asks about the difficulty level of French as language to learn. This was just a general open question that was not counted in the scoring. (II) Question two consists of six sub-questions. Each one was asking about the difficulty level of the properties tested in this study (i.e. Gender, Number concord, Definiteness and Verb Raising), one question for each property except for Gender and Number where each had two questions. As for gender, the first question was about the difficulty level of remembering whether a given noun is masculine (le) or feminine (la) while the second was about the difficulty level of assigning gender concord to Dets and Adjs. As for Number concord, the first question was about the difficulty level of assigning plural inflection to the Det (article) while the second was about the difficulty level of assigning plural inflection to Adjs. (III) Question three consists of five sub-questions about the similarity/difference level between the languages tested (a. French and English), (b. French and Spanish) (c. Spanish and English), (d. Turkish and French) and (e. Turkish and English)<sup>107</sup>. (IV) Question three asked participants to rate how helpful learning English as an L2 before L3 French was. There were two parts to this question. The first part involved a rating question (analysed quantitatively) while the second contains a backup open-ended question in which participants were asked to explain why they thought learning English as an L2 helped (or did not help) in learning L3 French. This second part was analysed qualitatively. (V) The fifth question is an open-ended question because it asks

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<sup>107</sup> Qs b-c were answered by the Spanish participants only while Qs d-e were answered by the Turkish ones only.

participants to explain how similar/different their L1-L2, L1-L3 and L2-L3 regarding each of the four properties tested and to briefly justify how.

Rating questions were scored as follows. The researcher randomly divided the scale into seven equally spaced boxes, where each box refers to a specific degree. For example, questions asking about the difficulty rate of a given property would be scored as shown below.

- 1- *Box 1: Very easy*
- 2- *Box 2: Easy*
- 3- *Box 3: Slightly easy*
- 4- *Box 4: Neutral (neither easy nor difficult)*
- 5- *Box 5: Slightly difficult*
- 6- *Box 6: Difficult*
- 7- *Box 7: Very difficult*

The same scoring criteria were used with questions asking about the similarity/difference levels, and whether learning English before French was helpful or not, simply by replacing the word (easy) by (similar/helpful) and the words (different/not at all helpful) replaced the word (difficult), respectively.

### **6.3 Research Questions and Hypotheses**

As earlier stated, this questionnaire tests the proposals of two hypotheses: the TPM and the PSP. While the former argues for holistic typological proximity, the latter claims that in the absence of a background language that is typologically the closest to the L3 on a holistic basis, structural similarity between L1 and/or L2 and the L3 is the factor that triggers CLI in L3A. In light of these proposals, the following research question is posed:

Do NNSs perceive the typological/structural similarity between their background languages and the L3 on a holistic basis or on a property-by-property basis?

## 6.4 Results and Interpretations

### 6.4.1 Comparisons between L1, L2 and L3

In order to examine learners' perception of the typological proximity between their background languages and the L3, two steps were carried out. First, participants were asked to rate the similarity/difference level between their L1/L2 and L3 in general and then they were asked about the structural similarity between their L1/L2 and L3 with regard to the four properties tested. Now, regarding the questions about the similarity in general, each group were asked to rate three pairs (L1 vs. L3) (L2 vs. L3) and (L1 vs. L2), as shown by the example below:

Which of the following pair of languages do you regard as similar/different?

English and French

Very similar \_\_\_\_\_ Not at all similar

The findings of the two groups in these questions were as follows. When asked about the similarity between their mother tongue and French, most of the Spanish participants rated the two languages as being either *very similar* (31.8%) or *similar* (31.8%), a very few of them rated them as *slightly similar* (18.2%) or *slightly different* (18.2%), but no one rated them as *different* or *very different*. When asked about the similarity between their mother tongue and English, on the contrary, the majority of the Spanish group rated them either as *slightly different* (22.7%), *different* (31.8%) or as *very different* (27.3), but a very few of them (4 out of 22) rated the two languages as *slightly similar* (18.2%). Similar percentages were seen when asked about the similarity/difference between French and English, where the majority rated the two languages as being either *slightly different* (22.7%), *different* (39.05 %), or *very different* (18.2%). Such findings could have two interpretations; the first is that the Spanish participants are fully aware that Spanish and French are two languages that are typologically similar. The second

interpretation is that they seem to think that English is typologically different from both Spanish and French.

Responses of the Turkish group revealed that over 50% of the subjects rated Turkish and French as *slightly similar*, 25% rated them as *very different* while 6.25% rated them as *slightly different* and only three participants (18.75%) rated them as *different*. When asked to compare the Turkish and English languages, their responses were as follows. 50% of this group rated the two languages as being *very different*, 18.75% as *different* and 18.75% also as *slightly different*, while 12.5% considered Turkish and English as *slightly similar*. However, when asked to compare English and French, unlike the Spanish group who saw the two languages as being different, overall more than half of the Turkish group rated the two languages as *similar* (56.25%), 25% rated them as *slightly similar* while only 12.5% and 6.25% rated them as *slightly different* and *different*, respectively.

What is noticeable here is that while the Turkish group considers English and French as relatively similar languages, the Spanish group considers these two languages to be different. One possible justification for this difference is that for the Spanish group whose L1 is typologically very similar to French, English is different from French compared to Spanish, whereas for the Turkish group neither L1 Turkish nor L2 English is typologically very similar to French; both Turkish/English are similar to French but also different vis-à-vis certain properties.

#### 6.4.2 The role of L2 in L3A

Participants were asked to rate whether learning English as an L2 helped in learning L3 French. This question consists of two parts, one rating part and a backup open-ended question asking

participants to justify why they think English helped or did not help in learning L3 French. The question was as shown below:

- a. Did learning English first help when you came to learn French?

Very helpful \_\_\_\_\_ Not at all helpful

- b. (Depending on the answer) Why do you think it helped (didn't help)?

Results of the Spanish group showed that the majority considered English not to have helped them in learning French. Results were distributed as follows: two participants rated English as *slightly not helpful* (9.1%), five rated it *not helpful* (22.7%) and 15 rated *not at all helpful* (68.2%). When asked about their justifications, most of the participants said that Spanish is much closer to French than English to French. This is why they consider Spanish to have helped them much more than English when they started learning French.

Unlike the Spanish group, however, many Turkish participants considered English to have helped them in learning L3 French. Their responses were as follows. Three out of 16 (18.75%) rated it as *very helpful*, four out of 16 (25%) rated it as being *helpful*, four rated it as being *slightly helpful* (25%) while the other five participants (31.25%) rated it as *not helpful*. When asked to justify their responses, those who rated English as either very helpful or helpful said that English shares many features with French this is why learning it before French helped them, whereas those who rated it as being just slightly helpful or not helpful mentioned that though there are similarities between English and French, they are quite few this is why English did not help much in learning French. Again, what is noticeable is that for the Spanish group, English is very different from French, compared to Spanish. That is why they find it not helpful, whereas for the Turkish group, English is relatively similar to French; this is why they seem to find it quite helpful when learning L3 French.

### 6.4.3 Results by property

The rest of the questions aimed at examining learners' perception of the structural similarity between L1, L2 and L3 with regard to each of the four properties tested. In fact, after investigating learners' perception of the typological similarity between their background languages and the L3 on a holistic basis, it seems fairly important to investigate also learners' perception of the structural similarity between their background languages and the L3 on a property-by-property basis. The questions were of two types: closed questions asking learners to rate the difficulty level of each of the four properties tested, and open-ended questions which asked participants to justify their rating choices. In the next sub-sections, the results of the rating questions of each property along with the responses to the open-ended questions are presented.

#### 6.4.3.1 Gender

##### ✓ Closed (Rating) Questions

The two closed questions asking about learners' perception on gender were:

How difficult do you think is?

(i) Gender of nouns (e.g. remembering whether *livre* is *masculine* (le) or *feminine* (la))?

Very Easy \_\_\_\_\_ Very Difficult

(ii) Gender concord between Dets, Adjs and Ns (e.g. whether it is la *chemise blanche* or le *chemise blanc*)

Very Easy \_\_\_\_\_ Very Difficult

These two questions were mainly raised to investigate participants' perspectives on gender assignment (i.e. knowing whether the gender of a given noun is masculine or feminine) versus gender concord (i.e. assigning the right gender inflection to the modifying Dets and Adjs). Descriptive results of the Spanish subjects showed that their responses on gender assignment ranged between easy and very easy; no other ratings were selected. 19 participants out of 22

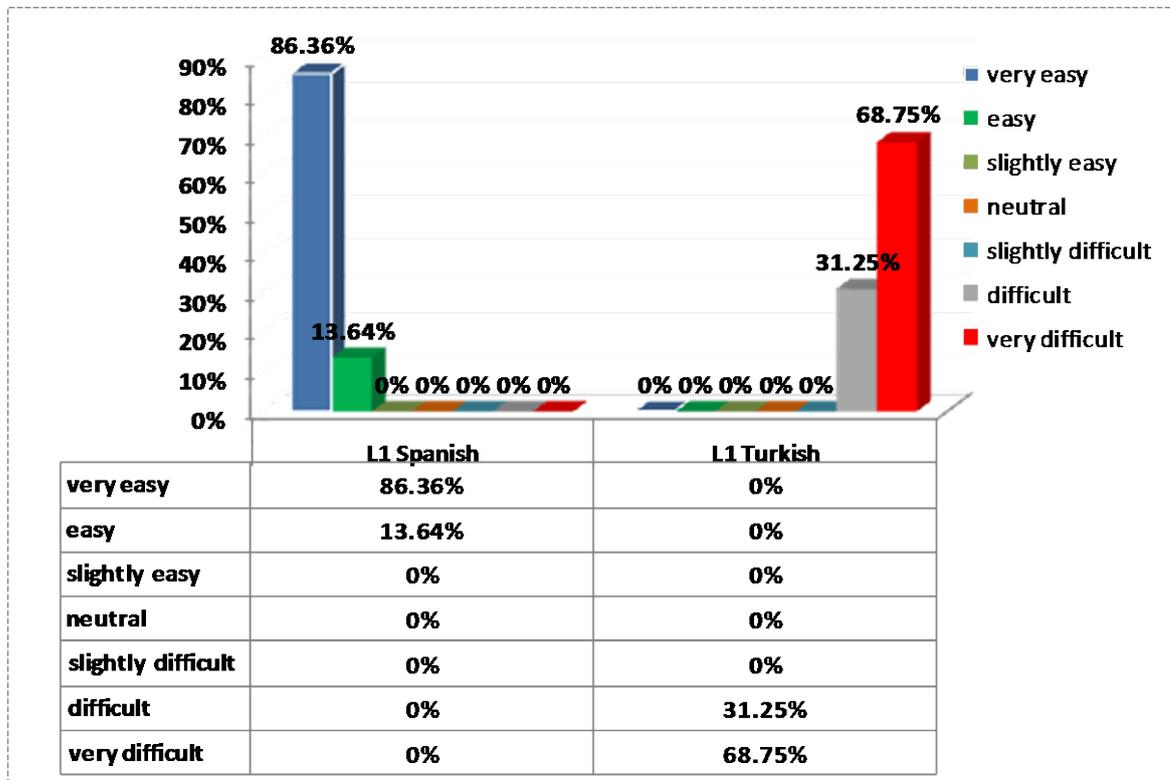
selected *very easy* (86.36%) while the rest three rated this property as *easy* (13.64%). This group considered gender concord also to be very easy to learn as 20 out of 22 participants rated this feature as *very easy* (90.9%) while the other two participants treated it as being just *easy*. No other ratings were selected for this feature.

Responses of the Turkish group, on the contrary, showed that they consider both gender assignment and gender concord as difficult features to learn. Five out of 16 rated gender assignment as *difficult* (31.25%) while the other 11 rated it as *very difficult* (68.75%). As for gender concord, there were three types of responses: *slightly difficult* (two out of 16 i.e. 12.5%), eight rated it as *difficult* (50%), while the other six participants rated it as *very difficult* (37.5%). Overall, although the Turkish participants rated the feature gender (both assignment and concord) as challenging, one can notice that over 50% of these participants rated gender assignment as *very difficult* but they rated gender concord to be *just* difficult. That might imply that gender assignment might be more problematic to these learners than gender concord. This would be logical for once they know the gender of a given noun, assigning the right inflection to the modifying Dets and Adjs might be less difficult.

Figures 6.1 and 6.2 below compare the responses of the Spanish and Turkish groups on gender assignment and gender concord, respectively.

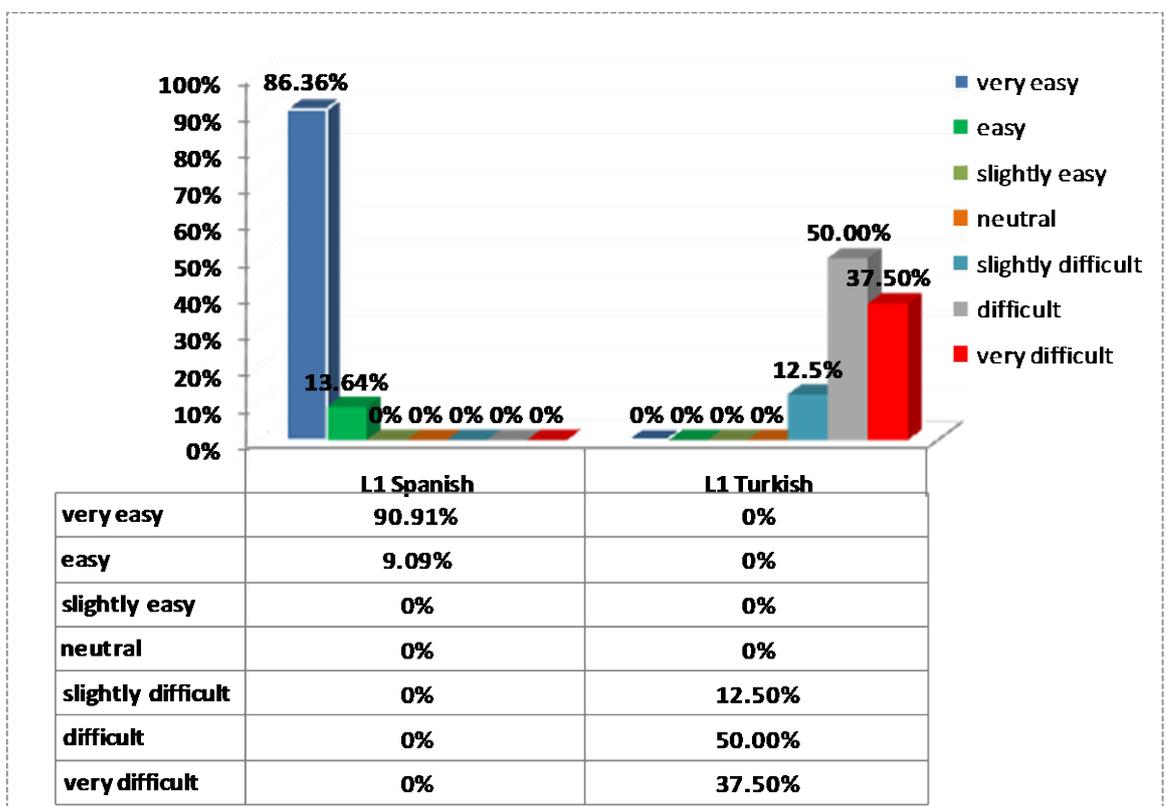
Gender assignment:

**Figure 6.1 Responses of the Spanish and Turkish groups on the difficulty level of gender assignment in L3 French**



Gender concord:

**Figure 6.2 Responses of the Spanish and Turkish groups on the difficulty level of gender concord in L3 French**



✓ Open-ended questions

The next three open-ended questions were asked to back up the previous rating questions. Specifically, participants were asked to think about the properties they were tested on and rate at which of these properties, their mother tongue and French, their mother tongue and English, and French vs. English were similar or different. Depending on their answers, participants were asked to explain how similar/different each pair was. As for gender assignment and gender concord, most Spanish participants shared the same answer ‘Spanish and French are very similar because both languages have gender’. However, three of this group considered the two languages to be different and their justification was that there are feminine nouns in Spanish which are masculine in French, and vice versa, there are nouns that are masculine in Spanish but are feminine in French. Almost all subjects in this group considered French vs. English and also Spanish vs. English as different with regard to gender simply because English does not have gender.

All Turkish participants considered both Turkish and English to be similar in terms of gender since neither language has the feature gender in its grammar.

6.4.3.2 *Number concord*

✓ Closed (rating) questions

How difficult do you think is?

(i) Plural form of articles (e.g. remembering that it is *les livres* and not *le livres*)

Very Easy \_\_\_\_\_ Very Difficult

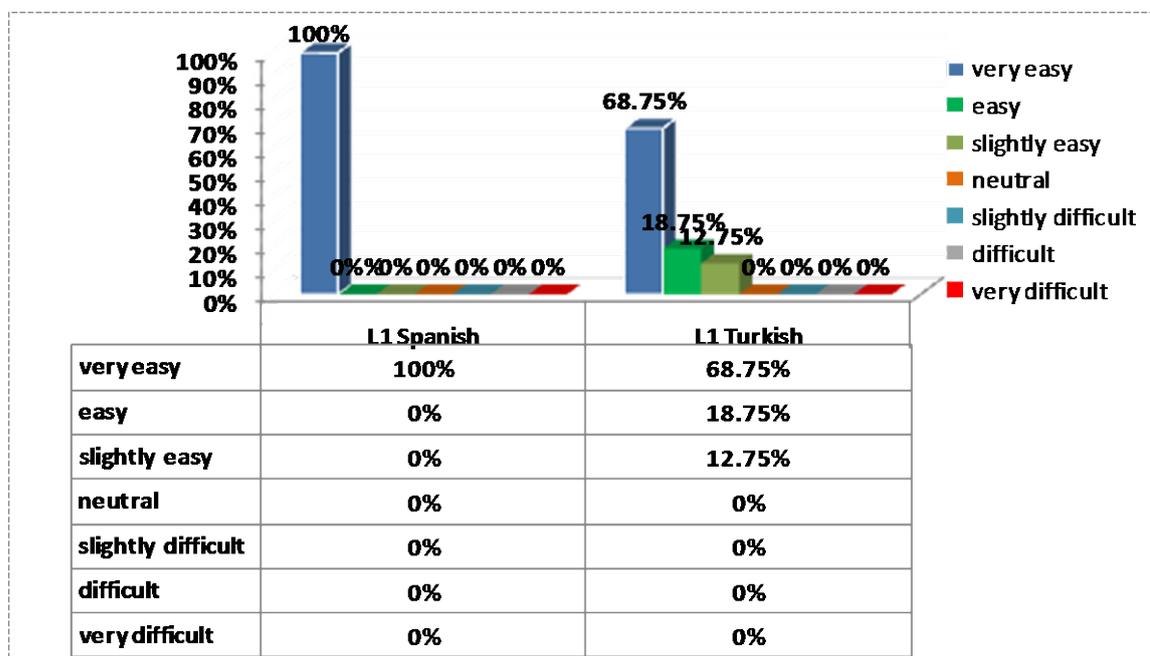
(ii) Remembering to mark adjectives for plural (e.g. *des livres rouges* and not *des livres rouge*)

Very Easy \_\_\_\_\_ Very Difficult

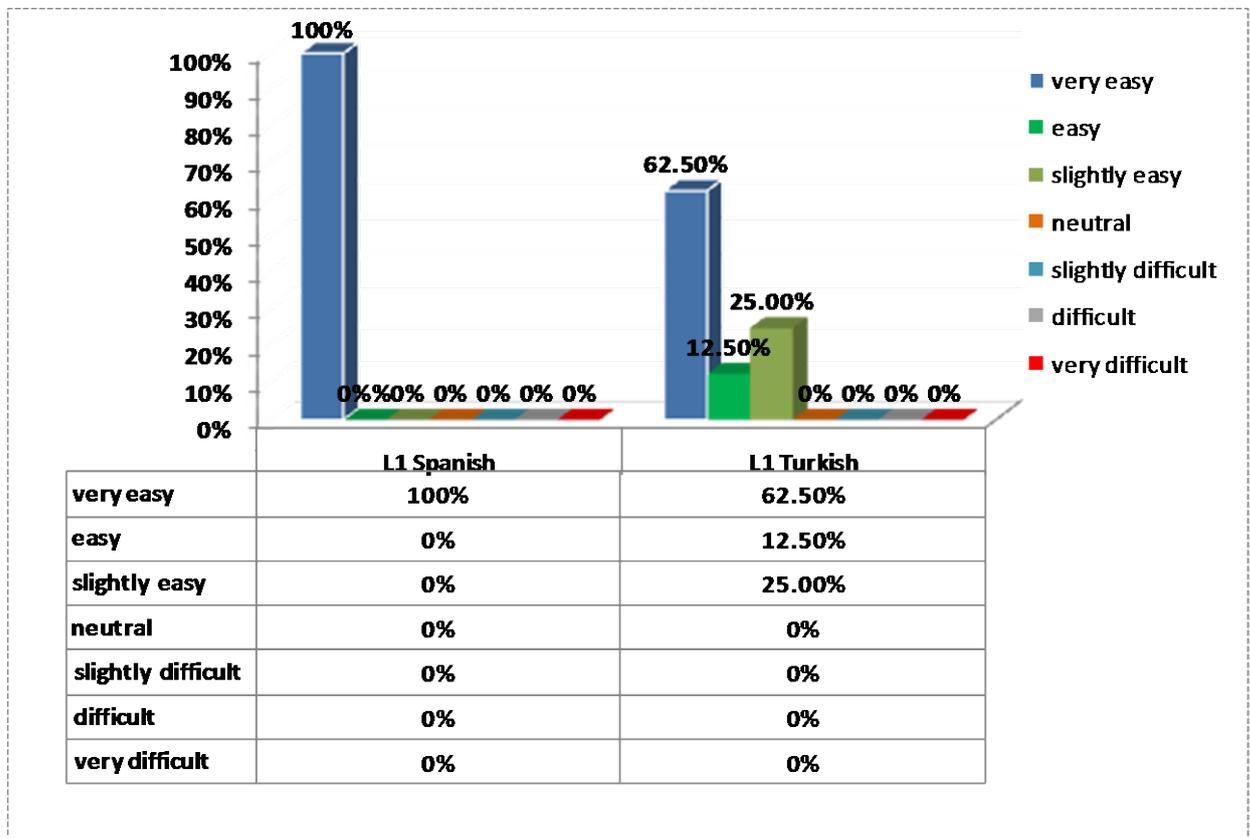
Both Spanish and Turkish participants responded almost alike to this question. Specifically, all the 22 Spanish participants (i.e. 100%) rated plural inflection on Dets and Adjs as *very easy*, and similarly, most Turkish subjects also rated them as being *very easy* while a very few of them rated the two properties as being either *easy* or *slightly easy*<sup>108</sup>. Such responses could be interpreted as follows. Although neither of the two groups rated number concord as being *difficult* or *very difficult*, this feature seems slightly more challenging for the Turkish group than the Spanish. This conclusion is drawn from the fact that unlike the Spanish participants who had 100% of responses rating this feature as *very easy*, the ratings of the Turkish group were distributed between *very easy*, *easy* and *slightly easy*. Figures 6.3 and 6.4 below illustrate the difference between the Spanish and Turkish responses on plural inflection on Dets versus plural inflection on Adjs, respectively.

Number concord on articles:

**Figure 6.3 Responses of the Spanish and Turkish groups on the difficulty level of plural inflection on articles in L3 French**



<sup>108</sup> Turkish responses were as follows: Plural Inflection on articles: 11 rated *very easy* (68.75%), three rated *easy* (18.75%) and two rated *slightly easy* (12.5%). Plural inflection on adjectives: 10 rated *very easy* (62.5%), two rated *easy* (12.5) and four rated *slightly easy* (25%).

Number concord on adjectives:**Figure 6.4 Responses of the Spanish and Turkish groups on the difficulty level of plural inflection on adjectives in L3 French**

## ✓ Open-ended Questions

The next three open ended questions asked participants to say whether their L1-L3, L1-L2 and L2-L3 were similar or different with regard to the property of number concord. Depending on their answers, participants were also asked to briefly explain how similar/different each pair is. Similar to the results above, the 22 Spanish participants all agreed that Spanish and French are completely similar in number concord; they all argued that both languages realise this property in a similar way. When asked how similar French and Spanish vs. English are in number concord, 14 of the Spanish group said that they are different while only eight said that they are similar. Most of those who rated the two languages to be different justified their answer by the fact that English does not allow number inflection on Nouns and Adjectives. These participants did not mention that English Nouns get inflected for plural. However, those who rated the pair as similar

considered English to be similar to French and Spanish because Ns in this language take a plural form by adding an 's'. This means that those who rated English to be similar to Spanish and French regarding number concord based their responses on the fact that English Ns take a plural form while those who consider it to be different based their responses on the fact that English Dets and Adjs do not take plural inflection unlike Spanish and French.

As for the Turkish group, when asked about the similarity/difference between English and French in number concord, they rated the two languages to be similar. In fact, nine participants (56.25%) considered the two languages to be similar and their argument was that both languages have Ns that take a plural form. None of these participants mentioned the fact that neither English Dets nor Adjs get inflected for plural. The remaining seven participants (43.75%) rated English to be different from French and justified their responses by the fact that English Adjs do not take an 's' for the plural. Interestingly, only two participants out of the seven drew attention to the fact that English Dets also do not take plural inflection. Similar responses were found when asked about the difference between Turkish and French. Those who considered Turkish to be different from French paid attention to the fact that Turkish Adjs do not take a plural form while French Adjs do whereas those who rated the pair to be similar highlighted the fact that Turkish Ns take plural forms ('ler' or 'lar') and Turkish is, therefore, similar to French in number concord. Finally, when asked to judge the similarity/difference between Turkish and English, a few Turkish participants (four out of 16) considered both languages to be different, and their justification is that English is much closer to French than Turkish while the majority (11 out of 16) who rated the pair to be similar argued that Turkish is similar to French because Ns in both languages have plural inflection. What can be concluded from both groups' responses is that while for the Spanish group, Spanish is the only language that is linguistically similar to French regarding number concord, for the Turkish group, both Turkish and English are fairly

similar to French, specifically regarding plural inflection on Ns. That implies that the same language could be perceived differently by two groups depending on what background language(s) they have learnt before. For the Spanish group, English is very different from French whereas for the Turkish group, it is similar to French.

#### 6.4.3.3 Definiteness

##### ✓ Closed (rating) Questions

How difficult do you think is?

Choosing the right article with nouns (e.g. remembering what goes in the gap in *Elle va acheter \_\_\_ vélo*) as opposed to (*Elle va acheter \_\_\_ vélo de son cousin*)

Very Easy \_\_\_\_\_ Very Difficult

Results of the Spanish participants showed that they seem to find the appropriate article selection in L3 French an easy property to learn<sup>109</sup>. This was apparent from their responses, which ranged between *very easy*-to *slightly easy*. Their responses were distributed as follows: 15 answered *very easy* (68.18%); three answered *easy* (13.6%) and four answered *slightly easy* (18.18%). The Turkish group also seems to find the appropriate article selection in French an easy property to learn. However, the distribution of the responses was slightly different from that of the Spanish group. While more than half of the Spanish group rated this feature to be *very easy*, more than half of the Turkish group rated it as just *easy* (10 out of 16, 62.5%) and only four participants (25%) considered it as *very easy* while the other two chose *slightly difficult* (12.5%).

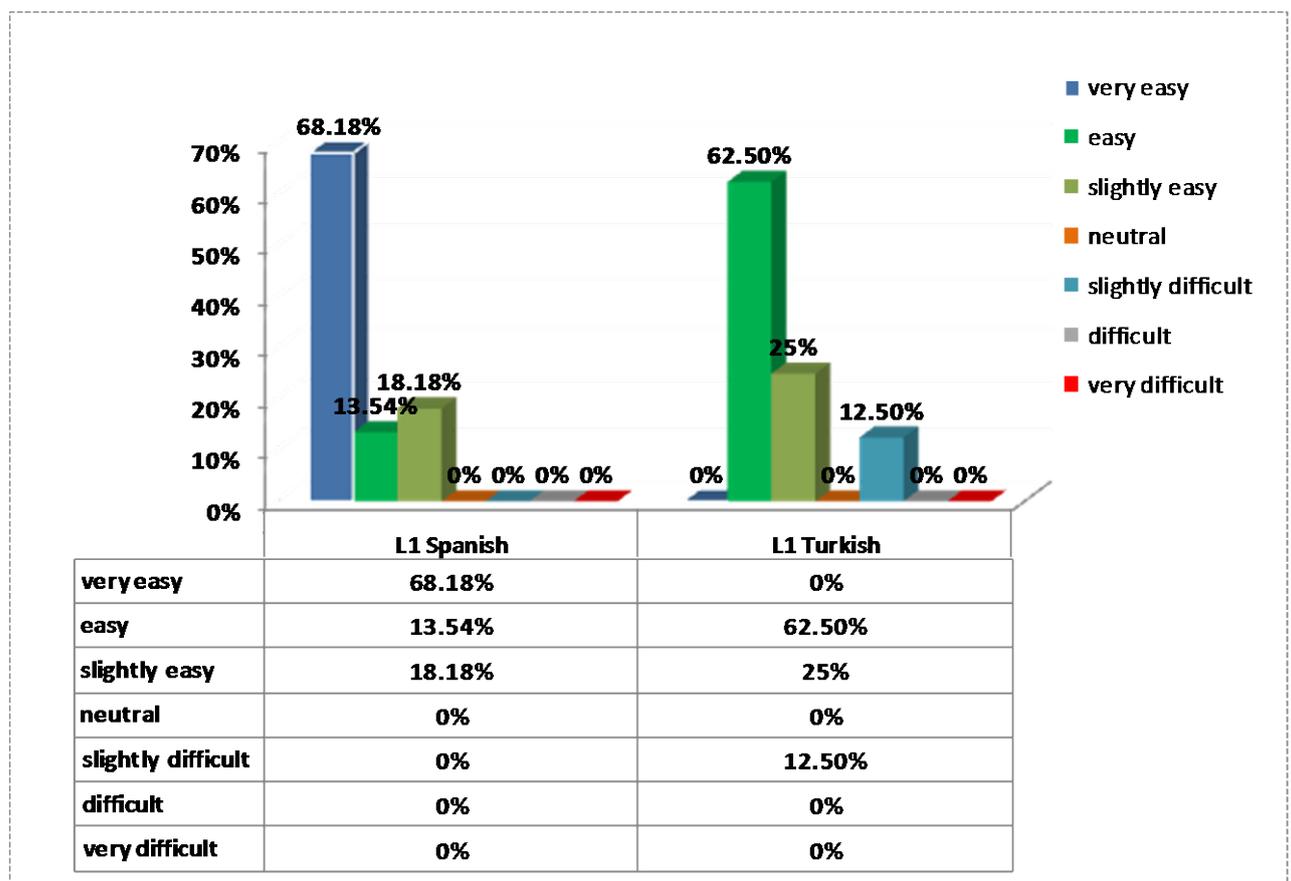
Such findings imply that while both groups find definiteness in L3 French an easy property to learn, the Spanish group seems to find it much easier than the Turkish group. This might be due to the fact that Spanish participants are exposed to two languages (L1 Spanish and L2 English)

<sup>109</sup> Though both features (definiteness and specificity) were tested in the quantitative experiments of this study, given the practical difficulty of finding particular question to rate specificity, there was no explicit question on specificity in this questionnaire, only questions about definiteness were posed.

that are [+ART] languages whereas the Turkish natives are only exposed to one language (L2 English) that is [+ART] while L1 Turkish is described as an article-less language. Such justification contradicts the responses of the Spanish participants who seem to perceive English as non helpful compared to Spanish, even though both languages grammaticalise definiteness in a similar manner. Figure 6.5 below shows the distribution of responses among the Spanish and Turkish groups on the difficulty level of article choices in L3 French:

Article choices (Definiteness):

**Figure 6.5 Responses of the Spanish and Turkish groups on the difficulty level of article choices in L3 French**



✓ Open-ended Questions

In the open-ended questions, which asked participants about whether their L1-L2, L1-L3 and L2-L3 are similar or different in the property of definiteness, the responses of the two groups were

as follows. Almost all participants in the Spanish group considered Spanish and French to be typically alike in this property. They justified their responses by the fact that each of these two languages has definite and indefinite articles. As for English vs. French and Spanish, this group considered English to be also similar as it has indefinite articles and definite articles, but for no clear reasons, most Spanish participants consider Spanish and French to be much closer than English. Most of the Spanish participants were simply repeating this expression “Spanish is much closer to French than English to French”.

Almost all the Turkish participants also considered English to be very similar to French regarding the feature definiteness because both languages have definite and indefinite articles. However, 13 out of 16 participants of this group (81.25%) considered Turkish to be very different from both English and French simply because this language does not have articles. Some few participants, however, (three out of 16) considered Turkish to be slightly similar to French and English and they justified their answer by the fact that in Turkish they use ‘bir’ as an article and this why it is similar to both languages.

#### 6.4.3.4 Verb Raising

##### ✓ Closed (Rating) Questions

How difficult do you think is?

Remembering the right position of an adverb in a sentence in French. Is it before or after a verb (e.g. where can *souvent* go: is it *Elle écrit souvent des lettres* or *Elle souvent écrit des lettres*)?

Very Easy \_\_\_\_\_ Very Difficult

Choosing the right adverb position in French does not seem to be very difficult for the Spanish group but it is not that easy also. This interpretation was drawn from their responses which ranged between *easy* to *slightly difficult*. Specifically, 16 participants out of 22 (72.72%) rated this property to be *easy* while the other six (27.27%) considered adverb placement in French to

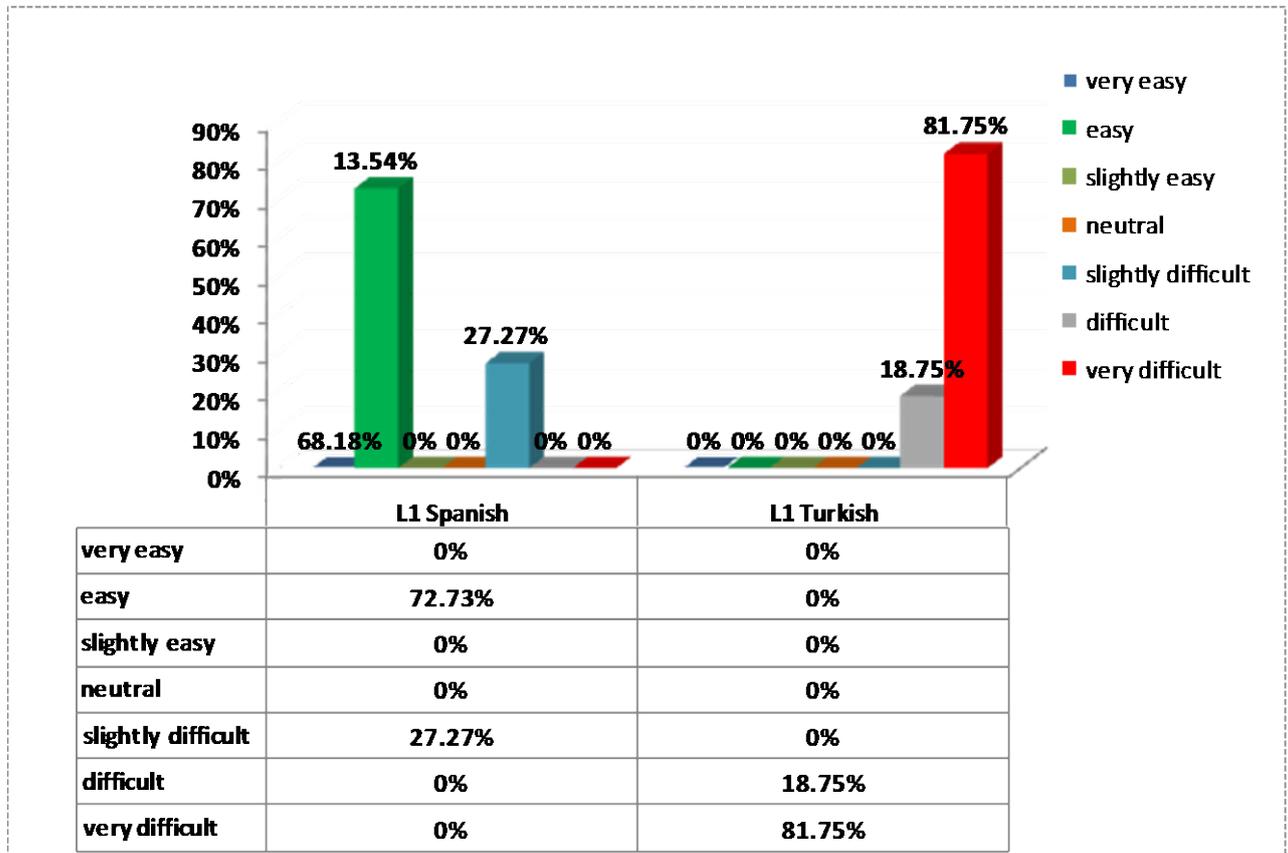
be *slightly difficult*. This could imply that the Spanish group might find this feature more challenging than the other three properties tested. This is because verb raising is the only feature which the Spanish participants rated as being *slightly difficult*. Turkish responses, on the contrary, were quite different because all their responses ranged between *very difficult* (13 out of 16, 81.25%) and *difficult* (three out of 16, 18.75%). This means that Turkish Subjects find adverb placement in L3 French very challenging.

It seems, therefore, that though both groups consider the property of adverb placement more challenging than the other features, the Spanish natives appear to find it less problematic than the Turkish natives. This difference could be attributed to the fact that while the Spanish group is exposed to adverbs occurring in post-verbal positions in L1 Spanish, the Turkish group is only exposed to adverbs occurring pre-verbally in both L1 Turkish and L2 English. It should be noted, however, that Spanish is a ‘mixed language’; that is to say, it allows both pre-verbal and post-verbal adverb placements, in addition to the fact that the L2 English this group was exposed to is a non verb raising language, this might explain why some Spanish participants consider choosing the right position for adverbs to be challenging in French<sup>110</sup>. Such results were also found in the quantitative results where the Spanish group did not reach nativeness in this property compared to their native-like performance in the other tested features.

Figure 6.6 below shows the responses of the Spanish and Turkish groups on the property of adverb placement in French.

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<sup>110</sup> It is worth noting that though this second possibility is mentioned as a possible reason for the non native-like performance of the Spanish group in adverb placement in L3 French, the quantitative results of this group showed cases of ‘optionality’ between pre-verbal and post-verbal adverb positions. Such results were mainly attributed to a case of L1 influence and not L2 influence. That was mainly evidenced by the fact that L2 proficiency was not shown to have played any significant role on the performance of this group, and, therefore, L2 English did not appear to play a significant role on the performance of the Spanish group on adverb placement in L3 French.

Verb raising: Adverb placement**Figure 6.6 Responses of the Spanish and Turkish groups on the difficulty level of verb raising in L3 French**

## ✓ Open-ended Questions

The majority of the Spanish participants considered Spanish and French to be similar regarding adverb placement while the others considered them to be different. Those who rated them as similar considered that Spanish adverbs, like the French ones, occur after the verb, while those who rated them as different argued that some Spanish adverbs occur before the verb and some others occur after. 20 out of 22 considered English to be completely different from French. 16 out of 22 considered Spanish and English to be very different while six of this group considered both languages to be similar. Those who argued for the similarity between English and Spanish justified their responses by the fact that Spanish, just like English, allows adverbs to occur before the verb.

Most Turkish participants argued that French and English are very different with regard to adverb placement and so are Turkish and French, but they believe that Turkish and English are quite similar in this regard.

## **6.5 Quantitative data vs. Qualitative data**

This section summarises and compares the findings collected quantitatively and those collected qualitatively. The aim of this comparison is to provide a complementary picture of learners' performance on a given property and their perception towards that property which might in its turn provide us with some evidence on whether learners perceive the typological similarity/difference between L1, L2 and L3 holistically, or they rather pay attention to the property-by-property-based structural proximity (if any). For so doing, quantitative and qualitative data of each property are compared in the following sub-sections.

### **6.5.1 Gender**

Overall results in the written and oral tasks showed that L1 Spanish natives outperformed their L1 Turkish counterparts. Furthermore, while the Spanish group did not seem to have any difference between gender assignment and gender concord, the Turkish participants found gender assignment more challenging than gender concord and that was mainly evidenced by their non target-like behaviour in the vocabulary task (on gender assignment). Finally, while the Spanish natives treated gender concord on Dets and Adjs in a native-like pattern, Turkish natives, found gender concord on Adjs more challenging than on Dets. Similar findings were also found in the questionnaire. Most Spanish participants rated gender concord and gender assignment as easy properties to learn while Turkish participants considered both gender assignment and gender concord as difficult features to learn, but they seemed to find gender assignment more challenging than gender concord.

### 6.5.2 Number concord

The quantitative results of the Spanish subjects showed that they performed in a near native-like way in number concord. Turkish participants were less target-like than the Spanish subjects, but performed over our 75% accuracy rates compared to their poor performance in other features (e.g. gender and verb raising). The responses of both groups in the questionnaire showed that they both considered number concord an easy feature to learn but the only difference was that while all Spanish participants (100%) rated number concord as a very easy feature to learn in French, only the majority of the Turkish subjects rated this property as being very easy; while the others rated it as being either easy or slightly easy. Both groups argued that they had already learnt number concord in their L1 and L2; this is why learning this feature in L3 French was not something new.

### 6.5.3 Definiteness

Similar to number concord, definiteness did not seem to be a challenging feature neither for the Turkish group nor the Spanish group. However, the Turkish participants (in the quantitative tests) were less target-like than the Spanish participants, especially in indefinite contexts. The Spanish group rated the appropriate article selection in L3 French to be easy to learn and, similarly, the Turkish group also rated definiteness in French as an easy property to learn. However, the distribution of the Turkish responses was slightly different from that of the Spanish group in that more than half of them rated it as just *easy* while the others rated it as either *very easy* or *slightly difficult* (12.5%).

### 6.5.4 Verb Raising (Adverb Placement)

Quantitative results of the Spanish participants showed some differences between their performance on adverb placement and the other three properties. In fact, though they were more

target-like than the Turkish ones, they were still much less target-like than the French natives in adverb placement, compared to their near native-like performance in the other three properties. Their behaviour was characterised by *variability* between adverbs in pre-verbal positions and those in post-verbal positions. Such behaviour was attributed to a case of transfer from L1 Spanish, a language that is characterised by *optionality* with regard to adverb placement (Ayoun, 2005). The Turkish participants were also non target-like, but most of the errors they committed were cases of allowing adverbs in pre-verbal positions only. The behaviour of the Turkish group was attributed to a case of negative transfer either from L1 Turkish and/or L2 English, both languages with pre-verbal adverbs (see chapter five for detailed argumentation on this).

These quantitative results were backed up by the qualitative findings of the questionnaire which showed that participants of both groups rated adverb placement in L3 French as a difficult feature to learn. However, the Spanish group seems to perceive this property as slightly much easier than how the Turkish group perceives it. Again, this might be due the fact that despite the optionality that the Spanish adverbs exhibit, Spanish is still described as a predominately verb raising language, whereby its adverbs mostly occur in post-verbal positions, just like in French. Turkish and English, in contrast, are consistently non-verb raising languages and their frequency and manner adverbs occur in pre-verbal positions only.

## **6.6 Typological proximity vs. Structural proximity: holistic (the TPM) or property-specific (the PSP)?**

In light of the results collected so far, it seems that typological proximity, and not the order of acquisition, that is the trigger for CLI in L3A. This was mainly evidenced by the fact that in all the four properties tested, the Spanish group outperformed the Turkish one and that was believed to be the result of the typological similarity between Spanish and French. That similarity might

justify why the Spanish group was near native-like in almost all the properties tested, except for verb raising (see above). However, the main question raised is whether this linguistic similarity is holistic or property-specific. Spanish and French are both Romance languages which share not only the family root but also various lexical, morphological and syntactic features. This is why Spanish and French are often described as being typologically similar. Rothman (2011) and proponents of the TPM argue that once an L1 and/or L2 is/are described as being generally typologically similar to an L3, the parser will transfer all its properties at the initial stage of L3A. In the case when L1 and L2 appear both similar to the L3, Rothman (2015) argues that the language that is lexically the closest to the L3 is the one that is transferred. The results of the present study *partially* corroborate the proposal of the TPM in that the Spanish participants benefited from the holistic typological similarity between Spanish and French, and this is why they were much more target-like than the Turkish participants. However, the TPM cannot account for the results of the Turkish group. In fact, this group did not seem to have detected one language *per se* (among L1 Turkish and L2 English) as the one that is holistically the closest to L3 French to be the source of CLI, but rather showed that once a given property is present in either L1 and/or L2, learners are able to perform in a target-like manner (i.e. above the 75% accuracy criterion set by this study), as in the case of number concord and definiteness. Once the property is absent in both L1 and L2 as in the case of gender and verb raising, participants will fail to acquire that property. Such results indicate that in the absence of a language that is typologically similar to the L3 on a holistic basis (e.g. L1 Spanish vs. L3 French), any structural similarity between the L1/L2 and the L3 regarding any given property will help the learner be target-like. That learner might not behave in a native-like manner like someone whose L1 and/or L2 is typologically proximate to L3 on a *holistic basis* but will at least reach high accuracy rates. Such findings cannot be fully supportive of the TPM; this is why the present study proposed a new hypothesis entitled the property-based structural similarity (PSP) which believes in

property-by-property based structural similarity in the absence of any holistic typological similarity between L1/L2 and the L3 (see chapter seven for a more thorough discussion of the predictions of the PSP hypothesis as well as a discussion of the TPM and its predictions).

## **6.7 Summary of chapter 6**

This chapter presented and discussed qualitative data collected through a semi-closed questionnaire which was devised to investigate learners' perception of the typological proximity between L1/L2 and L3 French regarding the four properties tested. The findings attained showed that while some participants perceive linguistic similarity between their L1, L2 and L3 on a holistic basis, the majority of the participants showed awareness about property-by-property structural similarity. Such statements were evidenced not only by learners' responses on the questionnaire but also by their performances on the properties tested. Quantitative data showed that once the parser identifies a language as being typologically very similar to the L3 on a holistic basis, that language will be the source of CLI. The Spanish subjects transferred all the properties of L1 Spanish, even the variability in verb raising which was evidence that Spanish was the source of CLI in the learning of L3 French. Similarly, despite the typological dissimilarity between Turkish and French and English and French, the Turkish participants were target-like in number concord and article choices. That was taken as evidence that structural similarity on a property-by-property basis is also a triggering factor for CLI in L3A. In light of that, the present study has proposed the PSP hypothesis, which states that once a language is detected by the parser as being typologically similar to the L3 on a holistic basis (e.g. Spanish vs. French), that language will be the source of CLI in full. However, in the absence of any holistic typological similarity, any structural similarity between the L1/L2 and the L3 regarding any given property will help the learner be target-like in that property. Further elaboration on the

difference between the TPM and the PSP hypotheses is provided in the next chapter which summarises and discusses the major findings of the previous six chapters.

## **Chapter 7    General Discussion and Conclusion**

### **7.1    Introduction**

This study set out primarily to examine the role of previously acquired languages (L1 and L2) on the learning of a range of morpho-syntactic properties in L3 French by two groups of L1 speakers Spanish/Turkish who learned English as an L2 (each further divided into lower intermediate (LI) and advanced (Adv) according to their L2 proficiency). The properties tested were (i) Gender, (ii) Number Concord, (iii) Definiteness/Specificity and (iv) Verb Raising. This chapter summarises the research findings about each property and discusses them in relation to current L2 and L3 studies and vis-à-vis the predictions of four L3 hypotheses.

This chapter is, therefore, organised as follows. Section 7.2 provides a summary of the results of each property obtained through quantitative and qualitative instruments and discusses their findings in relation to current L2 and L3 studies. Section 7.3 discusses the findings in relation to the predictions of four L3 hypotheses. Section 7.4 provides some implications of the present study on typological proximity. Section 7.5 serves as a final conclusion to the present study. Finally, section 7.6 discusses the limitations of this work and presents some possible directions for future research.

## 7.2 Summary and discussion of findings by property (quantitative and qualitative data)

### 7.2.1 Gender

#### 7.2.1.1 Quantitative data

##### *Multiple Choice Translation (MCT) Test*

This task, which consisted of three versions, Spanish (for the Spanish group), Turkish (for the Turkish group) and English (undertaken by both groups) showed that the Spanish participants were near native-like (97.34%) compared to the Turkish participants whose performance was lower than the 75% accuracy criterion set by this study (63.02%)<sup>111</sup>.

In addition, while Spanish participants showed no difference between gender assignment and gender concord, nor any difference between their treatment of gender in Masc and Fem Ns, the Turkish participants showed some differences. In particular, they were less target-like in gender assignment than gender concord and were more target-like in assigning the correct gender inflection to Dets than to Adjs. Besides, they were consistently more accurate in Masc DPs than in Fem DPs, implying that this group might be treating Masc as the ‘default gender’.

##### *Acceptability Sentence Correction (ASC) test*

The ASC task was devised to test whether learners would be able to correct sentences which contain ungrammatical cases of gender concord and gender assignment and how they would react towards sentences which are grammatically correct. Most of the errors committed, especially by the Turkish group, were cases of not rejecting ungrammatical sentences. Both groups rarely rejected sentences that were already grammatical.

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<sup>111</sup> A brief reminder, the accuracy criterion set by this study is 75% (see chapter one section 1.6 for further details).

Similar to the MCT test, results of this test showed that the Spanish group (96.59%) outperformed the Turkish one (56.25%). Turkish participants performed worse in this productive task than in the MCT test. Furthermore, unlike the Spanish participants who showed no significant differences between gender assignment and gender concord (both on Dets and Adjs), nor between Masc and Fem DPs, Turkish participants were better in gender concord than gender assignment, in particular in gender concord on Dets than Adjs and were more accurate in Masc DPs than in Fem DPs, showing once again that Masc might be the ‘default gender’ for this group.

#### *(Oral) Picture Description Test*

In this task, the Turkish participants (45.93%) were much less target-like than the Spanish natives (96.81%) and their performance was worse than that in the MCT and the ASC tests. The Spanish participants showed no significant differences between their treatment of gender assignment or gender concord (both on Dets and Adj), nor between Masc and Fem DPs, whereas the Turkish participants performed better in gender concord than gender assignment and were more target-like in gender concord on Dets than Adjs and were also more accurate in Masc DPs than in Fem DPs, showing, therefore, similar trends to that in the ASC and MCT tasks.

#### *Vocabulary Test on gender assignment*

This test aimed to back up the other three experimental tests above by investigating whether Spanish and Turkish natives would have problems in assigning the appropriate gender to a given noun. A comparison between the results of these tests and the vocabulary test will help conclude whether learners have difficulties in *gender assignment* or *gender concord*.

The Spanish natives did not show any difficulty in gender assignment, with no difference between Masc and Fem Ns. Turkish natives, on the contrary, were less target-like than their

Spanish counterparts. Most of the errors the Turkish participants committed in this task were cases of assigning Masc gender to Fem Ns.

A noteworthy finding is that in the above four tests, L2 proficiency was not a significant factor neither in the performance of the Spanish group nor the Turkish group. In addition, definiteness was a not a significant factor either, because both the MCT and ASC tasks showed no significant difference across the two groups in their treatment of gender in Def and Indef contexts. Definiteness was not a tested factor either in the picture description test or in the vocabulary test.

#### 7.2.1.2 Qualitative data

In the semi-closed questionnaire, two questions were raised. The first concerned the difficulty level of gender assignment and gender concord. Descriptive responses of the Spanish participants showed that they perceive both features to be easy to learn in L3 French as 100% of the participants rated the two properties either as *easy* or *very easy*. Responses of the Turkish participants, however, showed that they perceive both as difficult properties to learn. Most of their ratings ranged between *very difficult*, *difficult* and *slightly difficult*. The results also showed that they seemed to consider gender assignment more problematic than gender concord.

The second question was an open-ended question which served as a back up to the previous question. It asked participants to say how similar/different L1-L2, L2-L3 and L1-L3 with regard to the property of gender, specifically gender on N (gender assignment), gender concord on Nouns and gender concord on Adjs. Most Spanish participants (86.36%) consider gender assignment and gender concord in Spanish and French to be very similar, a few others, nonetheless, consider the two languages to be slightly different with regard to gender assignment. They justified their responses by the fact that some words that are masculine in Spanish are feminine in French and

vice versa. Almost all subjects in this group considered French vs. English and also Spanish vs. English to be very different with regard to gender simply because English does not have gender. As for the Turkish participants, almost all of them considered both Turkish and English to be completely different from French, simply because gender is absent in both languages.

### 7.2.1.3 Discussion of findings in relation to L2 and L3 studies on gender

To sum up, the aforementioned experimental tasks showed that the Spanish group treated gender assignment and gender concord in a native-like manner whereas the Turkish group behaved in a non target-like manner. Such results are consistent with several studies in the literature which also found that learning the property of *gender* in an L2/L3 seems to be challenging for NNSs whose L1 and/or L2 lack(s) this property (Price, 2003). Hawkins and Franceschina (2004), for example, found that the L1 Italian group outperformed the L1 English in acquiring gender in L2 Spanish. They attributed the English group's failure to the absence of this feature in L1 English. Some other L2 studies, on the contrary, found divergent results from these. White *et al.*, (2004), for example, found no difference between L1 English and L1 French groups, though French is a [+gender] language whereas English is [-gender]. In L3A, Jaensch (2009a) found that learners of an L1 Japanese and L2 English which are both [-gender] languages are able to learn this feature in L3 German. She attributed these findings to the 'enhanced feature sensitivity' account. That is to say, once learners have achieved a high proficiency level in L2, they might become more aware that different features exist in other languages and therefore they become able to acquire new features in the L3 even those that are absent in the L1 and L2.

In 2012, Jaensch carried out another study on gender by adding a second L1 group (Spanish) whose L1 is [+gender] but results showed no difference between the Japanese and the Spanish groups, once again with learners with advanced L2 proficiency outperforming those of lower L2

proficiency in both groups. Such results differed from those of the present study which found no significant effect of L2 proficiency on the learners' performance in gender (both the Spanish and Turkish groups).

Other findings of the present study were that the Turkish subjects, but not the Spanish ones, found gender assignment more challenging than gender concord. This follows logically because correct gender assignment is a pre-requisite for correct gender concord. Some studies such as White *et al.*, (2004), nevertheless, did not find any difference between gender assignment and gender concord while Sabourin *et al.*, (2006) found that gender concord was much more challenging particularly to NNSs whose L1 does not have the feature of gender (see chapter two for further details).

As for gender concord, on the other hand, Turkish participants were better in assigning the right gender inflection to Dets than to Adjs. These findings are inconsistent with those of Jaensch (2012) whose Japanese participants managed to mark the relevant gender concord to Dets and Adjs. The question that could be raised here is why Turkish subjects of the present study were more unsuccessful in assigning gender concord to Adjs than to Dets, though in both L1 Turkish and L2 English, neither Dets nor Adjs are assigned gender concord. One possible justification could be that the Turkish participants are negatively transferring the features of L1 Turkish. Particularly, Turkish is an article-free language and, therefore, Turkish natives are exposed to NPs which consist of (no Dets), a head N that is not inflected on gender and Adjs showing no gender concord with the head noun. That might be the reason why they performed relatively better in gender concord on Dets than on Adjs. However, we are drawing such interpretation with caution because it remains pure speculation until further research proves that.

Furthermore, while the Spanish subjects treated gender in Masc and Fem DPs in a similar target-like manner, the Turkish subjects were more accurate in assigning the correct gender to Masc DPs than to Fem DPs. That would imply that for the Turkish natives, Masc might be the ‘default’ gender, a view that has been shared by certain L2 studies (e.g. White *et al.*, 2004; Hawkins and Franceschina, 2004) but not by other L2 studies such as Menzel (2005) nor some L3 studies (e.g. Jaensch, 2009a) who both found that the masculine gender was causing more problems to NNSs than the feminine gender. Jaensch (2009a) argues that the most accurately used rules or cues are those assigning feminine gender, while those assigning masculine are the least accurate because masculine Ns account for the highest rule exception ratio.

Finally, there was no difference between both groups in their treatment of gender in Def and Indef DPs. Definiteness had no significant main effect on the performance of either group. Such findings are inconsistent with Rule and Myles (2007) who noted some differences between the treatment of gender in Def and Indef contexts in the production of their L2 French learners, but that was in the oral production data only. Similarly, Jaensch (2008) found minor variations between Def and Indef contexts in the performance of Japanese natives (L2 English speakers) when acquiring gender in L3 German.

## 7.2.2 Number Concord

### 7.2.2.1 Quantitative data

#### *MCT Test*

Results of the three versions of the MCT task were comparably similar; both groups were successful in their treatment of number Concord (i.e. above our 75% accuracy criterion). However, while the difference between the Spanish group and the French control group was not significant, there was a significant difference between the performance of the Turkish group and the control group. Additionally, a comparison between the types of errors that Turkish

participants committed in this test showed that most of the errors were cases of *No plural inflection on Adjs*, implying that this group found plural inflection on Adjs more challenging than plural inflection on Dets.

#### *ASC test*

Results of this test were similar to those of the MCT task. Overall, both Spanish and Turkish participants behaved in a target-like manner, but the Turkish subjects were less target-like than the Spanish ones. Results also revealed that most of the errors Turkish participants committed were cases of dropping the plural inflection on Adjs than on Dets.

#### *(Written) Picture Description Test*

Results showed that both groups were successfully target-like, but similar to the above two tasks, the Spanish group (98.18%) outperformed the Turkish one (86.87%). Once again, most of the errors committed by the Turkish group were cases of *No plural inflection on Adjs*.

Results of the above three tests revealed that L2 proficiency did not have any significant effect on the performance of either L1 group (Spanish and Turkish) on this feature. Besides, results of the MCT and ASC tests both showed that definiteness did not have any main significant effect on the performance of the Spanish and Turkish groups in their treatment of number concord in L3 French. Definiteness was not a tested factor in the picture description task.

#### 7.2.2.2 *Qualitative data*

The quantitative results of the Spanish and Turkish subjects showed that both groups reached accuracy rates above our 75% accuracy criterion, but the Turkish participants were relatively less target-like than the Spanish ones. A comparison between these quantitative findings and the responses of participants in the questionnaire showed that the 22 Spanish participants (i.e. 100%)

rated the property number concord (on Dets and Adjs) in French a *very easy* feature to learn. The Turkish participants also rated this feature to be easy. The only difference, nevertheless, was that while all Spanish participants agreed that number concord on both Dets and Adjs is very easy, Turkish subjects' ratings ranged between very easy, easy and slightly easy. It was also noticed that many Turkish participants (25%) rated assigning plural inflection to Adjs as being just slightly easy. That might be consistent with the findings above i.e. plural inflection on Adjs seems quite challenging compared to plural inflection on Dets for the Turkish group.

In the open-ended question, the 22 Spanish participants all agreed that Spanish and French are completely similar in Number concord; they argued that both languages realise this property in a similar way. When asked about how similar French and Spanish vs. English are in number concord, only 36.36% said that they are similar, all the rest consider English to be different from both Spanish and French. They justified their answer by the fact that English does not allow number inflection on articles and adjectives. These participants did not mention that English Ns get inflected for plural, though. However, those who consider English to be similar to French and Spanish said this because English inflects Ns for plural just like Spanish and French. As for the Turkish group, nine out of 16 participants (56.25%) considered English and French to be similar and their argument was that both languages have Ns that take a plural form. None of these participants mentioned the fact that neither English Dets nor Adjs are inflected for plural. The other 43.75% rated English to be different from French and justified their responses by the fact that English Adjs do not take an 's' for the plural. Only two participants out of the seven drew attention to the fact that English Dets also do not take plural inflection. As for Turkish versus French, the majority argued that both languages are similar and a very few of them rated them to be different. Those who considered Turkish to be different paid attention to the fact that Turkish Adjs do not take a plural form while French Adjs do. Finally, when asked to judge the

similarity/difference between Turkish and English, a few Turkish participants (4 out of 16) consider both languages to be different while the majority (11 out of 16) rated the pair to be similar and argued that in both languages nouns have plural inflection and are, therefore, similar.

What could be concluded from both groups' responses is that for the Spanish group, though English inflects Ns for plural, it is still perceived to be different from L3 French simply because Spanish is much closer to French than English. For the Turkish group, on the contrary, English is perceived to be similar to French with regard to number concord. That implies that this same language is perceived differently by the two groups. This could imply that when there is no clear typological proximity between an L3 and L1 and/or L2, (e.g. Spanish vs. French) typological similarity turns into similarity at the level of the property *per se*.

### 7.2.2.3 Discussion of findings in relation to L2 and L3 studies on Number concord

To sum up, the experiments testing number concord revealed that both groups were target like (i.e. above our 75% accuracy criterion). However, the Spanish participants almost reached the natives' level while the Turkish ones did not. Such results are relatively inconsistent with some L2 and L3 studies. White *et al.*, (2004), for example, found no difference between L1 English and L1 French natives when learning number concord in L2 Spanish. Similarly, Judy *et al.*, (2008) found that English native speakers of L2 Spanish at two proficiency levels (intermediate and advanced) were target-like and consequently number concord did not cause any problem to these learners. Results of the Turkish group in the present study also showed that they were least target-like in assigning plural inflection to Adjs compared to Dets. This is why most of the errors this group committed were cases of *No plural inflection on Adjs*. Such results are different from those found by Jaensch (2009a) whose Japanese participants had an article-less L1 and neither language inflects Dets and Adjs for plural. Jaensch found that the Japanese speakers did not face

any problem when learning number concord in L3 German. They managed to assign plural inflection to Ns and Adjs<sup>112</sup>.

The question that might be raised here is why Turkish subjects were more unsuccessful in assigning plural inflection to Adjs than to Dets though neither is inflected for plural in L1 Turkish or L2 English. Such results could be possibly explained by the fact that Turkish is an article-less language and Turkish participants are therefore exposed to DPs consisting of Ns that get inflected for plural and Adjs that are not inflected for plural, but are not exposed to Dets that are not inflected for plural. This might be why they were less target-like in assigning correct plural inflection to Adjs than to Dets. However, once again such an interpretation is drawn with caution. It is a pure speculation that needs further research on similar cases before any generalisation could be substantiated.

Finally, the present study found no significant effect of L2 proficiency on the performance of both groups in number concord. Similar results were also found by Jaensch (2009a) whose Japanese participants with higher L2 proficiency did not outperform those with lower L2 proficiency<sup>113</sup>.

### 7.2.3 Definiteness

#### 7.2.3.1 Quantitative data

##### *MCT Test*

Results of the three versions of this test were relatively similar. First, both groups were above the 75% accuracy criterion, but the Spanish participants (94.31%) were more accurate than the

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<sup>112</sup> Jaensch (2009a) did not test plural marking on Dets, but rather on Ns and Adjs only.

<sup>113</sup> Noteworthy, Jaensch interpreted her results differently. She argued that though the statistical results showed no significant effect for English proficiency group, but given that the descriptive results showed a distinct trend i.e. within each of the three German proficiency groups, learners of higher English proficiency outperformed learners of lower English proficiency, L2 proficiency had an effect on the performance of these sub-groups (p. 195).

Turkish participants (80.72%). Second, while the Spanish group was near native-like in both Def and Indef contexts and also in Spec and Non spec settings, Turkish participants, on the contrary, were more target-like in Def contexts than in Indef contexts. Additionally, in Indef contexts, Turkish subjects were more accurate in [-Spec] than in [+Spec] contexts which implies that this group was fluctuating between a definiteness setting and a specificity setting in the Indef context only.

#### *ASC test*

Similar to the MCT test, results of the ASC test showed that the Spanish and Turkish groups were both accurate in their performance on article choices in L3 French, reaching an accuracy rate over 80%. However, while the Spanish participants almost reached nativeness, the Turkish subjects were relatively less accurate (85.54%) than the Spanish subjects (96.59%) and the control group (98.12%). Besides, while the Spanish group did not fluctuate neither on the basis of definiteness nor specificity, treating both contexts in a near native-like manner, the Turkish group was more target-like in the Def context than in the Indef context. Additionally, the Turkish results indicated an interaction between definiteness and specificity, but in Indef contexts ONLY. Finally, L2 proficiency did not have significant effect on the performance of the Spanish group but it did have an effect on the performance of the Turkish group.

#### 7.2.3.2 *Qualitative data*

Similar to Number concord, Definiteness does not seem to be a challenging feature for any of the L1 groups (Spanish/Turkish) and that was evidenced by the responses of both groups which ranged between *very easy-easy* and *slightly easy*. However, the distribution of the ratings slightly differed across the two groups. In particular, 68.2% of the Spanish participants rated this property as *very easy*, 13.6% rated it as *easy* and 18.2% rated it as *slightly easy*. As for the

Turkish group, 25% considered article choice in L3 French as *very easy*, 62.5% rated this feature as *easy* while 12.5% rated it as being *slightly difficult*, which implies that some Turkish participants seem to find this property quite challenging to learn in L3 French.

The responses of the two groups in the open-ended questions about the similarity/difference between L1-L2, L1-L3 and L2-L3 with regard to the property of definiteness were as follows. Almost all participants in the Spanish group (20 out of 22) considered Spanish and French to be typically alike in this property. They justified their responses by the fact that each of these two languages has definite and indefinite articles. As for English vs. French and Spanish, this group considered English to be also similar to them, but for no clear reason most Spanish subjects repeated the same answer ‘Spanish is much more similar to French than English to French with regard to article choices’.

Almost all Turkish participants also considered English to be very similar to French regarding the feature definiteness whereas about 81.25% of this group considered Turkish to be very different from both English and French simply because this language does not have articles. However, a very few participants (18.75%) considered that Turkish uses ‘bir’ as an article and this is why it is somehow similar to French and English.

It is obvious once again that for the Spanish group, English is slightly different from French while for the Turkish group, this language is quite similar to French. Thus, the same language is perceived differently by the two groups. One possible justification for such differential perception could be that Spanish is typologically much closer to French than English to French. This is why the Spanish group did not see English to be typologically proximate to French even when the property tested is already present in English in the same way it is in Spanish and

French (definiteness in this case). However, as Turkish is structurally different from French concerning the feature definiteness, the Turkish group finds in English a language that is much more typologically similar to French than Turkish to French. That could explain why the Turkish group was target-like in article choices in L3 French, though Turkish is an article-less language. L2 English, a [+ART] language, seems to have indeed a positive effect on the performance of the Turkish group when learning the feature definiteness in French.

### 7.2.3.3 *Discussion of findings in relation to L2 and L3 studies on Definiteness*

To sum up, the results obtained so far showed that the Spanish and Turkish groups both performed above the 75% accuracy criterion set by this study in their performance on the feature definiteness/specificity in L3 French. However, the Spanish group significantly outperformed the Turkish group. Such results were attributed to the close typological similarity between Spanish [+ART] and French unlike Turkish which is a [-ART] language. One possibility for why Turkish subjects performed also above the 75% accuracy criterion, though their L1 is an article-less language, is that this group seems to have benefited from their L2 English, a language that grammaticalises definiteness in the same way Spanish and French do. That could be true for Turkish participants of a higher L2 proficiency level (Adv) were as accurate as their Spanish counterparts of L2 Adv proficiency level, whereas Turkish subjects with a lower proficiency in English (LI) were less target-like than the Spanish LIs. Such results are in line with Leung (2005a) and Jaensch (2008, 2009a) who both found an effect of L2 proficiency on the performance of NNSs of a [-ART] L1 and [+ART] L2.

Leung (2005a) compared article choices between an L3 group (L1 Cantonese-L2 English-L3 French) and an L2 group (L1 Vietnamese-L2 French), where both Cantonese and Vietnamese are [-ART] languages. She found that the L3 learners benefited from learning an L2 (English) that is

[+ART]; this is why they outperformed the L2 group. Additionally, Jaensch (2008; 2009a) also found that the L1 Japanese learners (whose L1 is an article-free language) benefited from learning an L2 English, a [+ART] language. As a result, Japanese learners with a higher L2 proficiency level outperformed those with a lower L2 proficiency level. This implies that the presence of articles in the L2, even if absent in the L1, can somehow facilitate the acquisition of articles in an L3.

Results of the present study also showed that while the Spanish group was near native like in Def and Indef contexts, Turkish natives performed better in Def than in Indef contexts. One possible justification could be that NNSs are generally said to acquire the definite marker before the indefinite one because of the wide variety of usage and higher frequency of use of the definite markers compared to the indefinite ones (For similar interpretations on the acquisition of English article systems, see Master, 1993, and Lu, 2001)<sup>114</sup>.

In addition, while the Spanish group did not appear to fluctuate either on the basis of definiteness or specificity, Turkish participants did so, especially in the Indef context. There were cases of definite marker overuse in [-Def, +Spec] contexts. Although at a surface level, the Turkish behaviour might pattern with a theory of fluctuation, but given that the Turkish natives were also mistakenly inappropriately making selections in [-Def, -Spec] contexts, such findings do not seem to support the FH proposal (Ionin *et al.*, 2004). The FH states that learners with a [-ART] L1 will fluctuate between selecting articles based on definiteness and/or specificity i.e. they will inappropriately select Indef articles for [+Def, -Spec] contexts and Def articles for [-Def, +Spec] contexts. The present study, however, showed that the Turkish group was fluctuating between a definiteness setting and a specificity setting in the Indef context only. Besides, this group was

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<sup>114</sup> These assumptions are pure speculations and are left open for further future research to corroborate or reject this view.

also mistakenly overusing the definite marker in the [-Def, -Spec] contexts also, which would not be explained by the predictions of the FH.

One possibility for the Turkish speakers' overuse of the definite marker *le/la* in the Indef specific contexts versus the infrequent overuse of *un/une* in Def non specific contexts could be in line with the claim that for some learners' ILGs, *le/la* might mark specificity, whereas *un/une* do not seem to be used as markers of non specificity (See Snape (2006) for similar results and similar interpretations on L2 English articles). A second possibility could be that the Turkish participants were misdetermining the relevant features for the French article system, such as choosing [ $\pm$ specific] rather than [ $\pm$ definite], implying, therefore, that the FH is not supported but rather the feature-based account as suggested by Hawkins *et al.*, (2006).

Thus far, it seems that the findings of this study provide some empirical evidence for the role of L1 and L2 in the acquisition of L3 articles but not in the same way as expected under the FH. The results showed that the similarities between the article systems in L1 Spanish and L3 French did help the Spanish natives behave in a near native-like pattern. Similarly, the presence of the feature definiteness in L2 English (despite the absence of this feature in L1 Turkish) did help the Turkish natives in the acquisition of French articles.

## 7.2.4 Verb Raising

### 7.2.4.1 Quantitative data

Results of the verb raising feature in the MCT and ASC tests were somewhat different from those of the other three features, especially for the Spanish group.

*MCT Test*

Results of the three versions of the MCT test showed comparable results. Both groups performed below our 75% accuracy criterion, but the Spanish participants were more target-like than the Turkish participants.

Overall, the Spanish group outperformed the Turkish group in the appropriate selection of adverb placement in L3 French, but the former was significantly less native-like than the French control group. Most errors committed by the Turkish group were cases of accepting sentences with adverbs in pre-verbal positions (i.e. with an S-Adv-V-O word order (57.29%) versus (30.20%) only for sentences with post-verbal adverbs). The errors committed by the Spanish group, however, showed a pattern of *optionality* between sentences with pre-verbal and post-verbal adverbs. They mainly accepted sentences with S-V-Adv-O word order (64.39%), but they sometimes allowed sentences with an S-Adv-V-O word order to be acceptable in French (34.09%). Results also revealed that adverb type had no significant effect on the performance of either L1 group i.e. they treated manner and frequency adverbs in a comparable manner. Furthermore, L2 proficiency was not found to have any significant effect on the performance of either the Spanish or Turkish group on the property verb raising.

*ASC test*

In this test, participants were given two types of sentences to judge grammatically, those with an S-V-Adv-O word order (correct) and those with an S-Adv-V-O word order (incorrect). Results of the Spanish participants revealed that most errors committed were cases of treating sentences with an S-Adv-V-O word order as acceptable in French. In other words, they rarely treated sentences with post-verbal adverbs as incorrect but they frequently allowed sentences with pre-verbal adverbs to be grammatical in French. The Turkish participants, on the contrary, committed both types of errors. That is to say, they rejected sentences with post-verbal adverbs

and accepted sentences with pre-verbal adverbs. The non target-like performance of both groups by adverb type is summarised in table 7.1 from chapter five, repeated once again below.

**Table 7.1** ASC test: Mean percentage of inappropriate adverb choices by adverb type and L1 group

Performance by adverb position and error type		L1 Spanish (N=22)	L1 Turkish(N=16)
Manner Adverbs	Error type 1: treating the SAdvVO order as correct	17/44 (38.63%)	21/32 (65.62%)
	Error type2: treating the SVAdvO order as incorrect	7/44 (15.90%)	18/32(56.25%)
Frequency Adverbs	Error type 1: treating the SAdvVO order as correct	15/44(34.09 %)	19/32 (59.37%)
	Error type2: treating the SVAdvO order as incorrect	7/44 (15.90%)	19/32 (59.37%)

Finally, results of this test also revealed no significant difference in the performance of either L1 group neither on the basis of L2 proficiency nor on the basis of adverb type (manner and frequency adverbs).

#### 7.2.4.2 Qualitative data<sup>115</sup>

When asked to rate the difficulty level of the property verb raising (adverb placement) in L3 French, the Spanish participants' responses were quite different from those on the other three properties. In particular, some Spanish participants rated adverb placement in L3 French as *easy* while some others rated it as being *slightly difficult*. It is noteworthy, however, that the Turkish subjects found adverb placement in French much more challenging than the Spanish subjects. The ratings of the Spanish and Turkish groups were distributed as follows. 72.72% of the Spanish subjects rated verb raising in L3 French as *easy* while 27.27% rated it as *slightly difficult*. 81.25% of the Turkish participants rated verb raising in French as *very difficult* while 18.75% of them rated it as being *difficult*. This could imply that both groups perceive the property of adverb placement to be more challenging than the other features, but the Spanish natives appear to find this property less challenging than the Turkish natives. Such results were

<sup>115</sup> In this questionnaire, participants were only asked about pre-verbal and post-verbal adverb positions. Sentence-initial and sentence-final positions are not asked about for two main reasons. First, they do not tell us anything about the Verb raising parameter and second, in the four languages tested, adverbs occur at initial and final positions, so there is no cross-linguistic difference that might raise questions concerning the role of CLI.

also found in the quantitative results where the Spanish group outperformed the Turkish group but the former did not reach nativeness compared to their near native-like performance in the other three features tested.

In addition, responses of both groups to the open-ended questions were as follows. 16 out of 22 Spanish participants considered Spanish and French to be *similar* with regard to adverb placement while the other six participants considered them to be *different*. Those who rated them as *similar* considered that Spanish adverbs, like the French ones, occur after the verb while those who rated them as different argued that in Spanish some adverbs, unlike in French, occur before the verb. Furthermore, 20 out of 22 Spanish participants considered English to be completely different from French while 16 out of 22 considered Spanish and English to be very different. Those who argued that English and Spanish are similar again justified their responses by the fact that some Spanish adverbs also occur before the verb while those who rated them to be different considered that Spanish adverbs always occur post-verbally. As for the Turkish participants almost all of them (14 out of 16) argued that French and English are different and so are Turkish and French but they believe that Turkish and English are much closer. Thus, for the Spanish group, Spanish is more similar to French than English to French, though it is perceived as slightly different from French with regard to adverb placement. Turkish subjects, on the other hand, argue that both Turkish and English are different from French with regard to adverb position.

#### 7.2.4.3 Discussion of findings in relation to L2 and L3 studies on Verb Raising

To sum up, results of the quantitative and qualitative instruments showed that both groups performed below our 75% accuracy criterion. Interestingly, however, even though the Spanish participants reached higher accuracy scores than those of the Turkish subjects, they did not reach

the natives' accuracy level. Their performance was characterised by *variability* i.e. they developed a grammar that allowed adverbs in pre-verbal and post-verbal positions. The Turkish participants, on the contrary, did not show any pattern of *variability* as their behaviour was more towards accepting the *S-Adv-V-O* word order while rejecting the *S-V-Adv-O* word order. L2 proficiency did not have any main effect on the performance of either group as the L1 and Adv sub-groups (of the Spanish and Turkish groups) behaved in a comparable manner.

At a surface level, it seems that the grammar the Spanish subjects started with is a combined L1 Spanish word order (*S-V-Adv-O*) and L2 English word order (*S-Adv-V-O*). However, a closer scrutiny reveals that such findings could also be the result of L1 influence. Spanish is characterised by *optionality*. It is a language with a predominantly *S-V-Adv-O* word order but it sometimes exhibits an *S-Adv-V-O* word order (Ayoun, 1999b, 2005). The non target-like behaviour of the Turkish group on adverb placement could be due to negative transfer from L1 Turkish and/or L2 English, for both languages place adverbs pre-verbally<sup>116</sup>.

A comparison between these findings and those of L2 and L3 studies on adverb placement showed some consistency with some studies and divergence from others. This study is consistent with Antes *et al.*, (1995) who tested the acquisition of adverb placement by Anglophone native learners of L2 French and Spanish. Results of the French group showed a moderate acceptance of the target order forms (*SVAO*) with the advanced group reaching a near native-like level. Spanish L2 learners, on the other hand, showed a slightly lower moderate acceptance of the target (*SVAO*) word order, and the advanced group, unlike the French Advanced one, did not attain near native-like performance. Antes *et al.* concluded that the French learners performed

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<sup>116</sup> Noteworthy, a comparison between Spanish and Turkish subjects with advanced L2 proficiency showed that the Spanish advanced outperformed the Turkish subjects with advanced L2 proficiency. Similarly, Spanish subjects with lower-intermediate L2 proficiency outperformed Turkish subjects with a comparable L2 proficiency. Such findings were taken as indicative of no L2 effect on the performance of neither L1 group.

significantly better than the Spanish learners because French data consistently provide evidence for overt verb raising whereas the Spanish input is characterized by *optionality*. This *optionality* in the Spanish input might have slowed down the resetting of the verb movement parameter.

Similar results were also found by Hawkins *et al.*, (1993) who investigated the performance of two groups of adult English-speaking learners of L2 French (intermediate and advanced) on adverb placement. Results showed that the majority of the intermediate subjects were non target-like; 40% of them allowed both the French and English locations of thematic verbs with manner and frequency adverbs but the advanced group was near native-like. Hawkins *et al.*, (1993) interpreted such results to be indicative of L1 negative influence i.e. participants start with an L1 grammar (adverbs in pre-verbal positions) and then the input might lead to rapid restructuring of specific properties (adverbs in post-verbal positions). This is why the advanced group behaved in a near native-like manner.

Results of the present study were also consistent with those of Ayoun (1999b) who tested adverb placement in a verb raising language (L2 French, intermediate-advanced) by L1 English speakers (a non verb raising language). She found that the intermediate participants were non native-like but the advanced ones performed in a near native-like manner, over 75% of target like performance. Ayoun argued that adverb placement is a difficult property to learn at the initial stages of L2A. It is a property that might take longer time to be acquired compared to other properties; this is why *only* the advanced group performed in a near native-like manner (p. 118). Ayoun further argued that although English learners might have been exposed to ample cases of

adverb placement in French, the complexity of this property and the wide range of possibilities of adverb placement resulted in no parameter resetting (p. 118)<sup>117</sup>.

A comparison between the present work and the L3 study carried out by Leung (2007b) showed some similar but also divergent results. More precisely, both studies tested one L3 group whose L1 and L2 exhibit an S-Adv-V-O word order: L1 Cantonese-L2 English (Leung, 2007b) versus L1 Turkish-L2 English (the present work). However, the present work tested another L3 group whose L1 has an S-V-Adv-O word order (Spanish) and an L2 with an S-Adv-V-O word order (English). In the present study, the Turkish participants were non native-like; they were allowing sentences with adverbs placed pre-verbally and rejecting those with adverbs placed post-verbally, while the Spanish group showed some variability between S-V-Adv-O and S-Adv-V-O word orders. These results were attributed to a case of negative transfer. As for the Spanish participants, the variability in their performance was also attributed to a case of transfer from L1 Spanish. Their variability was believed to be the consequence of the ‘optionality’ that the Spanish adverbs show with regard to their placement vis-à-vis the verb. Spanish is a ‘mixed language’ which predominantly allows adverbs to occur post-verbally (similar to French) but differs when sometimes allowing adverbs to occur pre-verbally. In Leung’ study; however, the Cantonese natives showed a pattern of variability similar to that of the Spanish group. They were allowing both sentences with pre-verbal and post-verbal adverbs. More precisely, the beginners showed some ‘optionality’ between allowing S-V-Adv-O and S-Adv-V-O word orders while the intermediate and the advanced groups behaved significantly better than this group, and the advanced group was even better than the other two. Leung provided an interpretation similar to that of Hawkins (2001a, p.112–113). She considered the failure of the beginner group to be the consequence of competition between L2 transfer (suggesting non verb raising) and L3 input

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<sup>117</sup> A brief reminder, Ayoun argued this when she was comparing between the learnability of adverb placement and the other properties tested in this study (i.e. negation, inverted questions and quantification at a distance). Floating quantifiers was also described to be a difficult property to learn in L2 Spanish.

(suggesting verb raising). She further argued that her interpretation was mainly evidenced by the fact that as subjects' L3 French proficiency increased, the extent of variability decreased. That demonstrates that L2 transfer effects are gradually diminishing with increased exposure to L3 input.

Results of the present work also showed no main effect of adverb type on the performance of the Spanish and Turkish groups. Similar results were also found in certain L2 studies (e.g. Hawkins *et al.*, (1993); Antes *et al.*, (1995), Ayoun (2005) and Al Thubaiti (2010). However, such results are inconsistent with the findings of Leung (2007b) who found some differences between NNSs' performance on manner and frequency adverbs.

Another main finding of this study was no main effect of L2 proficiency on the performance of both L1 groups. These results seem quite logical, for L2 English is a non verb raising language and, therefore, having a lower or a higher proficiency level in English will not help learners set the appropriate value of the parameter in L3 French. Leung's (2007b) study differed from this study in testing only learners of advanced L2 proficiency.

### 7.3 Discussion of findings in relation to L3 hypotheses

The morpho-syntactic contrasts across Spanish, Turkish, English and French are summarised in table 7.2.

**Table 7.2** Presence/absence of the properties tested in L1, L2 and L3

	L1		L2	L3
	Spanish	Turkish	English	French
Gender (assignment/concord)	√	X	X	√
Plural marking on N	√	√	√	√
Number Concord on Dets and Adj	√	X	X	√
Definiteness/Specificity	√	X	√	√
Verb Raising	S-Adv-V-O	√optional	√	√
	S-V-Adv-O	√	X	√

As shown in this table, Spanish and French are structurally very proximate. They both realise the features Gender, Number concord and Definiteness/specificity in a similar way. However, they relatively differ with regard to Verb raising (adverb placement). While French is consistently a verb raising language with an S-V-Adv-O word order, Spanish is described as a ‘mixed language’ which has a predominantly S-V-Adv-O word order but optionally allows the S-Adv-V-O word order (Ayoun, 1999b). Turkish and English, on the other hand, are typologically different from French *but* share certain properties with this language. English, similar to French, inflects Ns for number (but not Dets and Adjs), grammaticalises definiteness, but differs from French in being a non verb raising language (i.e. with an S-Adv-V-O word order). Turkish and French are only similar with respect to plural marking on Ns; for Turkish is an article-less language, with no gender feature, no formal marking of plurality on Adjs and with an S-Adv-O-V word order. Thus, while Spanish and French, two Romance languages, could be described as being *holistically typologically similar*, English and Turkish are only *structurally* similar to French on a property-by-property basis because they share certain features with French but differ vis-à-vis certain others.

These linguistic differences will help tease apart the predictions of four L3 hypotheses with respect to which of the previously acquired language(s) is/are the source(s) of CLI in the acquisition of the four properties tested in L3 French. That will also help answer the main research question of this work which is whether holistic typological proximity (the TPM) or the property-based structural similarity is the triggering factor for CLI in L3A (the PSP)?

In order to answer these questions, let us first examine the non target-like performance of each L1 group in the four properties tested. The descriptive results and then statistical analyses are

first carried out to see at which property participants were least target-like and in light of such results, the predictions of four L3 models will be discussed in the upcoming sub-section.

*Descriptive results: Non target-like performance by property*<sup>118</sup>

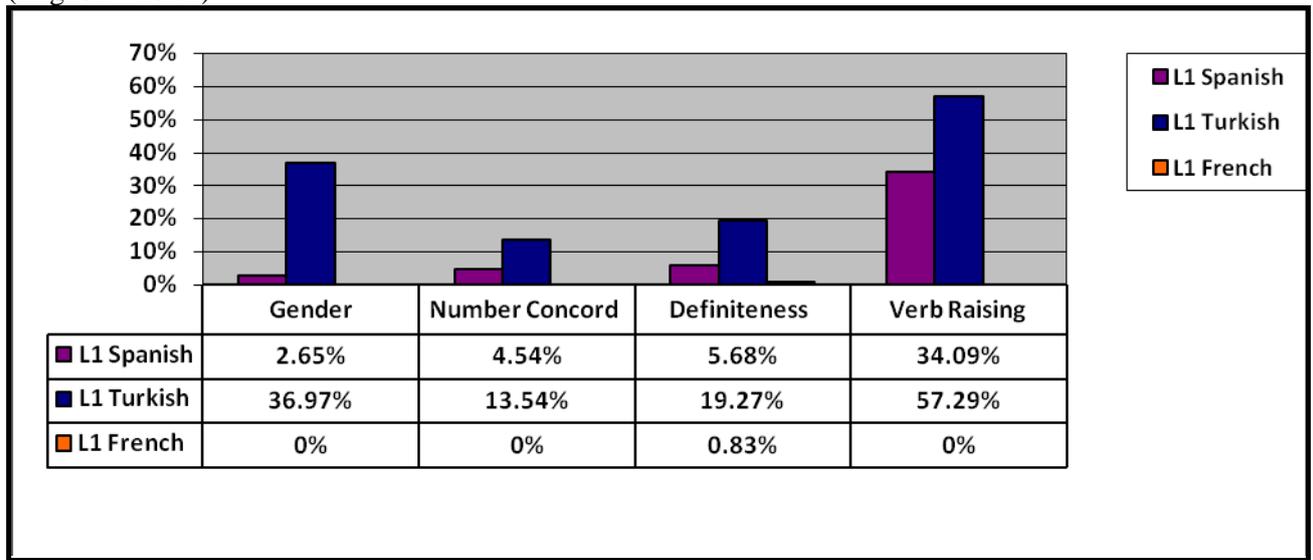
**Table 7.3** Non Target-like performance by property and L1 group in the MCT task (English version)

Property	Spanish (N=22)			Turkish (N=16)			French (N=10)		
	%	Mean	SD	%	Mean	SD	%	Mean	SD
Gender	2.65%	.32	.568	36.97%	4.44	1.632	0%	.00	.000
Number Concord	4.54%	.27	.456	13.54%	.81	.834	0%	.00	.000
Definiteness/Specificity	5.68%	.77	.869	19.27%	2.31	1.352	0.83%	.10	.316
Verb Raising	34.09%	2.05	.653	57.29%	3.44	.964	0%	.00	.000

Results displayed in table 7.3 show that the Spanish participants were near native-like in gender, number concord and definiteness, but appeared less native-like in their treatment of adverb placement (i.e. verb raising). The Turkish participants were less target-like than their Spanish counterparts in all the properties and did not reach nativeness in any of the four properties. Additionally, the performance of the Turkish group in number concord and definiteness/specificity was much more target-like than in gender and verb raising. Figure 7.1 summarises the non target-like performance of the Spanish and Turkish groups in comparison with the control group in the four properties tested.

<sup>118</sup> Only results of the MCT (English version) and the ASC tests are used (both descriptive and statistical) because the rest tests either test only one property (e.g. the vocabulary test on gender assignment) or were testing only one experimental group, such as the Spanish and Turkish versions of the MCT.

**Figure 7.1** Mean percentage of Non target-like performance by property and L1 group in the MCT test (English version)



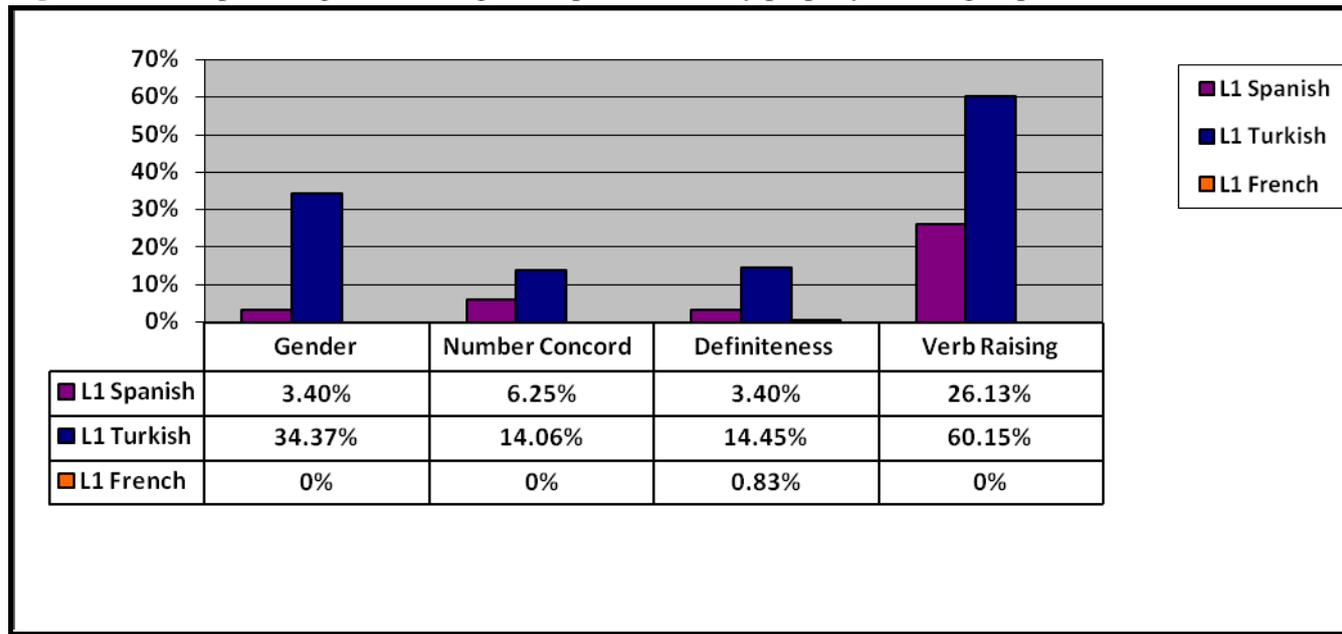
The non target-like performance of the two groups in the four properties tested in the ASC task is displayed in the table below.

**Table 7.4** Non Target-like performance by property and L1 group in the ASC task

Property \ L1 group	Spanish (N=22)			Turkish (N=16)			French (N=10)		
	%	Mean	SD	%	Mean	SD	%	Mean	SD
Gender	3.40%	.55	.596	34.37%	5.50	1.033	0%	.00	.000
Number Concord	6.25%	.50	.598	14.06%	1.13	.885	0%	.00	.000
Definiteness/Specificity	3.40%	.55	.596	14.45%	2.31	1.922	0.83%	.10	.316
Verb Raising	26.13%	2.09	.921	60.15%	4.81	1.167	0%	.00	.000

Results of the ASC test showed that the Spanish participants consistently behaved in a near native-like manner in gender, number concord and definiteness, but were less native-like in verb raising. The performance of the Turkish participants was less target-like than that of the Spanish speakers. In addition, the performance of the former in number concord and definiteness/specificity appeared more target-like than their performance in gender and verb raising. Figure 7.2 summarises the non target-like performance of the Spanish and Turkish groups in comparison with the control group in the four properties tested.

**Figure 7.2** Mean percentage of Non target-like performance by property and L1 group in the ASC test



*Statistical results: Non target-like performance by property*

Paired samples t-tests for the non target-like performances of the Spanish and Turkish groups in the four properties were carried out to see at which properties each group was least target-like. Results of the MCT and the ASC tests are displayed below.

MCT test: The Spanish group

**Table 7.5** Non target-like performance of the Spanish group by property (Paired samples t-tests of the MCT test)

	Gender	Number Concord	Definiteness	Verb Raising
Means	.32	.27	.77	2.05
Gender		$p=.789$	$p=.073$	$p=.0001***$
Number Concord			$p=.059$	$p=.0001***$
Definiteness				$p=.0001***$

As shown in table 7.5, the Spanish group performed at a similar level on all features, with the exception of verb raising, which was significantly worse than all the other properties. That

confirms what was said earlier that the Spanish group behaved in a near native-like manner in all the properties, except for verb raising, where the performance was characterised by variability.

*MCT test: The Turkish group*

**Table 7.6** Non target-like performance of the Turkish group by property (Paired samples T-tests of the MCT test)

	Gender	Number Concord	Definiteness	Verb Raising
Means	4.44	.81	2.31	3.44
Gender		$p=.0001^{**}$	$p=.001^{**}$	$p=.048$
Number Concord			$p=.002$	$p=.0001^{***}$
Definiteness				$p=.014$

The performance of the Turkish group differs significantly between almost all the properties tested. However, the difference between gender and verb raising was approaching non significance level ( $p=.048$ ). That implies that this group was more target-like in number concord and definiteness compared to gender and verb raising, whereby their performance was almost uniform.

*ASC test: The Spanish group*

**Table 7.7** Non target-like performance of the Spanish group by property (Paired samples T-tests of the ASC test)

	Gender	Number Concord	Definiteness	Verb Raising
Means	.55	.50	.55	2.09
Gender		$p=.815$	$p=1.000$	$p=.0001^{***}$
Number Concord			$p=.833$	$p=.0001^{***}$
Definiteness				$p=.0001^{***}$

Similar to the MCT task, the Spanish group performed at a similar level on all features, with the exception of verb raising, which was significantly worse than all the other properties.

*The ASC test: The Turkish group***Table 7.8** Non target-like performance of the Turkish group by property (Paired samples T-tests of the ASC test)

	Gender	Number Concord	Definiteness	Verb Raising
Means	5.50	1.13	2.31	4.81
Gender		$p=.0001^{***}$	$p=.0001^{***}$	$p=.068$
Number Concord			$p=.029$	$p=.0001^{***}$
Definiteness				$p=.0001^{***}$

The Turkish natives' performance differs significantly between almost all the properties tested, with the exception of gender and verb raising, where their performance was almost uniform. That implies that the Turkish participants performed significantly better on number concord and definiteness but were least target-like on gender and verb raising.

*L3 hypotheses and their predictions*

The predictions of the four properties tested in this study, already described in details in chapter one, are repeated once again below. Each model is followed by a discussion part discussing the tenability of its predictions in light of the findings achieved.

➤ **The L1-factor model**

This model (Jin, 2009; Hermas, 2014), argues that L1 should be the main source of influence in L3A. It implies that the Spanish group will be influenced by L1 Spanish while the Turkish group will be influenced by L1 Turkish. Given that the four properties tested are present in Spanish, just like in L3 French, unlike L1 Turkish grammar in which three properties are absent (gender, definiteness and verb raising), the Spanish group is expected to outperform the Turkish group in all the properties, except for number whereby both groups are expected to be native-like according to this model. This model makes no claims about L2 proficiency because it does not believe in any important role for the L2 in L3A.

The descriptive and statistical results displayed above reveal that the Spanish group outperformed the Turkish group in the four properties tested. Contra the L1 factor model which expects the Spanish and Turkish subjects to perform in a similar native-like manner in the property of number concord, Turkish results, nevertheless, showed that the Turkish subjects behaved over our 75% criterion *but* were much less target-like than their Spanish counterparts. Besides, contra the predictions of the L1-model, the Turkish participants were target-like in article choices in L3 French with over 80% of target-like use, though Turkish is an article-free language. Such findings cannot be attributed to L1 transfer only. Another good piece of evidence against the L1 factor model is the fact that the Turkish participants with advanced L2 proficiency outperformed those with lower-intermediate L2 proficiency in their treatment of the property definiteness/specificity in L3 French. That implies that the Adv participants of the Turkish group benefited from learning an L2 that shares the feature definiteness with L3 French, a prediction that the L1 factor model does not support. Hence, for the above reasons, it seems that the L1 factor model has not been supported by the findings of this study.

### ➤ **The L2 Status Factor**

According to the L2 Status factor model (Bardel and Falk, 2007; Falk and Bardel, 2011), CLI occurs only or dominantly from the second acquired language (L2), because L3 learners have a general tendency to activate their L2 rather than their L1 when learning an L3. This model would, therefore, expect the performance of the Spanish and Turkish groups in the four properties tested to be alike because both groups are expected to be strongly influenced by the properties of L2 English. In light of that, both groups are expected to be target-like in number concord and definiteness only, for these are the only features that are present in L2 English. As for gender and verb raising, both groups are expected to be non target-like because both features are not present in the grammar of L2 English.

This model also argues that learners with higher L2 proficiency would outperform those with lower L2 proficiency in both L1 groups if the property tested is present in L2 English (i.e. number concord and definiteness), but if the property is not present in L2 English (e.g. gender and verb raising), this model expects no difference on the basis of L2 proficiency.

The findings of this study did not seem to support the L2 status factor model for three reasons. First, contra the predictions of this model, the Spanish group outperformed the Turkish group in all the properties. The Turkish group did not boarder the performance of the Spanish group even in number concord and definiteness, contra the predictions of this model. Second, the Spanish subjects behaved in a native-like manner regarding the property of gender and were target-like (i.e. reached above 70% of accuracy rates) in the property of verb raising in the ASC test, a scenario that does not support the L2 status factor. Third, a comparison between the Spanish subjects with an advanced L2 proficiency level and those with a lower-intermediate level showed no significant difference between the two sub-groups across the four properties tested. For these three reasons, the findings of this study do not seem to support the L2 status factor hypothesis either.

Thus far, it seems that the order of acquisition appears not to be the significant factor underpinning CLI in L3A, but rather how typologically similar/different L1 and/or L2 versus the L3. However, the question that is raised here is whether holistic typological similarity (the TPM) or the property-by-property-based structural similarity (or both) is/are the triggering factor(s) for CLI in L3A (the PSP)? In order to answer this question, the predictions of two models will be assessed, the TPM and the PSP, respectively.

➤ **The Typological Primacy Model (TPM)**

The TPM hypothesis (Rothman, 2011, 2013, 2015) argues that what matters in L3A is not the order of acquisition *per se* but rather the typological proximity between the background languages and the L3. The language that is typologically the most proximate to the L3 (on a holistic basis) is the language that is the source of CLI. Given that Spanish is the language that is typologically the closest to L3 French, the Spanish group will outperform the Turkish group in the four properties tested. In a recent study, Rothman (2013, 2015) provides a revised version of the TPM in which he elucidates what is meant precisely by holistic typological proximity and how the learner determines it. Rothman (2013) argues that (a) typological proximity assessment has to occur very early on in the L3A process and (b) once typological proximity is detected, the entire L1 or L2 is transferred in the sense of Full Transfer (Schwartz & Sprouse, 1996). Rothman (2015) further argues that “structural similarity is [...] referring to linguistic properties that overlap cross-linguistically at the level of mental representation, whether at the lexical or grammatical levels. Such underlying or true grammatical similarity is assessed and determined subconsciously by the linguistic parser very early in the L3 process based on an implicational hierarchy of linguistic cues” (p.1-2). This continuum consists, in chronological order, of:

- (1) Lexicon→(2) Phonological/Phonotactic Cues→ (3) Functional Morphology→(4) Syntactic Structure

Following this continuum, the parser detects typological similarity on the basis of lexical similarity then phonological/phonotactic cues whereas morphology and syntax come last because detecting lexical similarities is much more straightforward than detecting morphological and syntactic similarities. Morphology and syntax, according to Rothman (2015), require more experience with the L3 and a deeper level of (implicit) knowledge about the L3 (p. 8). Under this logic, the TPM would predict the parser to detect typological proximity between L1/L2 and

the L3 at a very early stage based on lexical similarity *only* rather than any other types of similarity.

In the case of the present study, we are confronted by two situations. A group which has a language that is typologically very proximate to L3 French on a holistic basis (Spanish) and another group which has two background languages (L1 Turkish/L2 English) that are typologically quite different from L3 French compared to Spanish, but share certain lexical terms (due to borrowing). However, English seems more lexically similar to French than Turkish because the former contains more words that are either borrowed (or similar) to the French ones. In order to verify this assumption, two measurements are used. The first one is the use of some statistics that are freely available at the website of *Ethnologue: Languages of the world*<sup>119</sup> which states that English words that are borrowed from French represent 27% and also the data published by the *Turkish Language Association*<sup>120</sup> which state that the Turkish words that are borrowed from French represent just 4.76%. The second measurement relied on a list of the 500 most frequently used French words in order to identify how many out of these words there are words that are present in English and in Turkish<sup>121</sup>. Out of 500 French words, there were around 114 words that were either the same or nearly similar to the English words which implies that about 22.8% of the English words are similar to the French words in this list. Conversely, only 16 Turkish words were found to be similar to the French words in this list, making a 3.2% only of lexical similarity between Turkish and French<sup>122</sup>. Merging the findings of the two measurements, this study will consider that there is about 24.5% of lexical similarity between

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<sup>119</sup> See note 21 for further details.

<sup>120</sup> See note 22 for further details.

<sup>121</sup> Reminder, this list is based on an original work of New & Pallier (2001).

<sup>122</sup> Reminder, this list is uploaded from the following website:

<http://french.languagedaily.com/wordsandphrases/most-common-words>

English and French whereas the lexical similarity between Turkish and French is only around 3.9% (see chapter one for further details).

Thus far, it seems, at least based on the two measurements discussed above, that English is lexically much more similar to French than Turkish to French. In light of this, the TPM would predict that the parser, very early on, would identify English as the language that is typologically the closest to L3 French and would, therefore, holistically transfer all its properties into the L3 French grammar. That would imply that the Turkish group, like the Spanish group, would behave in a native-like manner in number concord and definiteness because both features are present in L2 English but would be non native-like in their treatment of gender and verb raising because English is, respectively, a gender-free and a non verb raising language.

However, though the predictions of this model were corroborated vis-à-vis the performance of the Spanish group, the Turkish results contradicted this model. Contra the TPM, the Turkish subjects did not attain nativeness in their treatment of number concord and definiteness. They reached above our 75% accuracy criterion but were significantly less target-like than the Spanish and the French control groups (see chapter three and four for further details). Second, English does not seem to be the only source of CLI in the performance of the Turkish group, as predicted by the TPM. Rather, there was *variability* between Turkish and English. Facilitative influence was derived sometimes from L1 Turkish (e.g. in number concord) and sometimes from L2 English (definiteness). In the case where L2 English was the only language that shares the property with French (e.g. definiteness), it was the only source of positive influence whereas when both L1 and L2 share the same property with L3 French (e.g. number concord), L1 Turkish appeared more influential. This was concluded following a comparison based on L2 proficiency which showed no difference between those who learnt English to a higher proficiency level and

those of a lower proficiency level on number concord, a property which is present in both L1 Turkish and L2 English. For the definiteness property, in contrast, because English is the only language that shares this property with L3 French, English was the main source of influence and L2 proficiency level was a significant factor i.e. the Turkish Adv participants outperformed the L1s. Finally, non facilitative influence was mainly due to L1 Turkish influence. Once again, this conclusion follows from the fact that L2 proficiency did not have any significant effect on the performance of the Turkish subjects either in their treatment of gender or verb Raising (two properties that are absent in both Turkish and English).

Finally, the TPM makes no official claims with regard to performance linked to L2 proficiency. However, the findings of the Turkish group showed that whenever the property was present in L2 English only, participants with higher L2 proficiency outperformed those of a lower L2 proficiency level<sup>123</sup>.

➤ **The Property-based Structural Proximity (PSP) hypothesis**

Given the findings attained in this study, it seems that there is a need to distinguish between two terms: *typological proximity* (holistic) versus *structural proximity* (property-based). The parser does not always rely specifically on typological proximity on a holistic basis, any structural similarity on a property-by-property basis between L1/L2 and the L3 helps the learner acquire a given property in an L3. In light of these results, the present study has proposed a new hypothesis entitled the property-based structural proximity (PSP), which maintains similar to the TPM, that typological proximity is the key factor triggering CLI in L3A. However, contra the TPM, the PSP argues that in the absence of a language that is clearly typologically very similar

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<sup>123</sup> A brief reminder, it was claimed in chapter one that though Rothman (2015) argues that having high L2 proficiency could help learners in learning an L3, given that he did not test this factor in any of his studies through a placement test, but rather relied on years of immersion (in addition to the fact that he relied on participants with advanced L2 proficiency only), it is claimed above that Rothman makes no official claim regarding the role of L2 proficiency in L3A.

to the L3 on a holistic basis (e.g. Spanish vs. French)<sup>124</sup>, linguistic similarity would be perceived by the learner on a property-by-property basis, and in this case, one would speak about *structural similarity that is property-specific* and not *holistic typological proximity* that is the factor triggering CLI in L3A.

Given that the results of the Spanish group have shown that learners transfer the grammar of L1 Spanish on a holistic basis (i.e. a case of typological proximity) while the Turkish results have shown cases of transfer based on structural proximity (on a property-by-property basis). That is to say; transfer was sometime driven from L1 Turkish and sometimes from L2 English depending on the presence of the property in L1 and/or L2, the PSP hypothesis does not believe that holistic typological similarity is *always* the only variable that triggers the parser to transfer the properties of an L1 or L2 in the L3 grammar. Rather, it argues that in the absence of a background language that is typologically similar to the L3 on a holistic basis, the language that shares property X with the L3 will be the source of CLI in the performance of learners on that particular property even if that language is typologically different from the L3 on a holistic basis and here lies indeed the main difference between the TPM and the PSP. If on the other hand, the property is present in neither L1 nor L2, L3 learners will fail to be native-like in that property. Thus, transfer is facilitative when the property is present in either the L1 and/or L2 but it is also non facilitative if the property is absent in both L1 and L2.

Consequently, in the case of Spanish L1→ English L2→French L3, the PSP expects Spanish to be transferred as a whole because it is typologically the closet to L3 French on a holistic basis. In this case, the Spanish group will behave in a native-like manner in the features gender, number concord and definiteness. As for verb raising, though this group is expected to outperform the

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<sup>124</sup> Clear typological similarity as used here means two languages sharing the same family roots and having many common features in different domains e.g. lexical similarity, phonological similarity, syntactic similarity....etc.

Turkish group, the behaviour of the former is expected to be characterised by variability, which is found in L1 Spanish regarding adverb placement (see chapter five for more details). Results of the Spanish in the four properties tested were consistent with the predictions of the PSP hypothesis. Precisely, the Spanish natives outperformed the Turkish natives in all the properties and were near native-like in their treatment of gender, number concord and definiteness. Regarding verb raising, their behaviour was characterised by *variability* between allowing sentences with the grammatical S-V-Adv-O word order and sentences with the ungrammatical S-Adv-V-O word order. That *optionality* in their behavior was attributed to a negative influence from L1 Spanish which is described as a ‘mixed’ language (Ayoun, 1999b).

In the case of Turkish L1→English L2→French L3, contra the TPM which would expect English to be the source of CLI because it is lexically the closest to L3 French<sup>125</sup>, the PSP expects both languages to be sources of CLI, sometimes Turkish is the source of influence and sometimes English would transfer, depending on whether the property tested is present in L1, L2 or in both. As for the four properties tested, the PSP would expect the Turkish natives to behave as follows:

- Both Turkish and English are gender-free languages, so the PSP, similar to the TPM, expects the Turkish participants to be nonnative-like in their treatment of this feature in L3 French. This is the scenario attained in this study (see summary and discussion of chapter 2).
- Both Turkish and English, similar to L3 French, inflect Ns for plural, so the PSP expects this group to benefit from such similarity. However, unlike the TPM which might expect the Turkish group to be native-like, the PSP expects this group not to reach nativeness for neither language inflects the articles or adjectives for plural. This is why the PSP expects

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<sup>125</sup> Refer to the discussion of the TPM hypothesis for further details on why English would be considered lexically much more similar to French than Turkish.

the Turkish group to be target-like but not to reach nativeness in number concord on the articles and the adjectives. The findings of this study corroborated these predictions (see summary and discussion of chapter 3).

- L1 Turkish is an article-free language but English, similar to French, is a language that grammaticalises definiteness. The PSP expects the Turkish natives to benefit from the similarity between English and French regarding this feature. However, contra the TPM which would expect the Turkish speakers to behave native-like, the PSP does not expect them to reach nativeness. The absence of this feature in L1 Turkish would negatively affect the performance of this group. Similar to above, these predictions were supported by the findings of this study (see summary and discussion of chapter 4).
- Finally, given that Turkish and English are both non verb-raising languages, similar to the TPM, the PSP expects the Turkish participants to be nonnative-like in their treatment of adverb placement in L3 French. This is also the scenario attained in this study (see summary and discussion of chapter 5).

In light of such findings, it appears that the learner does not always search for typological proximity on the basis of lexical similarity as suggested by the TPM. In the absence of a clear holistic typological similarity between any of the background languages and the L3, the learner searches for linguistic similarity on a property-by-property basis. Even at an early stage, learners are able to search for syntactic similarity between their background languages and the L3, so as to identify which one is the closest to L3, and therefore, will help them learn the property in question. The fact that learners have learnt two linguistic systems prior to learning the L3 makes them aware of certain similarities (cues) between these languages and the L3 at a lexical, phonological, morphological and even at the syntactic level. The fact that the Turkish subjects were target-like in the features number concord and definiteness (compared to their non target-

like performance in gender and verb raising) could show that these subjects were positively influenced by the similarity between L1 Turkish and/or L2 English and L3 French regarding these two features. Results showed that transfer was sometimes derived from L1 Turkish and sometimes from L2 English, an idea that contradicts the TPM which believes in holistic typological proximity and, therefore, one particular language should be the source of CLI (in this case English should be the source of CLI).

Additionally, results of the questionnaire (chapter 6) were consistent with CLI on a holistic basis in the case of the Spanish group but on a property-by-property basis for the Turkish group. When asked about the similarity between Spanish vs. French and English vs. French holistically and regarding the four properties tested, the responses of the Spanish subjects were almost uniform. They were consistently rating Spanish as being typologically the closest to French even in the feature verb raising whereby Spanish, unlike French, is characterised by *optionality*. The Spanish subjects were also consistently rating English as being typologically different from French in all the properties tested even in the ones that are present in L2 English (e.g. number concord and definiteness). Besides, when asked about how helpful learning English before French was, most responses were that English did not help much because Spanish was much more helpful due to the close similarities between the two languages (Spanish/French).

The Turkish responses, nevertheless, were different. When asked about how similar English and French vs. Turkish and French (holistically and with regard to the four properties tested), the Turkish participants rated each pair as similar in certain properties but different in others. Moreover, when asked about how helpful learning English before L3 French was, contra the Spanish group, the Turkish group considered that learning English was quite helpful in certain properties but not that helpful in others. That would imply that when there is a language that is

clearly typologically similar to the L3 on a holistic basis (Spanish), it will be the source of influence even if the other language shares some properties with the L3. However, where neither L1 nor L2 is typologically very close to the L3 (on a holistic basis), learners even at an early stage will search for similarities between their background languages and the L3, even at the syntactic level. Such findings are not predicted by Rothman's TPM model.

In addition to typological proximity, this study tested the role of L2 proficiency on the performance of the Spanish and Turkish groups when learning L3 French. While the TPM makes no claims with regard to the role of L2 proficiency (*cf.* Rothman, 2015), the PSP states that L2 proficiency can have an effect on the acquisition of an L3 only if L2 is the only language that is structurally similar to the L3 concerning the property tested. In the case of the Spanish group, given that Spanish is typologically the closest to French; the PSP expects no role for L2 proficiency on the performance of this group. As for the case of the Turkish natives, the PSP expects L2 English proficiency to have a major role on their performance only if the L2 is the only language that is structurally similar to the L3 regarding the property tested. This implies that Turkish natives would benefit from their higher proficiency in L2 English in their treatment of definiteness/specificity *only* because it is the only feature in which English is the only language that is structurally similar to L3 French for gender and verb raising are both absent in L1 Turkish and L2 English while number concord is a feature that is present in both L1 Turkish and L2 English. Results of the four properties have shown that the only case when Turkish learners of advanced L2 English proficiency outperformed their counterparts of L1 L2 proficiency level was in their performance on the property definiteness *only* which would corroborate the predictions of the PSP hypothesis<sup>126</sup>.

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<sup>126</sup> Noteworthy, Jaensch (2008) also found differences on the basis of L2 proficiency in the performance of L3 learners but that difference was when the property was present in L2 English (e.g. definiteness), and also when the property tested was absent in L2 grammar (e.g. Gender). Similar findings were also attained by Leung (2002b).

## 7.4 General Implications on typological proximity

Results of this study have shown that there are two types of linguistic similarity that one should be aware of when dealing with L3A, *typological similarity* which is generally holistic and *structural similarity* which refers to the property-by-property-based linguistic similarity. Keeping these concepts in mind, the implications of the results of this study are summed up as follows:

- The language that is typologically the closest to the L3 (on a holistic basis) is the source of CLI in L3A (the case of L1 Spanish).
- In the absence of holistic typological proximity, structural similarity on a property-by-property basis is possible. The language that shares property X with the L3 will be the source of CLI in the acquisition of that property. Facilitative CLI is, therefore, possible on a property-by-property basis (the case of the Turkish group).
- In the absence of any structural similarity between L1 and/or L2 and the L3, non facilitative CLI is also possible on a property-by-property basis. Properties that are absent in L1 and L2 seem to represent persistent acquisitional problems for learners. They cannot achieve a native-like level, or at least a target-like level (for example, below the 75% accuracy criterion set by this study). Non Facilitative transfer was shown to be on a property-by-property basis for the Spanish group when learning verb raising. Their behaviour was characterised by *optionality* which was attributed to negative transfer from L1 Spanish that is also characterised by variability regarding this property.

Thus far, given that this study has found evidence for holistic typological proximity in the performance of the Spanish group whereas the performance of the Turkish group showed evidence for structural property-based proximity, it seems that when a given property in L3 is

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also present in both L1 and L2, learners do not seem to face any learning difficulties in this feature. If, on the other hand, the property is absent in one of the background languages but present in the other (for example definiteness is present in L2 English but absent in L1 Turkish) that property will present less challenging learning problems compared to when this feature is absent in both L1 and L2. Gender and verb raising, for example, are absent in both L1 Turkish and L2 English, this is why they were more difficult to learn due to the lack of input that could provide relevant triggering evidence on these properties. Moreover, it appears that not all properties are equal in terms of their levels of difficulty nor with regard to the amount of time each property requires to develop. Some features are believed to be inherently more difficult than others and this might depend on the input and the availability of triggering evidence in that input. Such findings are consistent with the assumptions of certain researchers in the literature (e.g. White, 2008; Na Ranong, 2009; Ayoun, 1999b, 2005; among others). In the present study, the four properties tested can be grouped as follows according to their levels of difficulty (from least difficult to most difficult): (i) Number concord (ii) Definiteness/Specificity (iii) Gender and (iv) Verb raising. Such an order is inferred based on the responses of the Turkish participants who found gender and verb raising as most challenging compared to number and article choices, with verb raising being rated the most difficult.

## 7.5 Final Conclusion

To conclude, the present study set out to provide a modest contribution to the flourishing research area of L3A. Similar to most L3 studies within the generative paradigm, the main goal of this work is to investigate the source of CLI among previously acquired languages. However, the present study slightly differs from some of the previous L3 studies in investigating, in addition to the role of L1 and L2, the role of typological proximity *per se* as a factor triggering CLI in L3A and how it is perceived by learners, on a holistic basis as proposed by the TPM

(Rothman, 2011, 2013, 2015) or on a property-by-property basis as advocated by the PSP, the hypothesis proposed by the present study? In so doing, this study tested the acquisition of four morpho-syntactic properties that are distributed differently across the four languages tested (i.e. Spanish, Turkish, English and French). This study also differs from most L3 studies regarding the methodology adopted. While the majority of L3 studies, including Rothman (2011, 2013, 2015), have relied on quantitative experimental tasks, the present study relied on a ‘mixed methods approach’ consisting of quantitative experimental tasks (to test learners’ performance on the four properties tested) and a qualitative instrument (a semi-closed questionnaire) which aimed to assess learners’ perception of the similarities/differences between L1/L2 and L3 on a holistic basis and vis-à-vis the properties tested.

The concluding results that this study has attained so far are as follows. The Spanish group behaved in a near native-like manner and outperformed the Turkish group in the four properties tested. However, this group was less native-like in adverb placement (verb raising), where they showed some *variability* between allowing the non target S-Adv-V-O order and the target S-V-Adv-O order. These results of this group were attributed to a case of positive L1 influence in gender, number and definiteness but a case of negative transfer from L1 Spanish concerning verb Raising. The Turkish subjects were, nonetheless, non native-like in gender and verb raising but reached high accuracy rates (over 80% of target-like use) in number concord and definiteness. Their results were attributed to a case of negative transfer from L1 and L2 in the case of gender and verb raising while results of number concord and definiteness were attributed to cases of positive CLI from either L1 and/or L2. Such results were taken as indicative of an effect of holistic typological proximity in the performance of the Spanish group (Spanish vs. French), but indicative of structural proximity on a property-by-property basis in the case of the Turkish group.

Thus, irrespective of the order of acquisition, the language that is typologically the closest to L3 French is the language that affects learners' performance either positively or negatively. However, in the absence of any language that is typologically very similar to L3 on a holistic basis, the language that shares property X with L3 will be the source of CLI in the acquisition of that particular property. Such assumptions, however, can only be generalised if more L3 studies testing similar language combinations or languages with similar linguistic profiles are carried out, but what is certain so far, is that L3A is an exciting area of research wherein several research questions are still open for further future research to tease apart all debates.

## **7.6 Limitations of the work and Directions for future research**

Despite the interesting findings attained in this study, there are certain shortcomings that need to be overcome in any future work to ensure more generalisable results. First, the number of participants was pretty low in certain (sub)groups. For example, the Turkish LI group, only six participants took part. Such a small number cannot provide generalisable results. More groups of bigger sizes are needed. This is why we are taking such results as indicative and not conclusive.

Second, this study tested the initial stage of L3A, the results attained and the assumptions provided are only relevant to beginners and cannot be generalised to other proficiency groups unless more L3 proficiency groups (i.e. intermediates and advanced) are tested as in the study by Jaensch (2009a). That will enable us confirm the assumptions provided with regard to the role of previously acquired languages as well as how typological proximity is perceived by L3 learners.

Third, a major weakness of the present work concerns methodology. More precisely, there was no balance between the number of tasks devised for each property tested; four tasks testing gender, three tasks testing number concord, and only two tasks testing definiteness and verb raising. However, that choice of tests was due to two main reasons. First, the vocabulary test can

only be used to test gender assignment and, therefore, cannot be used to test other features, and it was needed to identify whether learners have difficulties in gender assignment or gender concord. Second, the picture description task is a simple task that asks participants to describe each picture in terms of its colour to identify, once again whether learners have problems in gender assignment/concord and whether they have problems in number concord. Such a test does not require learners to have rich linguistic background. However, in order to test the learnability of the features definiteness and verb raising in this same test, learners should have a rich linguistic system which enables them to use certain expressions in context, which is practically difficult for the beginners of this study. This is why these two features were tested in a multiple choice translation (MCT) test and an acceptability sentence correction (ASC) test which are believed to be quite informative about the participants' knowledge of the properties tested.

Another weakness regarding the methodology might be the fact that some tests used in this study such as the vocabulary test and the multiple choice translation (MCT) test are testing learners' metalinguistic awareness rather than their underlying knowledge. Ideally, to offset the metalinguistic task effects, some comprehension interpretation tests and more productive tasks are needed to be more reliable in tapping interlanguage competence. However, as this study used some productive tasks such as the acceptability sentence correction (ASC) test and the picture description test, the methodology used in this study could be described as reliable and balanced. In addition, using tests that are purely productive with L3 beginners would be practically difficult as there is a high probability that participants would not understand the test and, therefore, their responses may not be that informative. These productive tests can be used in future research but when more L3 proficiency groups are tested (e.g. intermediates or advanced).

Fourth, the number of experimental tasks might also be a weakness in this study. Five tests are fairly demanding and that could have had an effect on participants' responses. However, as they were tested over three sessions separated by a break of a few days in between, the factor of fatigue may scarcely have had an effect on participants' performance in this study (see chapter two for further details on the procedure of these tasks). This is also the reason why the frequency factor was not tested in this study. In other words, though certain words are repeated across the experimental tests, but as these tests were performed in different sessions, answering based on guessing due to frequency is believed to have hardly had an effect on participants' performance.

Besides, in order to draw conclusive assumptions on whether typological proximity is perceived on a holistic basis or on a property-by-property level, the use of mirror groups would be ideal e.g. L1Turkish- L2English- L3French versus L1English- L2Turkish- L3French versus L1Spanish- L2English- L3French versus L1English- L2Spanish- L3French. More L3 groups using more language combinations and more diverse properties distributed differently cross-linguistically are also recommended as that would help us get a complete picture of the role of typological proximity in L3A and how it is perceived by learners. In this concern, it is worth noting that though in this study, it is claimed that the Spanish results are attributed to cases of holistic transfer from L1 Spanish, it is practically very difficult to be decisive as to whether the Spanish results are due to transfer on a holistic basis or property-by-property basis because Spanish and French are typologically similar and also the properties investigated in this study are so similar in Spanish and French, except for verb raising whereby Spanish is characterised by *optionality* (it predominantly allows sentences with post-verbal adverbs but also sometimes accepts sentences with pre-verbal adverbs) unlike French which is a predominantly verb raising language with an S-V-Adv-O word order, and also number concord on adjectives is audible in both spoken and written Spanish, but it is only audible in written French. Future studies

investigating similar cases i.e. languages that are described to be typologically similar on a holistic basis but structurally differ regarding certain properties will be of great importance to tease apart the debate regarding whether the learner perceives typological proximity on a holistic basis or rather relies on the property-by-property based structural similarity between L1/L2 and the L3.

Furthermore, though the use of the ‘mixed methods approach’ in this study was an original idea that aimed to help tease apart conclusions on whether holistic typological proximity or structural property-based similarity is a triggering factor for CLI in L3A, the researcher cannot be decisive on how reliable this instrument and the questions devised were. More innovative ideas on these instruments will help come up with more reliable measurements that will provide conclusive data needed in the domain of L3A.

Finally, the researcher would like to explain that the proposal of the PSP hypothesis was primarily inspired by the TPM model (Rothman, 2011, 2013 and 2015) and also by a personal experience of the researcher as an L4 Turkish learner. The researcher learnt four languages, being in chronological order (L1 Arabic- L2 French- L3 English-L4 Turkish). Although, Arabic and Turkish are lexically very similar, the difference between Arabic and Turkish regarding the syntactic features made the researcher rely more on English and French when learning certain syntactic features in L4 Turkish. However, that might be explained by the fact that the researcher learnt L2 French, L3 English and L4 Turkish in a formal setting which could be the reason why the researcher was aware of certain linguistic similarities/difference between the languages in questions. Thus, it might be fruitful to conduct such studies on participants who learnt an L3 in *instructive environments* and compared them with L3 learners from non *instructive environments*. That could provide us with conclusive results on whether learners, at the outset of

L3A, perceive the similarities/differences between their background languages (L1/L2) and the L3 on a holistic basis or on a property-by-property basis.

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## Appendices

### Appendix A. Bio-data Questionnaire and Experimental Tasks

#### Appendix A.1. Bio-data Questionnaire

(Note: These details will remain confidential and will be used for data analysis purposes only. Your anonymity is guaranteed and will not be disclosed in any possible presentation of results.)

1. Initials: Date of birth:
2. Male/Female:
3. Native language:
4. Country of birth:
5. How old were you when you first began to learn English?
6. How old were you when you first began to learn French?
7. How many years of English instruction have you had?
8. How many years of French instruction have you had?
9. Have you ever lived in a French-speaking-country before?
10. Where? How long?
11. Have you ever lived in an English-speaking-country before?
11. Where? How long?
12. Do you have knowledge of any other languages?

## Appendix A.2. Oxford French Placement Test<sup>127</sup>



**Answer the questions below by selecting an answer from the list.**

1. Vous..... français? (es/être/êtes/est)
2. ....vous parlez français? (Qu'est ce que/Est-ce que/Quel/Quoi)
3. ....18 ans. (Je suis-J'ai-Je-Je suis age)
4. J'habite .....Paris,..... France (au.....a la/ en.....en/a.....en/en.....a).
5. Monsieur Martin et.....femme sont très sympathiques. (sa-son-ses-leur)
6. Mes parents.....la radio tous les matins.  
(écoutes/écoutent/écoutez/écoutant)
7. Sylvie..... souvent à la piscine. (va/vais/allez/allons)
8. Vous buvez.....café (un peu/la/des/du).
9. Pour aller à la poste, vous tournez.....(tout droit/ à la droite/ à droite/droit).
10. Les enfants.....leurs devoirs à 6 heures. (finissez-finissons-finis-finissent)

<sup>127</sup> The original format of this test was slightly modified here to enable the perception of the options to choose between, but no change in the content occurred. The original test with its original format can be freely accessed in the website below of Oxford University:

([http://www.lang.ox.ac.uk/courses/tst\\_placement\\_french.html](http://www.lang.ox.ac.uk/courses/tst_placement_french.html))

11. Hier, nous.....avec Monsieur le Maire à midi. (déjeunions/avons déjeuné/avons déjeuné/a déjeuné)
12. Quand j'habitais à Paris,..... le métro tous les jours. (j'avais pris/je prenais/j'ai pris/je prendrais)
13. Je regardais la télévision depuis 1 heure quand il.....(arrivait/va arriver/est arrivé/arrivera)
14. L'année prochaine j'..... au Canada. (irais/irai/ira/irez)
15. Mon numéro de téléphone c'est le soixante-dix-huit, quatre-vingt-un, quarante, quatre-vingt-douze. (68-41-40-82/78-41-40-92/78-81-40-92/68-81-14-92)
16. Je suis arrivé en Angleterre.....10 ans. (pour/depuis/il y'a/pendant)
17. Vous connaissez monsieur Dupuis? Oui, je..... connais bien. (leur/lui/le/la)
18. Vous avez téléphoné à madame Lesieur? Non, je..... téléphonerai demain.(lui-la-leur-le)
19. Vous buvez de la bière? Oui,..... bois de temps en temps. (je la/je lui/j'en/je le)
20. Vous allez au cinéma? Oui,.....vais souvent. (je le/j'en/j'y/je la)
21. Il mange en.....la télévision. (regardait/regarde/regardé/regardant)
22. La voiture de Paul est noire.....est rouge. (Ma/Mienne/La mienne/A moi)
23. Si je pouvais, je.....en vacances la semaine prochaine.(partais/partirais/partirai/vais partir)
24. Il faut que tu.....à l'aéroport. (va/aller/ailles/ira)
25. Je suis allée voir un film..... était très intéressant. (dont/que/qui/où)
26. J'ai lu le livre..... tu m'avais parlé.(dont/que/qui/ou)
27. Je ..... n'ai vu.....Paul,.....Jacques.(ni...ni/pas...pas/ni....pas/pas....ni)
28. À votre place,..... mes études. (je continuerais/je continuerai/je continue/je vais continuer)
29. Si tu.....nous serions allés au théâtre hier soir. (voulais/voudrais/voudras/avais voulu)

30. Vous offrez des fleurs à votre femme? Oui, je.....offre pour son anniversaire. (les en/en lui/lui en/en les)
31. Voici la salade que je vous ai.....(préparé/préparés/préparée/préparer).
32. Le suspect s'est rendu au commissariat où.....pendant plusieurs heures. (il a interrogé/il s'est interrogé/il a été interrogé/il était interrogé)
33. Vous sortirez quand vous..... vos devoirs! (aurais fini/finissez/avez fini/auriez fini)
34. ...., j'aimerais présenter nos invités. (Commencer/En premier lieu/Le commencement/Premier)
35. J'aurais voulu que..... plus tôt. (tu me le dises/tu me le dis/tu me l'aies dit/tu me l'aurais dit)
36. Voilà le restaurant..... je pensais. (a qui/auquel/lequel/duquel)
37. Je dois envoyer cette lettre....., c'est urgent. (plus tard/dans quelque temps/dès que possible/quand c'est possible)
38. ...., j'ai réussi mes examens. (A cause de toi/Grace a toi/Par ta faute/Parce que toi)
39. Il fait.....froid que je préfère rester près de la cheminée.(beaucoup/trop/très/tellement)
40. Nous construisons ces hôtels..... de développer le tourisme dans cette région. (a fin/pour/de façon/pour objectif)
41. .... sa pauvreté, il est heureux. (Pourtant/Par contre/Bien que/Malgré)
42. Elles se sont..... une maison au bord de la mer. (acheté/achetées/achetée/acheter)
43. Ce musée est.....attrayant qu'on peut y voir de magnifiques sculptures. (autant/plus/d'autant plus/de plus)
44. Je n'ai jamais vu un..... désordre! (similaire/tel/aussi/autant)
45. Je ne crois pas que vous..... raison. (avez/aurez/ayez/auriez)
46. .... il pleut, prenons l'autobus. (Parce qu'/Puisqu'/A cause/A cause d')
47. Elle se lamentait sans cesse pour qu'on la.....(plaint/plainte/plaigne/plaindre).
48. Napoléon 1<sup>er</sup>..... proclamé empereur en 1804. (fit/fuit/fut/eut)
49. J'admets mes fautes..... le mensonge. (dehors/hors de/hors/hormis)

50. C'est vraiment dommage qu'il .....venir. (n'a pas pu/n'aie pas pu/n'ait pas pu/n'avait pas pu).

<b>Score</b>	<b>Level</b>
1-10	Beginner
11-20	Lower Intermediate
21-30	Intermediate
31-40	Upper Intermediate
41-50	Advanced

**Appendix A.3.**

**Oxford English Placement Test**

**Oxford University Press  
and  
University of Cambridge Local Examinations Syndicate**

**Name:** .....

**Date:** .....

**quick  
placement  
test**

Version 1

**This test is divided into two parts:**

**Part One (Questions 1 – 40) – All students.**

**Part Two (Questions 41 – 60) – Do not start this part unless told to do so by your test supervisor.**

**Time: 30 minutes**

## Part 1

### Questions 1 – 5

- Where can you see these notices?
- For questions 1 to 5, mark **one** letter **A**, **B** or **C** on your Answer Sheet.

1

**Please leave your  
room key at Reception.**

- A in a shop
- B in a hotel
- C in a taxi

2

**Foreign money  
changed here**

- A in a library
- B in a bank
- C in a police station

3

**AFTERNOON SHOW  
BEGINS AT 2PM**

- A outside a theatre
- B outside a supermarket
- C outside a restaurant

4

**CLOSED FOR HOLIDAYS**  
Lessons start again on  
the 8 th January

- A at a travel agent's
- B at a music school
- C at a restaurant

5

**Price per night:**  
£10 a tent  
£5 a person

- A at a cinema
- B in a hotel
- C on a camp-site

## Questions 6 – 10

- In this section you must choose the word which best fits each space in the text below.
- For questions 6 to 10, mark **one** letter **A**, **B** or **C** on your Answer Sheet.

### Scotland

Scotland is the north part of the island of Great Britain. The Atlantic Ocean is on the west and the North Sea on the east. Some people (6) ..... Scotland speak a different language called Gaelic.

There are (7) ..... five million people in Scotland, and Edinburgh is (8) ..... most famous city.

Scotland has many mountains; the highest one is called 'Ben Nevis'. In the south of Scotland, there are a lot of sheep. A long time ago, there (9) ..... many forests, but now there are only a (10) .....

Scotland is only a small country, but it is quite beautiful.

6 A on

B in

C at

7 A about

B between

C among

8 A his

B your

C its

9 A is

B were

C was

10 A few

B little

C lot

## Questions 11 – 20

- In this section you must choose the word which best fits each space in the texts.
- For questions 11 to 20, mark **one** letter **A, B, C** or **D** on your Answer Sheet.

### Alice Guy Blaché

Alice Guy Blaché was the first female film director. She first became involved in cinema whilst working for the Gaumont Film Company in the late 1890s. This was a period of great change in the cinema and Alice was the first to use many new inventions, (11) ..... sound and colour.

In 1907 Alice (12) ..... to New York where she started her own film company. She was (13) ..... successful, but, when Hollywood became the centre of the film world, the best days of the independent New York film companies were (14) ..... . When Alice died in 1968, hardly anybody (15) ..... her name.

- |    |              |             |               |               |
|----|--------------|-------------|---------------|---------------|
| 11 | A bringing   | B including | C containing  | D supporting  |
| 12 | A moved      | B ran       | C entered     | D transported |
| 13 | A next       | B once      | C immediately | D recently    |
| 14 | A after      | B down      | C behind      | D over        |
| 15 | A remembered | B realised  | C reminded    | D repeated    |

## UFOs – do they exist?

UFO is short for 'unidentified flying object'. UFOs are popularly known as flying saucers,

(16) ..... that is often the (17) ..... they are reported to be. The (18) .....

"flying saucers" were seen in 1947 by an American pilot, but experts who studied his claim decided it had been a trick of the light.

Even people experienced at watching the sky, (19) ..... as pilots, report seeing UFOs. In

1978 a pilot reported a collection of UFOs off the coast of New Zealand. A television

(20) ..... went up with the pilot and filmed the UFOs. Scientists studying this

phenomenon later discovered that in this case they were simply lights on boats out fishing.

16 A because B therefore C although D so

17 A look B shape C size D type

18 A last B next C first D oldest

19 A like B that C so D such

20 A cameraman B director C actor D announcer

## Questions 21 – 40

- In this section you must choose the word or phrase which best completes each sentence.
- For questions 21 to 40, mark **one** letter **A, B, C** or **D** on your Answer Sheet.

- 21 The teacher encouraged her students ..... to an English pen-friend.  
A should write    B write    C wrote    D to write
- 22 They spent a lot of time ..... at the pictures in the museum.  
A looking    B for looking    C to look    D to looking
- 23 Shirley enjoys science lessons, but all her experiments seem to ..... wrong.  
A turn    B come    C end    D go
- 24 ..... from Michael, all the group arrived on time.  
A Except    B Other    C Besides    D Apart
- 25 She ..... her neighbour's children for the broken window.  
A accused    B complained    C blamed    D denied
- 26 As I had missed the history lesson, my friend went ..... the homework with me.  
A by    B after    C over    D on
- 27 Whether she's a good actress or not is a ..... of opinion.  
A matter    B subject    C point    D case
- 28 The decorated roof of the ancient palace was ..... up by four thin columns.  
A built    B carried    C held    D supported
- 29 Would it ..... you if we came on Thursday?  
A agree    B suit    C like    D fit
- 30 This form ..... be handed in until the end of the week.  
A doesn't need    B doesn't have    C needn't    D hasn't got
- 31 If you make a mistake when you are writing, just ..... it out with your pen.

A cross            B clear            C do            D wipe

32 Although our opinions on many things ..... , we're good friends.

A differ            B oppose            C disagree            D divide

33 This product must be eaten ..... two days of purchase.

A by            B before            C within            D under

34 The newspaper report contained ..... important information.

A many            B another            C an            D a lot of

35 Have you considered ..... to London?

A move            B to move            C to be moving            D moving

36 It can be a good idea for people who lead an active life to increase their ..... of vitamins.

A upturn            B input            C upkeep            D intake

37 I thought there was a ..... of jealousy in his reaction to my good fortune.

A piece            B part            C shadow            D touch

38 Why didn't you ..... that you were feeling ill?

A advise            B mention            C remark            D tell

39 James was not sure exactly where his best interests .....

A stood            B rested            C lay            D centred

40 He's still getting ..... the shock of losing his job.

A across            B by            C over            D through

## Part 2

**Do not start this part unless told to do so by your test supervisor.**

### Questions 41 – 50

- In this section you must choose the word or phrase which best fits each space in the texts.
- For questions 41 to 50, mark one letter **A**, **B**, **C** or **D** on your Answer Sheet.

### The tallest buildings - SKYSCRAPERS

Nowadays, skyscrapers can be found in most major cities of the world. A building which was many (41) ..... high was first called a skyscraper in the United States at the end of the 19th century, and New York has perhaps the (42) ..... skyscraper of them all, the Empire State Building. The (43) ..... beneath the streets of New York is rock, (44) ..... enough to take the heaviest load without sinking, and is therefore well-suited to bearing the (45) ..... of tall buildings.

- |    |              |             |              |              |
|----|--------------|-------------|--------------|--------------|
| 41 | A stages     | B steps     | C storeys    | D levels     |
| 42 | A first-rate | B top-class | C well-built | D best-known |
| 43 | A dirt       | B field     | C ground     | D soil       |
| 44 | A hard       | B stiff     | C forceful   | D powerful   |
| 45 | A weight     | B height    | C size       | D scale      |

## SCRABBLE

Scrabble is the world's most popular word game. For its origins, we have to go back to the 1930s in the USA, when Alfred Butts, an architect, found himself out of (46) ..... He decided that there was a (47) ..... for a board game based on words and (48) ..... to design one. Eventually he made a (49) ..... from it, in spite of the fact that his original (50) ..... was only three cents a game.

- 46 A earning      B work      C income      D job
- 47 A market      B purchase      C commerce      D sale
- 48 A took up      B set out      C made for      D got round
- 49 A wealth      B fund      C cash      D fortune
- 50 A receipt      B benefit      C profit      D allowance

**Questions 51 – 60**

- In this section you must choose the word or phrase which best completes each sentence.
- For questions 51 to 60, mark **one** letter **A, B, C** or **D** on your Answer Sheet.

- 51 Roger's manager ..... to make him stay late if he hadn't finished the work.  
A insisted      B warned      C threatened      D announced
- 52 By the time he has finished his week's work, John has hardly ..... energy left for the weekend.  
A any      B much      C no      D same
- 53 As the game ..... to a close, disappointed spectators started to leave.  
A led      B neared      C approached      D drew
- 54 I don't remember ..... the front door when I left home this morning.  
A to lock      B locking      C locked      D to have locked
- 55 I ..... to other people borrowing my books: they always forget to return them.  
A disagree      B avoid      C dislike      D object
- 56 Andrew's attempts to get into the swimming team have not ..... with much success.  
A associated      B concluded      C joined      D met
- 57 Although Harry had obviously read the newspaper article carefully, he didn't seem to have ..... the main point.  
A grasped      B clutched      C clasped      D gripped
- 58 A lot of the views put forward in the documentary were open to .....  
A enquiry      B query      C question      D wonder
- 59 The new college ..... for the needs of students with a variety of learning backgrounds.  
A deals      B supplies      C furnishes      D caters
- 60 I find the times of English meals very strange – I'm not used ..... dinner at 6pm.  
A to have      B to having      C having      D have

**Appendix A.4. Multiple Choice Translation Test (English Version)****Instructions**

Below, there are 44 underlined sentences in English. Under each of these sentences there are four possible equivalent translations in French. Read the sentences carefully and tick (✓) every sentence that you think is acceptable in French. In some cases, more than one sentence will be a possible translation. In others, only one sentence will be possible. Here are two examples to illustrate.

**(i) Her students don't do their homework.**

- a- Tes étudiants ne font pas leurs devoirs.
- b- Ses étudiants ne font pas leurs devoirs.
- c- Ses étudiants ne font pas leurs devoirs. ✓
- d- Ses étudiants ne pas faire leurs devoirs.

**(ii) Who did she invite to watch the match?**

- a- Qui a-t-elle invité pour regarder le match? ✓
- b- Qui a invité elle au match?
- c- A-t-elle invité pour regarder le match?
- d- Qui est-ce qu'elle a invité pour regarder le match? ✓

**Tick (✓) all the options that you think are correct.**

**1- I rarely read newspapers.**

- a. Rarement je lis les journaux.
- b. Je rarement lis les journaux.
- c. Je lis les journaux rarement.
- d. Je lis rarement les journaux.

**2- We use a delicate instrument.**

- a. Nous utilisons une instrument délicate.
- b. Nous utilisons un instrument délicate.

- c. Nous utilisons un instrument délicat.
- d. Nous utilisons une instrument délicat.

**3- She will play tennis tonight.**

- a. Elle joue au tennis ce soir.
- b. Elle a joué le tennis ce soir.
- c. Elle va jouer au tennis ce soir.
- d. Elle jouera le tennis ce soir.

Do you have a pencil? I need one to complete this form.

**4- I want a pencil.**

- a. Je veux crayon.
- b. Je veux du crayon.
- c. Je veux le crayon.
- d. Je veux un crayon.

**5- They like the grey colour.**

- a. Ils aiment la couleur gris.
- b. Ils aiment le couleur gris.
- c. Ils aiment la couleur grise.
- d. Ils aiment le couleur grise.

**6- She designs difficult tests.**

- a. Elle fait des test difficile.
- b. Elle fait du tests difficiles.
- c. Elle fait du tests difficile.
- d. Elle fait des tests difficiles.

**7- He does not want to ski**

- a. Il veut pas skier.
- b. Il ne skier pas.
- c. Il ne veut pas skier

d. Il ne pas vouloir skier.

**8- He briefly explains the lesson.**

- a. Brièvement, il explique la leçon.
- b. Il brièvement explique la leçon.
- c. Il explique brièvement la leçon.
- d. Il explique la leçon brièvement.

Although we own two cars and a bicycle, I like to take the bicycle for going to work. It is healthier.

**9- I like to take the bicycle.**

- a. J'aime prendre du vélo.
- b. J'aime prendre le vélo.
- c. J'aime prendre un vélo.
- d. J'aime prendre vélo.

**10- Every Sunday, they visit an ancient temple.**

- a. Chaque dimanche, ils visitent un temple ancien.
- b. Chaque dimanche, ils visitent une temple ancienne.
- c. Chaque dimanche, ils visitent un temple ancienne.
- d. Chaque dimanche, ils visitent une temple ancien.

**11- I'm eating the red apples.**

- a. Je mange le pommes rouge.
- b. Je mange les pomme rouge.
- c. Je mange les pommes rouges.
- d. Je mange le pommes rouges.

12- She wants to buy a jean. She needs one to wear to her sister's wedding.

**She wants to buy a jean.**

- a. Elle veut acheter un jean.
- b. Elle veut acheter jean.
- c. Elle veut acheter du jean.
- d. Elle veut acheter le jean.

13- **Aren't you tired?**

- a. Vous n'êtes pas fatigué?
- b. N'êtes-vous pas fatigué ?
- c. N'êtes-pas vous fatigué ?
- d. N'es-tu pas fatigué?

14- Marie is going shopping this morning. Her sister has asked for a new handbag for her birthday. Marie must buy it before the party this evening.

**Marie must buy the handbag before the party.**

- a. Marie doit acheter le sac à main avant la fête.
- b. Marie doit acheter sac à main avant la fête.
- c. Marie doit acheter du sac à main avant la fête.
- d. Marie doit acheter un sac à main avant la fête.

15- **He has a horrible room.**

- a. Il a une chambre affreux.
- b. Il a un chambre affreuse.
- c. Il a une chambre affreuse.
- d. Il a un chambre affreux.

16- **They drink black coffees.**

- a. Elles boivent du cafés noir.
- b. Elles boivent des cafés noirs.
- c. Elles boivent du cafés noirs.
- d. Elles boivent des cafés noir.

**17- I like Canadian rice.**

- a. J'aime la riz canadien
- b. J'aime la riz canadienne.
- c. J'aime le riz canadien.
- d. J'aime le riz canadienne.

18- She is watching the programme on channel 4. It is her favourite afternoon program.

**She is watching the program.**

- a. Elle regard du programme.
- b. Elle regarde le programme.
- c. Elle regarde programme.
- d. Elle regarde un programme.

**19- We carefully prepare the tests.**

- a. Nous préparons les épreuves soigneusement.
- b. Nous préparons soigneusement les épreuves.
- c. Soigneusement, nous préparons les épreuves.
- d. Nous soigneusement préparons les épreuves.

**20- I've lived here for five years.**

- a. J'habite ici depuis cinq ans.
- b. J'habite ici pendant cinq ans.
- c. J'habite ici il y a cinq ans.
- d. J'ai habité ici depuis cinq ans

**21- She likes driving the green car**

- a. Elle aime conduire le voiture vert.
- b. Elle aime conduire la voiture vert.
- c. Elle aime conduire la voiture verte.
- d. Elle aime conduire le voiture verte.

**22- They love the green curtains.**

- a. Ils aiment les rideaux verts.
- b. Ils aiment le rideaux vert.
- c. Ils aiment le rideaux verts.
- d. Ils aiment les rideaux vert.

**23- Martin often visits the church.**

- a. Martin souvent visite l'église.
- b. Martin visite l'église souvent.
- c. Martin visite souvent l'église.
- d. Souvent, Martin visite l'église.

**24- She is wearing the white dress.**

- a. Elle porte la robe blanc.
- b. Elle porte la robe blanche.
- c. Elle porte le robe blanc.
- d. Elle porte le robe blanche.

**25-** I borrowed my cousin's history book. I have to return it today.

**I have to return the book today.**

- a. Je dois rendre du livre aujourd'hui.
- b. Je dois rendre livre aujourd'hui.
- c. Je dois rendre un livre aujourd'hui.
- d. Je dois rendre le livre aujourd'hui.

**26- Yesterday, we went to the beach.**

- a. Hier, nous allons à la plage.
- b. Hier, nous irons à la plage.
- c. Hier, nous sommes allées à la plage.
- d. nous sommes allées à la plage hier.

27- When he buys his new house, he thinks it would be nice to have a pet.

**He hopes to have a cat.**

- a. Il espère avoir chat.
- b. Il espère avoir du chat.
- c. Il espère avoir un chat.
- d. Il espère avoir le chat.

28- **She slowly eats the pizza.**

- a. Lentement, elle mange la pizza.
- b. Elle lentement mange la pizza.
- c. Elle mange la pizza lentement.
- d. Elle mange lentement la pizza.

29- **She wrote a smart report.**

- a. Elle a écrit un rapport intelligente.
- b. Elle a écrit une rapport intelligent.
- c. Elle a écrit un rapport intelligent.
- d. Elle a écrit une rapport intelligente.

30- **Would you lend me your skirt tomorrow?**

- a. Tu peux me prêter ta jupe demain ?
- b. Tu pourrais me prêter ta jupe demain ?
- c. Tu me prêteras ta jupedemain ?
- d. Tu pourras me prêter ta jupe demain ?

31- **You are wearing the green trousers.**

- a. Tu portes la pantalon verte.
- b. Tu portes la pantalon vert.
- c. Tu portes le pantalon verte.
- d. Tu conduis le pantalon vert.

32- They hope to appoint the new headmaster this afternoon. They are holding the interviews this morning.

**They hope to appoint the headmaster this afternoon.**

- a. Ils espèrent nommer directeur cet après-midi.
- b. Ils espèrent nommer du directeur cet après-midi.
- c. Ils espèrent nommer le directeur cet après-midi.
- d. Ils espèrent nommer un directeur cet après-midi.

**33- She only watches romantic movies.**

- a. Elle ne regarde que le films romantiques.
- b. Elle ne regarde que les films romantiques.
- c. Elle ne regarde que le films romantique.
- d. Elle ne regarde que les films romantique.

**34- He wants to buy a French agency.**

- a. Il veut acheter un agence français.
- b. Il veut acheter un agence française.
- c. Il veut acheter une agence française.
- d. Il veut acheter une agence français.

**35- They sometimes ask questions.**

- a. Ils parfois posent des questions.
- b. Ils posent des questions parfois.
- c. Parfois, ils posent des questions.
- d. Ils posent parfois des questions.

**36- They eat hot croissants.**

- a. Elles mangent des croissants chaud.
- b. Elles mangent du croissants chaud.
- c. Elles mangent des croissants chauds.
- d. Elles mangent du croissants chauds.

37- The mechanic is very busy today. He is repairing a tractor.

**The mechanic is repairing a tractor.**

- a. Le mécanicien répare du tracteur.
- b. Le mécanicien répare le tracteur.
- c. Le mécanicien répare un tracteur.
- d. Le mécanicien répare tracteur.

38- **He failed his diploma because he did not attend even half of the classes.**

- a. Il n'a pas réussi son diplôme mais il n'a pas assisté à la moitié des cours.
- b. Il n'a pas réussi son diplôme grâce il n'a pas assisté à la moitié des cours.
- c. Il n'a pas réussi son diplôme parcequ' il n'a pas assisté à la moitié des cours.
- d. Il n'a pas réussi son diplôme tant qu' il n'a pas assisté à la moitié des cours.

39- The professor is working on a problem. Several of his colleagues have tried to solve it, but without success.

**The professor is working on a problem.**

- a. Le professeur travaille sur du problème.
- b. Le professeur travaille sur un problème.
- c. Le professeur travaille sur le problème.
- d. Le professeur travaille sur problème.

40- **That's easy to say.**

- a. C'est facile de dire.
- b. C'est facile à dire.
- c. C'est facile pour dire.
- d. C'est facile du dire.

41- The police are looking for the burglar who broke into the professor's house. They have no idea who it might be.

**They are looking for the burglar.**

- a- Ils cherchent du voleur.

- b- Ils cherchent un voleur.
- c- Ils cherechent le voleur.
- d- Ils cherechent voleur.

**42- He is wearing the black hat.**

- a- Il porte le chapeau noire.
- b- Il porte la chapeau noir.
- c- Il porte la chapeau noire.
- d- Il porte le chapeau noir.

**43- While Marie is answering her emails in the internet café, she is eating a croissant.**

**Marie is eating a croissant.**

- a- Marie mange croissant.
- b- Marie mange un croissant.
- c- Marie mange du croissant.
- d- Marie mange le croissant.

**44- They have an exceptional idea.**

- a- Ils ont un idée exceptionnel.
- b- Ils ont un idée exceptionnelle.
- c- Ils ont une idée exceptionnel.
- d- Ils ont une idée exceptionnelle.

## Appendix A.5. Multiple Choice Translation Test (Spanish Version)

### **Instructions**

Below, there are 44 underlined sentences in Spanish. Under each of these sentences there are four possible equivalent translations in French. Read the sentences carefully and tick (✓) every sentence that you think is acceptable in French. In some cases, more than one sentence will be a possible translation. In others, only one sentence will be possible. Here are two examples to illustrate.

**(i) Sus estudiantes no hacen sus deberes.**

- a. Tes étudiants ne font pas leurs devoirs.
- b. Ses étudiants ne font pas leurs devoirs.
- c. Ses étudiants ne font pas leurs devoirs. ✓
- d. Ses étudiants ne pas faire leurs devoirs.

**(ii) A quién le invite a la fiesta?**

- a- Qui a-t-elle invité pour regarder le match? ✓
- b- Qui a invité elle au match?
- c- A-t-elle invité pour regarder le match?
- d- Qui est-ce qu'elle a invité pour regarder le match? ✓

**Tick (✓) all the options that you think are correct.**

**1- Ellos ven a menudo la televisión.**

- a. Ils regardent souvent la télévision.
- b. Ils la télévision regardent souvent.
- c. Ils souvent regardent la télévision.
- d. Ils regardent la télévision souvent.

**2- Salude a mi padre**

- a. Passe à mon père le salut.

- b. Passent le salut à mon père.
- c. Passe le salut à mon père.
- d. Le salut passe à mon père.

3- Aunque siempre he tocado la guitarra, me gustaría comprar un piano esta vez. Quiero comprar un piano

**Quiero comprar un piano**

- a. Je veux acheter du piano.
- b. Je veux acheter le piano.
- c. Je veux acheter piano.
- d. Je veux acheter un piano.

**4- Cada mañana abro la puerta verde del garaje.**

- a. Chaque jour, J'ouvre la porte verte du garage.
- b. Chaque jour, J'ouvre la porte vert du garage.
- c. Chaque jour, J'ouvre le porte verte du garage.
- d. J'ouvre le porte vert du garage chaque jour.

**5- Él escribe novelas interesantes.**

- a. Il écrit des romans intéressants.
- b. Il écrit du romans intéressant.
- c. Il écrit des romans intéressant.
- d. Il écrit du romans intéressants.

6- El periodista quiere ser la primera persona en entrevistar al presidente. No sabremos quién será hasta después de las elecciones. El periodista quiere reunirse con el presidente.

**El periodista quiere reunirse con el presidente.**

- a. Le journaliste veut voir du président.
- b. Le journaliste veut voir le président.
- c. Le journaliste veut voir président.
- d. Le journaliste veut voir un président.

**7- Voy a despertar a las 7 mañana**

- a. Je réveille à 7h demain.
- b. Je vais réveiller à 7h demain.
- c. Je réveiller à 7h demain.
- d. Je va réveiller à 7h demain.

**8. Empieza cada reunión cortemente.**

- a. Elle commence chaque réunion poliment.
- b. Elle poliment commence chaque réunion.
- c. Poliment elle commence chaque réunion poliment.
- d. Elle commence poliment chaque réunion.

**9. Él bebe un café caliente.**

- a. Il boit un café chaude.
- b. Il boit une café chaud.
- c. Il boit un café chaud.
- d. Il boit une café chaude.

**10. Él siempre escribe poemas.**

- a. Il écrit des poèmes toujours.
- b. Il écrit toujours des poèmes.
- c. Toujours, il écrit des poèmes.
- d. Il toujours écrit des poèmes.

**11. Él conduce un coche americano.**

- a. Il conduit un voiture américain.
- b. Il conduit un voiture américaine.
- c. Il conduit une voiture américain.
- d. Il conduit une voiture américaine.

**12. Tú coges las bicicletas azules.**

- a. Tu prends le vélos bleu.

- b. Tu prends le vélos bleus.
- c. Tu prends les vélos bleu.
- d. Tu prends les vélos bleus.

13. La Universidad tendrá un nuevo profesor el mes que viene, pero él o ella todavía no ha sido designado (a). Esperan que les guste el profesor.

**Ellos esperan que les guste el profesor.**

- a. Ils espèrent ils vont aimer du professeur.
- b. Ils espèrent ils vont aimer professeur.
- c. Ils espèrent ils vont aimer le professeur.
- d. Ils espèrent ils vont aimer un professeur.

14. **Compré un gato ayer.**

- a. J'achète un chat hier.
- b. J'ai acheté un chien hier.
- c. Hier, j'ai acheté le chat.
- d. J'ai achetée hier un chat.

15. **Ella a veces ve x-factor.**

- a- Elle regarde le X-facteur parfois
- b- Parfois, elle regarde le X-facteur.
- c- Elle regarde parfois le X-facteur.
- d- Elle parfois regarde le X-facteur.

16. **Quiero comprar bolsas verdes.**

- a- Je veux acheter des sacs vert.
- b- Je veux acheter des sacs verts.
- c- Je veux acheter du sacs verts.
- d- Je veux acheter du sacs vert.

**17. Ella lleva un camisa marrón.**

- a- Elle porte un chemise brun.
- b- Elle porte un chemise brune.
- c- Elle porte une chemise brun.
- d- Elle porte une chemise brune.

18. Cuando se jubile, quiere escribir un libro sobre sus experiencias. Ella espera escribir un libro.

**Ella espera escribir un libro.**

- a. Elle espère écrire le livre.
- b. Elle espère écrire du livre.
- c. Elle espère écrire un livre.
- d. Elle espère écrire livre.

**19. Encontré a un pequeño gato.**

- a. J'ai trouvé un petit chat.
- b. Je trouveras un petit chat.
- c. Je veux trouver un petit chat.
- d. Elle a trouvé un petit chat.

**20. Él habla bien inglés.**

- a. Bien il parle l'anglais.
- b. Il bien parle l'anglais.
- c. Il parle l'anglais bien.
- d. Il parle bien l'anglais.

**21. Prefiero la reunión habitual de los martes.**

- a. Je préfère la réunion régulier de chaque mardi.
- b. Je préfère la réunion régulière de chaque mardi.
- c. Je préfère le réunion régulier de chaque mardi.
- d. Je préfère le réunion régulière de chaque mardi.

22. No tengo mucho de que preocuparme sobre este contrato. Sus términos y condiciones son claros. Puedo firmar el contrato.

**Puedo firmar el contrato**

- a. Je peux signer contrat.
- b. Je peux signer du contrat.
- c. Je peux signer le contrat.
- d. Je peux signer un contrat.

23. **Él escribe rápidamente todas las cartas**

- a. Rapidement, Il écrit toutes les lettres.
- b. Il écrit rapidement toutes les lettres.
- c. Il écrit toutes les lettres rapidement.
- d. Il rapidement écrit toutes les lettres.

24. **El ascensor se está detenida en el segundo piso.**

- a. l'ascenseur s' arrête au deuxième étage.
- b. l'ascenseur arrêtée au deuxième étage.
- c. l'ascenseur s'est arrêtée au deuxième étage.
- d. l'ascenseur s'arrêtée au deuxième étage.

25. **Quiero comprar la chaqueta negra.**

- a. Je veux acheter la veste noir.
- b. Je veux acheter la veste noire.
- c. Je veux acheter le veste noir.
- d. Je veux acheter le veste noire.

26. **Él quiere comprar los teléfonos negros.**

- a. Il veut acheter le téléphones noirs.
- b. Il veut acheter les téléphones noir.
- c. Il veut acheter les téléphones noirs.
- d. Il veut acheter le téléphones noir.

**27. Quiere me mostrar el ascensor?**

- a- Voulez-vous me montrer l'ascenseur?
- b- Est-ce que vous me montrez l'ascenseur?
- c- Montrez-vous l'ascenseur?
- d- Est-ce que vous voulez me montrer l'ascenseur?

28. A ella le encanta tanto la música que quiere casarse con un músico. Ella dijo que no importa quién es! Ella quiere casarse con un músico.

**Ella quiere casarse con un músico**

- a. Elle veut épouser du musicien.
- b. Elle veut épouser le musicien.
- c. Elle veut épouser musicien.
- d. Elle veut épouser un musicien.

**29. Escribe con el bolígrafo nuevo.**

- a. Il écrit avec la stylo neuf.
- b. Il écrit avec le stylo neuf.
- c. Il écrit avec la stylo neuve.
- d. Il écrit avec le stylo neuve.

**30. Él está usando las zapatillas blancas.**

- a. Il porte les baskets blancs.
- b. Il porte le baskets blanc.
- c. Il porte les baskets blanc.
- d. Il porte le baskets blancs.

31. Están buscando al ladrón de casa de la señorita Catherina. Es un criminal conocido. Están buscando al ladrón.

**Están buscando al ladrón.**

- a. Ils cherchent du voleur
- b. Ils cherchent un voleur.
- c. Ils cherchent le voleur.
- d. Ils cherchent voleur.

**32. Quiero comprar una alfombra negra.**

- a. Je veux acheter un tapis noir.
- b. Je veux acheter une tapis noir.
- c. Je veux acheter un tapis noire.
- d. Je veux acheter une tapis noire.

**33. Ellos llevan guantes amarillos.**

- a. Ils portent des gants jaune.
- b. Ils portent du gants jaunes.
- c. Ils portent du gants jaune.
- d. Ils portent des gants jaunes.

**34.** Christine recibió un teléfono móvil por su cumpleaños. Tiene muchas funciones y ella está muy contenta con él. Christine tiene un teléfono móvil.

**Christine tiene un teléfono móvil.**

- a. Christine a du portable.
- b. Christine a le portable.
- c. Christine a un portable.
- d. Christine a portable.

**35. Le gusta organizar una fiesta animada.**

- a. Il aime organiser un fête vif.
- b. Il aime organiser un fête vive.
- c. Il aime organiser une fête vif.
- d. Il aime organiser une fête vive.

**36. Quiero un lápiz.**

- a- J'ai besoin d'un crayon.
- b- J'ai pas besoin d'un crayon.
- c- Je veux un crayon.
- d- Je ne veux pas un crayon.

37. El estudiante ha ordenado un libro sobre la historia del Inglés. Es de John Smith y fue publicado el año pasado. El estudiante está esperando un libro.

**El estudiante está esperando un libro.**

- a. L'étudiant attend du livre.
- b. L'étudiant attend le livre.
- c. L'étudiant attend un livre.
- d. L'étudiant attend livre.

**38. Tú vives en la casa blanca.**

- a- Tu vis dans la maison blanc.
- b- Tu vis dans le maison blanc.
- c- Tu vis dans la maison blanche.
- d- Tu vis dans le maison blanche.

**39. Me refiero turca mejor que stéphane.**

- a. Je parle Turque plus mal que Stéphane.
- b. Je parle Turque mieux que Stéphane.
- c. Je comprend Turque mieux que Stéphane.
- d. Je parle Turque mieux plus que Stéphane.

**40. Él lee el poema italiano de María.**

- a- Il lit la poème italienne de Marie.
- b- Il lit le poème italien de Marie .
- c- Il lit la poème italien de Marie.
- d- Il boit le poème italienne de Marie.

41. A ellos les gusta el edificio al lado del ayuntamiento. Les gusta el edificio.

**Les gusta el edificio**

- a- Ils aiment bâtiment.
- b- Ils aiment du bâtiment.
- c- Ils aiment le bâtiment.

d- Ils aiment un bâtiment.

**42. Tengo un cuaderno verde.**

- a. J'ai un cahier vert.
- b. J'ai une cahier verte.
- c. J'ai un cahier verte.
- d. J'ai une cahier vert.

**43. Jean claudé esta en la sala de estar. Está leyendo el periódico.**

**Está leyendo el periódico**

- a- Il lit du journal.
- b- Il lit journal.
- c- Il lit le journal.
- d- Il lit un journal.

**44. Quiero encontrar al chico que escribió esta carta. Pero no sé quién es. Quiero encontrar al chico**

**Quiero encontrar al chico**

- a. Je veux trouver garçon
- b. Je veux trouver un garçon.
- c. Je veux trouver le garçon.
- d. Je veux trouver du garçon

## Appendix A.6. Multiple Choice Translation Test (Turkish Version)

### Instructions

Below, there are 44 underlined sentences in Turkish. Under each of these sentences there are four possible equivalent translations in French. Read the sentences carefully and tick (✓) every sentence that you think is acceptable in French. In some cases, more than one sentence will be a possible translation. In others, only one sentence will be possible. Here are two examples to illustrate.

#### (i) Onun öğrencileri ödevlerini yapmıyorlar.

- a. Tes étudiants ne font pas leurs devoirs.
- b. Ses étudiants ne font pas leurs devoirs.
- c. Ses étudiants ne font pas leurs devoirs. ✓
- d. Ses étudiants ne pas faire leurs devoirs.

#### (ii) O partiye kimi davet etti?

- a- Qui a-t-elle invité pour regarder le match? ✓
- b- Qui a invité elle au match?
- c- A-t-elle invité pour regarder le match?
- d- Qui est-ce qu'elle a invité pour regarder le match? ✓

**Tick (✓) all the options that you think are correct.**

#### 1- Onlar, sık sık televizyon izlerler.

- a. Ils regardent souvent la télévision.
- b. Ils la télévision regardent souvent.
- c. Ils souvent regardent la télévision.
- d. Ils regardent la télévision souvent.

#### 2- Benden babana selam söyle

- a. Passe à mon père le salut.

- b. Passent le salut à ton père.
- c. Passe le salut à ton père.
- d. Le salut passe à ton père.

3- Hep gitar çalmış olmama rağmen, bu sefer piyano almak istiyorum. Piyano almak istiyorum.

**Piyano almak istiyorum.**

- a. Je veux acheter du piano.
- b. Je veux acheter le piano.
- c. Je veux acheter piano.
- d. Je veux acheter un piano.

**4- Hergün, ben garajın yeşil kapısını açarım**

- a. J'ouvre le porte vert du garage chaque jour.
- b. Chaque jour, J'ouvre la porte vert du garage.
- c. Chaque jour, J'ouvre le porte verte du garage.
- d. Chaque jour, J'ouvre la porte verte du garage.

**5- O, ilginç romanlar yazar.**

- e. Il écrit des romans intéressants.
- f. Il écrit du romans intéressant.
- g. Il écrit des romans intéressant.
- h. Il écrit du romans intéressants.

6- Gazeteci, başkanla röportaj yapan ilk kişi olmak istiyor. Bu kişinin kim olduğunu seçimlerden sonrasına kadar bilemeyeceğiz. Gazeteci, başkanla buluşmak istiyor.

**Gazeteci, başkanla buluşmak istiyor.**

- a. Le journaliste veut voir du président.
- b. Le journaliste veut voir le président.
- c. Le journaliste veut voir président.
- d. Le journaliste veut voir un président.

**7- Yarın 7'de uyanacağım.**

- a. Je réveille à 7h demain.
- b. Je vais réveiller à 7h demain.
- c. Je réveiller à 7h demain.
- d. Je va réveiller à 7h demain.

**8- O, her toplantıya kibarca başlar.**

- a. Elle commence chaque réunion poliment.
- b. Elle poliment commence chaque réunion.
- c. Poliment, elle commence chaque réunion poliment.
- d. Elle commence poliment chaque réunion.

**9- O, sıcak bir kahve içer**

- a. Il boit un café chaude.
- b. Il boit une café chaud.
- c. Il boit un café chaud.
- d. Il boit une café chaude.

**10- O, her zaman şiirler yazar.**

- a. Il écrit des poèmes toujours.
- b. Il écrit toujours des poèmes.
- c. Toujours, il écrit des poèmes.
- d. Il toujours écrit des poèmes.

**11- O, Amerikan bir araba sürüyor.**

- a. Il conduit un voiture américain.
- b. Il conduit une voiture américain.
- c. Il conduit un voiture américaine.
- d. Il conduit une voiture américaine.

**12- Sen mavi bisikleti al.**

- e. Tu prends le vélos bleu.
- f. Tu prends le vélos bleus.
- g. Tu prends les vélos bleu.

h. Tu prends les vélos bleus.

**13-** Universite, gelecek ay yeni bir profesör alacak, ama henüz atanmadı. Profesörü seveceklerini umuyorlar.

**Profesörü seveceklerini umuyorlar.**

- a. Ils espèrent qu'ils vont aimer du professeur.
- b. Ils espèrent qu'ils vont aimer professeur.
- c. Ils espèrent qu'ils vont aimer le professeur.
- d. Ils espèrent qu'ils vont aimer un professeur.

**14- Dün bir kedi satın aldım.**

- a. J'achète un chat hier.
- b. J'ai acheté un chien hier.
- c. Hier, j'ai acheté le chat.
- d. J'ai achetée hier un chat.

**15- O, bazen X-factor'ü izler.**

- a. Elle regarde le X-facteur parfois
- b. Parfois, elle regarde le X-facteur.
- c. Elle regarde parfois le X-facteur.
- d. Elle parfois regarde le X-facteur.

**16- Ben yeşil çantalar almak istiyorum.**

- a. Je veux acheter des sacs vert.
- b. Je veux acheter des sacs verts.
- c. Je veux acheter du sacs verts.
- d. Je veux acheter du sacs vert.

**17- O (kiz) kahverengi bir gömlek giyer.**

- a- Elle porte un chemise brun.
- b- Elle porte un chemise brune.
- c- Elle porte une chemise brun.

d- Elle porte une chemise brune.

18- O, emekli olunca kendi deneyimleriyle ilgili bir kitap yazmayı hedefliyor. Bir kitap yazmayı umuyor.

**Bir kitap yazmayı umuyor.**

- a. Elle espère écrire le livre.
- b. Elle espère écrire du livre.
- c. Elle espère écrire un livre.
- d. Elle espère écrire livre.

**19- Küçük bir kedi buldum.**

- a. J'ai trouvé un petit chat.
- b. Je trouveras un petit chat.
- c. Je veux trouver un petit chat.
- d. Elle a trouvé un petit chat.

**20- O, ingilizce' yi iyi konuşur.**

- a. Bien, il parle l'anglais.
- b. Il bien parle l'anglais.
- c. Il parle l'anglais bien.
- d. Il parle bien l'anglais.

**21- Düzenli olan Salı toplantisini tercih ederim.**

- a. Je préfère la réunion régulier de chaque mardi.
- b. Je préfère le réunion régulier de chaque mardi.
- c. Je préfère la réunion régulière de chaque mardi.
- d. Je préfère le réunion régulière de chaque mardi.

22- Bu sözleşmeyle ilgili olarak çok fazla endişelenmek zorunda değilim. Sözleşme koşulları açık ve net. Sözleşmeyi imzalayabilirim.

**Sözleşmeyi imzalayabilirim.**

- a- Je peux signer contrat.

- b- Je peux signer du contrat.
- c- Je peux signer le contrat.
- d- Je peux signer un contrat.

**23- O, bütün mektupları hızlıca yazar.**

- a- Rapidement, Il écrit toutes les lettres.
- b- Il écrit rapidement toutes les lettres.
- c- Il écrit toutes les lettres rapidement.
- d- Il rapidement écrit toutes les lettres.

**24- Asansör ikinci katta duruyor.**

- a- l'ascenseur s'arrête au deuxième étage.
- b- l'ascenseur arrêtée au deuxième étage.
- c- l'ascenseur s'est arrêtée au deuxième étage.
- d- l'ascenseur s'arrêtée au deuxième étage.

**25- siyah ceketi almak istiyorum.**

- a- Je veux acheter la veste noir.
- b- Je veux acheter la veste noire.
- c- Je veux acheter le veste noir.
- d- Je veux acheter le veste noire.

**26- O, siyah telefonları almak istiyor.**

- a. Il veut acheter le téléphones noirs.
- b. Il veut acheter les téléphones noir.
- c. Il veut acheter les téléphones noirs.
- d. Il veut acheter le téléphones noir.

**27- O halıyı asansör gösterir misiniz?**

- e- Voulez-vous me montrer l'ascenseur?
- f- Est-ce que vous me montrez l'ascenseur?
- g- Montrez-vous l'ascenseur?
- h- Est-ce que vous voulez me montrer l'ascenseur?

28- O, müziği o kadar çok Sever ki, bir müzisyen ile evlenmek istiyor. O, kim olduğu önemli değil dedi. O, müzisyen ile evlenmek istiyor.

**O, müzisyen ile evlenmek istiyor.**

- a- Elle veut se épouser du musicien.
- b- Elle veut épouser le musicien.
- c- Elle veut épouser musicien.
- d- Elle veut épouser un musicien.

**29- O, yeni kalemle yazıyor.**

- a- Il écrit avec la stylo neuf.
- b- Il écrit avec le stylo neuf.
- c- Il écrit avec la stylo neuve.
- d- Il écrit avec le stylo neuve.

**30- O, beyaz spor ayakkabıları giyiyor.**

- a- Il porte les baskets blancs.
- b- Il porte le baskets blanc.
- c- Il porte les baskets blanc.
- d- Il porte le baskets blancs.

31- Onlar Catherina Hanım'ın evini soyan hırsızları arıyorlar. O bilinen bir suçlu. Onlar, o hırsızları arıyorlar.

**Onlar, hırsızları arıyorlar.**

- a- Ils cherchent du voleur
- b- Ils cherchent un voleur.
- c- Ils cherchent le voleur.
- d- Ils cherchent voleur.

**32- Onlar, sarı eldiven giyiyorlar.**

- a- Ils portent des gants jaune.
- b- Ils portent du gants jaunes.
- c- Ils portent du gants jaune.
- d- Ils portent des gants jaunes.

**33- Siyah bir halı almak istiyorum.**

- a- Je veux acheter un tapis noir.
- b- Je veux acheter une tapis noir.
- c- Je veux acheter un tapis noire.
- d- Je veux acheter une tapis noire.

34- Christine doğum günü için bir cep telefonu aldı. özelliğe sahip ve Christine onunla çok mutlu. Christine'in bir cep telefonu var.

**Christine'in bir cep telefonu var.**

- a- Christine a du portable.
- b- Christine a le portable.
- c- Christine a un portable.
- d- Christine a portable.

**35- Eğlenceli parti düzenlemekten hoşlanır.**

- a- Il aime organiser un fête vif.
- b- Il aime organiser un fête vive.
- c- Il aime organiser une fête vif.
- d- Il aime organiser une fête vive.

**36- Bir kaleme ihtiyacım var.**

- a- J'ai besoin d'un crayon.
- b- J'ai pas besoin d'un crayon.
- c- Je veux un crayon.
- d- Je ne veux pas un crayon.

37- Öğrenci, İngiliz tarihi ile ilgili bir kitap sipariş etti. Bu kitap, John Smith'in ve geçen yıl basıldı. Öğrenci, kitabı bekliyor.

**Öğrenci, kitabı bekliyor.**

- a- L'étudiant attend du livre.
- b- L'étudiant attend le livre.

c- L'étudiant attend un livre.

d- L'étudiant attend livre.

**38- Sen, beyaz evde yasiyorsun.**

e- Tu vis dans la maison blanc.

f- Tu vis dans le maison blanc.

g- Tu vis dans la maison blanche.

h- Tu vis dans le maison blanche.

**39- Ben Stefan'dan daha iyi Türkçe konuşuyorum.**

a- Je parle Turc plus mal que Stéphane.

b- Je parle Turc mieux que Stéphane.

c- Je comprend Turc mieux que Stéphane.

d- Je parle Turc mieux que Stéphane.

**40- O, İtalyan Marie kitap okur.**

a- Il lit la poème italienne de Marie.

b- Il lit le poème italien de Marie .

c- Il lit la poème italien de Marie.

d- Il boit le poème italienne de Marie.

**41- Onlar, belediye binasının yanındaki binayı beğeniyorlar. Onlar bu binayı beğeniyorlar.**

**Onlar bu binayı beğeniyorlar.**

a- Ils aiment bâtiment.

b- Ils aiment du bâtiment.

c- Ils aiment le bâtiment.

d- Ils aiment un bâtiment.

**42- Benim yeşil bir defterim var**

a. J'ai un cahier vert.

b. J'ai une cahier verte.

c. J'ai un cahier verte.

d. J'ai une cahier vert.

**43-** Jean-Claude oturma odasındadır. O, gazete okuyor.

**O, gazete okuyor.**

- a- Il lit du journal.
- b- Il lit journal.
- c- Il lit le journal.
- d- Il lit un journal.

**44-** Ben bu mektubu yazan oğlanı bulmak istiyorum. Ama kim olduğunu bilmiyorum. Ben bu oglanı bulmak istiyorum.

**Ben bu oglanı bulmak istiyorum.**

- a- Je veux trouver garçon
- b- Je veux trouver un garçon.
- c- Je veux trouver le garçon.
- d- Je veux trouver du garçon

## Appendix A.7. Acceptability Sentence Correction Test

### Instructions

Some of the underlined sentences below are grammatically acceptable in French while some others are not acceptable. Write acceptable under the acceptable sentences and correct the unacceptable ones. Here are two examples to illustrate.

(i) Je mange une pomme hier.

**Answer:** Unacceptable (J'ai mangé une pomme hier).

(ii) Elles aiment danse .

**Answer:** Unacceptable (Elles aiment danser).

### The test :

1- Elle explique brièvement la leçon.

**Answer :** .....

2- Les voleurs prennent des tableaux.

**Answer :** .....

3- Elle va rencontrer professeur de sport pour cette année. Elle ne lui a jamais vu avant.

**Answer :** .....

4- Elle porte des bijoux cher.

**Answer :** .....

5- Elle étudie le civilisation portugaise.

**Answer :** .....

6- Quand Jacqueline a vu les deux hommes, elle a eu peur.

**Answer :** .....

7- Elle construit du panneau. Il n'est pas sur qu'il va le terminer.

**Answer :** .....

8- Elle regarde souvent ce programme.

**Answer :** .....

9- Ma grand-mère ne mange jamais de fraises, elle est allergique.

**Answer :** .....

10- Elle porte une veste démodée.

**Answer :** .....

11- Ils importent le produits italiens.

**Answer :** .....

12- Je veux le réponse précis.

**Answer :** .....

13- Vous regardez un émission française.

**Answer :** .....

14- Elle a dit qu'elle viendra demain si elle pouvait.

**Answer :** .....

15- Elles complètement rejettent cette proposition.

**Answer :** .....

16- Elle va acheter boulangerie de monsieur Patrick.

**Answer :** .....

17- Elle porte la pantalon grise.

**Answer :** .....

18- Je veux acheter un pull verte ce soir.

**Answer :** .....

19- Elle préfère les examens difficiles.

**Answer :** .....

20- Je ne parle pas de Français, pas de italien.

**Answer :** .....

21- Elle régulièrement visite la Cathédrale.

**Answer :** .....

22- Nous lisons la rapport intéressant de Jacqueline.

**Answer :** .....

23- Je veux savoir de la solution de cet exercice.

**Answer :** .....

24- Nous serons en vacance demain

**Answer :** .....

25- Je veux acheter un piano ce soir.

**Answer :** .....

26- Il est deux ans.

**Answer :** .....

27- Il écoute attentivement les membres de comité.

**Answer :** .....

28- J'aime les yeux vert.

**Answer :** .....

29- Il décrit la fleur blanche.

**Answer :** .....

30- Tu vas acheter le livre de Maths demain.

**Answer :** .....

31- Tu veux que je suis plus rapide.

**Answer :** .....

32- Il regarde le documentaire. C'est la première fois qu'il le voit.

**Answer :** .....

33- Il parfois écrit des lettres à son père.

**Answer :** .....

34- Tu peux faire une voyage amusante.

**Answer :** .....

35- Je cherche le vélo blanche.

**Answer :** .....

36- Ils regardent le films comique.

**Answer :** .....

37- Elle va chercher mécanicien. Il est mon cousin.

**Answer :** .....

38- Nous avons terminons le test hier

**Answer :** .....

39- Nous préparons un soupe délicieux.

**Answer :** .....

40- Nous allons passer test de physique bientôt.

**Answer :** .....

41- Il mange un pomme verte.

**Answer :** .....

42- Je lis des romans amusants.

**Answer :** .....

43- Je lis rarement des journaux.

**Answer :** .....

44- Pierre as trois enfants.

**Answer :** .....

45- Tu peux acheter costume d'ici ou n'importe ou.

**Answer :** .....

46- Je peux voir le château ancien des Romans?

**Answer :** .....

47- J'ai écouté de la discussion mais je ne sais pas c'est à propos de qui.

**Answer :** .....

48- Nous achetons du stylos rouges.

**Answer :** .....

49- Elle doucement ouvre la porte.

**Answer :** .....

50- Il partira demain soir.

**Answer :** .....

51- Il conduit une voiture de son ami.

**Answer :** .....

52- Ils lisent une livre passionnant.

**Answer :** .....

53- J'aime fabriquer du jouet de carton.

**Answer :** .....

54- Tu décris du visages expressif.

**Answer :** .....

55- Il décrit une maison de mon frère. Mon frère n'a qu'une seule maison.

**Answer :** .....

56- Nous sommes très content de vous voir.

**Answer :** .....

57- Je déteste la vérité gonflé.

**Answer :** .....

58- Tu décris un portrait physique de quelqu'un que tu ne l'a pas vu.

**Answer :** .....

59- Tu regardes un tableau noir.

**Answer :** .....

60- Je veux voir le garçon qui a écrit cette lettre. Je ne l'ai jamais vu avant.

**Answer :** .....

**Appendix A.8. Picture Description Test on Gender: Part One**<sup>128</sup>**Instructions**

Below, there are 24 coloured pictures. Briefly describe each picture orally in terms of its colour. Use French language only for the description of these pictures. Your answers will be recorded anonymously and will only be used for data collection.

N.B: For the sake of recording please speak loudly and clearly. The first picture is used as an illustration:



**Answer:** Un lit jaune

**Picture 1**



**Picture 2**



**Picture 3**



---

<sup>128</sup> These pictures are downloaded from *Google image*. The sizes of some of the pictures shown here have been reduced in order to conform to printing requirements. Additionally, as this task was computer based, participants were shown one picture at a time and were given about five minutes to think before displaying the next picture.

**Picture 4**



**Picture 5**



**Picture 6**



**Picture 7**



**Picture 8**



**Picture 9**



**Picture 10**



**Picture 11**



**Picture 12**



**Picture 13**



**Picture 14**



**Picture 15**



**Picture 16**



**Picture 17**



**Picture 18**



**Picture 19**



**Picture 20**



**Picture 21**



**Picture 22**



**Picture 23**

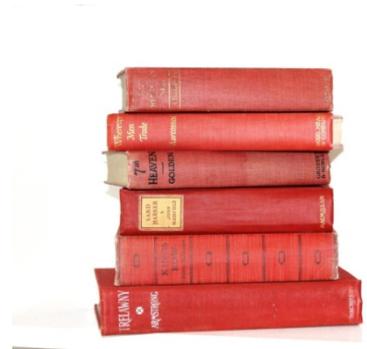


**Picture 24**



**Appendix A.9. Picture Description Test on Number Concord: Part Two****Instructions**

Below, there are 10 coloured pictures. Briefly write down one sentence to describe each picture in terms of its colour. Use French language only. Your answers will be analysed anonymously and will only be used for data collection.

**Picture 1****Picture 2****Picture 3****Picture 4****Picture 5****Picture 6**

**Picture 7**



**Picture 8**



**Picture 9**



**Picture 10**



## Appendix A.10. Vocabulary Test on Gender Assignment

### Instructions

In the table below, there is a list of French words. They are either masculine or feminine. If you think a word is masculine; put a tick (✓) in the *masculine* column but if you think it is feminine, put a tick (✓) in the *feminine* column. The first word is done as an illustration.

	<b>Masculine</b>	<b>Feminine</b>
Cartable	✓	
1. bibliothèque		
2. Fleur		
3. Tableau		
4. Temple		
5. Civilisation		
6. Robot		
7. Veste		
8. Château		
9. Vérité		
10. Pomme		
11. Bus		
12. Soupe		
13. Pull		
14. Réponse		
15. Voyage		
16. Porte		
17. Réunion		
18. Stylo		
19. Émission		
20. Tapis		
21. Chapeau		
22. Robe		
23. Livre		
24. Couleur		
25. Café		
26. Voiture		
27. Vélo		
28. Fête		
29. Riz		
30. Chambre		
31. instrument		
32. Agence		
33. Pantalon		

34. Idée		
35. ordinateur		
36. papier		
37. Sac		
38. Table		
39. Poème		
40. Chaise		
41. Crayon		
42. Décision		
43. Jardin		
44. Jupe		
45. Montagne		
46. Manteau		
47. Rapport		
48. Montre		
49. Armoire		
50. catalogue		
51. Cahier		
52. Ballon		
53. Maison		
54. Chemise		
55. Coussin		
56. Telephone		

## Appendix A.11. Qualitative instrument: Semi-closed Questionnaire

1. How difficult do you think French is to learn?

Very Easy \_\_\_\_\_ Very Difficult

2. There are a number of grammatical properties that a learner of French has to acquire. How do you rate the following in terms of difficulty for you?

a) Gender of nouns (e.g. remembering whether *livre* is *masculine* (le) or *feminine* (la))?

Very Easy \_\_\_\_\_ Very Difficult

b) Gender agreement between dets, adjectives and nouns (e.g. whether it is *la chemise blanche* or *le chemise blanc*)

Very Easy \_\_\_\_\_ Very Difficult

c) Plural form of articles (e.g. remembering it is *les livres* and not *le livres*)

Very Easy \_\_\_\_\_ Very Difficult

d) Remembering to mark adjectives for plural (e.g. *trois livres rouges*)

Very Easy \_\_\_\_\_ Very Difficult

e) Choosing the right article with nouns (e.g. remembering what goes in the gap in *Elle va acheter \_\_\_ vélo*) as opposed to (*Elle va acheter \_\_\_ vélo de son cousin*)

Very Easy \_\_\_\_\_ Very Difficult

f) Remembering the right position of an adverb in a sentence before or after a verb (e.g. where can *souvent* go in *Elle écrit souvent des lettres* as opposed to *Elle souvent écrit des lettres*)?

Very Easy \_\_\_\_\_ Very Difficult

3. Did learning English first help when you came to learn French?

Very much \_\_\_\_\_ Not at all

(Depending on the answer) Why do you think it helped (didn't help)?

4. Which of the following pairs of languages do you regard as similar?

a) English and French

Very \_\_\_\_\_ Not  
similar at all similar

b) French and Spanish

Very \_\_\_\_\_ Not  
similar at all similar

c) English and Spanish

Very \_\_\_\_\_ Not  
similar at all similar

d) English and Turkish

Very \_\_\_\_\_ Not  
similar at all similar

e) French and Turkish

Very \_\_\_\_\_ Not  
similar at all similar

5. Think about the properties questioned about earlier (gender, number concord, definiteness, adverb placement) in which property (ies) do you think:

a) Your mother tongue and English are similar/different? Briefly explain How?

b) Your mother tongue and French are similar/different? Briefly explain How?

c) English and French? Briefly explain How ?

## Appendix B. Participant information

This table contains information about each of the participants in terms of age, gender, scores in French/English proficiency tests, age when French/English instruction began and years of immersion in French/English speaking country.

Subjects N°	Age	Gender	French				English			
			*1	*2	*3	4*	*1	*2	*3	4*
<b>Spanish Advanced</b>										
1	20	Female	5	19	1.0	.0	49	11	9.0	2.0
2	21	Female	7	19	1.0	.3	50	8	12.0	1.5
3	25	Male	6	20	1.0	.5	49	10	11.0	2.0
4	26	Male	8	22	0.9	.3	52	9	10.0	2.4
5	38	Female	10	32	1.0	.2	54	8	15.0	4.5
6	19	Female	6	18	1.0	.5	48	9	9.0	1.0
7	22	Female	9	21	1.0	.4	48	9	9.0	2.0
8	23	Female	7	22	1.0	.6	52	9	9.0	3.0
9	22	Male	8	19	0.9	.0	49	10	9.0	2.0
10	24	Female	7	20	0.8	.0	49	10	9.0	3.3
11	25	Female	6	21	1.0	.4	49	10	8.0	3.5
12	26	Male	5	23	1.0	.3	49	12	11.0	3.0
13	27	Male	6	22	1.0	.4	54	11	9.0	1.0
<b>Spanish Lower Intermediate</b>										
14	19	Female	8	17	0.7	.3	32	10	9.0	1.5
15	29	Male	5	25	0.8	.0	30	9	10.0	2.5
16	28	Female	6	26	1.0	.5	34	11	10.0	1.5
17	23	Male	7	21	1.0	.4	39	11	9.0	2.0
18	24	Female	7	23	1.0	.6	30	12	9.0	2.0
19	19	Female	6	18	1.0	.5	31	9	9.0	.7
20	26	Male	8	22	0.6	.3	32	8	8.0	2.0
21	22	Male	6	19	1.0	.5	33	10	9.0	2.5
22	24	Female	8	21	0.6	.4	34	11	9.0	2.0
<b>Turkish Advanced group</b>										
23	29	Female	6	26	1.0	.5	51	12	13	2.0
24	24	MALE	8	23	1.0	.4	53	13	12	2.0
25	30	Male	7	27	0.8	.4	48	12	13	4.5
26	34	Female	9	30	1.0	.4	48	13	13	4.0
27	24	Male	6	22	1.0	.2	49	13	12	3.0
28	24	Female	5	20	1.0	.2	49	13	13	2.0

29	25	Female	6	21	1.0	.3	51	13	13	2.5
30	24	Female	7	22	1.0	.4	48	12	12	2.0
31	26	Male	8	23	1.0	.3	53	13	13	3.5
32	29	Male	8	25	0.8	.4	49	12	12	3.0
<b>Turkish Lower Intermediate group</b>										
33	19	Female	5	18	1.0	.4	37	13	13	1.0
34	26	Female	6	24	1.0	.3	34	13	13	2.5
35	23	Male	6	21	1.0	.3	31	13	12	2.0
36	26	Male	7	24	0.9	.3	33	12	13	2.0
37	34	Female	7	30	1.0	.2	32	13	13	3.0
38	28	Female	7	25	1.0	.4	31	12	13	3.0

**Key**

- \*1 = Score obtained in Oxford French placement test (OFPT) (/50) or Oxford English placement test (OEPT) (/60)
- \*2 = Age French/English study began
- \*3 = Number of years (or parts thereof) studying French/English
- \*4 = Years (or parts thereof) immersion in French/English speaking country

## Appendix C. Individual results on Gender

### Appendix C.1. Target-like gender selection in the MCT task (English version)

This table contains the mean for the participants in respect of their target-like selections in the feature gender in the multiple choice translation test (English version). Figures are distributed as follows: target-like Gender concord selection on Dets in Def DPs (n=6), target-like Gender concord selection on Dets in Indef DPs (n=6), target-like Gender concord selection on Adjs in Def DPs(n=6), target-like Gender concord selection on Adjs in Def DPs (n=6), target-like Gender assignment selection in Def DPs (n=6) and target-like Gender assignment selection in Indef DPs (n=6).

Target-like performance by participants, gender type, definiteness and L2 proficiency

Subj N°	L1	L2 English prof	Gender concord on Det in Def DPs	Gender concord on Det in Indef DPs	Gender concord on Adj in Def DPs	Gender concord on Adj in Indef DPs	Gender assignment in Def DPs	Gender assignment in Indef DPs
1	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
2	Spanish	Adv	6.00	6.00	6.00	6.00	5.00	6.00
3	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
4	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
5	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
6	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
7	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
8	Spanish	Adv	6.00	6.00	6.00	5.00	6.00	6.00
9	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
10	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
11	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
12	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
13	Spanish	Adv	6.00	6.00	6.00	6.00	5.00	6.00
14	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
15	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
16	Spanish	LI	6.00	6.00	6.00	6.00	6.00	5.00
17	Spanish	LI	6.00	5.00	6.00	6.00	6.00	6.00
18	Spanish	LI	6.00	6.00	5.00	6.00	6.00	5.00
19	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
20	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
21	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
22	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
23	Turkish	Adv	6.00	6.00	6.00	6.00	4.00	4.00
24	Turkish	Adv	5.00	6.00	6.00	6.00	6.00	6.00
25	Turkish	Adv	5.00	5.00	6.00	6.00	6.00	2.00
26	Turkish	Adv	6.00	6.00	6.00	5.00	5.00	3.00
27	Turkish	Adv	6.00	6.00	6.00	6.00	5.00	4.00

<b>28</b>	<b>Turkish</b>	Adv	5.00	4.00	5.00	6.00	4.00	4.00
<b>29</b>	<b>Turkish</b>	Adv	6.00	6.00	6.00	6.00	5.00	5.00
<b>30</b>	<b>Turkish</b>	Adv	6.00	5.00	6.00	6.00	1.00	6.00
<b>31</b>	<b>Turkish</b>	Adv	6.00	6.00	6.00	6.00	5.00	3.00
<b>32</b>	<b>Turkish</b>	Adv	6.00	6.00	6.00	6.00	4.00	4.00
<b>33</b>	<b>Turkish</b>	LI	5.00	5.00	5.00	6.00	5.00	5.00
<b>34</b>	<b>Turkish</b>	LI	6.00	6.00	6.00	6.00	3.00	4.00
<b>35</b>	<b>Turkish</b>	LI	5.00	6.00	6.00	6.00	4.00	5.00
<b>36</b>	<b>Turkish</b>	LI	6.00	6.00	6.00	6.00	4.00	3.00
<b>37</b>	<b>Turkish</b>	LI	5.00	5.00	6.00	6.00	4.00	5.00
<b>38</b>	<b>Turkish</b>	LI	5.00	5.00	6.00	6.00	5.00	5.00

## Appendix C.2. Target-like gender selection in the MCT test (Spanish version)

This table contains the mean for the Spanish participants in respect of their target-like selections in the feature gender in the multiple choice translation test (Spanish version). Only the data of the Spanish group are disclosed below as it is the only group that sat for this test.

Target-like performance by participants, gender type, definiteness and L2 proficiency

Subj N°	L1	L2 Eng prof	Gender concord on Det in Def DPs	Gender concord on Det in Indef DPs	Gender concord on Adj in Def DPs	Gender concord on Adj in Indef DPs	Gender assignment in Def DPs	Gender assignment in Indef DPs
1	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
2	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
3	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
4	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
5	Spanish	Adv	6.00	6.00	5.00	6.00	6.00	6.00
6	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
7	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
8	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
9	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
10	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	5.00
11	Spanish	Adv	5.00	6.00	6.00	6.00	6.00	6.00
12	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
13	Spanish	Adv	6.00	6.00	6.00	6.00	6.00	6.00
14	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
15	Spanish	LI	6.00	5.00	6.00	6.00	6.00	6.00
16	Spanish	LI	6.00	6.00	6.00	6.00	6.00	5.00
17	Spanish	LI	6.00	6.00	6.00	6.00	6.00	5.00
18	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
19	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
20	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
21	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00
22	Spanish	LI	6.00	6.00	6.00	6.00	6.00	6.00

### Appendix C.3. Target-like gender selection in the MCT test (Turkish version)

This table contains the mean for the Turkish participants in respect of their target-like selections in the feature gender in the multiple choice translation test (Turkish version). Only the data of the Turkish group are disclosed below as it is the only group that sat for this test.

Target-like performance by participants, gender type, definiteness and L2 proficiency

Subj N°	L1	L2Eng prof	Gender concord on Det in Def DPs	Gender concord on Det in Indef DPs	Gender concord on Adj in Def DPs	Gender concord on Adj in Indef DPs	Gender assignment in Def DPs	Gender assignment in Indef DPs
23	Turkish	Adv	6.00	6.00	5.00	6.00	5.00	3.00
24	Turkish	Adv	6.00	6.00	6.00	6.00	3.00	3.00
25	Turkish	Adv	6.00	6.00	6.00	6.00	1.00	2.00
26	Turkish	Adv	6.00	6.00	6.00	5.00	4.00	3.00
27	Turkish	Adv	6.00	6.00	5.00	6.00	4.00	2.00
28	Turkish	Adv	5.00	6.00	6.00	6.00	6.00	4.00
29	Turkish	Adv	6.00	6.00	5.00	6.00	2.00	4.00
30	Turkish	Adv	5.00	6.00	6.00	5.00	5.00	4.00
31	Turkish	Adv	6.00	6.00	6.00	5.00	4.00	3.00
32	Turkish	Adv	6.00	6.00	6.00	5.00	4.00	5.00
33	Turkish	LI	6.00	6.00	6.00	5.00	4.00	2.00
34	Turkish	LI	6.00	6.00	6.00	6.00	3.00	3.00
35	Turkish	LI	6.00	6.00	5.00	6.00	4.00	3.00
36	Turkish	LI	6.00	6.00	6.00	6.00	4.00	3.00
37	Turkish	LI	6.00	5.00	6.00	5.00	4.00	4.00
38	Turkish	LI	5.00	6.00	6.00	5.00	3.00	4.00

### Appendix C.4. Target-like gender selection in the ASC task

This table contains the mean for the participants in respect of their target-like selections in the feature gender in the acceptability sentence correction test. Figures are distributed as follows: target-like Gender concord selection on Dets in Def DPs (n=2), target-like Gender concord selection on Dets in Indef DPs (n=2), target-like Gender concord selection on Adjs in Def DPs(n=2), target-like Gender concord selection on Adjs in Def DPs (n=2), target-like Gender assignment selection in Def DPs (n=2) and target-like Gender assignment selection in Indef DPs (n=2).

Target-like performance by participants, gender type, definiteness and L2 proficiency

Subj N°	L1	L2 English prof	Gender concord on Det in Def DPs	Gender concord on Det in Indef DPs	Gender concord on Adj in Def DPs	Gender concord on Adj in Indef DPs	Gender assignment in Def DPs	Gender assignment in Indef DPs
1	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	2.00
2	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	2.00
3	Spanish	Adv	1.00	2.00	2.00	2.00	2.00	2.00
4	Spanish	Adv	2.00	2.00	2.00	2.00	1.00	2.00
5	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	2.00
6	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	2.00
7	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	2.00
8	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	2.00
9	Spanish	Adv	2.00	1.00	2.00	2.00	2.00	2.00
10	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	2.00
11	Spanish	Adv	2.00	2.00	1.00	2.00	2.00	2.00
12	Spanish	Adv	2.00	2.00	2.00	1.00	2.00	2.00
13	Spanish	Adv	2.00	2.00	2.00	2.00	2.00	1.00
14	Spanish	LI	2.00	2.00	2.00	2.00	2.00	2.00
15	Spanish	LI	2.00	2.00	2.00	2.00	2.00	2.00
16	Spanish	LI	2.00	1.00	2.00	2.00	2.00	2.00
17	Spanish	LI	2.00	2.00	2.00	2.00	1.00	2.00
18	Spanish	LI	2.00	2.00	2.00	2.00	2.00	2.00
19	Spanish	LI	2.00	2.00	2.00	2.00	2.00	2.00
20	Spanish	LI	2.00	2.00	2.00	2.00	2.00	2.00
21	Spanish	LI	2.00	2.00	2.00	2.00	1.00	2.00
22	Spanish	LI	2.00	2.00	2.00	2.00	2.00	1.00
23	Turkish	Adv	.00	1.00	2.00	1.00	1.00	1.00
24	Turkish	Adv	2.00	2.00	1.00	.00	.00	2.00
25	Turkish	Adv	2.00	2.00	1.00	2.00	1.00	.00
26	Turkish	Adv	2.00	.00	1.00	2.00	.00	.00
27	Turkish	Adv	.00	1.00	2.00	.00	1.00	1.00
28	Turkish	Adv	2.00	2.00	2.00	1.00	1.00	.00
29	Turkish	Adv	2.00	1.00	1.00	2.00	1.00	.00
30	Turkish	Adv	2.00	2.00	1.00	2.00	1.00	1.00

<b>31</b>	<b>Turkish</b>	Adv	1.00	2.00	1.00	1.00	.00	.00
<b>32</b>	<b>Turkish</b>	Adv	2.00	2.00	2.00	1.00	1.00	.00
<b>33</b>	<b>Turkish</b>	LI	1.00	1.00	.00	1.00	2.00	1.00
<b>34</b>	<b>Turkish</b>	LI	2.00	1.00	1.00	1.00	.00	1.00
<b>35</b>	<b>Turkish</b>	LI	1.00	1.00	2.00	2.00	.00	.00
<b>36</b>	<b>Turkish</b>	LI	1.00	1.00	1.00	.00	.00	1.00
<b>37</b>	<b>Turkish</b>	LI	1.00	1.00	2.00	1.00	1.00	2.00
<b>38</b>	<b>Turkish</b>	LI	1.00	1.00	1.00	1.00	1.00	.00

### Appendix C.5. Target-like gender selection in the oral picture description test

This table contains the mean for the participants in respect of their target-like selections in the feature gender in the oral picture description task. Figures are distributed as follows: target-like Gender concord selection on Dets (n=20), target-like Gender concord selection on Adjs (n=20), target-like Gender assignment selection (n=20), target-like Gender assignment Masc nouns (n=10) and target-like Gender assignment Fem nouns (n=10).

Target-like performance by participants, gender type, definiteness and L2 proficiency

Subj N°	L1	L2 English prof	Gender concord on Det	Gender concord on Adj	Gender assignment	Gender assignment Masc Nouns	Gender assignment Fem Nouns
1	Spanish	Adv	19.00	20.00	20.00	10.00	9.00
2	Spanish	Adv	20.00	20.00	20.00	10.00	10.00
3	Spanish	Adv	20.00	20.00	19.00	9.00	10.00
4	Spanish	Adv	20.00	19.00	20.00	10.00	9.00
5	Spanish	Adv	20.00	20.00	20.00	10.00	10.00
6	Spanish	Adv	20.00	20.00	20.00	10.00	10.00
7	Spanish	Adv	20.00	20.00	20.00	10.00	10.00
8	Spanish	Adv	20.00	19.00	20.00	9.00	10.00
9	Spanish	Adv	20.00	19.00	20.00	10.00	9.00
10	Spanish	Adv	20.00	20.00	20.00	10.00	10.00
11	Spanish	Adv	20.00	20.00	19.00	10.00	9.00
12	Spanish	Adv	20.00	20.00	19.00	10.00	9.00
13	Spanish	Adv	20.00	20.00	20.00	10.00	10.00
14	Spanish	LI	20.00	19.00	20.00	9.00	10.00
15	Spanish	LI	20.00	20.00	19.00	9.00	10.00
16	Spanish	LI	20.00	20.00	19.00	10.00	9.00
17	Spanish	LI	20.00	20.00	20.00	10.00	10.00
18	Spanish	LI	20.00	20.00	19.00	10.00	9.00
19	Spanish	LI	20.00	20.00	19.00	10.00	9.00
20	Spanish	LI	20.00	20.00	19.00	9.00	10.00
21	Spanish	LI	20.00	19.00	20.00	9.00	10.00
22	Spanish	LI	20.00	20.00	20.00	10.00	10.00
23	Turkish	Adv	19.00	18.00	11.00	4.00	4.00
24	Turkish	Adv	20.00	17.00	13.00	5.00	5.00
25	Turkish	Adv	20.00	18.00	11.00	5.00	4.00
26	Turkish	Adv	19.00	16.00	14.00	5.00	4.00
27	Turkish	Adv	20.00	17.00	14.00	6.00	5.00
28	Turkish	Adv	20.00	17.00	13.00	6.00	4.00
29	Turkish	Adv	20.00	17.00	13.00	5.00	5.00
30	Turkish	Adv	20.00	17.00	12.00	5.00	4.00
31	Turkish	Adv	19.00	17.00	13.00	5.00	4.00
32	Turkish	Adv	19.00	17.00	14.00	6.00	4.00

<b>33</b>	<b>Turkish</b>	LI	20.00	16.00	13.00	5.00	4.00
<b>34</b>	<b>Turkish</b>	LI	19.00	18.00	12.00	5.00	4.00
<b>35</b>	<b>Turkish</b>	LI	20.00	15.00	11.00	3.00	3.00
<b>36</b>	<b>Turkish</b>	LI	20.00	16.00	13.00	5.00	4.00
<b>37</b>	<b>Turkish</b>	LI	20.00	16.00	13.00	5.00	4.00
<b>38</b>	<b>Turkish</b>	LI	19.00	17.00	14.00	5.00	5.00

## Appendix C.6. Target-like gender assignment selection in the vocabulary test

This table contains the mean for the participants in respect of their target-like selections in the feature gender in the multiple choice translation test (English version). Figures are distributed as follows: target-like Gender assignment selection on masculine (Masc) nouns (n=24), target-like Gender assignment selection on feminine (Fem) nouns (n=25).

Target-like performance by participants, gender type, definiteness and L2 proficiency

Subj N°	L1	L2 English proficiency	Gender assignment Masc nouns	Gender assignment Fem nouns
1	Spanish	Adv	24.00	24.00
2	Spanish	Adv	24.00	23.00
3	Spanish	Adv	24.00	24.00
4	Spanish	Adv	24.00	24.00
5	Spanish	Adv	24.00	24.00
6	Spanish	Adv	23.00	25.00
7	Spanish	Adv	24.00	23.00
8	Spanish	Adv	24.00	25.00
9	Spanish	Adv	22.00	25.00
10	Spanish	Adv	24.00	25.00
11	Spanish	Adv	24.00	24.00
12	Spanish	Adv	24.00	25.00
13	Spanish	Adv	23.00	25.00
14	Spanish	LI	24.00	22.00
15	Spanish	LI	24.00	25.00
16	Spanish	LI	23.00	24.00
17	Spanish	LI	23.00	25.00
18	Spanish	LI	24.00	24.00
19	Spanish	LI	24.00	24.00
20	Spanish	LI	23.00	24.00
21	Spanish	LI	23.00	21.00
22	Spanish	LI	23.00	24.00
23	Turkish	Adv	14.00	14.00
24	Turkish	Adv	17.00	15.00
25	Turkish	Adv	14.00	15.00
26	Turkish	Adv	22.00	15.00
27	Turkish	Adv	14.00	11.00
28	Turkish	Adv	16.00	15.00
29	Turkish	Adv	16.00	16.00
30	Turkish	Adv	17.00	13.00
31	Turkish	Adv	17.00	15.00
32	Turkish	Adv	14.00	13.00

<b>33</b>	<b>Turkish</b>	LI	18.00	14.00
<b>34</b>	<b>Turkish</b>	LI	13.00	12.00
<b>35</b>	<b>Turkish</b>	LI	15.00	10.00
<b>36</b>	<b>Turkish</b>	LI	15.00	11.00
<b>37</b>	<b>Turkish</b>	LI	15.00	11.00
<b>38</b>	<b>Turkish</b>	LI	14.00	16.00

## Appendix D. Individual results on Number Concord

### Appendix D.1. Target-like Number concord selection in the MCT task (English version)

This table contains the mean for the participants in respect of their target-like selections in the feature gender in the multiple choice translation test (English version). Figures are distributed as follows: target-like Number concord on Det in Def DPs (n=3), Number concord on Det in Indef DPs (n=3), Number concord on Adj in Def DPs (n=3), Number concord on Adj in Indef DPs (n=3), Number concord on Det and Adj in Def DPs (n=3) and Number concord on Det and Adj in Indef DPs (n=3).

Target-like performance by participants, Number concord type, definiteness and L2 proficiency

Subj N°	L1	L2 English prof	Number concord on Det in Def DPs	Number concord on Det in Indef DPs	Number concord on Adj in Def DPs	Number concord on Adj in Indef DPs	Number concord on Det and Adj in Def DPs	Number concord on Det and Adj in Indef DPs
1	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
2	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
3	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
4	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
5	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
6	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
7	Spanish	Adv	3.00	3.00	3.00	2.00	3.00	3.00
8	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
9	Spanish	Adv	3.00	3.00	2.00	3.00	3.00	3.00
10	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
11	Spanish	Adv	3.00	3.00	2.00	3.00	3.00	3.00
12	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
13	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
14	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
15	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
16	Spanish	LI	3.00	3.00	3.00	2.00	3.00	3.00
17	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
18	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
19	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
20	Spanish	LI	2.00	3.00	3.00	3.00	3.00	3.00
21	Spanish	LI	3.00	3.00	2.00	3.00	3.00	3.00
22	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
23	Turkish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
24	Turkish	Adv	3.00	3.00	3.00	2.00	3.00	3.00
25	Turkish	Adv	3.00	3.00	3.00	3.00	3.00	3.00

<b>26</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	3.00	2.00	3.00
<b>27</b>	<b>Turkish</b>	Adv	3.00	3.00	1.00	3.00	3.00	3.00
<b>28</b>	<b>Turkish</b>	Adv	3.00	3.00	2.00	3.00	2.00	3.00
<b>29</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	3.00	3.00	3.00
<b>30</b>	<b>Turkish</b>	Adv	3.00	3.00	2.00	3.00	3.00	3.00
<b>31</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	3.00	3.00	3.00
<b>32</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	2.00	3.00	3.00
<b>33</b>	<b>Turkish</b>	LI	3.00	3.00	2.00	3.00	3.00	3.00
<b>34</b>	<b>Turkish</b>	LI	3.00	3.00	3.00	3.00	3.00	3.00
<b>35</b>	<b>Turkish</b>	LI	3.00	3.00	3.00	3.00	3.00	3.00
<b>36</b>	<b>Turkish</b>	LI	3.00	3.00	2.00	2.00	3.00	3.00
<b>37</b>	<b>Turkish</b>	LI	3.00	3.00	3.00	3.00	3.00	3.00
<b>38</b>	<b>Turkish</b>	LI	3.00	3.00	3.00	2.00	3.00	2.00

## Appendix D.2. Target-like Number concord selection in the MCT Task (Spanish version)

This table contains the mean for each of the Spanish participants in respect of their target-like selections in the feature number concord in the multiple choice translation test (Spanish version). Only the data of the Spanish group are disclosed below as it is the only group that sat for this test.

Target-like performance by participants, number concord type, definiteness and L2 proficiency

Subj N°	L1	L2Eng prof	Number concord on Det in Def DPs	Number concord on Det in Indef DPs	Number concord on Adj in Def DPs	Number concord on Adj in Indef DPs	Number concord on Det and Adj in Def DPs	Number concord on Det and Adj in Indef DPs
1	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
2	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
3	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
4	Spanish	Adv	2.00	3.00	3.00	2.00	3.00	3.00
5	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
6	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
7	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
8	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
9	Spanish	Adv	3.00	3.00	2.00	3.00	3.00	3.00
10	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
11	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
12	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
13	Spanish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
14	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
15	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
16	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
17	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
18	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
19	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
20	Spanish	LI	3.00	3.00	3.00	2.00	3.00	3.00
21	Spanish	LI	3.00	3.00	3.00	3.00	3.00	3.00
22	Spanish	LI	3.00	3.00	2.00	3.00	3.00	3.00

### Appendix D.3. Target-like Number concord selection in the MCT Task (Turkish version)

This table contains the mean for the Turkish participants in respect of their target-like selections in the feature number concord in the multiple choice translation test (Turkish version). Only the data of the Turkish group are disclosed below as it is the only group that sat for this test.

Target-like performance by participants, number concord type, definiteness and L2 proficiency

Subj N°	L1	L2Eng prof	Numberc oncord on Det in Def DPs	Number concord on Det in Indef DPs	Number concord on Adj in Def DPs	Number concord on Adj in Indef DPs	Number concord on Det and Adj in Def DPs	Number concord on Det and Adj in Indef DPs
23	Turkish	Adv	3.00	3.00	3.00	3.00	2.00	3.00
24	Turkish	Adv	3.00	3.00	2.00	3.00	3.00	3.00
25	Turkish	Adv	3.00	3.00	2.00	2.00	3.00	3.00
26	Turkish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
27	Turkish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
28	Turkish	Adv	3.00	3.00	2.00	2.00	3.00	3.00
29	Turkish	Adv	3.00	2.00	3.00	3.00	3.00	3.00
30	Turkish	Adv	3.00	3.00	3.00	2.00	3.00	3.00
31	Turkish	Adv	3.00	3.00	3.00	2.00	3.00	3.00
32	Turkish	Adv	3.00	3.00	3.00	3.00	3.00	3.00
33	Turkish	LI	3.00	3.00	1.00	3.00	3.00	2.00
34	Turkish	LI	2.00	3.00	3.00	2.00	3.00	3.00
35	Turkish	LI	3.00	3.00	3.00	2.00	3.00	3.00
36	Turkish	LI	3.00	3.00	3.00	3.00	3.00	3.00
37	Turkish	LI	3.00	3.00	2.00	3.00	3.00	3.00
38	Turkish	LI	3.00	3.00	3.00	3.00	3.00	3.00

### Appendix D.4. Target-like Number concord selection in the ASC task

This table contains the mean for the participants in respect of their target-like selections in the feature number concord in the acceptability sentence correction test. Figures are distributed as follows: target-like Number concord on Det in Def DPs (n=4), Number concord on Det in Indef DPs (n=4), Number concord on Adj in Def DPs (n=4), Number concord on Adj in Indef DPs (n=4), Number concord on Det and Adj in Def DPs (n=4) and Number concord on Det and Adj in Indef DPs (n=4).

Target-like performance by participants, Number concord type, definiteness and L2 proficiency

Subj N°	L1	L2 English prof	Number concord on Det in Def DPs	Number concord on Det in Indef DPs	Number concord on Adj in Def DPs	Number concord on Adj in Indef DPs	Number concord on Det and Adj in Def DPs	Number concord on Det and Adj in Indef DPs
1	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
2	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
3	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
4	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
5	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
6	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
7	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
8	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
9	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
10	Spanish	Adv	4.00	4.00	3.00	4.00	4.00	4.00
11	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
12	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
13	Spanish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
14	Spanish	LI	4.00	4.00	4.00	4.00	3.00	4.00
15	Spanish	LI	4.00	4.00	3.00	4.00	4.00	4.00
16	Spanish	LI	4.00	4.00	4.00	3.00	4.00	4.00
17	Spanish	LI	4.00	4.00	4.00	4.00	4.00	4.00
18	Spanish	LI	4.00	4.00	4.00	4.00	4.00	4.00
19	Spanish	LI	4.00	4.00	4.00	4.00	4.00	4.00
20	Spanish	LI	4.00	4.00	4.00	3.00	4.00	4.00
21	Spanish	LI	4.00	4.00	3.00	4.00	4.00	4.00
22	Spanish	LI	4.00	4.00	3.00	4.00	4.00	4.00
23	Turkish	Adv	4.00	4.00	4.00	4.00	4.00	3.00
24	Turkish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
25	Turkish	Adv	4.00	4.00	3.00	4.00	4.00	4.00
26	Turkish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
27	Turkish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
28	Turkish	Adv	4.00	4.00	4.00	4.00	4.00	4.00
29	Turkish	Adv	4.00	4.00	3.00	4.00	4.00	4.00

<b>30</b>	<b>Turkish</b>	Adv	4.00	4.00	4.00	3.00	4.00	4.00
<b>31</b>	<b>Turkish</b>	Adv	4.00	4.00	4.00	4.00	4.00	4.00
<b>32</b>	<b>Turkish</b>	Adv	3.00	4.00	4.00	3.00	4.00	4.00
<b>33</b>	<b>Turkish</b>	LI	4.00	4.00	3.00	4.00	4.00	4.00
<b>34</b>	<b>Turkish</b>	LI	4.00	3.00	3.00	4.00	4.00	4.00
<b>35</b>	<b>Turkish</b>	LI	4.00	4.00	4.00	3.00	4.00	4.00
<b>36</b>	<b>Turkish</b>	LI	4.00	4.00	3.00	3.00	4.00	4.00
<b>37</b>	<b>Turkish</b>	LI	4.00	4.00	4.00	3.00	4.00	4.00
<b>38</b>	<b>Turkish</b>	LI	4.00	4.00	4.00	4.00	4.00	3.00

### Appendix D.5. Target-like Number concord selection in the Written Picture Description task

This table contains the mean for the participants in respect of their target-like selections in the feature number concord in the acceptability sentence correction test. Figures are distributed as follows: target-like Number concord on Det (n=10), Number concord on Adj (n=10), Number concord on Det and Adj (n=10), Number concord on N (n=10).

Target-like performance by participants, Number concord type and L2 proficiency

Subj N°	L1	L2 English prof	Number concord on Det	Number concord on Adj	Number concord on Det and Adj	Number concord on N
1	Spanish	Adv	10.00	10.00	10.00	10.00
2	Spanish	Adv	10.00	10.00	10.00	10.00
3	Spanish	Adv	10.00	10.00	10.00	10.00
4	Spanish	Adv	10.00	9.00	10.00	10.00
5	Spanish	Adv	10.00	10.00	10.00	10.00
6	Spanish	Adv	10.00	10.00	10.00	10.00
7	Spanish	Adv	10.00	10.00	10.00	10.00
8	Spanish	Adv	10.00	10.00	10.00	10.00
9	Spanish	Adv	10.00	10.00	10.00	10.00
10	Spanish	Adv	10.00	10.00	10.00	10.00
11	Spanish	Adv	10.00	9.00	10.00	10.00
12	Spanish	Adv	10.00	10.00	10.00	10.00
13	Spanish	Adv	10.00	9.00	10.00	10.00
14	Spanish	LI	10.00	10.00	10.00	10.00
15	Spanish	LI	10.00	10.00	10.00	10.00
16	Spanish	LI	10.00	10.00	10.00	10.00
17	Spanish	LI	10.00	10.00	10.00	10.00
18	Spanish	LI	10.00	10.00	10.00	10.00
19	Spanish	LI	10.00	10.00	10.00	10.00
20	Spanish	LI	10.00	10.00	10.00	10.00
21	Spanish	LI	10.00	10.00	10.00	10.00
22	Spanish	LI	10.00	10.00	9.00	10.00
23	Turkish	Adv	10.00	9.00	10.00	10.00
24	Turkish	Adv	10.00	10.00	10.00	10.00
25	Turkish	Adv	10.00	10.00	9.00	10.00
26	Turkish	Adv	10.00	10.00	9.00	10.00
27	Turkish	Adv	10.00	8.00	10.00	10.00
28	Turkish	Adv	10.00	8.00	10.00	10.00
29	Turkish	Adv	10.00	8.00	9.00	10.00
30	Turkish	Adv	10.00	10.00	10.00	10.00
31	Turkish	Adv	9.00	9.00	10.00	10.00
32	Turkish	Adv	10.00	9.00	10.00	10.00

<b>33</b>	<b>Turkish</b>	LI	9.00	10.00	10.00	10.00
<b>34</b>	<b>Turkish</b>	LI	10.00	9.00	9.00	10.00
<b>35</b>	<b>Turkish</b>	LI	10.00	8.00	10.00	10.00
<b>36</b>	<b>Turkish</b>	LI	10.00	9.00	10.00	10.00
<b>37</b>	<b>Turkish</b>	LI	10.00	10.00	10.00	10.00
<b>38</b>	<b>Turkish</b>	LI	10.00	9.00	9.00	10.00

## Appendix E. Individual results on Definiteness/Specificity

### Appendix E.1. Target-like Definiteness/Specificity selection in the MCT English task (English version)

This table contains the mean for each participant in respect of their target-like selections in the feature definiteness/specificity in the multiple choice translation test (English version). Figures are distributed as follows: target-like article selection in [+Def, +Spec] contexts (n=3), target-like article selection in [+Def, -Spec] contexts (n=3), target-like article selection in [-Def, +Spec] contexts (n=3), target-like article selection in [-Def, -Spec] contexts (n=3).

Target-like performance by participants, definiteness, specificity and L2 proficiency

Subj N°	L1	L2 English prof	[+Def, +Spec]	[+Def, -Spec]	[-Def, +Spec]	[-Def, -Spec]
1	Spanish	Adv	3.00	3.00	3.00	3.00
2	Spanish	Adv	3.00	2.00	3.00	3.00
3	Spanish	Adv	3.00	3.00	3.00	1.00
4	Spanish	Adv	3.00	2.00	3.00	3.00
5	Spanish	Adv	3.00	2.00	3.00	3.00
6	Spanish	Adv	3.00	3.00	2.00	3.00
7	Spanish	Adv	3.00	3.00	3.00	3.00
8	Spanish	Adv	3.00	3.00	2.00	3.00
9	Spanish	Adv	3.00	3.00	3.00	3.00
10	Spanish	Adv	3.00	3.00	3.00	2.00
11	Spanish	Adv	3.00	3.00	3.00	3.00
12	Spanish	Adv	3.00	3.00	3.00	2.00
13	Spanish	Adv	3.00	2.00	3.00	3.00
14	Spanish	LI	3.00	3.00	2.00	3.00
15	Spanish	LI	2.00	3.00	2.00	3.00
16	Spanish	LI	3.00	3.00	3.00	3.00
17	Spanish	LI	3.00	3.00	3.00	3.00
18	Spanish	LI	3.00	3.00	2.00	3.00
19	Spanish	LI	3.00	2.00	3.00	3.00
20	Spanish	LI	3.00	3.00	3.00	3.00
21	Spanish	LI	3.00	3.00	3.00	3.00
22	Spanish	LI	3.00	3.00	3.00	3.00
23	Turkish	Adv	3.00	3.00	3.00	.00
24	Turkish	Adv	3.00	2.00	3.00	3.00
25	Turkish	Adv	3.00	3.00	3.00	2.00
26	Turkish	Adv	3.00	3.00	3.00	1.00
27	Turkish	Adv	3.00	3.00	3.00	3.00

<b>28</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	2.00
<b>29</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	2.00
<b>30</b>	<b>Turkish</b>	Adv	2.00	3.00	3.00	3.00
<b>31</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	2.00
<b>32</b>	<b>Turkish</b>	Adv	3.00	3.00	3.00	1.00
<b>33</b>	<b>Turkish</b>	LI	3.00	2.00	2.00	1.00
<b>34</b>	<b>Turkish</b>	LI	2.00	2.00	2.00	.00
<b>35</b>	<b>Turkish</b>	LI	3.00	2.00	3.00	.00
<b>36</b>	<b>Turkish</b>	LI	3.00	2.00	2.00	1.00
<b>37</b>	<b>Turkish</b>	LI	2.00	3.00	1.00	1.00
<b>38</b>	<b>Turkish</b>	LI	2.00	3.00	1.00	2.00

## Appendix E.2. Target-like Definiteness/Specificity selection in the MCT task (Spanish version)

This table contains the mean for each Spanish participant in respect of their target-like selections in the feature definiteness/specificity in the multiple choice translation test (Spanish version). Only data of the Spanish group are disclosed here because only the Spanish group sat for this test.

Target-like performance by participants, definiteness, specificity and L2 proficiency

Subj N°	L1	L2Eng prof	[+Def, +Spec]	[+Def, -Spec]	[-Def, +Spec]	[-Def, -Spec]
1	Spanish	Adv	3.00	3.00	3.00	3.00
2	Spanish	Adv	3.00	2.00	3.00	3.00
3	Spanish	Adv	3.00	2.00	3.00	3.00
4	Spanish	Adv	3.00	3.00	3.00	2.00
5	Spanish	Adv	3.00	3.00	3.00	3.00
6	Spanish	Adv	3.00	3.00	3.00	3.00
7	Spanish	Adv	3.00	3.00	3.00	3.00
8	Spanish	Adv	3.00	3.00	3.00	3.00
9	Spanish	Adv	3.00	3.00	3.00	3.00
10	Spanish	Adv	3.00	2.00	3.00	3.00
11	Spanish	Adv	3.00	3.00	2.00	3.00
12	Spanish	Adv	2.00	3.00	2.00	3.00
13	Spanish	Adv	3.00	3.00	3.00	3.00
14	Spanish	LI	3.00	3.00	2.00	3.00
15	Spanish	LI	3.00	3.00	2.00	3.00
16	Spanish	LI	3.00	2.00	3.00	3.00
17	Spanish	LI	3.00	3.00	3.00	3.00
18	Spanish	LI	3.00	2.00	3.00	3.00
19	Spanish	LI	3.00	3.00	3.00	3.00
20	Spanish	LI	3.00	3.00	3.00	3.00
21	Spanish	LI	2.00	3.00	3.00	2.00
22	Spanish	LI	3.00	3.00	3.00	2.00

### Appendix E.3. Target-like Definiteness/Specificity selection in the MCT task (Turkish version)

This table contains the mean for each Turkish participant in respect of their target-like selections in the feature definiteness/specificity in the multiple choice translation test (Turkish version). Only data of the Turkish group are disclosed here because only the Turkish group sat for this test.

Target-like performance by participants, definiteness, specificity and L2 proficiency

Subj N°	L1	L2Eng prof	[+Def, +Spec]	[+Def, -Spec]	[-Def, +Spec]	[-Def, -Spec]
23	Turkish	Adv	3.00	3.00	1.00	3.00
24	Turkish	Adv	3.00	3.00	1.00	3.00
25	Turkish	Adv	3.00	2.00	3.00	3.00
26	Turkish	Adv	3.00	3.00	3.00	2.00
27	Turkish	Adv	3.00	3.00	3.00	3.00
28	Turkish	Adv	3.00	3.00	3.00	2.00
29	Turkish	Adv	3.00	3.00	3.00	3.00
30	Turkish	Adv	3.00	3.00	3.00	3.00
31	Turkish	Adv	3.00	2.00	2.00	3.00
32	Turkish	Adv	3.00	3.00	3.00	3.00
33	Turkish	LI	3.00	1.00	1.00	2.00
34	Turkish	LI	2.00	3.00	1.00	1.00
35	Turkish	LI	3.00	3.00	1.00	2.00
36	Turkish	LI	3.00	2.00	1.00	3.00
37	Turkish	LI	2.00	1.00	2.00	2.00
38	Turkish	LI	3.00	3.00	1.00	1.00

### Appendix E.4. Target-like Definiteness/Specificity selection in the ASC task

This table contains the mean for each participant in respect of their target-like selections in the feature definiteness/specificity in the acceptability sentence correction test. Figures are distributed as follows: target-like article selection in [+Def, +Spec] contexts (n=4), target-like article selection in [+Def, -Spec] contexts (n=4), target-like article selection in [-Def, +Spec] contexts (n=4), target-like article selection in [-Def, -Spec] contexts (n=4).

Target-like performance by participants, definiteness, specificity and L2 proficiency

Subj N°	L1	L2 English prof	[+Def, +Spec]	[+Def, -Spec]	[-Def, +Spec]	[-Def, -Spec]
1	Spanish	Adv	4.00	4.00	4.00	4.00
2	Spanish	Adv	4.00	4.00	3.00	4.00
3	Spanish	Adv	4.00	4.00	4.00	4.00
4	Spanish	Adv	4.00	4.00	4.00	3.00
5	Spanish	Adv	4.00	4.00	4.00	4.00
6	Spanish	Adv	4.00	3.00	3.00	4.00
7	Spanish	Adv	4.00	4.00	4.00	3.00
8	Spanish	Adv	4.00	4.00	3.00	4.00
9	Spanish	Adv	4.00	3.00	4.00	4.00
10	Spanish	Adv	4.00	4.00	4.00	4.00
11	Spanish	Adv	4.00	4.00	4.00	4.00
12	Spanish	Adv	4.00	4.00	3.00	4.00
13	Spanish	Adv	4.00	4.00	4.00	4.00
14	Spanish	LI	4.00	4.00	4.00	4.00
15	Spanish	LI	4.00	4.00	4.00	4.00
16	Spanish	LI	4.00	4.00	4.00	3.00
17	Spanish	LI	4.00	3.00	4.00	4.00
18	Spanish	LI	4.00	4.00	4.00	4.00
19	Spanish	LI	4.00	4.00	4.00	4.00
20	Spanish	LI	3.00	4.00	4.00	4.00
21	Spanish	LI	4.00	4.00	4.00	4.00
22	Spanish	LI	4.00	3.00	4.00	4.00
23	Turkish	Adv	4.00	4.00	3.00	3.00
24	Turkish	Adv	4.00	4.00	3.00	4.00
25	Turkish	Adv	3.00	3.00	4.00	4.00
26	Turkish	Adv	4.00	4.00	4.00	4.00
27	Turkish	Adv	4.00	4.00	4.00	4.00
28	Turkish	Adv	4.00	4.00	4.00	4.00
29	Turkish	Adv	4.00	3.00	4.00	4.00
30	Turkish	Adv	4.00	3.00	3.00	4.00
31	Turkish	Adv	3.00	4.00	3.00	4.00
32	Turkish	Adv	4.00	4.00	4.00	4.00

<b>33</b>	<b>Turkish</b>	LI	4.00	4.00	1.00	3.00
<b>34</b>	<b>Turkish</b>	LI	4.00	3.00	2.00	3.00
<b>35</b>	<b>Turkish</b>	LI	3.00	4.00	2.00	2.00
<b>36</b>	<b>Turkish</b>	LI	3.00	3.00	2.00	3.00
<b>37</b>	<b>Turkish</b>	LI	4.00	3.00	2.00	2.00
<b>38</b>	<b>Turkish</b>	LI	3.00	3.00	2.00	4.00

## Appendix F. Individual results on Verb Raising

### Appendix F.1. Target-like Verb Raising selection in the MCT task

#### (English version)

This table contains the mean for each participant in respect of their target-like selections in the feature verb raising in the multiple choice translation test (English version). Figures are distributed as follows: target-like choices of manner adverbs S-V-Adv-O word order (n=3), non-target-like choices of manner adverbs S-Adv-V-O word order (n=3), target-like choices of frequency adverbs S-V-Adv-O word order (n=3), non-target-like choices of frequency adverbs S-Adv-V-O word order (n=3)<sup>129</sup>.

Target-like performance by participants, adverb type, word order and L2 proficiency

Sub j N°	L1	L2 English prof	manner adverb S-Adv-V-O	manner adverb S-V-Adv-O	frequency adverb S-Adv-V-O	frequency adverb S-V-Adv-O
1	Spanish	Adv	2.00	1.00	1.00	2.00
2	Spanish	Adv	1.00	1.00	1.00	2.00
3	Spanish	Adv	1.00	2.00	1.00	2.00
4	Spanish	Adv	1.00	2.00	1.00	2.00
5	Spanish	Adv	1.00	2.00	1.00	2.00
6	Spanish	Adv	1.00	1.00	1.00	2.00
7	Spanish	Adv	.00	3.00	1.00	2.00
8	Spanish	Adv	2.00	1.00	1.00	2.00
9	Spanish	Adv	1.00	2.00	.00	3.00
10	Spanish	Adv	1.00	2.00	1.00	2.00
11	Spanish	Adv	.00	3.00	1.00	2.00
12	Spanish	Adv	1.00	2.00	1.00	2.00
13	Spanish	Adv	1.00	2.00	.00	3.00
14	Spanish	LI	1.00	2.00	1.00	2.00
15	Spanish	LI	1.00	2.00	2.00	1.00
16	Spanish	LI	1.00	2.00	1.00	2.00
17	Spanish	LI	1.00	2.00	1.00	2.00
18	Spanish	LI	1.00	2.00	1.00	2.00
19	Spanish	LI	1.00	2.00	1.00	2.00
20	Spanish	LI	1.00	2.00	1.00	2.00
21	Spanish	LI	1.00	2.00	1.00	2.00
22	Spanish	LI	2.00	1.00	1.00	2.00

<sup>129</sup> Reminder, S-V-Adv-O is the correct word order in French whereas S-Adv-V-O is ungrammatical because French is a verb raising language.

<b>23</b>	<b>Turkish</b>	Adv	1.00	1.00	1.00	.00
<b>24</b>	<b>Turkish</b>	Adv	2.00	1.00	2.00	1.00
<b>25</b>	<b>Turkish</b>	Adv	2.00	.00	3.00	.00
<b>26</b>	<b>Turkish</b>	Adv	1.00	2.00	2.00	1.00
<b>27</b>	<b>Turkish</b>	Adv	3.00	.00	1.00	1.00
<b>28</b>	<b>Turkish</b>	Adv	1.00	.00	2.00	1.00
<b>29</b>	<b>Turkish</b>	Adv	1.00	1.00	2.00	1.00
<b>30</b>	<b>Turkish</b>	Adv	2.00	1.00	2.00	1.00
<b>31</b>	<b>Turkish</b>	Adv	2.00	1.00	2.00	1.00
<b>32</b>	<b>Turkish</b>	Adv	1.00	2.00	1.00	1.00
<b>33</b>	<b>Turkish</b>	LI	2.00	1.00	3.00	.00
<b>34</b>	<b>Turkish</b>	LI	2.00	1.00	1.00	1.00
<b>35</b>	<b>Turkish</b>	LI	1.00	1.00	2.00	1.00
<b>36</b>	<b>Turkish</b>	LI	2.00	.00	1.00	1.00
<b>37</b>	<b>Turkish</b>	LI	2.00	1.00	2.00	1.00
<b>38</b>	<b>Turkish</b>	LI	2.00	1.00	1.00	2.00

## Appendix F.2. Target-like Verb Raising selection in the MCT task

### (Spanish version)

This table contains the mean for each Spanish participant in respect of their target-like selections in the feature verb raising in the multiple choice translation test (Spanish version). Only data of the Spanish group are disclosed here because only the Spanish group sat for this test.

Target-like performance by participants, adverb type, word order and L2 proficiency

Subj N°	L1	L2Eng prof	manner adverb S-Adv-V-O	manner adverb S-V-Adv-O	frequency adverb S-Adv-V-O	frequency adverb S-V-Adv-O
1	Spanish	Adv	1.00	2.00	2.00	1.00
2	Spanish	Adv	2.00	1.00	1.00	2.00
3	Spanish	Adv	2.00	1.00	2.00	1.00
4	Spanish	Adv	2.00	1.00	1.00	2.00
5	Spanish	Adv	2.00	1.00	2.00	2.00
6	Spanish	Adv	1.00	1.00	1.00	2.00
7	Spanish	Adv	.00	3.00	1.00	2.00
8	Spanish	Adv	2.00	1.00	.00	3.00
9	Spanish	Adv	2.00	1.00	2.00	1.00
10	Spanish	Adv	2.00	1.00	1.00	2.00
11	Spanish	Adv	.00	3.00	2.00	1.00
12	Spanish	Adv	1.00	2.00	2.00	1.00
13	Spanish	Adv	.00	3.00	1.00	2.00
14	Spanish	LI	2.00	1.00	1.00	2.00
15	Spanish	LI	2.00	1.00	2.00	1.00
16	Spanish	LI	1.00	2.00	1.00	2.00
17	Spanish	LI	2.00	1.00	1.00	2.00
18	Spanish	LI	.00	3.00	1.00	2.00
19	Spanish	LI	1.00	2.00	1.00	2.00
20	Spanish	LI	1.00	2.00	1.00	2.00
21	Spanish	LI	1.00	2.00	2.00	1.00
22	Spanish	LI	2.00	1.00	1.00	2.00

### Appendix F.3. Target-like Verb Raising selection in the MCT task

#### (Turkish version)

This table contains the mean for each Turkish participant in respect of their target-like selections in the feature verb raising in the multiple choice translation test (Turkish version). Only data of the Turkish group are disclosed here because only the Turkish group sat for this test.

Target-like performance by participants, number concord type, definiteness and L2 proficiency

Subj N°	L1	L2Eng prof	manner adverb S-Adv-V-O	manner adverb S-V-Adv-O	frequency adverb S-Adv-V-O	frequency adverb S-V-Adv-O
23	Turkish	Adv	2.00	1.00	3.00	.00
24	Turkish	Adv	2.00	2.00	2.00	1.00
25	Turkish	Adv	2.00	1.00	1.00	2.00
26	Turkish	Adv	2.00	1.00	1.00	2.00
27	Turkish	Adv	3.00	.00	1.00	1.00
28	Turkish	Adv	2.00	.00	1.00	2.00
29	Turkish	Adv	3.00	.00	2.00	1.00
30	Turkish	Adv	1.00	.00	2.00	.00
31	Turkish	Adv	3.00	.00	2.00	1.00
32	Turkish	Adv	1.00	1.00	.00	.00
33	Turkish	LI	2.00	1.00	2.00	1.00
34	Turkish	LI	2.00	1.00	2.00	.00
35	Turkish	LI	2.00	.00	2.00	1.00
36	Turkish	LI	2.00	1.00	2.00	1.00
37	Turkish	LI	1.00	2.00	1.00	2.00
38	Turkish	LI	3.00	.00	3.00	.00

#### Appendix F.4. Target-like Verb Raising selection in the ASC task

This table contains the mean for each participant in respect of their target-like selections in the feature verb raising in the acceptability sentence correction test. Figures are distributed as follows: target-like selection of S-V-Adv-O word order (manner adverbs) (n=4), target-like article frequency adverbs (n=4).

Target-like performance by participants, definiteness, specificity and L2 proficiency

Subj N°	L1	L2 English prof	manner adverb S-Adv-V-O	manner adverb S-V-Adv-O	frequency adverb S-Adv-V-O	frequency adverb S-V-Adv-O
1	Spanish	Adv	3.00	1.00	1.00	3.00
2	Spanish	Adv	3.00	1.00	3.00	1.00
3	Spanish	Adv	3.00	1.00	2.00	2.00
4	Spanish	Adv	2.00	2.00	4.00	.00
5	Spanish	Adv	4.00	.00	3.00	1.00
6	Spanish	Adv	3.00	1.00	3.00	1.00
7	Spanish	Adv	3.00	1.00	2.00	2.00
8	Spanish	Adv	2.00	2.00	3.00	1.00
9	Spanish	Adv	4.00	3.00	4.00	4.00
10	Spanish	Adv	3.00	1.00	3.00	1.00
11	Spanish	Adv	3.00	1.00	4.00	.00
12	Spanish	Adv	4.00	.00	3.00	1.00
13	Spanish	Adv	4.00	.00	3.00	1.00
14	Spanish	LI	2.00	2.00	4.00	.00
15	Spanish	LI	3.00	1.00	3.00	1.00
16	Spanish	LI	3.00	1.00	1.00	3.00
17	Spanish	LI	2.00	2.00	4.00	.00
18	Spanish	LI	3.00	1.00	4.00	.00
19	Spanish	LI	4.00	.00	3.00	1.00
20	Spanish	LI	2.00	2.00	4.00	.00
21	Spanish	LI	3.00	1.00	2.00	2.00
22	Spanish	LI	3.00	1.00	3.00	1.00
23	Turkish	Adv	3.00	1.00	1.00	3.00
24	Turkish	Adv	3.00	1.00	1.00	3.00
25	Turkish	Adv	1.00	3.00	2.00	2.00
26	Turkish	Adv	2.00	2.00	1.00	3.00
27	Turkish	Adv	2.00	2.00	2.00	2.00
28	Turkish	Adv	1.00	3.00	1.00	3.00
29	Turkish	Adv	2.00	2.00	1.00	3.00
30	Turkish	Adv	1.00	3.00	2.00	2.00
31	Turkish	Adv	1.00	3.00	1.00	3.00
32	Turkish	Adv	1.00	3.00	2.00	2.00

<b>33</b>	<b>Turkish</b>	LI	.00	4.00	3.00	1.00
<b>34</b>	<b>Turkish</b>	LI	3.00	1.00	2.00	2.00
<b>35</b>	<b>Turkish</b>	LI	.00	4.00	2.00	2.00
<b>36</b>	<b>Turkish</b>	LI	1.00	3.00	1.00	3.00
<b>37</b>	<b>Turkish</b>	LI	3.00	1.00	3.00	1.00
<b>38</b>	<b>Turkish</b>	LI	1.00	3.00	1.00	3.00

## Appendix G. Individual responses on the Questionnaire

### Appendix G.1. Rating Questions on similarities/differences (L1 vs. L2 vs. L3)

This table contains the mean for each participant in respect of their responses to the closed questions (rating questions) of the questionnaire. The questions were distributed as follows: (a) How similar are French and English? (b) How similar are French and Spanish/Turkish? How similar are French and Spanish/Turkish (c) How helpful was learning English before French. Spanish participants answered questions about how similar Spanish vs. English/French while the Turkish participants answered questions about how similar Turkish vs. English/French. Both groups answered both questions (a) and (c).

Responses by question type and L2 proficiency

Subj N°	L1	L2 English prof	French vs. English	French vs. Spanish	English vs. Spanish	French vs. Turkish	English vs. Turkish	Learning English before French
1	Spanish	Adv	Different	Very similar	Very different	N/A	N/A	Not at all helpful
2	Spanish	Adv	Different	Very similar	Very different	N/A	N/A	Not helpful
3	Spanish	Adv	Very different	similar	Very different	N/A	N/A	Not helpful
4	Spanish	Adv	Very different	similar	Slightly different	N/A	N/A	Not helpful
5	Spanish	Adv	Different	Very similar	different	N/A	N/A	Not at all helpful
6	Spanish	Adv	Different	Slightly similar	Slightly different	N/A	N/A	Not at all helpful
7	Spanish	Adv	Slightly different	Slightly different	Slightly similar	N/A	N/A	Slightly not helpful
8	Spanish	Adv	different	similar	Very different	N/A	N/A	Not at all helpful
9	Spanish	Adv	Different	similar	Slightly different	N/A	N/A	Not helpful
10	Spanish	Adv	Very different	Very similar	Very different	N/A	N/A	Not at all helpful
11	Spanish	Adv	Slightly different	Slightly different	Slightly similar	N/A	N/A	Slightly not helpful
12	Spanish	Adv	Very different	Very similar	different	N/A	N/A	Not at all helpful
13	Spanish	Adv	Slightly different	Slightly different	Slightly similar	N/A	N/A	Not helpful
14	Spanish	LI	Different	Very similar	different	N/A	N/A	Not at all helpful
15	Spanish	LI	Slightly different	Slightly different	Slightly different	N/A	N/A	Not at all helpful
16	Spanish	LI	Different	similar	Slightly different	N/A	N/A	Not at all helpful
17	Spanish	LI	Different	Very similar	Very different	N/A	N/A	Not at all helpful
18	Spanish	LI	Different	Slightly similar	different	N/A	N/A	Not at all helpful

19	Spanish	LI	Different	Slightly similar	different	N/A	N/A	Not at all helpful
20	Spanish	LI	Slightly different	Slightly similar	different	N/A	N/A	Not at all helpful
21	Spanish	LI	Different	similar	different	N/A	N/A	Not at all helpful
22	Spanish	LI	Different	similar	different	N/A	N/A	Not at all helpful
23	Turkish	Adv	Very similar	N/A	N/A	Very different	Very different	Very helpful
24	Turkish	Adv	Similar	N/A	N/A	different	different	Very helpful
25	Turkish	Adv	Very similar	N/A	N/A	different	different	Very helpful
26	Turkish	Adv	Slightly similar	N/A	N/A	Very different	Very different	Helpful
27	Turkish	Adv	Very similar	N/A	N/A	Very different	Very different	Very helpful
28	Turkish	Adv	Slightly different	N/A	N/A	Slightly different	Slightly different	Slightly helpful
29	Turkish	Adv	Slightly similar	N/A	N/A	Very different	Very different	Slightly helpful
30	Turkish	Adv	Similar	N/A	N/A	Very different	different	Very helpful
31	Turkish	Adv	Similar	N/A	N/A	different	Slightly different	Slightly helpful
32	Turkish	Adv	Slightly different	N/A	N/A	Very different	Very different	Slightly helpful
33	Turkish	LI	Slightly similar	N/A	N/A	Slightly similar	Slightly similar	Helpful
34	Turkish	LI	Similar	N/A	N/A	Slightly similar	Slightly different	Very helpful
35	Turkish	LI	Similar	N/A	N/A	Very different	Very different	Very helpful
36	Turkish	LI	Similar	N/A	N/A	Very different	Very different	Very helpful
37	Turkish	LI	Different	N/A	N/A	Slightly similar	Slightly similar	Slightly helpful
38	Turkish	LI	Slightly similar	N/A	N/A	different	Very different	Helpful

## Appendix G.2. Rating Questions on the difficulty level of the properties tested

This table contains the mean for each participant in respect of their responses to the closed questions (rating questions) of the questionnaire concerning the difficulty level of each property in L3 French. The questions were distributed as follows: (a) How difficult is identifying the gender of a given noun? (b) How difficult is assigning the right gender concord to Dets and Adjs? (c) How difficult is assigning the right plural inflection to Dets (c) How difficult is assigning the right plural inflection to Adjs? (d) How difficult is identifying the right article to a given noun (e) How difficult is choosing the right adverb position (before/after the verb)?

Subj N°	L1	L2 English prof	Gender assignment	Gender concord on Dets and Adjs	Number concord on Dets	Number concord on Adjs	Definiteness (Article choices)	Verb raising (Adverb Placement)
1	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Easy	Slightly difficult
2	Spanish	Adv	Easy	Very easy	Very easy	Very easy	Very easy	Easy
3	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Easy	Easy
4	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
5	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Slightly difficult
6	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
7	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
8	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
9	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
10	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
11	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
12	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
13	Spanish	Adv	Very easy	Very easy	Very easy	Very easy	Slightly easy	Easy
14	Spanish	LI	Very easy	Very easy	Very easy	Very easy	Slightly easy	Easy
15	Spanish	LI	Very easy	Very easy	Very easy	Very easy	Very easy	Easy
16	Spanish	LI	Very easy	Very easy	Very easy	Very easy	Very easy	Slightly difficult
17	Spanish	LI	Very easy	Very easy	Very easy	Very easy	Very easy	Slightly difficult
18	Spanish	LI	Easy	Easy	Very easy	Very easy	Very easy	Slightly difficult
19	Spanish	LI	Very easy	Very easy	Very easy	Very easy	Slightly easy	Easy
20	Spanish	LI	Easy	Easy	Very easy	Very easy	Slightly easy	Easy
21	Spanish	LI	Very easy	Very easy	Very easy	Very easy	Easy	Easy
22	Spanish	LI	Very easy	Very easy	Very easy	Very easy	Very easy	Slightly difficult
23	Turkish	Adv	Very difficult	difficult	Very easy	Very easy	Very easy	Very difficult
24	Turkish	Adv	difficult	difficult	Slightly easy	Slightly	Easy	Very difficult

						easy		
25	<b>Turkish</b>	Adv	Very difficult	Very difficult	Very easy	Very easy	Very easy	Very difficult
26	<b>Turkish</b>	Adv	Very difficult	Very difficult	Slightly easy	Slightly easy	Easy	Very difficult
27	<b>Turkish</b>	Adv	Very difficult	Very difficult	Very easy	Very easy	Easy	Very difficult
28	<b>Turkish</b>	Adv	Very difficult	Very difficult	Very easy	Slightly easy	Easy	Very difficult
29	<b>Turkish</b>	Adv	difficult	difficult	Very easy	Very easy	Slightly difficult	Difficult
30	<b>Turkish</b>	Adv	difficult	difficult	Very easy	Very easy	Easy	Difficult
31	<b>Turkish</b>	Adv	Very difficult	difficult	Easy	Easy	Easy	Very difficult
32	<b>Turkish</b>	Adv	Very difficult	Very difficult	Easy	Very easy	Easy	Very difficult
33	<b>Turkish</b>	LI	Very difficult	Very difficult	Very easy	Very easy	Slightly difficult	Very difficult
34	<b>Turkish</b>	LI	Very difficult	Slightly difficult	Very easy	Very easy	Very easy	Very difficult
35	<b>Turkish</b>	LI	difficult	Slightly difficult	Very easy	Very easy	Easy	Very difficult
36	<b>Turkish</b>	LI	difficult	difficult	Easy	Easy	Easy	Very difficult
37	<b>Turkish</b>	LI	Very difficult	difficult	Very easy	Very easy	Very easy	Difficult
38	<b>Turkish</b>	LI	Very difficult	difficult	Very easy	Slightly easy	Easy	Very difficult

## Appendix H. A List of the 500 most frequently used French words

This table contains a list of the most frequently used French words. This list is based on an original work of New & Pallier (2001) *L'équipe de Lexique* and can be freely downloaded from the link below. This table contains the French words and their synonyms in English and Turkish; the words that are identical or similar are shaded.

(<http://french.languagedaily.com/wordsandphrases/most-common-words>).

French Word	English translation	Turkish translation
1.être	to be; being	Olmak
2.avoir	to have	Var
3.je	I	Ben
4.de	of, from, by, than, in, with	Arasinda
5.ne	not	Ve
6.pas	not; step, pace	Ile
7.le	the; him, it	Ø
8.la	the; her, it	Ø
9.tu	you	Seni
10.vous	you, yourself	Seniz
11.il	he, it	O
12.et	and	Ve
13.à	in, to, with	'e
14.un	a, an; one	ya da
15.l'	the	Ø
16.qui	who, whom; that, which	O
17.aller	to go	Go
18.les	the; them	Ø
19.en	in, into, to, as	'da
20.ça	this, that	Bu
21.faire	to do, make	Make
22.tout	all, everything, any; very, quite	Tüm
23.on	we, you	Olan
24.que	that; what; which	O
25.ce	this, that	Bu
26.une	a, an	Bir
27.mes	my	Benim
28.d'	of, from, by, than, in, with	Arasinda
29.pour	for	İçin
30.se	himself, herself, themselves	Kendisi
31.des	some	Ø
32.dire	to say, tell	Söylemek
33. pouvoir	can, to be able to	Güç
34.vouloir	to want	Talep
35.mais	but	Ama
36.me	me, myself	I
37.nous	we, us	Biz

38.dans	in, into	İçinde
39.elle	she	Biz
40.savoir	to know	Okuma
41.du	(de + le/les) = of the, from the	Arasında
42.où	where, that	Nerede
43.y	it, there	Orada
44. t'	you, yourself	Sen
45.bien	well, very; good	Iyi
46.voir	to see	Görünüm
47.plus	more	daha fazla
48.non	no	Sigara
49.te	you, yourself	Eğer
50.mon	my	Benim
51.au	at the, to the, in the	At
52. avec	with	Ile
53.moi	I, me	Beni
54. si	yes; if; so, such	Eğer
55.quoi	what	Dok
56.devoir	to have to, must; duty, test	Görevi
57.oui	yes	ya da
58.ils	they	Onlar
59.comme	as, like; how, same	Olarak
60.s'	himself, herself, themselves	Ø
61.venir	to come, occur	Gelip
62.sur	on, upon; over	Üzerinde
63.toi	you	Eğer
64.ici	here	Burada
65.rien	nothing	hiçbir şey
66.lui	he, him, it, her	O
67.bon	good, right, kind; good	Iyi
68.là	there, here, then	Oada
69.suivre	to follow verb	Takip
70.pourquoi	why	Neden
71.parler	to speak, talk	konuşmak,
72.prendre	to take, get	Almak
73.cette	this, that	bu
74.quand	when, whenever	ne zaman
75.alors	then; so; hence	bundan dolayı
76.une chose	thing, matter	Şey
77.par	per, by, through, out of	Tarafından
78.son	his, her, its or sound	Onun
79.croire	to believe, think	Inanan
80.aimer	to love, like, be fond of	Aşk
81.falloir	it is necessary, must, have to	Gerekir
82.comment	how; what	Nasıl
83.très	very	Çok
84.ou	or; either... or	ya da
85.passer	to pass, go by, cross	Anahtarı
86.penser	to think	Düşünüyorum
87.aussi	also, too	Ayrıca
88.jamais	never	Asla
89.attendre	to wait for, expect	Beklemek

90.trouver	to find	Bulmak
91.laisser	to leave	Bırakın
92.petit	small, little, young	Küçük
93.merci	thanks, thank you	teşekkür ederim
94.même	same; even, so much as, as	Aynı
95.sa	his, her, its (feminine)	Onun
96.ta	your (feminine)	Ta
97.autre	other, another, different	Başka
98.arriver	to arrive	Gerçekleşmesi
99.ces	these, those	Bu
100.donner	to give, give away	Veren
101.regarder	to look at, watch	Izle
102.encore	again, over again, even, still	Hala
103.appeler	to call, ring	Çağrı
104.est-ce que	is it	Do
105.peu	not much, not very, few; bit	Bit
106.homme	man	Adam
107.partir	to go, leave, go away	Adlı
108.ma	my	Benim
109.toujours	always, still	her zaman
110.jour	day, daytime	Gün
111.femme	woman, wife	Eşi
112.temps	weather; time; times	Kez
113.maintenant	now, nowadays	Şimdi
114.notre	our (singular)	Our
115.vie	life, lifetime, existence	Hayat
116.deux	two	İki
117.mettre	to put, put on, wear	Yer
118.rester	to stay, remain	Kalmak
119.sans	without	Olmadan
120.seul	alone	Yalnız
121.arrêter	to stop	Durak
122.vraiment	really, truly	Gerçekten
123.connaître	to know, experience	Biliyorum
124.quelque	some, a few, any	Bir
125.sûr	on, over	Ders
126.tuer	to kill	Öldürmek
127.mourir	to die, pass away	Kalıp
128.demander	to ask, ask for, be looking for	Isteği
129.juste	just, fair; just, right, accurate	Fuar
130.peut-être	perhaps, maybe	Belki
131.dieu	god	Tanrı
132.fois	time	Kez
133.oh	oh!	Hey
134.père	father	Baba
135.comprendre	to understand, comprehend	Anlama
136.sortir	to go out; take out	Üzerinden
137.personne	person	Kişi
138.an	year	Yıl
139.trop	too much, too	Çok
140.chez	at, to, in	Da
141.fille	daughter, girl,	Kızı
142.aux	(à + les) = of the	Etmek

143.monde	world, people	Dünya
144.ami	friend; friendly	Arkadaş
145.vrai	true, real, genuine	Gerçek
146.après	after, afterwards, later	Sonar
147.mal	trouble, difficulty; badly	Kötü
148.besoin	need, demand, necessity	İhtiyacı
149.accord	accord, harmony	Anlaşması
150.ses	his, her, its (plural)	Onun
151.avant	before	Önce
152.monsieur	Mr	Bay
153.enfant	child, infant	Çocuk
154.grand	big, large, tall, great	Büyük
155.entendre	to hear, listen to, understand	Duymak
156.voilà	there is, there are	Burada
157.chercher	to look for, seek	Arama
158.heure	hour	Kez
159.mieux	better, utmost, best	Daha
160.tes	your (plural)	Senin
161.aider	to help, aid	Yardım
162.mère	mother	Anne
163.déjà	already, before	Zaten
164.beau	beautiful, lovely, pretty	Güzel
165.essayer	to try, try out, test	Deneyin
166.quel	what, which (interrogative)	Ne
167.vos	your (plural, from "votre")	sizin
168.depuis	since, from, for	Beri
169.quelqu'un	someone, somebody	Birisi
170.beaucoup	much, many, a lot	Lot
171.revenir	to come back, return	Dönüş
172.donc	so, therefore	Yüzden
173.plaire	to be successful	Lütfen
174.maison	house, home	Ev
175.gens	people (plural)	Kişi
176.nuit	night	Gece
177.ah	ah	
178.soir	evening	Akşam
179.nom	name	İsim
180.bonjour	good morning	Merhaba
181.jouer	to play	Oyun
182.leur	their	Onları
183.finir	to finish, end	Sonunda
184.peur	fear, fright	Korku
185.mort	death; dead	Ölüm
186. parce que	because, for	Dolayı
187.perdre	to lose, miss	Kaybetmek
188.maman	mummy, mama, mom	Anne
189.sentir	to smell, sniff, feel	Hissediyorum
190.ouais	yeah, yep	Evet
191.rentrez	to bring in, come back	Dönüş
192.nos	our (plural)	Our
193.premier	first, basic; first floor	İlk
194.problème	problem	Sorun
195.argent	silver, money	Para

196.quelle	who, what, which	Ne
197.vivre	to live, be alive, go through	Canlı
198.rendre	to return, give back, repay	Yapmak
199.dernier	last, latest	Son
200.tenir	to hold, run, keep, last	Tutun
201.cet	this, that	Bu
202.main	hand	El
203.cela	this, that	O
204.vite	quickly, fast, soon	Yakında
205. oublier	to forget, miss	Unutmak
206.air	air; look, appearance	Hava
207.salut	greeting; Hi!, Hello!, Bye	Merhaba
208.fils	son	Oğlu
209. travailler	to work, work on, practise	Eser
210.moins	less	Az
211.tête	head, face	Baş
212.coup	blow, shot, kick, punch	Darbe
213.écouter	to listen	Dinle
214.raison	reason	Nedeniyle
215.manger	to eat	Yemek
216.amour	love, love affair, cupid	Aşk
217.entrer	to enter, come in	Girmek
218.dont	whose, of which	kimin
219. nouveau	new, fresher	Yeni
220.devenir	to become	Haline
221.hein	what?, eh?, Huh? (familiar)	Ha
222. commencer	to start, begin, commence	Başlangıç
223. merde	shit (vulgar), bull, crap, damn	Bok
224.moment	moment, while, point	Kez
225.voiture	car, coach, carriage	Araba
226.vieux	old; old man, old woman	Eski
227.demain	tomorrow	Yarın
228.revoir	to review	Yorum
229.elles	they	Onlar
230.payer	to pay	Ödeme
231.fou	fool, mad, crazy; madman	çılgın
232.tirer	to pull, draw	Berberlik
233.ouvrir	to open	Açık
234.oeil	eye, view (= œil) (plural is y	Göz
235.fait	fact	Aslında
236.changer	to change, exchange	Değişim
237.question	question, matter	Sorunu
238.tomber	to fall	Düşüş
239.assez	enough, quite, fairly	Yeterince
240.foutre	(slang) to do, give, put on	Cum
241.excuser	to forgive, pardon, excuse	özür dilerim
242.affaire	affair, business	Vaka
243.dormir	to sleep; to lie idle	Uyku
244.combien	how much, how many	Nasıl
245.frère	brother	Kardeş
246. travail	wor, labor, employment	Eser
247.idée	idea, opinion	Fikir
248.eh	hey!	Eh

249.puis	next, then, besides, plus	Sonar
250.famille	family	Aile
251.truc	trick, knack, thing	Hile
252.trois	three	Üç
253.tant	much, so much	Olarak
254.souvenir	souvenir, memory, to remember	Hatırla
255.ni	nor, or (negative)	Veya
256.tous	everything, all (plural)	Bütün
257.occuper	to occupy, live in, take up	Bakım
258.entre	between, among	Arası
259.ok	OK	Ok
260. marcher	to walk, march, go	Yürüyüş
261. chance	chance	Şans
262. aujourd'hui	today, nowadays	Bugün
263. envoyer	to send, throw, dispatch, refer	Gönderme
264. histoire	history, story	Hikaye
265.jeune	young, youthful; young person	Genç
266.tard	late	Daha sonar
267. apprendre	to learn, to hear (about)	Öğrenmek
268. minute	minute	Dakika
269.boire	to drink (consume alcohol)	İçecek
270.garder	to guard, to keep, to look after	Tutmak
271.quelques	some (quantity), small number	Az
272.type	type, kind; guy (colloquial)	Tip/Türü
273.porte	gate, door	Kapı
274.montrer	to show, point out	Gösterisi
275.mec	guy, bloke	Adam
276. asseoir	to sit down, sit up	Sit
277.porter	to carry, wear	Aşınma
278.attention	attention	Dikkat
279.année	year	Yıl
280.sous	under	Alt
281.prêt	ready	Kredi
282.contre	against	Karşı
283.prier	to pray	Dua
284.pendant	for, during	İçin
285.mois	month	Ay
286.meilleur	better; the best one	en iyi
287.servir	to serve	servis /hizmet
288.madame	madam, Mrs	Bayan
289.putain	whore, hooker	Fahişe
290.écrire	to write	Yazma
291.part	part, share	Bölüm
292.eau	water	Su
293.sang	blood	Kan
294.place	room, square, seat	Yeri
295.espérer	to hope for	Umut
296.plein	full, solid	tam
297.désoler	to distress, upset	Grieve
298.eux	them, they	Onları
299.retrouver	to find; to meet	Bulmak
300.ville	town, city	Şehir
301.terre	earth, ground	Arazi

302.gagner	to win, earn	Kazanmak
303.semaine	week	Hafta
304.acheter	to buy	Almak
305.longtemps	long, for a long time	Uzun
306.gars	boy, chap, guy	Adamlar
307.chambre	bedroom, chamber	Oda
308.hé	Hey! (to attract attention)	Hey
309.côte	coast, slope, side	Tarafı
310.droit	law, right; straight	Hakkı
311.rappeler	to remind, remember, call back	Hatırlamak
312.lire	to read	Okuma
313.cas	case, instance	Olgu
314.mot	word	Kelime
315.seulement	only, solely	Sadece
316.voici	here is, here are	Burada
317.monter	to go up, rise, come up	Tırmanış
318.désolé	contrite, desolate, afraid, sorry	Üzgünüm
319.quitter	to quit, leave, depart	Çıkmın
320.police	police	Polis
321.suite	rest, result, continuation	Aşağıdaki
322.matin	morning	Sabah
323.emmener	to take (somebody), take along	Almak
324.toucher	to touch	Dokunmatik
325.continuer	to continue, go on	Devam
326.devant	in front, ahead; in front of	Ön
327.fort	strong, solid; loud, much, most	Kutu
328.gros	big, large, thick, heavy	Toptan
329.enfin	finally, at last	son olarak,
330.pardon	Pardon. I'm sorry!, Excuse me!,	Af/üzgünüm
331.mari	husband	Koca
332.là-bas	there, over there	Orada
333. importer	to import; to matter	Ithalat
334.papa	daddy, dad	Baba
335.train	train, pace	Tren
336.manquer	to miss, to miss somebody	Bayan
337.raconter	to tell	Yeniden sayımın
338. ensemble	together, at once	Genel
339.mauvais	bad, poor, wrong	Kötü
340.film	film, movie	Film
341.répondre	to answer, reply	Karşılama
342.garçon	boy, chap, guy	Oğlan
343.chéri	darling, loved	Sevgilim
344.corps	body	Vücut
345.celui	the one, that one	Bir
346.autres	other	Diğer
347.heureux	happy, felicitous	Mutlu
348.loin	far, a long way off	Uzak
349.aucun	no, not any; none	Hiçbir
350.pauvre	poor; poor person	fakir
351.sauver	to save	Tasarrufu
352.chaque	each, every	Her
353.retourner	return	Dönüş
354.leurs	theirs	Onların

355.rencontrer	to meet, encounter	Karşılama
356.coeur	core, heart	Kalp
357.voler	to fly; to steal, swipe	Sinek
358.fermer	to close, shut	Yakın
359.car	because, for	Dolayı
360.valoir	to hold, apply; to be worth	Savunuyor
361.descendre	to take down, go down	Aşağı
362.feu	fire	Yangın
363.docteur	doctor, physician	Doktor
364.suffire	suffice, to be enough	Kâfi
365.çon	way, manner, behaviour	Yolu
366.important	important, considerable	Önemli
367.semblant	to seem, appear, look	Ses
368.super	great, fantastic, super	Super
369.compter	to count	Sayısı
370.vers	towards, near, around, about	Etmek
371.joli	nice, tidy, pretty (attractive)	Güzel
372.point	dot, full stop, period	Nokta
373.noir	black; black man/woman	Siyah
374.hier	yesterday	Dün
375.chien	dog	Kopek
376.guerre	war	Savaş
377.genre	kind, type, sort	Tarz
378.marier	to marry, get married	Evlenmek
379.arme	weapon	Silah
380.cause	cause, reason	Dolayı
381.endroit	place	Yer
382.ordre	order, command	Sipariş
383.poser	to put down, lay, pose, sit	poz
384.reste	the rest	Dinlenme
385.pied	foot; stem, leg, base	Ayak
386.envie	desire, urge, craving	Gıpta
387.près	near	Yakın
388.fin	end, ending	Sonu
389.tiens	Why!, Hello! (surprise)	Gibi
390.inquiéter	to worry, bother, trouble	Endişe
391.d'autres	others; more	Diğer
392.bouger	to move	Hareket
393.plutôt	rather, quite	Yerine
394.apporter	to bring, supply	Yapmak
395.photo	photo, photography	Foto
396.décider	to decide	Karar
397.ainsi	like this, in this way	Ve
398.certain	certain, sure	Bazı
399.aucune	no, not any, in no way	Hiçbir
400.vendre	to sell	Satışı
401.école	school	Okul
402.cher	dear, beloved, darling, expensive	Sevgili
403.chef	leader, chief, head	Baş
404.tourner	to turn, stir, toss, shoot	Dönüş
405.cacher	to hide, conceal	Sakla
406.boulot	work, job	İş
407.pays	country, nation, land (country)	Ülke

408.ceux	this one, that one	Olanlar
409.possible	possible	mümkün
410.expliquer	to explain, account for	Açıklar
411.battre	to beat	Yendi
412.peine	sorrow, grief, sadness, suffering	Cümle
413.livre	book; pound	Kitap
414.agir	to act, behave; work, take effect	Hareket
415.imaginer	to imagine, suppose	Hayal
416.tour	tour, tower, castle	Kule
417. adorer	to adore, love	Aşk
418.vérité	truth	Gerçeği
419.recevoir	to receive, to get	Almak
420.gentil	gentil, kind, good, nice	Güzel
421.jeter	to throw	Atmak
422.pleurer	to cry	Çılgılığı
423.bébé	baby	Bebek
424.partie	part; game	Bölüm
425.nouvelle	new, fresh	Yeni
426. jeu	play, game	Oyunu
427.amener	to bring, take, bring about	Kurşun
428.instant	instant, moment	hiçbir şey
429.parent	parent	Veli
430.dur	hard, tough, harsh	Sabit
431. service	service, favor	Servis/Hizmet
432. plaisir	pleasure	Zevk
433. promettre	to promise	Söz
434. mentir	to lie	Yalan
435. soeur	sister	kardeş (kardeş)
436. bientôt	soon, quickly, shortly	Yakında
437. lit	bed	Okur
438. tellement	so (to such an extent), so much	Yüzden
439. utiliser	to use	Çok
440.lieu	place, site	Kullanım
441.coucher	to put to bed, lay down, to sleep	Yer
442.presque	almost, nearly	Yatmadan
443.dehors	outside, outdoors	Neredeyse
444.passé	past, last; the past, past tense	Dışında
445.préférer	to prefer	Geçmiş
446.content	happy, pleased, glad	Tercih
447.derrière	behind	Mutlu
448.con	stupid jerk, bloody idiot	geride
449.offrir	to offer, give	Con
450.roi	king	kanlı, aptal
451.verre	glass, drink	Cam
452.réveiller	to awake, wake (smb.) up	Uyandırma
453.aide	assistant; help, assistance	Yardım
454.d'abord	foremost (most important), first	İlk
455.journée	day	Gün
456.préparer	to prepare, make, get ready	Hazırlamak
457. numéro	number	Sayı
458.permettre	to permit, to allow	Izin
459.ramener	to bring back , take back	Arka
460.enlever	to take (smth.) away, remove	Kaldır

461.calme	calm	Sakin
462.lâcher	to let go of, to release	Sürümü
463.choisir	to choose	Seçin
464.musique	music	Müzik
465.conduire	to drive, lead	Kurşun
466.faute	mistake, error; fault; lack of	Arıza
467.calmer	to calm down, appease, sooth	Sakin
468.dîner	dinner; to have dinner	akşam yemeği
469.mariage	marriage, wedding	Evlilik
470.bureau	writing desk, study (room), office	Ofisi
471.route	road, journey, way	Yol
472.chanter	to sing	Şarkı
473.secret	secret; secretive	Sırrı
474.disparaître	to disappear, vanish	Kaybolur
475.lever	to raise, lift	Asansör
476.dessus	on top; top	yukarıdaki
477.présenter	to present, introduce	Mevcut
478.accepter	to accept	Kabul
479.baiser	kiss; to shag, screw, fuck	Öpücük
480.sinon	otherwise, or else, except	aksi takdirde
481.idiot	idiot; stupid	Salak
482.long	long, lengthy	Uzun
483.café	coffee, café (bar)	Kahve
484.propre	clean, tidy	Kendi
485.confiance	confidence, belief	Güven
486.cinq	five	Beş
487.bonsoir	good evening, good night	iyi geceler
488.compte	count, number	Hesap
489.téléphone	telephone	Telefon
490.casser	to break, shatter	Mola
491.prochain	next	Sonraki
492.frapper	to hit, strike, blow	Hit
493.facile	easy	Kolay
494.rêve	dream	Rüya
495.copain	friend, boyfriend	erkek arkadaşı
496.malade	ill, sick	Hasta
497.rue	street	Sokak
498.bas	low; bottom	düşük
499.lettre	letter	Mektup
500. ignorer	to ignore	Görmezden
<b>Total</b>	<b>=114 English words similar to French</b>	<b>=16 Turkish words similar to French</b>