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L2 learnability of viewpoint aspect at the initial stages of feature reassembly: a bidirectional study with learners of Chinese and Spanish

by

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Abstract

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L2 LEARNABILITY OF VIEWPOINT ASPECT AT THE INITIAL STAGES OF FEATURE REASSEMBLY: A BIDIRECTIONAL STUDY WITH LEARNERS OF CHINESE AND SPANISH

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The thesis examines the L2 learnability of features at the syntax-semantics interface. In the present thesis, L2 learnability problems are approached by following the predictions of the Feature Reassembly (FR) (Lardiere, 2007, 2008, 2009a, b), which assumes that L2 learning tasks lie in mapping existing features onto new L2 lexical items with different configurations. Previous studies testing the predictions of the FR reveal that the FR provides testable hypotheses for the learning task faced by the learners. However, what remains less known is which type of feature reassembly is more difficult for acquisition. The thesis provides novel insight into the nature of the L2 learning task and explores what factors affect the extent of L1 transfer and the complexity of the learning task at the initial stages of feature reassembly by exploring the L2 acquisition of viewpoint aspect.

Viewpoint aspect is a semantic category that has syntactic representations (Arche, 2006, 2014; Comrie, 1976, Demirdache and Uribe-Exebarria, 2000; Klein, 2009; Smith, 1991). The way aspectual meanings are realized is prone to cross-linguistic variation. L2 learnability of viewpoint aspect has been widely tested (e.g. Domínguez et al., 2013, 2017; Duff and Li, 2002; Jin, 2009; McManus, 2015; Montrul and Slabakova, 2002, 2003; Roberts and Liszka, 2013; Slabakova and Montrul, 2002,2003). However, what remains unclear is what are strong predictors of the acquisition problems faced by the learners: for instance, whether the grammaticalization of aspectual distinctions or the transparency of form-meaning mapping of the aspectual features determines the complexity of the learning task. The current thesis contributes to the knowledge of the nature of the L2 learnability of viewpoint aspect by investigating the Chinese—Spanish language combination. These two languages are typologically different, but both of them grammaticalize perfective/imperfective aspectual distinctions. A bidirectional study was conducted among 75 instructed L1 Spanish-L2 Chinese learners and 81 instructed L1 Chinese-L2 Spanish learners. A Sentence-Context-Preference-Matching task test whether learners have assigned correct semantic contrast to aspectual forms, and a Fill-in-the-blanks task test learners' use of the aspectual forms.

The results show that several factors contribute to the extent of L1 transfer and the complexity of the learning task at the initial stages of feature reassembly. The acquisition process can be facilitated when a linguistic property in the L2 has similarities in semantic meaning and grammatical function with its morphelexical equivalence in the L1. It is difficult to overcome L1 transfer at the initial stages of feature reassembly when there is a mismatch in the transparency of form-meaning mapping between the L1 and L2. The difficulty caused by the mismatch in the transparency of form-meaning mapping is more salient than the possible edge given by the fact that both L1 and L2 grammaticalize aspectual features. A condition that can exacerbate the complexity of the learning task is when the same features are expressed by more functional morphemes in the L2 compared to the L1. In addition, findings from the present study also reveal that the acquisition of a new feature not instantiated in the L1 is difficult. However, such a learning task is not necessarily more difficult than the task of mapping existing features onto new lexical items with different configurations. Meanwhile, the present study also reveals the potential role of L2 input and the role of previously acquired languages at the initial stages of feature reassembly.

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Research Thesis: Declaration of Authorship

Print name:	Kefan Yang

Title of thesis:	L2 learnability of viewpoint aspect at the initial stages of feature reassembly: a bidirectional study with learners of Chinese and Spanish

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signature:		Date:	June 7, 2021

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Definitions and Abbreviations

AH	aspect hypothesis
AUX	auxiliary
ASP	aspect
CONT	continuous
CL	classifier
DUR	durative
EvT	event time
EXP	experiential
FR	feature reassembly
GEN	genitive
L1	first language
L2	second language
L3	third language
PERF	perfective
P&P	principles and parameters
PROG	progressive
IMP	Imperfect
RefT	reference time
SLA	second language acquisition
T	tense
TT	topic time
UT	utterance time

Chapter 1 Introduction

1.1 Introduction of the study

In this study, I investigate the second language acquisition of features at the syntax and semantics interface. Features (phonological, syntactic, semantic) and the ways they are mapped onto lexical items of each language are at the core of cross-linguistic variation (Chomsky, 1995, 1998, 2001, 2004, 2007). One main argument of the thesis is that the L2 acquisition task involves reconfiguring features from the way they are assembled in the L1 into new configurations (different lexica items) in the L2 (Lardiere, 2008, 2009a.b). Crucially, L1 transfer plays an important role in the feature-reassembly process. Assuming Full Transfer (Schwartz and Sprouse, 1996), the L2 form-meaning mapping process involves learners initially looking for an equivalent morpholexical item in the L2 based on similarities in semantic meaning or grammatical function.

In this thesis, I will investigate the Feature Reassembly (Lardiere, 2008, 2009a.b) by exploring the L2 acquisition of aspect.

The main aims of the thesis are 1) to explore the extent to which L1 transfer is implicated in the L2 feature-reassembly processes, for example, the extent of L1 transfer in the initial feature remapping process and the subsequent feature reassembly process; 2) to investigate what factors affect the level of difficulty of establishing new L2 form-meaning mappings? For instance, to what extent does the transparency of form-meaning mapping in the L1-L2 combination affect the feature-reassembly process? 3) To explore whether the acquisition of a new feature in the L2 not available in the L1 is attainable.

In particular, this study examines what factors affect the extent of L1 transfer and the complexity of the learning task in the acquisition of aspect-related features in L2 Chinese by native Spanish speakers and L2 Spanish by native Chinese speakers within the Feature Reassembly (Lardiere, 2008, 2009a, b).

In order to achieve these goals, the present study employs a bidirectional design that involves 76 L1 Spanish-L2 Chinese and 80 L1 Chinese-L2 Spanish learners at two proficiency levels (beginners and intermediates). The main tasks used to collect evidence include a Sentence-Context-

Preference- Matching task and a Fill-in-the-blanks task. The purpose of the Sentence-Context Preference-Matching tasks is to explore the extent of L1 influence in the acquisition of aspectual forms by examining learners' interpretations of the associated forms. The function of the fill-in-the-blanks task is to investigate the extent to which learners are able to establish correct form-meaning mappings in the L2 by examining learners' choice of aspect forms in the corresponding contexts. (See more details of the design of the tasks in Chapter 5).

1.2 Rationale

Recent developments in generative linguistics (see section 1.3.1 below for details) have driven debates on the cause of divergence in L2 grammars. Among the relevant causes, the role played by features (phonological, syntactic, and semantic) in establishing form-meaning mappings in L2 acquisition has received special theoretical and empirical prominence.

On the one hand, there is one stream of theoretical proposals adopting the Representational Deficit Hypotheses (Beck, 1998; Eubank, 1993, 1994; Hawkins and Chan 1997; Hawkins and Hattori, 2006; Tsimpli and Dimitrakopoulou, 2006) which claims that L2 learners' failure of using correct morphology reflects that the syntactic features which trigger morphological movements are missing or impaired. This view holds that abstract morphosyntactic features are only accessible to the learners if they are instantiated in the L1. However, some findings show counterevidence to this view, indicating that morphosyntactic features are ultimately acquirable (Papadopoulou et al.; 2011; White et al., 2004). On the other hand, the opposite view (i.e., that L2 learners have intact underlying syntactic representations of target structures) suggests that the non-target-like use of the morpholexical items is caused by the difficulty of integrating knowledge from different linguistic modules. Within this position, the Missing Surface Inflection Hypothesis (Haznedar and Schwartz, 1997; Prévost and White, 2000) proposes that the missing inflections are attributed to difficulties in the retrieval of the relevant lexical items. In other words, instead of having a syntactic deficit in the interlanguage grammar, learners' non-native-like production of the morpholexical items reveals a mapping problem between the abstract features and the functional mental lexicon.

Building on the view that successful acquisition entails acquiring the formal features in the L2, the Feature Reassembly (FR) (Lardiere, 2005, 2007, 2008, 2009a, b) proposes that divergence in L2 grammar is caused by the difficulty of reconfiguring exiting features that are selected and assembled on the lexical items in the L1 into new formal configurations, often different lexical items in the L2. The Feature Reassembly is a relevant proposal as it allows researchers to make testable

hypotheses of the L2 acquisition process; for example, in terms of the hierarchy of difficulty of feature mapping and feature reassembly processes for different L1-L2 language combinations (Gil and Marsden, 2013), and how features are grammaticalized and encoded in the native language affects the level of difficulty in acquiring features in the L2 (Domínguez et al., 2017; Hwang and Lardiere, 2013; Shimanskaya and Slabakova, 2014). However, some researchers argue that despite the advantages of the FR, it has some limitations. White (2009) argues that the FR does not address the issue of what type of feature reassembly is more difficult, for instance, whether the reassembly process is more difficult if there are more features to be recombined. Slabakova (2009) proposes that the FR does not provide enough explanations of learners' difficulties with inflectional morphology and that some additional factors are responsible for the errors, e.g. whether a feature is overtly or covertly realized.

In spite of the development in the understanding of the feature-reassembly process, what remains less known is the L2 form-meaning remapping process at the initial stages of L2 acquisition. For instance, although previous studies testing the predictions of the FR have found that learners initially transfer the way form-meaning mapping is realized in the L1 to L2 acquisition (e.g. Cho and Slabakova; Hwang and Lardiere, 2013), it is not clear what factors affect the extent of L1 transfer at the initial process of FR. Meanwhile, previous studies have found that the L2 feature reassembly tasks are not equally difficult for the features: some features are acquired early while others remain persistently problematic (e.g. Domínguez et al., 2017; Gil and Marsden, 2013), it is not conclusive what factors can contribute to the complexity of the learning task at the initial stages of FR. Furthermore, new language pairs with different degrees of transparency of form-meaning mappings are needed in order to resolve this issue.

The current thesis aims to contribute to the knowledge of what factors affect the extent of L1 transfer and the complexity of the L2 learning task at the initial stages of feature mapping and feature reassembly. A bidirectional study focusing on the acquisition of grammatical aspect by L1 Spanish-L2 Chinese and L1 Chinese-L2 Spanish learners provides an ideal context in tackling this issue. In the following section, I will introduce the theoretical background of the current study.

1.3 Theoretical background

1.3.1 Generative Grammar and the Minimalist Program

In this thesis, I adopt 'Generative Grammar' as the underlying theoretical framework. In particular,

I use the latest approach of the theory: "the Minimalist Program" (Chomsky, 1995, 1998, 2000, 2004, 2007). The generative approach to the study of language was initially proposed by Chomsky (1957), and it proposes that language is based on a finite number of rules which enables us to generate an infinite number of sentences in a particular language. The basic proposal of generative linguistics is that as part of the human genetic endowment, humans have access to an innate Faculty of Language (FL) which is responsible for the production and comprehension of languages. An important component of the Faculty of Language is Universal Grammar (UG), which is regarded as the genetic blueprint of language (Chomsky 1981). UG makes available an array of features F (linguistic properties) and a computational system (CHL) which accesses the linguistic properties and generates expressions. It is also proposed that L1 acquisition and adult native speakers' language knowledge are constrained by the UG (Chomsky, 1957, 1986). The mental representations of the linguistic properties are generated and related by an unconscious, internalized linguistic system. What supports the existence of UG is the fact that the amount of linguistic input received by the L1 child learners is inadequate to account for the ultimate attainment of the L1 linguistic knowledge. Chomsky (1967) argues that the linguistic input received by the child decreases both in scope and quality: the input underdetermines all the possible sentences encountered by the child, and the input does not contain information about using the appropriate representations in establishing the generative grammar of the language. This is known as the argument from the Poverty of the Stimulus (Chomsky, 1986, 1971, 1978). Thus, the basis for generalizing linguistic knowledge comes from biological endowment together with linguistic experience (Chomsky, 1978).

The Minimalist Program (Chomsky, 1995, 1998, 2014) takes a reductionist view of UG, postulating that the number of internal entities of language should be minimal. The goal of the Minimalist Program is to find out the general conditions which the Faculty of Language should satisfy, as well as the extent to which the Faculty of Language is determined by these conditions. According to the Minimalist Program, the Faculty of Language consists of a computational system (CHL) and a lexicon (LEX) which comprises lexical items established by a well-articulated matrix of formal, phonological and semantics features. It is assumed that such features are derived from a limited, universal inventory of features that are made available by Universal Grammar (UG). Chomsky (2000, 2001, 2004) argues that triggered by exposure to linguistic input during first language acquisition, the language (L) makes a one-time selection of a subset [FL1] of features F, as well as a one-time assembly of elements of [FL1] onto particular lexical items [LEXL1]. As a result, each language selects a particular set of [FL1] and assembles a particular [LEXL1]. Language variations lie in the subset of features selected and the way the features are assembled onto functional categories and

lexical items.

The language-specific lexical items are accessed by the computational system that generates hierarchically structured representations of the mappings of meanings with forms. In the process of establishing form-meaning mapping, the computational system interacts with two systems: the articulatory-perceptual system (the sound or signs) and the conceptual-intentional system (the meaning). The interactions take place on two interface levels: the phonological form (PF) (syntax-phonology interface) and the Logical form (LF) (syntax-semantics interface). The two interface levels are assumed by the Minimalism to play a vital role in ensuring the optimal design of the linguistic expressions so that linguistic derivations must meet LF and PF demands in order to converge.

Features, which make up the lexical items of each language, are argued to have the distinction between interpretable and uninterpretable features (Pesetsky and Torrego, 2001, 2004). Interpretable features have semantic values and are interpretable at the LF (syntax and semantics interface); meanwhile, uninterpretable features, which do not have semantic content, are not interpretable at the LF and are restricted to syntactic derivations. Semantic features are interpretable features, while formal features are uninterpretable features.

1.3.2 The learning task for L2 acquisition

To account for the divergence of L2 grammar, some L2 acquisition theories within the Minimalist Program have probed into the source of the interlanguage knowledge. Two sources of interlanguage knowledge were identified: UG and the L1 steady-state grammar. For this study, an account of the L1 influence can facilitate a more precise understanding of the learning task faced by L2 learners (Slabakova, 2002). The Full Transfer/Full Access Hypothesis (Schwartz and Sprouse 1994, 1996) proposes that the initial state of the L2 grammar is the L1 steady-state grammar. L2 development is constrained by UG which L2 learners resort to when the cognitive representations of the native language cannot accommodate the linguistic restructuring from the L2 input. This hypothesis predicts that the influence of the native language is strong at the beginning stage of L2 acquisition, and it becomes less strong at the later stages of L2 acquisition. Following the assumptions of the Full Transfer hypothesis, the Feature Reassembly (FR) (Lardiere, 2005, 2007, 2008, 2009 a, b) addresses the difficulty of reconstructing morpholexical configurations. L2 learners bring a linguistic system with features assembled into L1 language-specific combinations. Thus, the acquisition task faced by the L2 learners is reconfiguring the features from the way these are

represented in the L1 and reassembling these features into new formal configurations onto quite different lexical items in the L2.

The learning tasks for L2 learners are complicated by the variation in how the different meanings available to all languages, which are provided by the Conceptual-Intentional system, are expressed by different languages (Jackendoff, 2002, Ramchand and Svenonius, 2008). According to Ramchand and Svenonius (2008), the variation includes several possibilities: some languages express the meanings by overt morphemes, others express the meanings by context; still, some languages have a null morpheme in the syntax even when there is no overt expression of the meanings. Ramchand and Svenonius (2008) discuss how different languages vary in the expression of definiteness. For example, Chinese and Russian have a null D in the syntax, and these languages allow bare noun phrases to express definiteness, see example (1a, b). Meanwhile, Italian uses dedicated morphemes to express definiteness (a definite article) and has strict restrictions for the use of bare nouns, see example (1c).

1) a. Xuesheng lai le.
Student come PERF
'The students came' (Chinese)

b. Student vo-šël v komnatu.
Student in-came in room
'A/The student came into the room.' (Russian)

c.*Bambini sono venuti da noi.
Children are come by us
'Children came to our house.' (Italian)

Ramchand and Svenonius (2008) argue that the D heads in the phrase structure are required by the UG. The underspecified D in Chinese and Russian have their 'specific interpretation and organization within a discourse representation filled-in by the C-I system' (7).

These variations underline the mismatches at the LF (the syntax-semantics interface), which require the L2 learners to establish new form-meaning mappings.

A linguistic property that is relevant to the issue of morphology-syntax-semantics mismatch is grammatical aspect. As an illustration of the learning situation of the above-mentioned property, consider the L2 acquisition of the Spanish Imperfect by L1 English learners in Domínguez et al. (2017). In Spanish, there is no ambiguity in the mapping between aspectual meanings and

morphological forms: the aspectual morphemes (Preterit and Imperfect) express either perfective meaning (one-time event) or imperfective meanings (progressive, habitual and continuous). In English, the simple past morphology can encode both perfective and imperfective meanings (habitual, continuous). Thus, the learning task faced by the L1 English-L2 Spanish learners is to remap the Imperfective meanings (habitual, continuous) associated with the English simple past onto the Spanish Imperfect. Another area under investigation which exemplifies the syntax-semantics mismatch is the acquisition of definiteness. For example, Ionin et al. (2004) investigated the acquisition of definiteness in L2 English by L1 Russian and L1 Korean learners. In English, definiteness and indefiniteness are mapped onto dedicated morphological items: definiteness to *the*, indefiniteness to *a*. Whereas in Russian and Korean, definiteness/indefiniteness distinction is not encoded by morpholexical items but instead expressed by other means, for instance, through context, demonstratives, and word order. The learning task faced by L1 Russian-L2 English and L1 Korean-L2 English learners is to establish new form-meaning correspondence: mapping definiteness onto *the* and mapping indefiniteness onto *a*.

1.3.3 Aspect at the syntax-semantics interface

The present study focuses on the L2 acquisition of Grammatical aspect (viewpoint aspect), a linguistic property known to be challenging for L2 speakers (Domínguez et al., 2017; McManus, 2011; Montrul and Slabakova, 2003; Roberts and Liszka, 2013; Salaberry, 1999; Slabakova, 2000, 2001, 2002, 2008; Slabakova and Montrul, 2002). In the present study, grammatical aspect is conceived as semantic features that carry information about the temporal development of an eventuality, for instance, whether an event is finished, in progress or about to start, and about the number of occasions for which an eventuality takes place. Researchers in the generative tradition have assumed that these semantic notions are mapped onto appropriate morphemes and have representations in the syntax (Arche, 2006; Arche, 2014; Demirdache and Uribe-Etxebarria 2000, 2014; Klein 1994, 2000; Stowell, 1993, 1996, 2007; Zagona, 1990). Under this view, the way the features are expressed is an area of cross-linguistic variation.

Wiltschko (2014) argues that although the formal mechanisms of viewpoint aspect are universal, they are achieved in different ways. A point of the cross-linguistic variation is that viewpoint aspect is not morphologically marked in all languages. For example, in the upper dialect of German, there is no morpholexical marking of the distinction between perfective and imperfective aspect. In addition, languages do not have identical formal properties associated with aspectual contrast.

Aspectual marking differs across languages in the 'positions in the hierarchical organization of morphemes (234)'. In Blackfoot, the aspectual markers: *a* (imperfective) and *akaa* (perfect) are involved in abstract nominalizations attached below the VP. This position is much lower than the expected universal aspectual category (above VP, below IP). Although the Blackfoot has overt realizations of aspectual distinctions, the instantiations of the aspectual category do not behave like a natural class. In Indo-European languages, viewpoint aspect is related to temporal categories, however, in other languages, for example, in Blackfoot, the point of view is introduced not based on times but on participant.

Thus, cross-linguistic variations on viewpoint aspect are not limited to whether there are overt/null expressions of aspectual features but also whether a language has the category of viewpoint aspect.

1.3.4 L2 acquisition of aspect: what do we still need to know

The L2 acquisition of aspect has been an intensively studied topic for several decades now. Previous studies have found evidence that L1 influence played an important role in the L2 acquisition of aspect (e.g. Chin, 2008; Duff and Li, 2002; Domínguez et al., 2011, 2017; McManus, 2015; Montrul and Slabakova, 2003; Roberts and Liszka, 2013; Slabakova, 2000, 2001, 2002, 2008; Slabakova and Montrul, 2002). However, there is no consensus on the extent of L1 transfer and the complexity of the learning task of establishing new form-meaning mapping of aspect-related features in L2 acquisition. For example, while some researchers propose that the grammaticalization of aspectual features in the L1 and L2 can largely determine the difficulty of L2 acquisition of aspect (Roberts and Listska, 2003; McManus, 2015), Domínguez et al. (2017) argue that the grammaticalization of aspectual distinctions is not a sufficient predictor of the complexity of the learning task because it does not provide the same level of transparency of form-meaning mapping of aspectual forms to be acquired in the L2.

The majority of studies on L2 acquisition of aspect have examined L1-L2 combinations which are both Indo-European languages: for instance: L1 English-L2 Spanish (e.g. Chin, 2008; Domínguez et al., 2017; Slabakova and Montrul, 2002), L1 English-L2 French (e.g. McManus, 2013), L1 German-L2 English (e.g. Roberts and Liszka, 2013). In contrast, fewer studies have explored the learning situation in which one of the languages is East-Asian Language: for example, L1 English-L2 Japanese (e.g. Gabriele and McClure, 2011; Gabriele, 2009), L1 English-L2 Chinese (e.g. Duff and Li, 2002). To the best of my knowledge, there is no previous study that has researched the L2 acquisition of

aspect using L1 Spanish-L2 Chinese and L1 Chinese-L2 Spanish combinations from a feature reassembly perspective.

1.4 The current study

The current study addresses the gap in our current knowledge concerning the extent of L1 influence and the complexity of the learning task at the initial stages of feature-reassembly in L2 acquisition. This is achieved by a bidirectional investigation into the acquisition of viewpoint aspect by a group of L1 Spanish-L2 Chinese learners and a group of L1 Chinese-L2 Spanish learners. The bidirectional study has the merits not shared by studies adopting a one-directional design: it allows an examination into the precise source of difficulty in the process of establishing form-meaning new mappings in the L2, for instance, the transparency of form-meaning mapping in the L1 and L2; it also allows an examination into whether the learning task is similar from Chinese to Spanish and from Spanish to Chinese.

Most of previous research on the L2 acquisition of aspect has been done on the L1 English speakers (e.g. Domínguez et al., 2011, 2017; Duff and Li, 2002; McManus, 2015; Montrul and Slabakova, 2002, 2003; Slabakova and Montrul, 2002). English does not grammaticalize perfective/imperfective distinctions. Both Chinese and Spanish use overt morphemes to express aspectual features. However, the way aspectual features are mapped onto lexical items in the two languages differ. The use of the Chinese-Spanish language pair allows a better understanding of the learning difficulties caused by the cross-linguistic difference in the way features are realized through morpholexical items when both the L1 and L2 grammaticalize aspect.

In the current study, I investigate six aspectual interpretations encoded by the Chinese aspectual markers (forms): perfective expressed by the marker *le*, experiential by *guo*, progressive by *zai*, habitual by temporal adverbial *jingchang* (often), continuous and durative by *zhe* (see example 1a-f); I also investigate five aspectual meanings encoded by the Spanish aspectual marking system: perfective by the Preterit, experiential by the Present Perfect, and progressive, habitual, continuous by the Imperfect (see examples 2a-e).

1) a. Línlín shàng zhōu bìng **le**. (**perfective**)
Linlin last week ill PERF.
'Linlin was ill last week.'
b. Wǒ cóngméi xiāngxìn **guo** fēngjiànmíxìn. (**experiential**)
I never believe EXP superstitions

'I have never believed in superstitions.'

c. Wǒmen dào de shíhou, Marta **zài** chàng gē. (**progressive**)
we arrive GEN time, Marta PROG sing song.
'Marta was singing when we arrived.'

d. Juan dào jiā de shíhou shēng **zhe** bìng. (**continuous**)
Juan arrive home GEN time was COUT ill
'Juan was ill when he got home.'

e. Zài huìyì shang, Lǐ xīanshēng chuān **zhe** xifu. (**durative**)
At conference during, Li sir wear DUR suit.
'At the conference, Mr Li was wearing a suit.'

f. Daniel **jīngcháng** zài dōngtiān shēng bìng. (**habitual**)
Daniel often in winter become ill.
'Daniel used to be sick in winter.'

2) a. Marta **estuvo** enferma el domingo pasado. (**perfective**)
Marta was$_{pret}$ ill the Sunday past
'Marta was ill last Sunday.'

b. Nunca **he creído** en las supersticiones. (**present perfect**)
Never AUX believed$_{pret\ perf}$ in the superstitions
'I have never believed in superstitions.'

c. Marta **estaba** dibujando un castillo. (**progressive**)
Marta was$_{imp}$ drawing a castle.
'Marta was drawing a castle.'

d. Juan **estaba** enfermo cuando llegó a casa. (**continuous**)
Juan was$_{imp}$ ill when he got home.
'Juan was ill when he got home.'

e. Normalmente Daniel **estaba** enfermo en invierno. (**habitual**)
Usually Daniel was$_{imp}$ sick in winter
'Daniel used to be sick in winter.'

These examples demonstrate that although Chinese and Spanish are two typologically different languages, both languages use overt morphemes to express aspectual meanings. I assume that these aspectual meanings are expressed by the same syntactic features in Chinese and Spanish except for one meaning: the durative meaning, which is only available in Chinese. Thus, the learning task faced by L1 Chinese-L2 Spanish and L1 Spanish-L2 Chinese learners is to reassemble existing features onto new L2 lexical items. For the L1 Spanish-L2 Chinese learners, the learning task also involves the acquisition of a new aspectual feature: durative.

Although the focus of the investigation of the current thesis is L2 acquisition, the participants of the study are in fact L3/L4 learners. Research into the school curriculum in China and Spain shows that English is an obligatory course in Chinese elementary and high schools. Thus, the Chinese learners of Spanish have learned English prior to the acquisition of Spanish. Meanwhile, English/French is taught obligatorily in Spanish high schools. Therefore, the Spanish learners of

Chinese have learned English prior to the acquisition of Spanish. Thus, based on these facts, it is fair to conclude that L2 learners of Chinese or Spanish are not available. A discussion of how learners' previously acquired languages can affect the acquisition of viewpoint aspect in Spanish and Chinese will be presented in Chapter 6.

1.5 The learning task in acquiring the features at the syntax-semantics interface

When investigating problems of establishing form-meaning mappings at the syntax-semantics interface in the L2, two questions emerge as particularly relevant. First, to what extent does L1 influence affect the initial stages involved in establishing form-meanings mappings in L2 acquisition? Previous studies have found that how form-meaning mappings are achieved in the L1 can cause different degrees of difficulty for L2 acquisition (e.g., Domínguez et al., 2017, McManus, 2015, Roberts and Listka, 2013).

An important factor causing the syntax-semantics mismatches between the L1 and L2 is the mismatch in the transparency of form-meaning mapping between the L1 and L2. Dekeyser (2005) proposes that transparency of form-meaning mapping plays a crucial role in determining the difficulty of L2 acquisition. The present study discusses which type of learning task is more difficult when there is a mismatch between the L1-L2 form-meaning mappings.

It has been argued that the most difficult type of form-meaning mapping is when a series of meanings are mapped to a single form in the L1 but are divided and expressed by separate forms in the L2 (Collins, 2004; Izquierdo, 2009). This is the learning situation faced by L1 Spanish-L2 Chinese learners in the acquisition of the imperfective meanings: progressive, continuous, habitual. In the learners' L1 Spanish, these meanings are expressed by a single morpheme: the Imperfect, whereas in L2 Chinese, these meanings are isolated and mapped onto different aspectual markers: the progressive marker *zai*, the durative marker *zhe,* and the temporal adverbial *jingchang*. An exacerbating factor of the difficulty of this type of learning task is that for the L1 Spanish-L2 Chinese learners, the same imperfective meanings are expressed by more functional morphemes in the L2 than those in the L1. Slabakova (2009, 2013) argue that acquiring functional morphology precedes the acquisition of syntax and semantics. The L1 Spanish-L2 Chinese learners will need more time to map correct interpretations onto the aspectual forms because they need to acquire the morphemes before establishing the semantics.

Another relevant factor is whether the grammaticalization of aspectual features in the L1 and L2 facilitates L2 acquisition. In the present study, both Chinese and Spanish grammaticalize aspectual features. Roberts and Liszka (2013) found that L2 acquisition can be facilitated when both L1/L2 encodes tense and aspectual meanings via overt morphemes. This is supported by the finding that L1 French-L2 English learners are more sensitive than L1 German-L2 English learners to the present perfect/simple past mismatches in L2 English. The authors argue that it is the fact that French overtly marks aspect gives an edge to the French learners so that they are more sensitive to the aspect marking in English. In contrast, the fact that aspect is not overtly realized in German makes it difficult for L1 German-L2 English learners to automatize the knowledge that the aspectual meanings are mapped to overt morphemes in L2 English.

The second question is what happens if the L2 acquisition involves acquiring a new semantic feature not instantiated in the L1? Is it more difficult to acquire a new feature than to remap features already selected and assembled in the L1 onto new lexical items in the L2? White (2009) argues that the selection of new features can be considered as a special case for feature reassembly. An example of this learning scenario is L1 Spanish-L2 Chinese learners' acquisition of the durative interpretation and its expressions through the durative marker by the marker *zhe* in Chinese, while this meaning is not available in their L1.

1.6 Research questions

The research questions I aim to investigate in this thesis are:

General research question: What factors affect the extent of L1 influence and the complexity of the learning task at the initial stages of L2 acquisition of a language that has different aspectual marking systems?

RQ 1: How are L2 learners affected by L1 transfer in the initial mapping process of the feature reassembly? In particular, do L2 learners map features from the closest equivalent morpholexical item in the L1 to a morpholexical item in the L2 (based on similarity in meaning or grammatical function)?

RQ 2: How are L2 learners affected by the transparency of form-meaning mappings in the mapping process? Will the initial stages of feature reassembly be challenging for the learners when

the semantic features are expressed by more functional morphemes in the L2? Will the initial stages of feature reassembly be facilitated by the grammaticalization of semantic features in the L1 and L2?

RQ 3: Are L2 learners able to add a new semantic feature not available in the L1 during the feature reassembly processes? If so, at what learning stages?

1.7 Organization of the thesis

The thesis is organized into 7 chapters. Chapter 1 introduces the main objectives of the thesis and the research questions. Chapter 2 discusses the theoretical framework adopted in this thesis, the Feature Reassembly (Lardiere 2008, 2009a, b), and also offers an overview of the studies that have tested this hypothesis. Chapter 3 investigates the theoretical background of Aspect, with a discussion of key concepts of Aspect, the Chinese/Spanish aspectual system, as well as previous studies on the L2 acquisition of Aspect. Chapter 4 discusses the learning tasks, research questions, and research predictions, and experimental methods of the thesis. Chapter 5 presents the results of the experimental study. Chapter 6 discusses the findings and the theoretical and pedagogical implications of the thesis. Chapter 7 concludes by discussing the contributions and limitations of this study and by providing suggestions for future research.

Chapter 2 Generative views on L2 acquisition

Research in generative approach to second language acquisition is concerned with establishing the nature of mental representations that L2 learners build and develop when learning an L2, and also examining how L2 learners use the underlying linguistic competence in language production and comprehension (White, 1989, 2003). According to the generative tradition to L2 acquisition, the learning task faced by L2 learners is to build mental representations of target form-meaning mappings based on exposure to L2 input. The aim shared by all theories of L2 acquisition is to investigate why certain types of form-meaning mappings pose persistent learning difficulties while others are easier to acquire (Slabakova, 2008). Thus, it is important to know the source of cross-linguistic variations and the cause of L2 learnability problems in establishing new form-meaning mappings in the L2.

2.1 The source of cross-linguistic variation: Early generative theories to language acquisition and the Minimalist Program

According to early generative theories of language acquisition, Universal Grammar (UG) is proposed as an element of the innate biological endowment of language faculty (Chomsky, 1965, 1981; Pinker 1994), which includes general, invariant principles which apply to all languages, as well as parameters which allow cross-linguistic variations on language-specific properties (Chomsky 1981, 1986). And such inquiry is referred to as the Principles and Parameters (P&P) framework (Chomsky, 1981, 1995). Within this framework, the setting of the parameters has been referred to as the 'switch setting' metaphor, which entails an 'on/off' or (+/-) binary setting. L1 acquisition is regarded as a process of identifying the appropriate settings of the relevant parameters according to the input they are exposed to. The central argument for the Principles and Parameters framework is that a single parameter setting brings together a cluster of apparently disparate syntactic properties. Taking the Null Subject Parameter (NSP) as an example (Chomsky 1981a), a learner has to discover whether the setting of the Null Subject Parameter of a language is [+null subject] or [-null subject], and a range of associated settings will follow automatically.

Although the Principles and Parameters framework was first advanced for L1 acquisition, it was developed to the realm of L2 acquisition (White, 1989a). Since L2 learners bring to the acquisition

task with parameters that are already set to L1 values, successful L2 acquisition depends on whether L2 learners can reset the parameters to the L2 values (White, 1985, 1986, 1989b, 2003).

The Minimalist Program (MP) (Chomsky, 1995b, 1998, 2000. 2004, 2007) emerged from the Principles and Parameters framework, taking a reductionist view of language faculty and language acquisition. Under this view, the theoretical apparatus relevant to language is reduced to a minimum (Gallego, 2011). UG only consists of Merge, an operation that applies two syntactic objects to form a new syntactic object (Chomsky, 2007), and a universal inventory of formal features (e.g. [±past], [±wh].)

According to the Minimalist Program, parametric differences across languages are argued to be located in the lexicon where formal features are assembled onto the lexical items. This proposal was first made by Borer (1984) in the Lexical Parametrisation Hypothesis, and later was adopted by Chomsky, which is widely known as the Borer-Chomsky Conjecture (Baker, 2008:253). Under this view, language variation lies in what features are selected by languages from the UG inventory and how the combinations of features are assembled onto language-specific morpholexical items.

According to the Minimalist Program, children have access to a universal inventory of features, and their acquisition task is to select the appropriate subset of features instantiated in their native language and disregard the rest of the features which are not selected in that particular language. The selected features are assembled onto the language-specific lexical items that enter into computations that derive a hierarchically structured representation of the form-meaning mappings. This process is referred to as a feature-selection-and-assembling process (Chomsky, 2007). For L2 learners, who bring to the acquisition task a fully assembled set of features, the success of acquisition depends on (1) feature selection: whether they can select features which are not instantiated in their L1, and (2) feature realization: whether they can reassemble features from the way these are realized in the L1 onto new formal configurations in the L2. Another standard assumption of the Minimalist Program is that human language faculty consists of only the Computational System, the Lexicon [LEX], and two interface levels: phonological form (PF) and logical form (LF). Cross-linguistic variation is argued to also lie at the LF: the syntax and semantics interface (see Chapter 1).

2.2 L2 learnability problem

2.2.1 Theoretical views under the parameter-setting framework

According to early generative theories of L2 acquisition, parameter-resetting constitutes a particular way of explaining the role of L1 influence in the L2 acquisition task. A prerequisite of understanding the L2 learning task is understanding what constitutes the initial state of L2 interlanguage grammar. The term initial state refers to the unconscious linguistic knowledge that an L2 learner starts out with before exposure to L2 input or the "characteristics of earliest grammar" (White, 2003: 58). Based on the principles-and-parameters framework, the Full Transfer/Full Access Hypothesis (Schwartz and Sprouse, 1994, 1996) assumes that the whole of a learner's native grammar forms the initial state of the interlanguage grammar. In addition, the parametric values are initially transferred from the L1. Furthermore, in subsequent development, learners are able to reconstruct the interlanguage grammar and accommodate to the properties in the L2 not instantiated in the L1 grammar, including new parametric settings, functional categories, and feature strength by recourse to UG options. This hypothesis proposes different development paths for learners of different L1s. When the L1 and L2 share similar parametric values, there is no need for adjustment; however, if the L1 and the L2 have different parametric values, parameter-resetting is necessary in order to achieve target-like L2 interlanguage grammar. However, the Full Transfer/Full Access hypothesis does not make it clear how subsequent restructuring of the interlanguage grammar happens after the initial L1 transfer. Although it predicts that the ultimate attainment of the target language is possible due to full access to UG, it does not provide concrete explanations concerning the cause of divergence in the target grammar.

Under the parameter-setting framework, L2 learning problems lie in the differences between L1 and L2 in terms of the selection of features. In other words, L2 learners have no access to the abstract morphosyntactic features which do not have the same parametric settings as those of the L1. This line of theoretical proposals is referred to as the Representational Deficit Hypotheses (Beck, 1998; Eubank, 1993, 1994; Hawkins and Chan, 1997; Hawkins and Liszka, 2003).

An example of this line of proposals is Hawkins and Liszka's (2003) study on L2 acquisition of past tense morphology in English by learners of three different L1 backgrounds: Chinese, Japanese and German. Results from the oral production tasks revealed that Chinese learners produced significantly fewer past tense *–ed* morpheme (63%) in comparison to the Japanese and German

speakers. The authors argue that Chinese speakers' defective past tense marking in English is caused by the fact that for L1 speakers of Chinese, the Tense functional category does not select the syntactic feature [past]. They argue that the discrepancy between Chinese speakers and speakers of Japanese or German is caused by the difference in the selection of parametric syntactic features. It is proposed that the formal features which are present in the L2 but absent in the L1 are not acquirable due to the critical period effect.

However, as argued by Lardiere (2009), the parameter-setting framework cannot explain the persistent variability in the interlanguage grammar. Since the parameter-resetting is an all-or-nothing phenomenon, it represents an 'abrupt change' in learners' I-language. However, the persistent variability of the grammatical properties cannot necessarily mean that a parameter has not been set or a feature has not been selected.

The Missing Surface Inflection Hypothesis (Haznedar and Schwartz, 1997; Prévost and White, 2000) assumes that variability in morphology reflects difficulties in mapping abstract features to the surface morphological realization, instead of having impaired functional categories of features associated with the verbal inflection. Prévost and White (2000) investigated the variability in the use of finite and infinite verbal inflection through the oral production task by L2 speakers of French and L2 speakers of German. The results show that learners do not use finite forms in non-finite contexts, and when an inflected form is used, the agreement is largely accurate. There are only a few incidences of "faulty" use of agreement in terms of the mismatches between person, number, and gender inflection on a verb/clitic and the corresponding subject. Such results support the argument of the Missing Surface Inflection Hypothesis. It was argued that instead of having impaired representations of verbal inflections, learners have knowledge in this domain at an abstract level.

Furthermore, the parameter-setting framework is too simplistic in accounting for the L2 learning problems presented by the variation in how features are realized in different languages, for instance, whether such features are inflectionally or lexically realized or even overtly realized or not (Lardiere, 2007, 2008). Lardiere (2007, 2008) illustrated this view by discussing the expression of the feature [±definite] in English and Chinese. In English, this feature is expressed by dedicated morphemes: the definite articles and indefinite articles. Although Chinese lacks definite articles, the nouns in Chinese can receive a definite or indefinite interpretation through discourse/pragmatic context and

the use of other grammatical properties such as demonstrative determiners, classifiers, or plural markers. This cross-linguistic comparison shows that the feature [±definite] is instantiated both in English and in Chinese but is realized differently. Thus, a Chinese learner learning definite/indefinite articles in English does not have to reset a parameter or select a new feature. Instead, they face a more complicated task of learning that the [±definite] is realized and conditioned differently in English.

2.2.2 The feature-based approaches to L2 acquisition

The Interpretability Hypothesis (Hawkins and Hattori, 2006; Tsimpli and Dimitrakopoulou, 2007) postulates that interpretable features are acquirable for L2 learners while uninterpretable features are not acquirable in L2 acquisition unless they are selected by the native grammar. Interpretable features, such as tense and determiners, are not only used for syntactic computation but also determine the meanings of the syntactic expressions (Hawkins and Hattori, 2006). Uninterpretable features, such as agreement and case, are void of semantic content and only contribute to the morpho-phonological realization of syntactic expressions (270).'

Hawkins and Hattori (2006) tested the Interpretability Hypothesis by investigating L2 acquisition of the uninterpretatble *wh*-feature, which forces the English interrogative *wh*-movement by native speakers of Japanese whose L1 lacks such feature. The interpretation of *wh*-interrogatives was tested using a truth-value judgment task involving either the violations of superiority (3b) or subjacency (3c).

3) a. When did Sophie's brother warn [Sophie would phone who <when>]?
   b. * Who did Sophie's brother warn [Sophie would phone <who> when]?
   c. * When did Sophie's brother warn [who Sophie would phone <who> <when>]?

(Hawkins&Hattori, 2006:286)

Hawkins and Hattori predicted that L1 Japanese speakers of English (JSE) would have non-target-like performance on *wh*-interrogatives in English since the learners' native language lacks the *wh*-feature which triggers the *wh*-movement in interrogatives. The findings showed that the highly proficient JSE have target-like performance in the judgment on grammatical interrogative sentences (3a). However, they also accepted ungrammatical sentences that have superiority (3b) or subjacency (3c) violations. Unlike the native speakers of English, the JSE do not have significant distinctions between the grammatical and ungrammatical test items. Hawkins and Hattori

attribute the fact that the JSE accepted ungrammatical sentences with *wh*-interrogatives to the absence of the uninterpretable *wh*-feature which triggers *wh*-movement in JSE's interlanguage grammar. They argue that target-like performance on the grammatical constructions does not imply that L2 learners have established the target grammatical representations in their interlanguage grammars. They suggest that the reason why the JSE have target-like judgment on grammatical constructions is that these learners interpret English sentences by scrambling, an operation in Japanese which involves obligatory *wh*-movement to focus position.

Following the Minimalist Program (Chomsky, 1995b, 1998, 2000, 2004, 2007), the Feature Reassembly (Lardiere, 2005, 2007, 2008, 2009 a, b) argues that features rather than parameters can explain the complexity of the divergence in L2 grammar; and the learnability problem for L2 learners is not thought to be caused by a failure of resetting parametric values not selected by the L1 but determined by the need to reconfigure features selected by both languages into new formal configurations (Lardiere 2009:187).

The Feature Reassembly starts out with the Minimalist view of L1 acquisition, arguing that the acquisition task faced by child L1 learners is to select an array of formal features which are instantiated in the L1 triggered by L1 linguistic input and assemble those features onto relevant L1 lexical items.

This view is further extended to L2 acquisition. For L2 learners, they bring to the L2 acquisition task an already fully assembled set of (L1) grammatical categories. The Feature-reassembly approach builds on the Full Transfer/Full Access Hypothesis (Schwartz and Sprouse, 1994, 1996) by adopting Full Transfer in assuming that at the initial stages of L2 acquisition, L2 learners transfer L1 feature values to the L2, and further develop Full Access by specifying the precise L2 acquisition task in the feature reassembly process.

According to the Feature Reassembly (Lardiere, 2005, 2007,2008,2009), L2 acquisition involves two processes: 1) feature mapping: L2 learners initially seek for the closest morphological equivalence of the L1 lexical items in the L2, possibly on the basis of semantic meaning or grammatical function (Lardiere,2009:191); 2) feature reassembly: Once the initial mapping of the relevant features to the L1 lexical entry is made based on target L2 input, then the task facing the L2 learners is to reconFigure or remap the features from the way they are represented in the L1 into new formal configurations on "possibly quite different types of lexical items in the L2" (175). In addition, L2

learners have to learn the conditioning factors for the realization of a certain form, for instance, whether these are phonological, morphosyntactic, semantic, or discourse linked.

As mentioned above, the FR formulates L2 acquisition task based on a contrastive analysis of features between the L1 and the L2. Corresponding to the morpholexical items in the L2, the underlying syntactic-semantic features that comprise the representation of a closest equivalent morpholexical items in the L1 form the basis for 'assembly and reconfigurations of new lexical items in the L2' (188). When the feature compositions of the L1 and L2 match, direct mapping of the features from target lexical items to L1 lexical entries will be established. When the corresponding feature compositions of the L1 do not match those of the L2, learners have to detect the feature specifications of a lexical item in the L2 and identify some sort of morpholexical equivalence in the L1. Then, based on the L2 input, L2 acquirers have to recruit the required syntactic-semantic features from the L1 morpholexical item and reassemble these features onto the target morpholexical item in the L2 (Lardiere, 2009: 213). Lardiere (2009:215) argues that "the greater difficulty for the second language acquirer lies in assembling just the right combination of features into the right lexical items for each language, and in determining the appropriate conditioning environments for their expression." According to Lardiere (2009), the learning task is more complicated when learners have to reassemble features into different configurations in the L2 from the L1 and also acquire the appropriate contexts in which these features are expressed. However, reassembly of features into target-like feature specifications may be delayed or not occur at all if the evidence in the input is insufficient or ambiguous.

Although the Feature Reassembly does not elaborate on the case of the addition of features in L2 acquisition, Lardiere (2009:214) points out that "any feature contrast (differences in meaning) that is detectable is ultimately acquirable.

In my thesis, I adopt the 'Feature Reassembly' (Lardiere, 2008, 2009) in identifying the nature of L1 transfer in the reassembly of aspectual features in L2 acquisition. Although aspectual features are not formal syntactic features, the acquisition task of the L2 aspectual features, containing the semantic notions that existed in both languages, can be well formulated into testable hypotheses by using a comparative linguistic feature-based approach. There is an alignment between the tenets of the Feature Reassembly and the tenents of L2 acquisition of Aspect research from a form-meaning mapping perfective. As Domínguez et al. (2017: 453) argue: "…the Feature Reassembly approach can provide testable hypotheses to elucidate the problematic nature of the acquisition

of aspectual morphology in a second language." The following section reviews previous studies testing the predictions of the Feature Reassembly. A review of broader existing literature on L2 acquisition of Aspect from other frameworks will be discussed in Chapter 3.

2.2.3 Previous studies testing the Feature Reassembly

Several studies have examined the Feature Reassembly (Lardiere, 2008, 2009a, b). Gil and Marsden (2013) tested the predictions of the Feature Reassembly by investigating the L2 acquisition of the existential quantifiers in English *any* and the equivalents in Chinese, Korean and Japanese based on findings from previous studies. Following a feature-based cross-linguistic analysis of the existential quantifiers of different L1-L2 combinations, the author made predictions of the acquisition tasks faced by different types of learners in the initial mapping process and subsequent feature-reassembly process. I take the case of the L1 English-L2 Chinese language combination as an example. In English, the existential quantifier *any* and its compounds (*anyone*, *anything*, etc.) are only compatible with certain nonveridical contexts, for example conditional and interrogatives see example (3a, b). It was argued that *any* bears an uninterpretable and nonveridical feature [uNV]. In Chinese, the existential quantifiers take the form of *wh*-expressions, for example *shenme* (what) and *shei* (who) are licenced by all the non-veridical environment, which contrast with the English *any* which is not grammatical in at least two nonveridical environments: with uncertainty adverbs, and in the complement clause of a non-factive verb. In addition, in Chinese, there is another polarity item *renhe* (any) that shares the same distributional restriction as *any* [uNV] see (3c, d).

4) a. If anyone crosses the finish line, raise the flag. (conditionals)
b. Did you eat any strawberries yesterday? (interrogatives)

c. Ta dagai/keneng xihuan shenme/*renhe dongxi. (with uncertainty adverbs)
He probably like WHAT/*anything
'He probably likes something/*anything.'

d. Wo yiwei ni xihuan shenme/*renhe (dongxi)
I think you like something/*anything
'I think that you like something/*anything.'

The authors predicted that for L1 English-L2 Chinese learners, the learners would initially map the interrogative interpretation of *wh*-expression (*shei*) in Chinese to the L1 English wh-interrogatives while neglecting the existential interpretations. In the feature-reassembly process, the L1 English-L2 Chinese learners have to reassemble the interpretations of the *wh*-expression in Chinese to the

existential quantifiers in English, learning that the distributional restrictions of *any*/*anyone* in English do not apply to the *wh*-expressions (*shei*, *shenme*) in Chinese. On the other hand, for L1 Chinese-L2 English learners, there are two mapping possibilities: (1) Chinese speakers will initially map *any* in English to the Chinese *wh*-existential. In the feature reassembly process, they will need to learn the non-veridical restrictions of *any* in English; (2) Chinese learners will initially map *any* to *renhe* (any) in Chinese, which has the same distributional restrictions as any. In this scenario, higher proficiency L1 Chinese-L2 English learners will have more accurate use of *any* in English than L1 English-L2 Chinese learners' use of *wh*-expressions in Chinese.

The predictions for L1-English-L2 Chinese learners are supported by findings in (Yuan, 2010) which recruited English-speaking learners of Chinese from beginner to advanced levels. The predictions for L1 English-L2 Chinese learners of the second mapping possibility are supported by findings in (Gil et al., 2011) which involved L1 Chinese-L2 English learners of upper-intermediate and advanced proficiency. The results show that L1 Chinese-L2 English learners produced more target-like use of *any* in comparison to the target-like use of *wh*-expression by L1 English-L2 Chinese learners in (Yuan, 2010).

Overall, the results are compatible with the predictions based on the Feature Reassembly (Lardiere, 2008, 2009 a, b).

It is found that although the features associated with the existential quantifiers have been proved to be difficult for low proficiency learners, it is possible for higher proficiency learners to attain target-like knowledge. And the poverty of stimulus in the input can be overcome. It corresponds with Lardiere's (2009) assumption that semantic meaning or grammatical functions are the fundamental elements that guide learners to map the morpholexical equivalents in the L2 to those in the L1 lexicon. This study provides evidence for the prediction that the feature reassembly process can proceed in a "finite and restricted way which can be precisely and explicitly formulated (144)".

Domínguez et al. (2011, 2017) investigated the acquisition of the Spanish Imperfect by English native speakers. Both Spanish and English have perfective (denoting finished events) and imperfective (denoting unfinished events) distinctions. However, the two languages differ in how the aspectual features are realized. Spanish grammaticalizes perfective/imperfective distinction and uses dedicated morphemes to encode aspectual interpretations associated with perfective and

imperfective morphology. The perfective feature (simple past) is mapped onto the Preterit morphology, whereas the imperfective interpretations (habitual, continuous, progressive) are mapped onto the Imperfect morphology. The same meanings are also available in English. However, they are not mapped to specific morphological forms to mark the perfective/imperfective distinction. In English, the simple past form encodes both perfective interpretation and imperfective interpretations (habitual, continuous). The learning tasks for English speakers of Spanish involve learning that the aspectual forms (Preterit and Imperfect) in Spanish express either perfective interpretation or imperfective interpretations. Then, they have to redistribute the habitual and continuous interpretations which are associated with the simple past in English and map these interpretations onto the Imperfect in Spanish. Based on the learning tasks, it is predicted that for L1 English-L2 Spanish learners, acquisition of the imperfect will not be more problematic than the acquisition of the Preterit. Since the English simple past is not perfective by default, the learners' L1 will not bias the learners to identify the simple past in English with the Preterit in Spanish. In imperfective contexts where the Imperfect should be accepted, and the Preterit should be rejected, the learners will have problems rejecting the Preterit in continuous and habitual contexts as they find it difficult to disassociate these two interpretations from the Preterit due to influence from English.

Results from two oral tasks and an interpretation task conducted among L1 English-L2 Spanish learners of three proficiency levels (beginners, intermediate, advanced) and native speakers largely corroborated the predictions. The learners started to use the Imperfect form at the beginner level, supporting the prediction that the Imperfect was not more problematic than the Preterit. As shown from the oral production data, learners overused Preterit in habitual contexts. Whereas in the written interpretation task, the continuous interpretation was shown to be persistently problematic for the learners till the advanced level. The advanced learners had non-native-like performance in rejecting the Preterit in continuous contexts. The problem of not rejecting the Preterit in habitual and continuous contexts is caused by transfer from L1. Findings from this study provide support to the predictions of the Feature Reassembly, suggesting that semantic features which exist both in the L1 and L2 but are assembled onto new L2 morpholexical items with different configurations can be persistently problematic for L2 acquisition.

Hwang and Lardiere (2013) tested the predictions of the feature reassembly by exploring the acquisition of Korean plural marking by native English speakers. The authors adopted a feature-based contrastive analysis of the plurals in Korean and English in order to make predictions on the

acquisition task faced by L1 English learners. In English, plural marking is achieved by the plural marker *–s* on nouns. In Korean, both the intrinsic and extrinsic plural markers are realized by the same morphological *-tul* suffix. However, these two markers have different functions. The intrinsic plural marker in Koren has the similar grammatical function to that of the plural marker in English, and it 'denotes multiple nominal references' (p59). Nonetheless, intrinsic plural marking in Korean has more distributive restrictions than the plural marking in English. There is a strong preference of using the plural marker *–tul* to pluralize references with specificity. In addition, *-tul* encodes some other relevant features which differ from the features encoded by the plural marking in English. The plural marking in English is compatible with both numerals, quantifiers, and with [+human] / [-human] nouns. In contrast, the plural marker *-tul* in Korean can only occur with weak quantifiers but in the absence of numerals, and it is only compatible with [+human] nouns.

The authors argue that the task for L1 English-L2 Korean learners involves not only mapping the relevant features from the intrinsic plural marker *–tul* onto the closest equivalent morpholexical item *-s* in English, but also acquiring the additional features required for the intrinsic plural marking in Korean. Regarding the Korean extrinsic plural marking, it is used as the affix of adverbs and direct/indirect objects, yielding a distributive reading. The authors outlined a distributive feature [dist] and an interpretable plural feature [u-pl]. The closest equivalent morphological form in English is *each* (*of the*), which requires the same morpholexical features as the extrinsic plural *-tul* in Korean but has different syntactic properties. The authors assume that the task for L1 English-L2 Korean learns is to recruit the [distr] and [u-pl] features which are encoded by a completely distinct morphological item in their native language, and then assemble these features onto the plural marker in Korean. The authors predict that the use and interpretation of the extrinsic marker will be more problematic than the intrinsic marker. Their study examines to what extent learners presume that the plural marking in Korean occurs in the same contexts and requires the same features as the plural marking in English. In addition, it also explores at what developmental level (accessed as L2 proficiency level) the learners begin to tease apart and reassemble the features associated with the plural marking in Korean.

The participants were divided into four experimental groups: (low-intermediate, high-intermediate, low-advanced, advanced). The four experimental groups, together with one control group of native speakers of Korean completed five tasks: 1) an elicitation task, for the purpose of eliciting the production of the intrinsic plural *-tul*; 2) an acceptability judgment task, designed to test whether learners are aware of the restrictions on the use of intrinsic *-tul*; 3) preference matching task,

designed to measure learners' knowledge of the fact that the extrinsic plural marker can be attached to various non-nominals in Korean. 4) a truth-value judgment task, designed to test the knowledge of both the extrinsic plural marking as well as the intrinsic plural marking; 5) a translation task, designed to test whether learners have acquired the interpretations of both types of *-tul*.

Results suggest that in line with the predictions, the L1 English-L2 Korean learners show more target-like performance with the intrinsic plural marker than with the extrinsic plural marker. The findings show that from the high-intermediate proficiency level above, the English learners are able to recruit relevant features from the closet equivalent morpholexical counterpart in English and map these features to the intrinsic *-tul* in Korean. The advanced learners can add new feature specifications of the intrinsic marker *–tul,* which differ from those encoded by the plural marker in their native language. The use and interpretation of the extrinsic plurals present more difficulties than that of the intrinsic plurals for L1 English-L2 Korean learners because learning the marker involves recruiting features from a completely distinct morpholexical item in the first language (e.g. *each/each of the*), and learners have to learn that the extrinsic plurals can be used in different categories from those in the L1 (e.g. adverbs). Learners' performance of the extrinsic plural improved with the increase of proficiency, and a small number of advanced learners showed target-like performance. Such results suggest that even though the L2 acquisition of functional morphology can be very difficult, especially when the same features are present in both the L1 and L2 but are assembled onto different morpholexical items in the L2, the ultimate native-like attainment is possible in principle. The findings also suggest that the Feature Reassembly provides a reliable framework for constructing the acquisition of the functional morphology, especially in terms of 'further refine the construct of L1 influence in second language acquisition (81).'

Cho and Slabakova (2017) investigated the feature reassembly task in the acquisition of the indefinite determiners (*kakoj-to* (which-to) and *kakoj-nibud*' (which-*nibud*')) in Russian by L1 English and L1 Korean speakers. Both of the two indefinite determiners are used in non-referential contexts (the speaker has no intended reference to the entity). However, the two markers differ in terms of scope specificity, e.g. *kakoj-to* can only be applied in specific contexts where the indefinite NP takes a narrow scope, whereas *kakoj-nibud*' can only be used in non-specific contexts where the indefinite NP takes a wide scope.

The feature value of the marker *kakoj-to* is [-definite, -referential, +specific], and the feature value

of the marker *kakoj-nibud'* is [-definite, -referential, -specific]. It is predicted that for both English and Korean learners of Russian, the learning task will be easier for the specificity marker *kakojo-to* than the non-specificity marker *kakoj-nibud'*. English and Korean also use overt morphemes that encode specificity with the same feature values of the *kakoj-to* in Russian: *some* in English and *eotteon* in Korean. Thus, the learning task faced by L1 English and L1 Korean speakers is to map the features values encoded by *kakojo-to* to the equivalent L1 morphemes without having to reassemble the features. However, neither English nor Korean has equivalent morphemes that encode the same feature values expressed by the non-specificity marker *kakoj-nibud'*. Thus, it is predicted that L1 English and L1 Korean speakers will initially map the non-specific feature values to the universal quantifiers *any* in English and *amwu* 'any' in Korean, as both two morphemes encode feature values that partially overlap with that of *kakoj-nibud'*, namely [-definite, ±referential, ±specific]. After the initial mapping, native English and native Korean speakers have to reconFigure their L1 feature values to match the target feature value set by deleting [+referential] and [+specific] features.

The prediction is examined through a felicity judgment task and a grammaticality judgment task conducted among English/Korean learners of Russian of three proficiency levels (beginners, intermediate and advanced). The beginners of both L1 backgrounds were more successful demonstrating contrast between the two indeterminate makers in specific contexts than in the non-specific contexts, supporting the prediction that the acquisition task for the non-specific marker *kakoj-nibud'* is more difficult as it involves feature-reassembly. Both intermediate and advanced learners showed target-like knowledge of the two determiners. The findings suggest that acquiring linguistic properties in the L2 that require feature reassembly poses more difficulties for the learners than acquiring properties that comprise the same feature compositions in the L1 and the L2. The authors argue that the feature-reassembly process can possibly be facilitated by "substantial exposure to L2 input" (336), which guides the learners to establish feature reconfiguration.

Cho (2017) investigated the acquisition of definiteness in English by L1 Korean-L2 English learners. In English, the definite article *the* is proposed to encode the features [+definite, ±anaphoric]. In other words, the definite article *the* can be used both in anaphoric and non-anaphoric contexts. Anaphoric definites establish a relationship between a definite NP and its antecedent in the preceding previous discourse (e.g. I bought a car and a bicycle. The bicycle was more expensive

than the car). On the other hand, nonanaphoric definites have no potential antecedent. Instead, it realizes definite interpretation via pragmatic information or common sense (e.g. I have just been to a wedding. The bridge wore blue). Korean lacks articles but uses demonstrative determiner *ku* (that) to express anaphoric definiteness. Based on Chang's (2009) analysis of definiteness in Korean, Cho proposes that Korean distinguishes between anaphoric and non-anaphoric definites by marking the anaphoric definites with demonstrative determiner *ku* and marking the anaphoric definites with bare NP. In other words, the marker *ku* is proposed to have the features [+definite, +anaphoric]. Based on the predictions of the Feature Reassembly and the cross-linguistic variation between Korean and English in marking the distinction between anaphoric and non-anaphoric definiteness, Cho (2017) makes predictions about the learning tasks faced by L1 Korean learners in the acquisition of the definite article in English. At the initial stages of acquisition, L1 Korean-L2 English learners are predicted to map the demonstrative determiner *ku* (that) and its feature bundles [+definite, +anaphoric] in the L1 onto the definite article *the* in L2 English, which encodes an additional feature value [-anaphoric]. Thus, at the early stages, learners are likely to be more accurate in the interpretation of anaphoric definite NPs than that of non-anaphoric NPs. With increased exposure to linguistic input, learners will be able to reconFigure the feature values and add [-anaphoric] to *the* in English. Thus, advanced learners are expected to have accurate interpretations of both types of definite NPs. Results from an acceptability judgment task conducted among L1 Korean-L2 English learners of intermediate and advanced level as well as native speakers of English largely corroborated the prediction. Intermediate learners were more successful in the acceptability judgment between definite and indefinite NPs in the anaphoric contexts than in the non-anaphoric contexts, suggesting that they have mapped the feature set [+definite, +anaphoric] from the L1 lexical item *ku* to the definite article *the* in the L2. Advanced learners' judgments did not correlate with anaphoricity, suggesting that they have reassembled the [+definite, $\pm$ anaphoric] feature values onto *the*. These findings support the developmental patterns predicted by Feature Reassembly that at the initial stages of L2 acquisition, learners map features from the closet equivalent morpholexical item in the L1 onto the L2 morpholexical items, with increased proficiency, learners are able to reassemble the feature bundles to attain target-like knowledge.

2.2.4 What is easy or difficult for L2 acquisition

Although the FR allows for the formulation of testable hypotheses in terms of L2 acquisition of features, it does not address the issue of which types of reassembly would be easy or difficult for L2 acquisition, for example, will certain L1/L2 combination presents more challenges for acquisition

than others because of the type of assembly it involves for any specific set of features (White, 2009:347)?

Following Lardiere's (2009) predictions on feature reassembly, Slabakova (2009) proposes a cline of difficulty in L2 acquisition, with the aim of making more precise predictions of the learning tasks faced by the L2 learners in terms of which type of learning situation presents more difficulties. The cline of difficulty model is based on Ramchand and Svenonius's (2008) proposal on the acquisition of overtly and covertly realized features in the L1. According to Ramchand and Svenonius (2008), the universal Conceptual-Intentional system of the mind (Chomsky, 2014) provides all the different meanings expressed by languages, and language variation lies in the way the universal meanings are expressed by the languages: some languages express these meanings by overt morphemes while other languages express these meanings by covert meanings such as discourse context. Ramchand and Svenonius (2008) predict that meanings that are overtly realized through morphemes are acquired earlier than meanings that are covertly realized through discourse context. In the cline of difficultly in L2 grammatical feature acquisition (Slabakova, 2009) (see Figure 1), Ramchand and Svenonius's (2008) prediction is further extended.

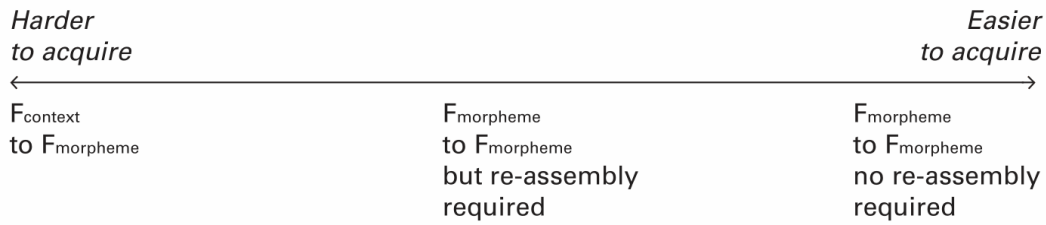

Figure 1. Cline of difficulty in grammatical feature acquisition (Slabakova, 2009: 321)

According to the cline of difficulty, the most difficult learning situation is when acquiring a feature that is covertly realized by context (Fcontext) in the L1 but overtly realized by a morpheme (Fmorpheme) in the L2. It is argued that this type of learning situation is more difficult than the one in which the feature is overtly realized in both the L1 and the L2 but requires feature-reassembly in L2 acquisition. According to this model, the least difficult learning situation is when a feature (Fmorpheme) is overtly realized both in the L1 and the L2, and no reassembly of features is required.

Cho and Slabakova (2014) tested the predictions of the cline of difficulty (Slabakova, 2009) by exploring the reassembly of the [definite] feature in L2 Russian by L1 English and L1 Korean

speakers. Russian has no dedicated morphemes (e.g. articles) to express (in)definiteness but instead uses a combination of overt and covert means to express this meaning. Following Apresjan (1995), Cho and Slabakova (2014) argue that an overt way of marking [definite] feature in Russian is using the possessor modifiers: adjectival possessors express an indefinite reading while nominal possessors can have either a definite or indefinite interpretation depending on the context. Similar to Russian, Korean also uses possessor modifiers in expressing the [definite] feature. However, the definite and indefinite interpretations are realized through a different position in Korean and are marked by case. Russian has another way of expressing [definite] feature by word order which fulfills the information structure requirements (e.g. the marking of Topics and Focus). The correlation between information structure—definiteness is natural: Topics are definite because these structures often contain information that is familiar to both the speaker and the hearer, whereas focused structures are indefinite because they often contain information that is new to the hearer. In neutral word order in Russian, the Topics take the preverbal position. Thus, the preverbal DPs are generally interpreted as definite; meanwhile, the Focus takes the postverbal position. Thus, postverbal DPs are generally interpreted as indefinite. Korean also uses word order to express definiteness. However, Korean differs from Russian in that both definiteness and indefiniteness are realized by preverbal DPs.

Following Ramchand and Svenonius's (2008) proposal, Cho and Slabakova (2014) further develop the cline of difficulty of L2 acquisition put forward by Slabakova (2009) and propose that the acquisition of a feature which is expressed covertly through context in the L2 will be more difficult than the acquisition of a feature which is expressed overtly via a morpheme. The extended cline of difficulty of feature acquisition based on Cho and Slabakova (2014) is presented via Figure 2.

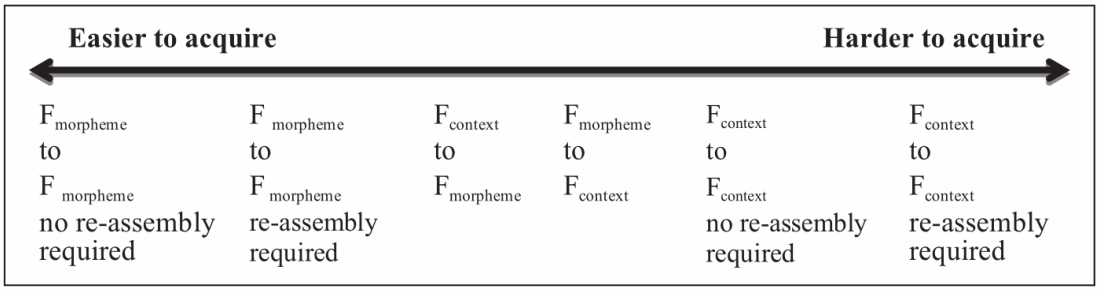

Figure 2. Extended cline of difficulty in grammatical feature acquisition (Cho and Slabakova, 2014: 166)

This cline consists of two dimensions of difficulties: whether reassembly of features is required and

whether the feature is overtly or covertly realized. Cho and Slabakova (2014) acknowledge that the learning scenarios put forward by the cline of difficulty are tentative and may scarcely be illustrated by real linguistic properties. Nevertheless, they tested the rightmost learning scenario of the cline, predicting that the hardest acquisition task involves learning features that are realized by context in the L1 and L2 but differ in the way they are assembled. Based on the feature-based contrastive analysis of the (in)definiteness in Russian and Korean, it is predicted that for both groups, the overt marking of definiteness through possessor modifiers will be less difficult for acquisition than the covert marking of definiteness through word order. Regarding the L1 transfer effect, it is predicted that L1 English-L2 Russian learners will have a more difficult reassembly task than L1 Korean-L2 Russian learners in acquiring the definiteness/indefiniteness contrast expressed by possessor modifiers since Korean speaking learners will be facilitated by similar possessor distinctions in Korean.

Results from felicity judgment tasks partially support the prediction that acquiring the expression of definiteness by possessor modifiers will be easier for Korean learners than for English learners. The findings demonstrate that the Korean learners performed better in rating the acceptability of adjective possessors in definite and indefinite contexts than the English learners, while both L1 groups performed equally accurately in rating the acceptability of adjective versus nominal possessors in definite contexts. As for the results for word order, the beginner and advanced English learners showed a contrast in the interpretation of the preverbal object in [definite] and [indefinite] context, while such context is not demonstrated by Korean learners.

These results show that it is difficult for Korean learners to overcome L1 transfer that all DPs are preverbal in Korean and only object DP in the OSV order receives a definite reading. These findings indicate that mapping features that are covertly realized in the L1 and L2 and that require feature reassembly are difficult for L2 learners. As for the performance of the English learners, they appear to map definiteness to preverbal DPs in Russian, which are acceptable in some but not all contexts in Russian. The individual results illustrate that only one-third of advanced English learners demonstrate a contrast in the rating of preverbal objects in definite and indefinite contexts, indicating the persistent difficulty of learning covert marking of definiteness by word order. Overall, the findings provide support for the predictions based on the cline of difficulty (Slabakova, 2009).

In addition, there are other proposals, which are not situated within the generative tradition to language acquisition, that aim to identify what factors contribute to the difficulty in L2 acquisition.

Goldschneider and DeKeyser (2001) propose that the difficulty of establishing form-meaning mapping in L2 acquisition of morphemes is determined by a combination of five factors: perceptual salience, semantic complexity, morphophonological regularity, syntactic category and frequency. However, it remains unclear in terms of whether one of these factors is more important than the others.

Dekeyser (2005) put forward three factors that are related to the difficulty of L2 acquisition of a grammatical property: complexity of form, complexity of meaning, and complexity of form-meaning relationship. Dekeyser (2005) argues that what determines the difficulty of acquisition is not form, meaning, or form-meaning relationships but the transparency of form-meaning relationships. Transparency of form-meaning mapping is determined by "the degree of importance of a linguistic form for the meaning it expresses" (Dekeyser, 2005:3). Lack of transparency can attribute to at least three factors: redundancy, optionality, and opacity. Redundancy refers to the scenario when a form in question is not semantically obligatory for the expression of its meaning because this meaning is also expressed by at least one other linguistic property of the sentence. Optionality refers to the case when the presence or absence of a linguistic form does not alter the presence of the same meaning. For instance, the null subject in Spanish and Italian. Opacity refers to a complex form of low form-meaning correlation when different forms express the same meaning, and the same form encodes different meanings. According to Slabakova (2015), the degree of transparency of form-meaning mappings ranges from the most transparent to least transparent according to how 'one' and 'many' is arranged: one form expressing one meaning, one form encoding multiple meanings, multiple forms corresponding to the same meaning, and a many-to-many correlation.

Slabakova (2015) examined what determined the difficulty in the L2 acquisition of form-meaning mapping by investigating the acquisition of Mandarin temporal interpretation by L1 English speakers. English uses dedicated tense morphemes. However, Chinese does not have inflectional morphologies for Tense but instead relies on aspectual, lexical, and adverbial means of expressing tense. While the form-meaning mappings of morphemes and temporal interpretations in English seem to be more straightforward (*ed*—past, bare verb/bare verb+progressive—present, future modal+bare verb—future), the form-meaning correlations appear to be a lot more complicated in Chinese. The expression of temporal interpretations in Chinese involves not only many-to-many mappings (for instance, past can be expressed by perfective marker *le*, experiential marker *guo*, resultative verb compounds,.etc.) but also involves covert means of expressing temporal

interpretations (for example, past can be expressed by states with past adverbials). Two lines of predictions are proposed regarding the learning task faced by L1 English learners of Chinese. On the one hand, the learning task will be difficult due to the mismatch in the transparency of form-meaning mapping. On the other hand, the learning task will not be challenging for L1 English learners since they will be facilitated by the universal deictic pattern: completed actions are interpreted as past and unbounded, ongoing actions are interpreted as present (Smith and Erbaugh, 2005). The results from two interpretation tasks and one translation task by intermediate and advanced English learners of Mandarin Chinese seem to support the second line of prediction. The learners were highly accurate with the temporal interpretation from the intermediate level. The results suggest that universal grammatical meanings do not pose great difficulties to learners and can be acquired with instruction on target-like uses.

Although it has been argued that the transparency of form-meaning mapping is not situated with any theory of language (Slabakova, 2016), it provides a lens of examining the syntax-semantics mismatch: that universal grammatical meanings are expressed with different configurations in the native language and the L2. Thus, an examination of the role played by the transparency of form-meaning mapping in the L2 feature reassembly contributes to more nuanced predictions of the complexities of the reassembly task faced by the learners.

Taking into account the transparency of form-meaning mapping and the predictions of the FR, an L2 learner will initially assume that a feature is expressed by the same configurations in the L2 as the native language, for instance, whether the feature is expressed by a one form-one meaning relationship or by a one form-many meanings relationship. When there is a mismatch between the L1 and L2 in the transparency of form-meaning mapping, the L2 learners have to reconFigure the initial non-target-like form-meaning mapping to accommodate the target-like configurations.

2.2.5 Summary

This chapter discusses the development of generative views on the source of cross-linguistic variation and the learnability problems in L2 acquisition. Following the Minimalist Program (Chomsky, 1995b, 1998, 2000. 2004, 2007), it is argued that features rather than parameters are the cause of cross-linguistic variation. Contrary to proposals adopting the parameter-setting metaphor such as the Representational Deficit Hypotheses (Beck, 1998; Eubank, 1993, 1994; Hawkins and Chan 1997; Hawkins and Hattori, 2006; Tsimpli and Dimitrakopoulou, 2006), which

argue that features not selected by the L1 or not set in L1 parametric values are not attainable, the Feature Reassembly (Lardiere 2005, 2007, 2008, 2009 a,b) argues that the L2 learnability problem lies not in the selection of features but in the reassembly of features from the way they are conditioned and realized in the L1 onto new morpholexical items in the L2 with different configurations.

As shown in the previous section reviewing studies that have tested predictions of the FR, at the beginning stages of acquisition, learners map features of the L2 target forms to the closest morpholexical items in the L1 based on similarities in meaning and grammatical function; with the increase of proficiency level, the features which are realized differently in the L1 and L2 go through feature reassembly so as to match new feature configurations in the L2.

Nevertheless, FR has the limitation of not being able to make predictions on which type of form-meaning mapping is easy or difficult for L2 acquisition. The cline of difficulty model by Slabakova (2009) and Cho and Slabakova (2014) make refinements to the Feature Reassembly and propose that whether the feature is overtly or covertly realized in the L1 and L2 and whether reassembly of features is needed in L2 acquisition of form-meaning mapping determine the degree of difficulty of the L2 learning task. Meanwhile, there are some proposals that identify factors that can contribute to the difficulty in L2 acquisition. One of these factors which have not been widely tested in terms of its role in affecting the difficulty in L2 feature reassembly is the transparency of form-meaning mapping (Dekeyser, 2005).

This thesis aims to address this gap and contribute to the understanding of how the transparency of form-meaning mapping in the L1 and L2 can possibly affect the extent of L1 transfer and the complexity of the learning task at the initial stages of form-meaning mapping in L2 acquisition.

The next chapter will provide a feature-based contrastive analysis of the linguistic property examined in the current thesis—grammatical aspect(viewpoint aspect) and how the aspectual features are realized in Chinese and Spanish. It will also review previous studies exploring L2 acquisition of Aspect.

Chapter 3 Theoretical Background of Aspect

3.1 Introduction of key concepts

The concept of Time is both a philosophical concept and a universal linguistic phenomenon. In the realm of linguistics, the temporal structure of a situation is expressed by the concept of Tense and Aspect. Tense refers to the external temporal structure of an event, (i.e. locating the situations in time, usually with reference to the present time) (Comrie, 1976; Smith, 1997). Viewpoint aspect refers to the internal temporal constituency of a situation, expressing information about the temporal development of an eventuality, for instance, whether the event is in progress, finished or about to start, and about the number of occasions of each eventuality (Arche, 2006, 2014; Comrie, 1976, Demirdache and Uribe-Exebarria, 2000; Klein, 2009; Smith, 1991). Both Tense and Viewpoint aspect are semantic and syntactic categories, carrying information about the interpretation of the sentence by morphemes. Thus, the discussion of the Tense and Viewpoint aspect issue is located within the semantics-morphology interface (Arche, 2014; Klein, 2009).

In this dissertation, I assume that Tense and Aspect are ordering predicates that take intervals as their arguments (Demirdache and Uribe-Etxebarria, 2000, 2014; Klein, 1994, 2009). They are described as time-denoting phrases represented in the syntax (Stowell, 1993, 1996, 2007). Thus, I will assume that Tense and viewpoint Aspect and the intervals they order are represented in the syntax (Stowell, 1993; Zagona, 1990).

Following Reichenbach (1947) and Klein (1994), the set of intervals that Tense and Aspect order include the following: 1) Topic Time (Assertion time): the time in which the speaker talks about the event, abbreviated TT in the trees; 2) Event time: the interval which the situation occupies, abbreviated EvT in the trees; 3) Reference time: either gets its content from the context of the discourse to refer to the assertion time or is bounded by the main event time in a compound clause, abbreviated RefT in trees. The three intervals co-contributes to the temporal architecture of the event. It is important to note that the interval ordered by Tense and Aspect is not the whole situation but a portion of it. Tense orders the Topic Time with respect to a Reference Time, aspect orders the Topic Time with respect to the Event Time. Following the Referential Approach to Tense and Aspect (Arche, 2006, 2014; Demirdache and Uribe-Etxebarria, 2000, 2014; Partee, 1973), I assume that Tense and Aspect have the same ordering predicates but differ in the time argument

they take. The predicate *before* gives future tense and prospective interpretation (see 5a); *after* leads to past tense and perfect aspect (see 5b); *within* yields present tense and Imperfective aspect (see 5c); and total overlap yields perfective aspect see 4(d).

5) a. Joe is going to write a novel.
b. Joe has written a novel.
c. Joe likes cats.
d. Joe wrote a novel.

In the current dissertation, I focus on the syntax and semantics of Viewpoint aspect.
Viewpoint aspect is also referred to in the semantics literature as a quantifier depicting the number of occasions an eventuality takes place (Verkuyl, 1999). Such information is represented in the syntax as a quantification node, named Q<occasions> by Arche (2006, 2014). The perfective refers to the number of occasions as just once (|1|) (see 5a), whereas the Imperfective refers to either one (|1|) (progressive) (see 5b), more than once |>1| (habitual) (see 5d) or no counting of occasions (∃) (continuous) (see 5c).

6) a.Perfective
Marta estuvo enferma el domingo pasado.
'Marta was ill last Sunday.'
|1| occasion of being ill
Status: finished

b. Progressive
Marta estaba dibujando un castillo.
'Marta was drawing a castle.'
|1| occasion of drawing
Status: unfinished

c. Continuous
Juan estaba enfermo cuando llegó a casa.
'Juan was ill when he got home.'
No accounting of occasions
Status: unfinished.

d. Habitual
Normalmente Daniel estaba enfermo en invierno.
'Usually, Daniel was sick in winter.'
|>1| occasion of being sick.
Status: period finished, each instance finished

Examples from Arche (2014)

On the other hand, lexical aspect refers to the inherent semantic properties of verbs that encode telicity, dynamicity, and durativity. According to Vendler's (1976) classification, lexical verbs can be divided into four situation types: states, activities, accomplishments, and achievements. States are non-dynamic situations with no natural endpoint, such as *know*, *love, or being happy.* Activities are dynamic situations that do not have a natural endpoint, such as *laugh*, *eat cherries.* Accomplishments are non-instantaneous dynamic events that involve an inherent culmination or completion, thus have a natural endpoint, such as *build a house*. Achievements are instantaneous events that entail the culmination of the events, thus have a natural endpoint.

In the next two sections, I will provide an introduction of the aspectual system in Mandarin Chinese and in Spanish, with the purpose of highlighting the cross-linguistic differences between the two aspectual systems.

3.2 The aspectual system in Spanish

3.2.1 The perfective and imperfective aspect in Spanish

In Spanish, perfective marking is expressed by Preterit morphology, while imperfective marking is expressed by the Imperfect morphology.

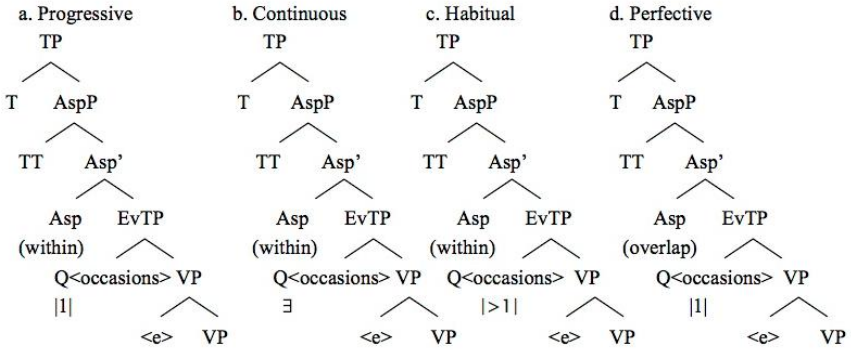

Figure 3. Syntactic tree of Spanish perfective and imperfective aspectual meanings from Arche (2006, 2014); Domínguez et al. (2017)

Arche (2006, 2014) and Domínguez et al. (2011, 2017) propose that there are three meanings encoded by Imperfect morphology: the progressive, the continuous, and the habitual. Both the perfective and imperfective meanings are represented in the syntactic trees, in which the distinction arises from a different ordering predicate.

As shown in figure 14, these trees illustrate that the distinction between the Imperfective (14a, b, c) and the perfective (14d) lies in a different ordering predicate Asp (*within* in the case of imperfective vs. complete *overlap* in the case of perfective). All the Imperfective interpretations share the same ordering predicate *Asp* "within" but differ in the information represented in the quantificational heads (see example (1a-1d) in Chapter 1).

Apart from inflectional morphology, Spanish also uses a dedicated past progressive form consisting of a copular verb and a main verb in the present participle to express progressive, see (7a). The habitual interpretation can be expressed by the periphrastic form *soler* and a main verb see (7b).

7) a. Marta estaba cantando cuando llegamos. (progressive)
   Marta was singing when we arrived
   'Marta was singing when we arrived.'
   b. Marta solía cantar en un coro. (habitual)
   Marta used to sing in a choir
   'Marta used to sing in a choir.' (Domínguez,et al., 2017: 435)

The present perfect in Spanish expresses a relation between the present state and a past situation. The present perfect orders the event time anterior to the utterance time which is simultaneous to the reference time. In Spanish, the present perfect is expressed via the use of the auxiliary verb *haber* (to have) in its present tense morphology and the past participle form of the verb. See example (8).

8) Habla bien francés porque ha estado quince anos en francia.
   Speak well French because have stayed fifteen years in France.
   'He spoke French very well because he has stayed in France for fifteen years.'

In terms of the interaction between viewpoint aspect and lexical aspect, the current study follows some general theoretical views (Lakoff, 1996; Smith 1991; Verkuyl 1993), as such views are relevant to the type of classroom input received by the participants. According to these views, the perfective is compatible with both states and events; the progressive is considered to be compatible with eventive verbs but not states; the continuous is compatible with states instead of eventive verbs. Meanwhile, the habitual is compatible with both states and events. The present perfect is compatible with both states and events.

3.2.2 Textbook explanations of Spanish aspect

In order to have a better understanding of the pedagogical context of Chinese learners' acquisition of Spanish aspect, I examine the textbooks for Spanish major students in China. These students use the textbook series *Espanol moderno: libro del Alumno* in the *Intensive Reading* course, in which the major part of the Spanish grammar teaching takes place. I will make a brief introduction to the teaching sequence of the Spanish Aspect in the textbook. The Preterit morphology is introduced in textbook 2 from unit 1 to unit 2, and the Imperfect morphology is introduced in textbook 2, unit 3. Subsequently, the introduction of the *Preterit* and the *Imperfect* is enhanced in a comparison of the usages of the two aspectual forms by relating them to the explanations of the English past tense. And such explanations cover three units: unit 4, unit 5, and unit 6. The *Present Perfect* is introduced in unit 11. Apart from the instructional sequence, another factor that can bias learners' initial mappings of the Spanish aspectual forms is how learners practice these forms. In the textbook, an important form of exercise is the Chinese to Spanish exercise. See the following examples:

The Preterit:

Chinese Example sentence:

9) Shangzhou, women canjia **le** yi ge youguan wenxue de
Last week, we attend PERF one CL about literature GEN
hen youqu de huiyi.
very interesting GEN conference.
"Last week we attended a very interesting conference about literature."
Spanish translation:

10) La semana pasada, asistimos a una conferencia de literatura muy
The week past attend a conference of literature very
interesante.
interesting
"Last week we attended a very interesting conference of literature."

The Imperfect:

Chinese example sentence

11) Mosheng ren jiaohan **zhe** zou jin wo
Stranger scream DUR walk close me
'The stranger was screaming and walking close to me.'

Spanish translation:

12) El extraño **gritaba** y se me acercaba.
The stranger screaming and pron me walk close.
'The stranger was screaming and walking close to me.'

Chinese example sentence

13) Women **tongchang** wancan shi he hongjiu
We normally(adverb) dinner time drink wine
'We used to drink wine during dinner.'

Spanish translation

14) Solíamos beber vino durante la cena.
Used to drink wine with the dinner
'We used to drink wine during dinner.'

Present perfect:

Chinese example

15) Wo cong mei kan **guo** zheme youyisi de xiaoshuo.
I never not read EXP such interesting GEN novel.
'I have never read such an interesting novel.'

Spanish translation

16) Nunca he leído una novela tan interesante.
Never have read an novel so interesting.
'I have never read such an interesting novel.'

Table 1. Distribution of the introduction of Spanish aspectual markers in the textbook

Aspect	**Teaching Sequence**	**Form (*cantar:* to sing) (3rd P)**	**Equivalent Chinese aspect markers**
Preterit	Textbook 2, unit 1, 2	cantó	*le*
Imperfect	Textbook 2, unit 3	cantaba	*zhe*, *zai*, *jingchang*
Preterit/Imperfect	Textbook 2, unit 4,5,6		
present perfect	Textbook 2, unit 11	ha cantado	*guo*

The above analysis shows that in instructed settings for L1 Chinese-L2 Spanish learners, the Preterit is introduced earlier than the Imperfect and the present perfect. Also, classroom practice is likely to bias learners to map the meanings encoded by the perfective marker *le* onto the Preterit; and map the meanings associated with the durative marker *zhe* , the progressive marker *zai,* and the temporal adverbial *jingchang* (often) onto the Imperfect, and also map the meanings encoded by the experiential marker *guo* onto the present perfect.

In summary, in section 3.2, I reviewed the semantic and syntactic features of aspectual forms in Spanish, as well as the teaching focus and sequence of these aspectual forms in Spanish learning classrooms. In table 2, I illustrate the interpretations encoded by Spanish viewpoint aspectual forms which are examined in this study, as well as the interaction between the viewpoint aspect and situation aspect.

Table 2. Characteristics of aspectual forms in Spanish

	Aspectual forms	**Aspectual meaning**	**Interaction with situation aspect**			
			states	activities	accomplishments	achievements
perfective	Preterit	perfective	√	√	√	√
Present perfect	Present Perfect	present perfect	√	√	√	√
Imperfective	Imperfect	progressive	×	√	√	⊘
	Imperfect	continuous	√	×	×	×
	Imperfect	habitual	√	√	√	√

3.3 The aspectual system in Chinese

In this section, I present an introduction of aspectual marking in Chinese: the use of aspect markers and the use of temporal adverbs. Chinese is known to have neither Tense nor morphological inflections but instead uses a few particles and temporal adverbs which precede or follow the verbs. The most important aspect markers are *le, guo*, *zhe, zai.* While their formal and functional properties are still largely under discussion, I will present some of the major arguments of the features of the four aspect markers as well as the features of the temporal adverbial.

In this thesis, I follow Klein et al.'s (2000) time-relational analysis of Chinese aspectual markers and Sun's (2014) proposal that bare predicate must be overtly marked for aspect in Mandarin Chinese in order to yield present/past episodic readings. I will start by introducing the key elements of the time-relational analysis and Sun's (2014) proposal, and then discuss how the Chinese aspect markers are defined by these analyses.

The temporal relational analysis (Klein et al., 2000) defines the interpretation of the aspectual markers using the general temporal framework by Klein (1994), referring to the relations between temporal intervals; see the definition of these intervals in 3.1.

Another concept pertains to the temporal relational analysis is the characterization of the lexical content of simple or complex verbs in terms of the phase they obtain. A situation described by a 1-phase expression involves one interval. For the 1-phase expression, the time span during which the situation obtains (Event time) has a beginning and an end, and is preceded and followed by time spans not obtained by this Event time. A situation described by a 2-phase expression involves

two intervals which express two opposing states. For example, the expression: *Jack arrived*, consists of two phases: the first phase is *Jack was not here*. And the second phase is *Jack was here*. The first phase in the 2-phase expression is referred to as the source phase, while the second phase in the 2-phase expression is referred to as the target phase.

Aspect is defined not by relating TT to different types of EvT themselves but by relating TT to the time of the distinguished phase (T-DP) of a situation. The distinguished phase is (a) the only phase in the 1-phase expressions, (b) and either the source phase or the target phase of the 2-phase expressions. Languages vary in terms of whether the source phase or target phase is the distinguished phase. In English, the distinguished phase is the source phase, while in Chinese, the distinguished phase is the target phase.

Sun's (2014) analysis of Chinese bare predicates adopts the Referential Approach to Tense (Enç, 1986; Heim, 1994; Kratzer, 1998; Partee 1973;) which assumes that tenses are variables over times and verbs takes tenses as arguments. In particular, Sun (2014) follows the Argument Structure Hypothesis (Katz, 2003; Kratzer, 1998), which attributes a different argument structure to stative and eventive predicates: states are properties of times, and eventive predicates are properties of events. Therefore, stative predicates can combine directly with a time. Meanwhile, before the eventive predicates can combine with a time, they must combine with an aspect, which maps properties of events to properties of times. Thus, stative predicates and eventive predicates have different requirements in terms of whether overt aspect is needed.

Root clauses with stative bare predicates are well-formed and yield present reading in out-of-the-blue context. When combined with a present or past temporal adverbial, the sentence with a bare state yields present or past stative readings.

17) a. Yīchéng xǐhuān Lǚxíng.
Yichen likes traveling
Yichen likes traveling.
b. Zuijin, Yīchéng xǐhuān Lǚxíng.
Recently Yichen likes traveling.
Nowadays, Yichen likes traveling.

In (17a), the root clause with bare predicate *xihuan* (like) yields present reading. When modified by the present temporal adverbial *zuijing* (recently) (17b), the root clause with bare state yields present stative readings.

On the other hand, root clauses with eventive predicates (activities, achievements, accomplishments) must be overtly marked by aspect markers in order to achieve episodic present or past readings. Episodic sentences refer to 'specific instances of eventualities' (Sun, 2014: 108).

18) a. *Lǐsì yíng.
Lisi win
b. *Jīntīan Lǐsì yíng.
Today Lisi won
*Lisi win today.
c. Lisi yíng **le.**
Lisi win PERF
Lisi won (Sun,2014:46)

19) Xióngmāo chī de tèbié duō
Panda eat *de* special lot
Panda eats a lot. (Sun, 2014: 110)

Example (18a-c) are root clauses with achievements. (18a) shows that the sentence with a bare achievement verb *ying* (win) is ungrammatical. (18b) shows that the sentence with a bare achievement cannot be rescued from ill-formedness by applying temporal adverbials like *jingtian* (today). (18c) shows that with the overt aspect marker *le*, the sentence with an achievement verb expresses a past episodic reading.

However, in some cases, bare eventives are grammatical and yield generic readings (Klein et al., 2000; Sun, 2014; Yong, 1997). Example (19) is a root clause with activities. This sentence is a well-formed root clause with a bare activity verb *Chi* (eat). The sentence yields generalizations over events that Panda eats a lot in general.

In summary, stative verbs in Mandarin root clauses are well-formed without overt aspect markers, and they yield stative readings with present and past time adverbials. Eventive verbs in Mandarin root clauses are grammatical and can yield generic readings. However, bare eventive verbs must be marked by overt aspect markers in order to have past or present episodic readings.

3.3.1 The perfective aspect in Chinese

There are two aspect markers in Chinese that can express perfective viewpoint: the perfective marker *le* and the experiential marker *guo* (Huang et al., 2009). The perfective aspect provides an external viewpoint, presenting a situation as a single whole.

3.3.1.1 The perfective marker *le*

According to the traditional metaphorical analyses of the perfective marker *le*, it signals the completion or termination of an action (Chao, 1968; Chan, 1980; Li and Thompson, 1981; Smith, 1997). In some cases, the marker *le* also conveys the meaning of "coming about" or inchoative (Chao, 1968; Rohsenow 1976, 1978; Smith, 1991). These analyses can be explained by the time-relational analysis of the marker *le*. According to this definition, TT overlaps with the distinguished phase (T-DP) and part of the time before the distinguished phase. The relation can be illustrated by some diagrams: +++++ refers to the time of distinguished phase (T-DP), ---- represents the source phase of the 2-phase expressions, and [ ] indicates the assertion time (TT). For 1-phase expressions, TT must include some time before the phase and at least the initial part of the phase.

20) Tā xiě le xìn , kěshìméi xiě-wán (Example from Klein et al 2000 : 755)
She write PERF letter but not write-finish
She wrote a letter, but did not finish writing it.

[+++++]+++++

Figure 4. Diagram of the time-relational analysis of the perfective marker *le*

In sentence (20), the marker *le* marks the verb *xie-xin* (write a letter), which asserts that the activity of letter writing took place and terminated at some time before the endpoint of the event. As shown by the diagram (figure 3) of the time-relational analysis of sentence (20), the TT *xie-xin* (write a letter) overlaps with the pretime of the event (T-DP) and some part of the T-DP. Such analysis of the marker *le* yields the interpretation that an event is terminated.

21) Tā pàng **le** (Example from Klein et al 2000 : 755)
He fat PERF
She became fat.

In sentence (21), the marker *le* marks the verb *pang* (become fat), which asserts that the state of becoming fat has been realized, and the scope of the assertion (TT) ends at some arbitrary point during the state (DP), see Figure 4. Thus, the sentence yields an inchoative reading that she has become fat and she is still fat.

[++++++++++]

Figure 5. Diagram of time-relational analysis of the perfective marker *le*

Klein et al. (2000) argue that the inchoative interpretation is a variation of the perfective meaning, which arises due to the scope difference of TT in relation to T-DP.

For 2-phase expressions marked by the marker, TT must overlap with the time of the target phase (T-DP) and its pretime, part of the source phase.

22) Zhangsan zhongyu dao le jia.
Zhangsan finally arrive PERF home.
Zhangsan finally arrived home.

------[-----++++++++]

source target

Figure 6. Diagram of time-relational analysis of the perfective marker *le*

In sentence (22), the verb phrase *dao jia* (arrive home) incorporates two phases: the source phase of 'not at home' and the target phase of 'at home'. The marker *le* relates the scope of the TT to the T-DP (the target time) and part of its pretime (the source time). Thus, it yields the interpretation that the event of 'arriving home' has been completed.

According to the analysis by Sun (2014), the perfective marker *le* initiates the temporal order, which guides readers' understanding of the sentence marked by perfective marker *le*. (see example sentence (23) and the syntactic and semantic analysis of the perfective marker *le* below as shown in Figure 6)

23) 1987 nián, Mòyán fābiǎo ***le*** Hóng Gāoliang Jiāzú.
1987 year, Moyan publish PERF Red Sorghum Clan
'In 1987, Moyan published Red Sorghum Clan.'

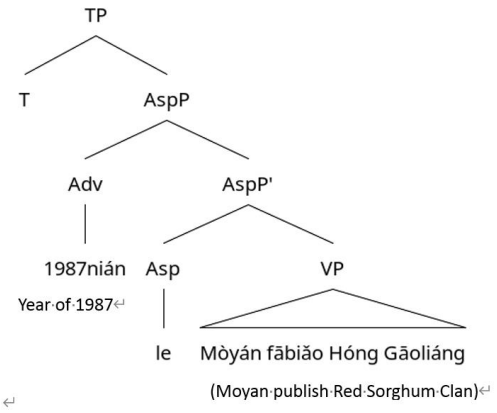

Figure 7. Syntactic tree of the Chinese perfective aspect *le*, adapted from Sun (2014: 71)

The tree in Figure 6 shows that the overt perfective aspect takes a property of events denoted by the VP '*Mòyán fābiǎo Hóng Gāoliang Jiāzú '* (Moyan publish Red Sorghum Clan), which then can combine with a time under TP.

According to the analysis on the semantics of the perfective marker *le* (Sun, 2014)*, le* takes a predicate of evens P and gives a relation between times that holds between the Reference Time (RT) and the Topic time (TT) when RT precedes TT and includes the running time of an event with property P. In other words, there is an event of '*Moyan publishing HGL*,' its running time is included within the year of 1817 and precedes the moment of utterance.[1]

As for the interaction with the situation aspect, the perfective aspect marker *le* is compatible with all situation types in Chinese: states, activities, accomplishments, and achievements.

24) a. States with perfective marker *le*
Xiǎomíng yoǔ **le** yí lìang xīn chē
Xiaoming have PERF one CL new car
'Xiaoming had a new car.'
b. Activities with perfective marker *le*
Tā huà **le** yì fú huà.
He draw PERF one CL picture.
'He drew a picture.'
c. Accomplishments with perfective marker *le*

[1] It has been argued that there are two different *le:* The verbal suffix *le* and the sentence-final *le.* The verbal suffix *le* is analyzed as perfective aspect, while the sentence-final *le* encodes 'currently relevant state' (Li and Thompson, 1981: 238). The present thesis only focuses on the acquisition of the verbal suffix *le.*

Wǒ gài **le** yí dong fángzi.
I build PERF one CL house.
'I built a house.'

d. Achievements with perfective marker *le*
Wǒ yíng **le** nà chǎng bǐsài.
I win PERF that CL competition.
'I won that competition.'

3.3.1.2 The experiential aspect marker *guo*

Another aspect marker in the Chinese perfective aspectual marking system is the marker *guo.* The aspect marker *guo* encodes two meanings: experiential and perfective. When the marker *guo* is used in experiential situations, it indicates that an event "has been experienced at some indefinite point in the past, and the resulting state no longer obtains at the time of speech" (Chen and Shirai, 2010: 5). The existential and indefinite interpretation of the marker *guo* (Chao, 1968; Li and Thompson, 1981; Smith, 1991) can be illustrated by the time-relational analysis. According to the time-relational definition, the time at which an assertion is made (TT) is ordered at an indefinite time after the distinguished phase (T-DP).

25) Tā chū **guò** guó
He leave EXP country
He has been to other countries.

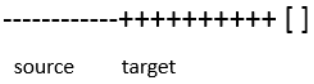

Figure 8. Diagram of time-relational analysis of the experiential marker *guo*

Sentence (25) suggests that the entire time of the situation (EvT), including the source phase (not going abroad) and the target phase (going abroad), precedes the TT. In sentence (25), the time of the situation no longer obtains at the time of the utterance because the TT is ordered entirely after the DP; see figure 7 for the diagram of the time-relational analysis of the marker *guo.*

The difference between the experiential interpretation marked by the marker *guo* and the perfective interpretation encoded by the marker *le* can be illustrated by comparing example (25) to example (26).

26) Tā chū **le** guó.
He leave PERF country.
He left the country.

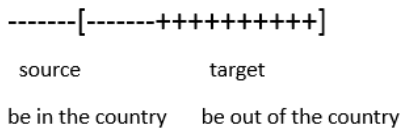

Figure 9. Diagram of time-relational analysis of the perfective marker *le*

According to the analysis of the marker *le*, the TT overlaps and fixate on a particular EvT. Thus, when there is a specific TT, there is a definite EvT that corresponds to it. In sentence (26), the target phase <He be out of the county> obtains at the time of the utterance as the TT covers the T-DP. In contrast, in sentence (25), the target phase of the situation <He be out of the country> no longer obtains because the TT is entirely ordered at some indefinite situation time after the DP.

When *guo* is used to express the completion of the situation, for example, in resultative verb constructions (RVC), it is interchangeable with the perfective marker *le* (Xiao and McEnery, 2004). Resultative verb constructions are 2-phase expressions consisting of two verb stems. See the following examples:

27) a. Zuótiān wǒ chī **guò** zǎofàn hoù gěi nǐ dǎ le diànhuà.
Yesterday I eat ASP breakfast after to you call PERF telephone.
'Yesterday, I called you after I had breakfast.'
b. Zuótiān wǒ chī **le** zǎofàn hoù gěi nǐdǎ le diànhuà.
Yesterday I eat PER breakfast after to you call PERF telephone.
'Yesterday, I called you after I had breakfast.'

In (27a), the RVC *guo* indicates that the event of (having breakfast) is completed. Meanwhile, in (27b), the marker *le* also indicates that the event of (having breakfast) is completed.

According to Arche (2014), for the perfect viewpoint aspect, the Assertion Time (Topic Time) is ordered after the Event time (EvT<AT (TT)). Since the temporal schema of the experiential meaning encoded by the marker *guo* is the same as the temporal schema of the perfect, I argue that the experiential interpretation marked by the marker *guo* is perfect aspect.

In terms of the interaction with situation aspect, the experiential aspect is compatible with any situation type, irrespective of their dynamicity, telicity, or boundedness (Yang, 1995; Li, 1999).

28) a. States with experiential marker *guo*
Tā ài **guò** Paul.
She love EXP Paul
'She has loved Paul.'
b. Activities with experiential marker *guo*
Tā huà **guò** yì fú huà.
He draw EXP one CL picture.
'He has drawn a picture.'
c. Accomplishments with experiential marker *guo*
Wǒ gài **guò** yídòng fángzi.
I build EXP one CL house.
'I have built a house.'
d. Achievements with experiential marker *guo*
Wǒ yíng **guò** nà chǎng bǐsài.
I win EXP that CL competition.
'I have won that competition.'

3.3.2 The imperfective aspect in Chinese

In Chinese, the imperfective viewpoint can be expressed by the use of two imperfective aspect markers and some temporal adverbials. In this study, I explore the functions of the durative marker *zhe,* the progressive marker *zai* as well as the temporal adverbial *jingchang* (often).

Unlike the perfective aspect, which provides an external perspective and presents the situation as a single whole, the imperfective aspect depicts a situation in which its internal temporal structure is decomposable.

3.3.2.1 The durative aspect marker: *zhe*

The marker *zhe* is referred to as the marker for the durative viewpoint aspect, which indicates that a situation is enduring and continuing (Klein et al., 2000; Li and Thompson 1981; Norman 1988; Smith 1997; Zhang 1995).

According to the time-relational definition of the marker *zhe* (Klein et al., 2000), the time of the assertion (TT) is fully included in the distinguished phase.

+++++[+++++]+++++

Figure 10. Diagram of time-relational analysis of the durative marker *zhe*

While the functions of the durative marker *zhe* are still under much debate in the literature on the Chinese aspect (e.g., Chen, 1999; Klein et al., 2000; Tsai, 2008; Zhu, 1982), in the present study, I focus on two meanings encoded by the durative marker *zhe*: the continuous interpretation and the durative interpretation.

When working with states, the marker *zhe* yields a continuous meaning, indicating the continuity of a state, see (29).

29) Shǔjià qījiān, túshūguǎn kāi **zhe.**
Summer holiday during, library open CONT
'During the summer holiday, the library was open.'

When working with non-stative verbs (e.g., activities), the marker *zhe* yields a durative meaning, which is related to two major functions from previous literature. First, when *zhe* is used with posture or positional verbs, it selects the stative reading to signal the ongoing posture or position of an entity (Li and Thompson 1981: 218). Posture and positional verbs belong to a special verb class in Chinese. They could either denote an activity or a state resulting from an activity. Posture verbs such as *zhàn* (stand), *zuò* (sit), *tǎng* (lie), *tíng* (stop) include verbs indicating the posture or physical disposition at a location. Positional verbs like *chuān/dài* (to put on; wear), *ná* (take; hold), *fàng* (put) and *guà* (hang) refer to verbs that indicate where something has been put or placed, see (30a, b).

30) a. Tā zài fángzi lǐ zuò **zhe** (Li&Thompson 1981:219)
he in house in sit DUR
'He is sitting in the house.'
b. Tā shēncái shòu cháng, dài **zhe** yǎnjìng.
He Figure slim tall, wear DUR glasses.
'He is tall and slim, wearing a pair of glasses.'

In the above examples, the positional verb *dài* (put on; wear) and the posture verb *zuò* (sit) can denote an activity (i.e. to put on a pair of glasses and to sit down) or a state associated with this activity (i.e. to wear a pair of glasses and to be in the physical disposition of sitting). When such verbs are marked by the durative marker *zhe*, the stative meanings of such verbs are more salient.

It is important to note that a consensual analysis of the nature of the posture and positional verbs is yet to be established in the semantics literature. Verbs like *sit*, *stand,* and *hang* are sometimes analyzed as dynamic eventualities. However, Maienborn (2008) classified these verbs as state verbs which were referred to as the Davidsonian states. Maienborn (2008) argues that what differentiate eventive verbs (e.g., processes) from state verbs are the subinterval properties. 'While processes have a lower bound on the size of the subinterval that is of the same type (e.g., *breath*, *run*), states have no such lower bound' (19).

Second, when the durative marker *zhe* is attached to a verb predicate followed by another verb predicate, it depicts an event with overlapping actions: the verb predicate marked by *zhe* denotes an enduring action serving as the background of the action depicted by the other verb predicate.

31) a. Tā zǒu **zhe** lù chàng gē.
He walks DUR road sing song.
'He sings a song while walking.'

b. Shuō **zhe** tā biàn tāo chū yí gè yàopíng.
Say DUR he then take out one CL medicine bottle.
'While he was talking, he took out a medicine bottle.'

In sentence (31a), the action marked by *zhe* : *zǒu* 'walk' overlaps with the action *chànggē '*singing a song.' It conveys the meaning that the action of walking is in the background of the action of singing a song. In sentence (31b), the enduring action marked by *zhe*: *shuō* "talk" is accompanied by the occurrence of another action *tāochū* 'take out'.

To describe the interpretation of the marker *zhe* in terms of quantification of instances (Arche, 2014), I propose that the quantifiers associated with the two interpretations of the marker *zhe* have two different values. For the continuous interpretation, it has no counting of occasions.

32) wǒ qù kàn tā de shí hòu ， Markshēng zhe bìng
I went see him GEN time, Mark is CONT ill.
Mark was ill when I went to see him.

In example (32), the situation of Mark being ill continued with no counting of occasions.
For the durative interpretation, I argue that the quantifier in the syntax instantiates one time of occasion.

33) a. Tā chuān zhe yī jiàn wài tào
He wear DUR one CL jacket
He was wearing a jacket.
b. Tā zǒu **zhe** lù chàng gē.
He walks DUR road sing song.
'He was singing a song while taking walking.'

Example (33a) and (33b) are two sentences in which the marker *zhe* have durative interpretations. In (33a), the posture and positional verb *chuan* (wear) marked by the marker *zhe* depicts one occasion of wearing the jacket. In (33b), the predicate *chang ge* (sing a song) marked by *zhe* depicts one occasion of singing a song, which serves as the background of the one-occasion event of taking a walk.

Tsai (2008) proposes the incompletness effect of sentences marked by durative marker *zhe* with bare predicates. Sentences marked by *zhe* when stands alone sound incomplete by the native Mandarin speakers. The incompleteness effect refers to the failure to implement tense anchoring in the syntactic sense. Tense anchoring is the process of 'spelling out an event variable in morphosyntactic terms.' This variable is in turn subject to tense operator binding. Tsai (2008) argues that although Chinese does not have overt inflectional morphology for tenses, it has weak syntactic tenses. Thus, Chinese can bring out an event variable by tense anchoring. One strategy of achieving tense anchoring is through Asp-to-T raising.

Following a three-layered analysis for aspectual projections, Tsai (2008) proposes that while the progressive marker *zai* is placed in outer aspect (Asp1), *zhe* is placed in middle aspect (Asp2) and inner aspect (Asp3). Only the outer aspect is capable of undergoing AspP-to-T raising, and the aspect marker *zhe* cannot reach T for tense anchoring.

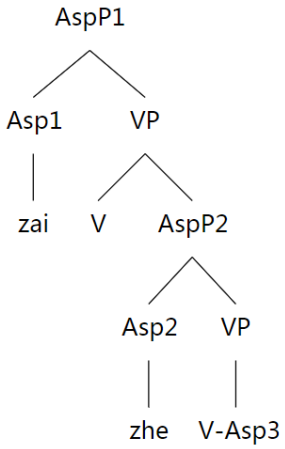

Figure 11. A three-layered analysis for aspectual projections in Mandarin Chinese from (Tsai, 2008).

There are a few strategies of bringing out the event variable: for example, when the durative marker *zhe* marks verbs with certain degrees of attachment such as the posture and positional verbs in (34a), or by adding adverbs of quantification as in (34b) and locative-existential construction as in (34c), etc.

34) a. Tā tí **zhe** yí gè lánzi.
He hold DUR one CL basket
'He was holding a basket.'

b. Tā yìzhí pǎo **zhe**
He continue run DUR
'He continues running.'
c. Qiáng shàng guà **zhe** yì fú huà
Wall on hang DUR one CL painting
'On the wall hangs a painting.'

The durative aspect marker *zhe* is sensitive to [durative] and [telic] values of a situation. It is only compatible with [+durative] and [-telic] situations. According to Vendler's (1976) classification of lexical verbs, states and activities are [+durative], [-telic] while accomplishments and achievements are [-durative], [+telic]. Thus, the durative aspect marker *zhe* can felicitously take states and activities rather than accomplishments and achievements. See the following examples:

35) a.States with durative marker *zhe*
Xiǎomíng ài **zhe** Xiǎohóng
Xiaoming love DUR Xiaohong
'Xiaoming is in love with Xiaohong.'

b. Activities with durative marker *zhe*
Tā chàng **zhe** gē zǒulù
He sing DUR song walk
'He is singing while taking a walk.'
c. Accomplishments with durative marker *zhe*
*Wǒ gài **zhe** yí dòng fángzi.
*I build DUR one CL building.
'I am building a house.'
d. Achievements with durative aspect marker *zhe*
*Wǒ yíng **zhe** nà chǎng bǐsài
*I win DUR that CL competition.
'I am winning that competition.'

A question arises in terms of to what extent the durative interpretation of the marker *zhe* is a new feature for the Spanish learners of Chinese. As discussed in 3.3.2.1, the continuous interpretation of the marker *zhe* has the same syntactic and semantic features as the continuous interpretation of the Imperfect in Spanish. To explore whether Spanish has a similar interpretation as the durative interpretation in Chinese, I refer to the analysis of the continuous interpretation in Arche (2014). Arche argues that continuous structure is not only compatible with states but can also occur with events, which leads to "ability" "characterizing," or "attitudinal" interpretations.

36) Esa maquina aplasta cien uvas en diez minutos.
That machine crushes a hundred grapes in ten minutes
That machine crushes a hundred grapes in ten minutes.
Example from Arche (2014: 816)

Sentence (36) means that the machine has the ability to crush a hundred grapes in 10 minutes. Note that this sentence is in the present tense. For this aspectual interpretation, the past imperfect works alike with the present tense.

In Chinese, the marker *zhe* can also yield "ability" or "characterizing" reading when working with non-states.

37) Là jiāo chī zhe hěn là
Pepper eat DUR very spicy
The pepper is very spicy.

In Example (37), the predicate *chi* (eat) marked by *zhe* characterizes the nature of the pepper being spicy. Apart from this reading, the durative marker *zhe* can also yield other readings when working with non-states, as mentioned in 3.3.2.1. To recap, when the durative marker *zhe* marks posture

and positional verbs, it yields the reading of "a state resulting from an activity." In example (38), the predicate *ti* (pick up/hold) is marked by *zhe* and expresses the state of holding a basket as a result of picking up the basket from the ground.

38) Tā tí **zhe** yí gè lánzi.
He hold DUR one CL basket
'He was holding a basket.'

Another function of the durative marker *zhe* is to express"overlapping actions." In this case, there are two predicates in the sentence, and the predicate marked by *zhe* provides background information of the action depicted by the other predicate.

39) a. Tā zǒu **zhe** lù chàng gē.
He walks DUR road sing song.
'He was singing a song while taking a walk.'
b. wǒ jīntiān kàndào tā zǒu zhe lù chànggē, tā hěnshǎo zhèyàng zuo.
I today saw him, walk DUR road sing, he rarely this do
'Today I saw that he was singing while he was walking. He rarely did this.'

Sentence (39a) means that the action of singing overlaps with the action of walking. Crucially, the reading of "overlapping actions" does not derive from habituality Example (39a) does not mean that the action of singing while taking a walk happens on a regular basis. As shown in (39b), these overlapping actions work well with the negation of habituality.

I argue that the readings of the marker *zhe* in Chinese, apart from the continuous reading and the "ability" "characterizing" and "attitudinal" reading, are not available from the continuity in Spanish.

In this thesis, I argue that the durative interpretation of the marker *zhe* distinguishes itself from the continuous interpretation of the marker *zhe.* While the continuous interpretation exists both in Chinese and Spanish, the durative interpretation is new for the learners of Spanish, excluding the "ability", "characterizing" and "attitudinal' reading.

3.3.2.2 The progressive aspect marker *zai*

The aspect marker *zai* is referred to as the progressive aspect marker in Mandarin Chinese. The main function of *zai* is to indicate that an event or action is in progress (Chen and Shirari, 2009:4).

The time-relational definition of the marker *zai* has the same characteristics as that of the marker *zhe*: the time of the assertion (TT) is fully included in the distinguished phase (Klein et al., 2000).

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Figure 12. Diagram of time-relational analysis of the perfective marker *zai.*

See the example sentences and syntactic and semantic analysis from Sun (2014).

40) Mòyán **zài** dú "SānGuó Yǎnyì"
Moyan PROG is reading Three Kingdoms Romance
'Moyan is reading Romance of the Three Kingdoms.' (Sun, 2014:70)

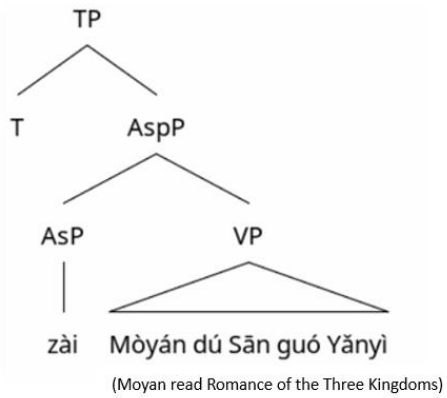


Figure 13. Syntactic tree of the progressive marker *zai* with bare predicate adapted from Sun (2014:61)

(40) is an example sentence marked by the progressive marker *zai* with the bare predicate *du* (read). Figure 12 is the syntactic analysis of the sentence (40). The tree shows that the marker *zai* takes a property of events described by the VP 'Mòyán dú Sān Guó Yǎnyì' (Moyan read Romance of the Three Kingdoms) and gives a property of times at the AspP level. This sentence derives a present ongoing reading.

41) 1967 niaán, Mòyán **zài** dú "San Guo Yanyi"
1967 year, Moan PROG read Three Kingdoms Romance
'In 1967, Moyan was reading Romance of the Three Kingdoms.'

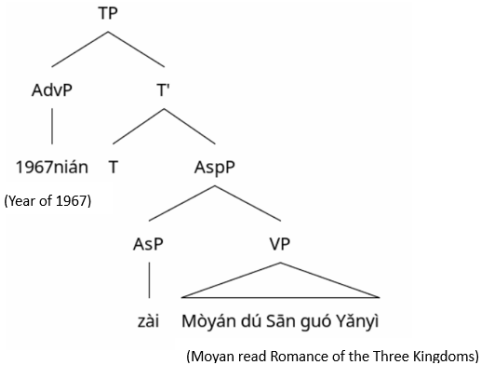


Figure 14. Syntactic tree of the progressive marker *zai* with a past adverbial, adapted from Sun (2014: 66).

(41) is a sentence marked by the progressive marker *zai in* the presence of a past-time adverbial *1967 nián* (the year 1967). Sun (2014) argues that in the presence of the past adverbial, the sentence yields an ongoing past reading. Figure 13 captures the syntactic structure of the sentence (41). The temporal adverbial provides a time adverbial that saturates the time interval of AspP and gives the truth value of the sentence (Sun 2014:70).

In discussing the semantic meaning of the progressive marker *zai,* Sun (2014) proposes that progressive marker *zai* does not only yield 'an ongoing perspective of a single continuous event' but also 'an ongoing perspective of a sequence of episodes of a discontinuous event' (71). Thus, sentence (41) does not mean that Moyan spent every moment reading the book in the year 1967, but refers to a discontinuous event of reading the book with several episodes. Thus, Sun (2014) proposes that sentence (22) is true only if the interval which begins at the moment when Moyan starts reading Romance of the Three Kingdoms and ends at the moment where he finishes it includes the year 1967.

The differences between the two Imperfective aspect markers: *zhe* and *zai,* lie in their distribution, syntactic structure, and semantic meaning.

--Distributional differences: *zai* always precedes a verb, whereas *zhe* always follows a verb.

--Syntactic differences: *zai* and *zhe* differ with regard to their ability to achieve tense anchoring. While *zai* can stand alone in a sentence and achieve AsP-to-T raising, the marker *zhe* cannot stand alone in a sentence.

--Semantically, *zai* focuses on progressiveness, whereas *zhe* is more continuous (Zhang, 1995:132). This point is illustrated well by posture and positional verbs.

42) a. Tāmen shǒu zhōng dōu tí **zhe** chénzhòng de bāodài
They hand in all carry DUR heavy GEN bag
'Each of them was holding a heavy bag in hand.'
b. Tāmen dōu **zài** tí bāodài
they all PROG carry bag
'They were all picking up bags.'

In (42a) with *zhe* after the verb *tí* (to carry), the sentence implies that the bags were continuously in their hands. Whereas in (42b), the continuous meaning is missing, the use of *zài* suggests that the event of picking up bags was ongoing and in progress. Likewise, the progressive meaning is missing in the sentence (42a).

In the current thesis, I focus on the semantic difference between the progressive marker *zai* and the durative marker *zhe* and test whether learners are capable of differentiating the semantic difference between the two markers when used with the posture and positional verbs.

When it comes to the compatibility with the lexical aspect, the progressive aspect is only compatible with activities and accomplishments.

43) a. States with progressive marker *zai*
*Wǒ **zài** rènshi Jane.
*I PRO know Jane.
* 'I am knowing Jane.'
b. Activities with progressive marker *zai*
Nǐ gěi wǒ dǎ diàn huà de shíhou, wǒ **zài** chuān yīfu.
You give me call telephone de time I PRO put on clothes.
'I was putting on clothes when you called me.'
c. Accomplishments with progressive marker *zai*
Wǒ **zài** gài yí dòng fángzi.
I PRO build one CL house.
'I am building a house.'
d. Achievements with progressive marker *zai.*
*Wǒ **zài** yíng nà chǎng bǐsài.
*I PRO win that CL competition.
* 'I am winning that competition.'

3.3.2.3 The habitual marking in Chinese

Habitual sentences in Chinese have been argued to have two types: *quantified habituals* and simple habituals (Sun, 2014: 141). Quantified habituals are habitual sentences formed with the use of overt temporal adverbials, which are also referred to as overt quantificational adverbs (Sun, 2014). Temporal adverbials are used to describe 'the number of times that an event, an action repeatedly happens within a specific time frame' (Guo 2016: 4). In Chinese, there are a number of such

temporal adverbials, which range from the adverbials that depict low-frequency events such as *ouer* (occasionally) to the ones that depict medium-frequency events: *jingchang* (regularly), and to the ones that depict high-frequency events: *tongchang* (usually). In this paper, I will focus on the usages of one of the most common temporal adverbials in Chinese: *jingchang* (regularly, often).

The temporal adverbial *Jingchang* is used to express certain regularities about the event described by the predicate. When *Jingchang* is used with a bare predicate, it is interpreted as the generic reading (Sun, 2014). In (44a), the use of *Jingchang* suggests that the habit of 'Xiaomao tīng zhè shǒu gē' (Xiaomao listens to this song) holds through a period including the topic time.

When *Jingchang* is used with an overt past adverbial, the sentence receives a past reading. In example (44b), the habit of smoking holds at the time when Xiaomao was young.

44) a. Xiǎomáo **jīngcháng** tīng zhè shǒu gē.
Xiaomao often listen this CL song
'Xiaomao often listens to this song.'
b. Niánqīng shí, Xiǎomáo **jīngcháng** chōuyān.
Youth time Xiaomao often smoke
'Xiaomao used to smoke when he was young.'

The quantificational adverbs are argued to play the same role as aspect, and they map properties of events to properties of times, and thus sentences marked by quantified adverbs do not need to be overtly marked for aspect (Sun, 2014).

On the other hand, simple habituals are habitual sentences that are not modified by overt quantificational adverbs (Sun, 2014: 152). The habitual interpretation of the bare habituals in Mandarin Chinses is argued by Sun (2014) to derive from the presence of a null quantificational operator.

45) a. Lǐsì dǎ wǎngqiú.
Lisi plays tennis
Lisi plays tennis.
(Example from Sun 2014:132)
b. Lǐsì ǒuěr dǎ wǎngqiú.
Lisi occasionally play tennis
Lisi occasionally plays tennis.

c. Lǐsì **jīngcháng** dǎ wǎngqiú.
Lisi often play tennis
Lisi often plays tennis.

Example (45a) is a well-formed sentence with bare eventive verbs. It expresses the meaning that Lisi regularly plays tennis. (45b) and (45c) are sentences with eventive verbs that are marked by overt quantificational adverbs. With the overt quantificational adverb, these two sentences have a restricted range of frequency of event (Lisi occasionally plays tennis in (45b), and Lisi often plays tennis in (26c). Meanwhile, the sentence with a covert quantificational adverb has a less restricted range of frequency of event (Sun, 2014: 156). In sentence (45a), the occurrences of the event of Lisi playing tennis ranges from one to the biggest possible number.

In terms of the interaction with lexical aspect, the quantificational adverb *jingchang* is compatible with activities and accomplishments instead of with states.

46) a. States with temporal adverb *jingchang*
*Tā jīngcháng xǐhuān xúe yīngyǔ
*He often like learning English
*'He often likes learning English.'
b. Activities with temporal adverb *jingchang*
Tā qùnián jīngcháng pǎobù
He last year often jog
'Last year, he used to go jogging.'
c. Accomplishments with temporal adverb *jingchang*
Tā shàngzhōu jīngcháng dú Aoman yǔ Piānjiàn
He last week often read *Pride and Prejudice*
'Last week, he used to read *Pride and Prejudice*.'
d. Achievements with temporal adverb *jingchang*.
*Yóukè jīngcháng dào lúndūn.
*Visitors often arrive London
*'Visitors often arrive in London.'

3.3.3 Textbook explanations of Chinese aspect markers

In order to have a better understanding of the L2 learning context of the Chinese aspect markers, I examined the Chinese textbook series: *New Practical Chinese Reader Textbook*, which are used by the L1 Spanish-L2 Chinese participants in my study, who were enrolled in Chinese as a second language learning course in the University of Granada in Spain. In the following session, I made a summary of the teaching sequence of the four aspect markers and the temporal adverbial *jingchang (often)* introduced in the textbook.

Table 3. Distribution of the introduction of Chinese aspectual markers in the textbook

Aspect marker	Grammatical Explanation	Sequence in the textbook	Textbook series
le	Perfective	Lesson 13	Textbook 1
	Perfective	Lesson 15	Textbook 2
	Perfective	Lesson 30	Textbook 3
guo	Past experience	Lesson 22	Textbook 2
zai	The progressive aspect of an event	Lesson 24	Textbook 2
zhe	The continuous aspect of an action	Lesson 25	Textbook 2
jingchang	Regularities of an action	Lesson 26	Textbook 2

From the information provided in table 3, we could see that the perfective marker *le* is the first aspect marker introduced among the four aspect markers, appearing in lesson 13 with its meaning and grammatical function as marking the completion and realization of an event. Subsequently, the meaning and grammatical function of the marker *le* are reinforced in lesson 15 and lesson 30. Not until lesson 22, is the experiential marker *guo* introduced for its function of marking past experiences. Unlike the big time gap between the introduction of the two perfective markers: *le* and *guo*, the introduction of the two Imperfective markers: *zai* and *zhe* follows closely. The usages of the progressive marking of *zai* are introduced in lesson 24, and the usages of the continuous interpretation of the marker *zhe* are introduced in lesson 24. The usages of the temporal adverbial *jingchang* are introduced in lesson 25.

In terms of the length of the introductions of the four aspect markers, the explanations of perfective marker *le* cover three lessons, while the instructions of the other three markers each cover one lesson. It is worth noting that in the textbook, the durative aspectual marker of *zhe* is defined as 'the continuous aspect of an action or a state', rather than the durative aspect. However, although not explicitly pointed out, some example sentences of *zhe* in the textbook contain the usages that illustrate the durative meaning. See the following example:

47) Ta chuan **zhe** yi jian hong qunzi.
She wear DUR one CL read dress
'She was wearing a white dress.'

In example (47), the verb *chuan(put on/wear)* can either describe the activity of putting on a dress or the state of wearing the dress as a result of putting on the clothes. When marked by the marker *zhe,* it expresses the state of wearing the dress.

I assume that although the explicit rule of the durative marker is not explained, learners could be informed by the example sentences illustrating the usages of the durative marker.

The study of the textbook content provides us with an idea of the arrangements of the instructions of the four aspect markers. Such information is helpful in understanding the kind of input of Chinese aspect markers that Spanish L2 learners of Chinese receive in the classroom. However, the way the aspect markers are explained and the exact input containing the aspect markers are likely to vary in different classroom contexts.

To summarize, this section (3.3) reviewed the theoretical views on the syntactic and semantic features of the aspectual forms in Chinese, as well as how the features of the aspectual forms are focused and arranged in Chinese learning classrooms. In the following table 4, I illustrate the interpretations encoded by Chinese viewpoint aspectual forms which are investigated in this study, as well as the interaction between the viewpoint aspect and lexical aspect.

Table 4. Characteristics of aspectual forms in Mandarin Chinese

	Aspectual form	**Aspectual meaning**	**Interaction with lexical aspect**			
			states	activities	accomplishments	achievements
perfective	*le*	perfective	√	√	√	√
	guo	perfective/experiential	√	√	√	√
Imperfective	*zai*	progressive	×	√	√	×
	zhe	continuous	√	×	×	×
	zhe	durative	×	√	×	×
	jingchang	habitual	√	√	√	√

3.4 Studies on the L2 acquisition of aspect

In this section, I review studies that explore what factors might affect the complexity of the learning task and the extent of L1 transfer in the L2 acquisition of aspect. First, some studies have examined lexical aspect and its role in understanding L1 transfer in the L2 acquisition of aspect. These studies tested the predictions of the Aspect Hypothesis (AH) (Anderson and Shirai, 1991, 1994, 1996) along with the effect of L1 transfer. According to the AH, learners are guided by the inherent aspectual

properties of the verbs in their acquisition and use of the past forms (Andersen, 2002: 79). Learners tend to first associate past marking or perfective marking with accomplishments and achievements, and eventually extend its use with activities and states; meanwhile, learners tend to first use imperfective past marking with states and activities and then extend to accomplishments or achievements verbs. Also, the acquisition of the perfective aspect is prior to the acquisition of the imperfective aspect (Anderson and Shirai, 1996: 533). Mixed results have been found regarding the predictions of AH, and how lexical aspect interacts with L1 transfer effects.

Jin and Hendriks (2003) investigated whether L1 and L2 learners' acquisition of the Chinese aspect markers: *le*, *zhe*, *zai* are influenced by the lexical aspect. Results of a grammatical judgment task and a storytelling task conducted among 30 L1 learners of Chinese and 20 English speaking learners of Chinese suggest that L1 learners are more likely to associate the perfective markers with telic verbs, and associate Imperfective markers with atelic verbs. The findings also show that the L2 English learners of Chinese initially associate the perfective marker *le* with achievements and then spread the use of the marker to other aspectual categories; meanwhile, they incorrectly spread the use of the imperfective marker *zai* with achievements, which is argued to be influenced by their L1 English. The results suggest that L2 acquisition of grammatical aspect is influenced by the inherent lexical aspect and L1 transfer in terms of how viewpoint aspect interacts with lexical aspect.

Duff and Li (2002) explored L1 transfer effect and the interaction between lexical aspect and grammatical aspect by investigating the differences between native speakers and non-native speakers' use of the Chinese perfective marker *le*. Nine native speakers of English and nine native speakers of Chinese were asked to participate in an oral video-story retelling task as well as a writing editing task in which learners were asked to add the missing aspect marker *le* where needed. The results suggest that while native speakers tend to use the perfective marker *le* with telic verbs, non-native speakers tend to underuse *le* in some obligatory contexts and overuse *le* with some non-telic verbs. The researchers argue that L1 transfer is an important factor of low-proficiency learners' early acquisition of the perfective marker: they regard the perfective marker *le* as an equivalent form of the English past tense morpheme *-ed*. Such usage was supplied in past situations regardless of whether the verb is stative, activity, or inherently bounded.

Wang (2012) explored whether Swedish adult learners' developmental pattern of the Chinese aspect markers supported the predictions of the AH and whether L1 transfer affected learners' acquisition order. The study recruited 60 native speakers of Swedish of three proficiency levels (low,

intermediate, and high proficiency level) as well as 30 native speakers of Chinese as the control group. Results from an oral production task, a written production task, a comprehension task, and a grammaticality judgment task reveal some evidence that supports the AH: learners tend to use the perfective marker *le* and *guo* with telic verbs, and imperfective marker *zhe* and *zai* with atelic verbs. The findings also show that the perfective markers are acquired earlier than the imperfective markers. The researcher argues that apart from the influence of the inherent lexical aspect, similarities in meaning and grammatical function of the aspectual forms the L1 and L2 also play a role in L2 acquisition. For instance, although the imperfective markers: (progressive marker *zai* and the durative marker *zhe*) are acquired later than the perfective marker *le*, learners have less error rate of the two aspect markers in the production tasks. This is because, in learners' L1 Swedish, there are various constructions with meanings and usages similar to *zhe* and *zai.* The constructions are in the form of periphrasiss*: hålla på att +* Infinitive (keep on that + Infinitive) */ vara i färd med att +* Infinitive (be in the process of+ Infinitive). These constructions are used optionally to express imperfective meaning. Thus, the author argues that the similarities between L1 and L2 in the meanings expressed by imperfective constructions facilitate the acquisition of imperfective markers in L2 Chinese.

Collins (2002) explored French learners' use of the tense/aspect marker in the past contexts. The AH is supported by the findings that learners' use of the simple past with telic verbs is more successful than atelic verbs and that learners prefer the use of the progressive with activities and the present with states.

Recently some researchers have realized the inadequacy of the Aspect Hypothesis in explaining the L2 acquisition problems of aspect, especially when the results contradict the predictions of the Aspect Hypothesis. Jin (2009) investigated English learners' acquisition of the Chinese aspect markers and found counter-evidence of the AH: in the acceptability judgment task, the lower-intermediate English learners accept the combination of the perfective marker *le* with all situation types, which indicates that lexical aspect does not affect L2 acquisition.

Gujord (2013) found that Vietnamese and Somali learners' acquisition of Norwegian past (the Preterite and the perfect) did not follow the predictions of the AH that telicity played a role in the acquisition of the Norwegian past. An analysis of the L2 Norwegian learner corpus shows that the proportion of atelic verb phrases with Preterit and present perfect inflection is higher than the proportion of telic verb phrases with Preterit and present perfect inflection. The pattern in which

the use of the past morphology expands from the verb type from achievements—accomplishments—activities—states is not observed from this study.

Domínguez et al.'s (2013) study on English learners´ acquisition of Spanish past tenses did not find evidence supporting the predictions of the AH. Findings from three oral tasks and a comprehension task reveal that the emergence of past-tense morphology is not associated with the telic feature but instead with the dynamic feature. As argued by Domínguez et al. (2017), the Aspect Hypothesis takes no considerations of the differences in the ways aspectual distinctions are realized in the native languages and target languages, specifically whether these distinctions are grammaticalized or not.

Some other studies exploring the role L1 influence on L2 acquisition of aspect argue that difficulties arise when L2 learners are requested to establish form-meaning mappings different from their L1.

McManus (2015) investigated the effect of L1/L2 differences in the form-meaning mappings in the acquisition of the French perfective morphology (*passé composé*) and habitual morphology (*imparfait*) by L2 English learners and L2 German learners. Unlike French which uses separate morphemes to mark perfectivity and habituality, English does not grammaticalize perfective and Imperfective distinction. Thus, perfectivity and habituality can be mapped onto a single form (simple past). Meanwhile, German does not explicitly mark viewpoint aspect. According to the cross-linguistic analysis of the form-meaning mapping of aspect, the learning task faced by English learners is to disentangle habituality from perfectivity and redistribute each viewpoint meaning to separate forms. It is predicted that the English speakers will initially map perfectivity and habituality to a single form. For German speakers, they need to learn that explicit tense and aspect marker PC expresses perfectivity and the maker IMP expresses habituality. It is predicted that the German learners will not distinguish between perfectivity and habituality by using aspect morphology. 38 English learners of French and 37 German learners of French were recruited, and the participants were respectively divided into the low proficiency group and the high proficiency group according to their performance in the French proficiency measure test. A group of ten French native speakers was selected as the control group. The main test instrument of the study was a picture-based oral narrative designed to elicit participants' production of aspect-related forms in perfective and habitual context. A number of prompts and illustrations were used with the purpose of sequencing the story and guiding learners' perception of the differences between the perfective and habitual context.

The results show that the German learners of French did not use *Passé compose* (PC) and *Imparfait* (IMP) in distinguishing between the perfective and habitual meaning. As argued by the researcher, such results indicate a strong L1 influence, because viewpoint aspect is not grammaticalized in the L1. However, German speakers in the high-proficiency group appear to use PC and IMP morphology, indicating that the L1 influence can be ruled out with the increase of proficiency. The English learners of French were able to use the PC in the perfective context and the IMP in the habitual context, although the low proficiency learners' use of the target forms lacks consistency, suggesting that their L2 form-meaning mapping is fragile. These results suggest that L1/L2 difference in the form-meaning mapping of aspect plays an important role in the L2 acquisition of aspect.

Gabriele and McClure (2011) investigated the L2 acquisition of the semantics of the Japanese Imperfective marker *te-iru* among advanced Chinese learners of Japanese. Their results suggest that Chinese learners find it difficult to tease apart the tense and grammatical aspect in the past tense context. The authors argue that the obstacles in acquiring the Imperfectives in L2 should not only be attributed to the properties of the L1 but should also be attributed to two properties of the target language: 1 the morphological encoding of the tense and aspect; 2 the complexity of the semantic computation of the aspectual form. It is easier for learners to acquire a language where there is a one-on-one mapping between the form and meaning of aspect and tense. Such argument underlies the necessity of taking into account the semantic complexity of aspect in the second language in terms of the form-meaning mapping.

Roberts and Liszka (2013) investigate the role of L1 influence by investigating the sensitivity to the tense/aspect mismatches by advanced French and German L2 learners of English. The French learners performed better than German learners to the tense and aspect mismatches in English. Such results can be traced to the fact that both French and English distinguish aspectual distinctions via overt morphology though in different ways, whereas German does not have any overt aspectual forms. Thus, it is argued that when the aspect is grammaticalized in the native language, the L2 acquisition of tense and aspect will be facilitated in some ways, even if the two marking systems work in different ways. However, it is not clear from the study to what extent the grammaticalization of perfective/imperfective distinction can determine the learnability of aspectual forms in the L2. Grammaticalization of perfective/imperfective distinction does not mean that the perfective and imperfective interpretations are expressed by the same level of transparency of form-meaning mapping.

Gabriele (2009) finds evidence that L1 transfer played a role in the acquisition of L2 aspectual interpretations. A bidirectional study was conducted investigating English L2 learners' acquisition of the Japanese Imperfective marker *te-iru* and Japanese learners' acquisition of the English present progressive *-ing*. When the English Present Progressive is used with some achievement verbs, such as '*arrive*' it naturally denotes a progressive interpretation. In this case, the achievements go through a type-shifting operation, being converted into accomplishments. On the other hand, the Japanese Imperfective marker *te-iru* always denotes a resultative interpretation when combined with achievements. Both two groups of learners have the task of not only acquiring a new semantic interpretation in the L2 but also ruling out an aspectual interpretation in their L1.

An English and a Japanese version of the story compatibility tasks are used in the study with the aim of tapping into learners' knowledge of the interaction between the accomplishments and achievements with the English present progressive and the Japanese Imperfective *te-iru*.

The results show that both two groups of learners found that the interaction between achievements and the Imperfective marking presents difficulties for acquisition. Such difficulty provides evidence that it is challenging for learners to rule out the L1 semantic interpretations. For L2 English learners, they need to rule out a resultative interpretation for achievements, whereas for L2 Japanese learners, they need to rule out a progressive interpretation for achievements. It was found that L2 Japanese learners performed better than the L2 English learners in both acquiring the semantics of the Imperfectives in the L2 and ruling out the aspectual interpretations in the L1. The challenge for L2 English learners is greater because the grammatical form in English is more complicated, requiring the learners to know that during the interaction with progressive marking, the achievements need to go through a verb-shifting operation or coercion, which is an additional semantic computation that is not confronted with the L2 learners of Japanese. It is argued that the success of overcoming the L1 transfer and restructuring grammar depends on the grammatical complexity of the target language as well as the transparency of the input cues available to the learners.

Slabakova and Montrul (2003) and Montrul and Slabakova (2002, 2003) explored the nature of L1 transfer in L2 acquisition of aspect following a parametric-type analysis of aspectual distinction on Germanic and Romance language by Giorgi and Pianesi (1997). According to the analysis, the difference between English and Spanish lies in the feature composition of the AspP category.

According to such analysis, Spanish selects both the [+perfective] and [+Imperfective] feature. Thus the *Preterit* expresses perfective interpretation, whereas the *Imperfect* expresses Imperfective interpretations (e.g. progressive, habitual). On the other hand, English only selects a [+perfective] feature, and the simple past expresses both perfective and Imperfective meaning (habitual). The learning task faced by English learners of Spanish is to overcome the parametric values in their L1 and learn the [-perfective] feature is instantiated in Spanish.

Slabakova and Montrul (2003) found that English learners of Spanish are capable of acquiring features of functional categories that are represented in different ways in the L2. For instance, although learners' L1 English and L2 Spanish differ in terms of the perfective and imperfective contrast on stative verbs, the learners are capable of recognizing the contrast. Montrul and Slabakova (2002) explored the relationship between the acquisition of aspectual morphology and the semantic interpretations associated with the [±perfective] features among 71 English learners of Spanish of intermediate and advanced level. The results show that all the advanced learners have acquired the morphological properties of the Preterit and Imperfect, and most of them have acquired the semantic distinction. A small percentage (20%) of the intermediates have acquired the aspectual morphology and semantic distinction of all the lexical classes. At the same time, the rest of the intermediates who have not acquired the Preterit/Imperfect aspectual morphology did not show sensitivity to the semantic distinction. Montrul and Slabakova (2002) argue that acquisition of aspectual morphology precedes the acquisition of semantic interpretations in this domain, and the acquisition of Imperfect morphology is likely to be the trigger of the acquisition of the [-perfective] feature value in L2 Spanish. However, one limitation of this study, as proposed by Domínguez et al. (2017), is that the authors did not explicitly explain whether the acquisition of a new formal feature triggers the acquisition of the associated morphological paradigm or whether the acquisition of the morphological contrast triggers the acquisition of formal features. These two possible relationships seemed not to be fully supported by the results of the data. On the one hand, there are many intermediate learners who have acquired the morphology but have not exhibited knowledge of the semantic contrast, which is at odds with the view that the acquisition of morphology triggers the semantic contrast. Meanwhile, it is not obvious from the data that the acquisition of the Imperfect is difficult for the English learners since English does not select the [-perfective] feature value. And such results did not support the view that the acquisition of semantic features triggers the acquisition of morphology. The limitation of the study reveals the problem with viewing the L2 learning task as selecting a new [-perfective] feature not instantiated in the learners' L1.

As stated in section 3.1 and section 3.4, the current thesis adopts Arche's (2006, 2014) analysis of aspect, which proposes that morphological forms are expressions of a particular meaning (perfective/Imperfective) encoded by interval-ordering heads which exist both in Spanish and Chinese. The learning task lies in remapping existing meanings onto new morpholexical forms in the L2 (Lardiere, 2008, 2009). However, the durative meaning encoded by the marker *zhe* in Mandarin Chinese is a special case in that this feature constraint is not instantiated in Spanish. Thus, the results of the study will bring new insights into the complexity of the learning task in establishing L2 form-meaning mapping and the development relationship between the acquisition of semantic features and grammatical morphemes.

In the next chapter, I discuss the experimental study of the current thesis. Based on a feature-based contrastive analysis of the aspectual features in Spanish and in Chinese, I discuss the learning tasks of the acquisition of viewpoint aspect in L2 Chinese by L1 Spanish learners and L2 Spanish by L1 Chinese learners. The research questions and research predictions will also be presented. In addition, the research methodology designed to answer the research questions will be presented

Chapter 4 The Experimental Study

4.1 Introduction

The discussion in Chapter 2 has shown that divergence in L2 grammar is not thought to be caused by a failure of resetting parametric values not selected in the L1 but by the need to reassemble features that exist both in the L1 and L2 but have new lexico-morphological configurations in the L2. Previous L2 acquisition studies have shown that Feature Reassembly (FR) (Lardiere, 2008, 2009a,b) provides testable hypotheses on the learning task faced by L2 learners. However, as pointed out by White (2009), the Feature Reassembly is not able to make predictions in terms of which type of feature reassembly will be easy or difficult for acquisition, for instance, which type of L1-L2 combination will be more difficult than others for acquisition as it involves a certain type of reassembly of feature compositions? The review of previous L2 acquisition studies testing the predictions of FR in Chapter 2 reveals a lack of knowledge of what factors contribute to the extent of L1 influence and the complexity of the learning task at the initial stages of FR. Among the proposals that isolate factors that contribute to the difficulty of the learning task in L2 acquisition, the proposal on the transparency of form-meaning mapping appears to be of particular relevance to the investigation of the present study. DeKeyser (2005) argues that the transparency of form-meaning mapping determines the difficulty of acquisition for a learner who processes language for meaning. An examination of the role of transparency of L1-L2 form-meaning mapping in L2 feature reassembly will contribute to more nuanced predictions of the complexity of the learning task.

In the current thesis, I approach the L2 learnability problem by exploring the L2 acquisition of viewpoint aspect. The review of the theoretical background of Aspect in Chapter 3 has shown that viewpoint aspect is a syntactic category expressing semantic notions on the temporal development of an eventuality (Arche, 2006, 2014; Demirdache and Uribe-Etxebarria 2000, 2014; Klein 1994; Stowell, 1993, 1996, 2007; Zagona, 1999). Although the essential aspectual features are universal, the way these features are realized is subject to cross-linguistic variation (e.g. whether the aspectual features are encoded by morphemes).

Previous literature on the L2 acquisition of Aspect has shown that learners have difficulties when they are requested to establish form-meaning mappings different from the L1 (Collins, 2002; Domínguez et al., 2013, 2017; Duff and Li, 2002; Gabriele, 2009; Gabriele and McClure, 2011; Roberts and Liszka, 2013; Slabakova and Montrul, 2002, 2003; Montrul and Slabakova, 2002, 2003).

However, what remains less known is what might be sufficient predictors of the complexity of the learning task and the extent of L1 transfer at the initial stages of L2 acquisition of viewpoint aspect, for instance, whether the grammaticalization of aspectual features or the transparency of form-meaning mapping in the L1 and L2 plays a role. The present study investigates what factors affect the extent of L1 transfer and the complexity of the learning tasks in the L2 acquisition of aspectual features at the initial stages of feature reassembly by conducting a bidirectional study on the L1-L2 language pair of Chinese and Spanish.

In the next section, I formulate the learning tasks and research predictions based on the predictions of the FR. The discussion of the learning tasks leads to the formation of the research questions and research predictions tested in a bidirectional experimental study with 76 instructed L1 Spanish-L2 Chinese learners and 81 instructed L1 Chinese-L2 Spanish learners. Two tasks were administrated to test the research questions advanced in this thesis: a Sentence-Context-Preference-Matching task and a Fill-in-the-blanks task.

4.2 The learning task, research questions, and research predictions

The learning tasks and research predictions of the thesis are formulated based on the predictions of the Feature Reassembly (FR) (Lardiere, 2008, 2009a, b) and also the proposals on the transparency of form-meaning mapping (Dekeyser, 2005; Slabakova, 2015). According to the FR, the L2 acquisition task involves two processes: 1) feature mapping: learners initially map lexical items in the L2 to the corresponding feature compositions encoded by morpholexical items in the L1 based on similarities in meaning and grammatical function; 2) feature reassembly: learners have to reassemble the initial mapping based on L1 feature compositions into new formal feature configurations onto different lexical items in the L2. According to the FR, the problems in L2 acquisition lie in assembly features that exist in the L1 but are conFigured differently in the L2. The current thesis examines the role of the transparency of form-meaning mappings in the L2 feature reassembly task. I assume that the mismatch between the L1 and L2 in the transparency of form-meaning mapping causes difficulty at the initial stages of feature reassembly. In this learning scenario, learners initially assume that the transparency of form-meaning mapping of an L2 lexical item is the same as that of the closest equivalent morpholexical item in the L1. After the initial mapping of the feature composition to the L1 lexical entry is completed, learners need to reassemble the initial non-target-like feature composition to accommodate the target grammar. In addition, although the FR does not directly address the case of acquisition of a new feature in the

L2, it proposes that any detectable feature contrast is ultimately attainable. The current thesis aims to have a more refined understanding of the learning problems in acquiring a new feature in the L2 and examines the learnability of a new feature in L2 acquisition at the initial stages of feature reassembly.

The issues mentioned above are examined by investigating the L2 acquisition of viewpoint aspect in Chinese and Spanish. According to general typological distinctions, Chinese and Spanish are two typologically different languages: Chinese is a Sino-Tibetan language while Spanish is a Romance language. However, both languages grammaticalize Aspect and use overt morphemes to express aspectual features. Thus, the language pair provides an ideal context in examining whether when both L1 and L2 grammaticalize Aspect but differ in the transparency of form-meaning mapping causes learning difficulties. The feature-based proposal on the viewpoint aspect in Chinese and Spanish, as discussed in Chapter 3, provides a basis for outlining the acquisition task faced by L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners.

Based on the characterization of the aspectual interpretations in Chinese and Spanish, I created a table (see table 5) that characterizes the aspectual readings and the realizations in Spanish and Chinese. In addition, based on the predictions of Feature Reassembly (Lardiere, 2008, 2009a, b), I make the possible bidirectional mapping schema of corresponding forms from L1 Chinese to L2 Spanish and from L1 Spanish to L2 Chinese (see Figure 9). With the current understanding of the realization of aspectual features in Chinese and Spanish, I make the following assumptions about the nature of the acquisition tasks faced by the two types of learners.

In the present study, the aspectual readings (one-time event, experiential (present perfect), progressive, habitual, continuous), which are present both in Chinese and Spanish, have the same syntactic structure. It is how these meanings are expressed and mapped onto morpholexical items that varies across these languages. Thus, the learning task for both types of learners is to map the existing features onto the corresponding morpholexical forms. In Chinese, the perfective aspectual reading (one-time event) is expressed by the perfective marker *le* and the experiential marker *guo*; the experiential aspectual reading is expressed by the experiential marker *guo;* the progressive interpretation is expressed by the progressive marker *zai*, the habitual interpretation is expressed by temporal adverbials (e.g. *jingchang (often))*, the continuous interpretation is expressed by the durative marker *zhe*.

In Spanish, the perfective interpretation is expressed by the Preterit morphology, the present perfect interpretation is expressed by the Present Perfect periphrasis, while the imperfective interpretations (progressive, continuous, habitual) are expressed by the Imperfect morphology.

Crucially, there is a mismatch in the transparency of form-meaning mapping between Chinese and Spanish in the realization of some aspectual meanings. The experiential interpretation is expressed by the marker *guo* in Chinese, which has a one form-two meanings pairing. Meanwhile, this meaning is expressed by the Present Perfect periphrasis in Spanish, which has a one form-one meaning relationship. The imperfective meanings (progressive, continuoui) are separated and expressed by the aspectual markers (*zai*, *zhe*) and the temporal adverbials (*jingchang*) in Chinese, which have a one-form-one meaning relationship. These meanings are expressed by the Imperfect morphology in Spanish, forming a one form-many meanings relationship. Thus, the mismatch in the transparency of form-meaning mapping in the expression of aspectual readings (experiential, progressive, continuous, habitual) in Chinese and Spanish leads to anticipation of acquisition challenges.

Meanwhile, the durative aspectual reading presents a special case for acquisition. As discussed in Chapter 3, when the durative marker *zhe* works with non-stative verbs (e.g. activities), it yields durative interpretation, depicting the state resulting from an activity. This interpretation is not present in Spanish. Therefore, it is a new feature to be acquired by L1 Spanish-L2 Chinese learners.

According to this analysis,
L1 Spanish-L2 Chinese learners need to (1) learn that in Chinese, perfectivity can be expressed by the use of two aspectual markers: *le, guo*; present perfect can be expressed by the experiential marker *guo*; Imperfectivity can be expressed by the use of two aspectual markers: *zhe, zai* and the temporal adverbials such as *Jingchang* (often); (2) remap the meaning associated with the *Preterit* in Spanish onto the two perfective markers *le, guo* in Chinese; remap the meaning associated with the *present perfect* form in Spanish onto the experiential marker *guo* in Chinese; remap the meanings associated with the *Imperfect* onto the two Imperfective markers *zhe*, *zai* and the temporal adverbial *Jingchang* (often) in Chinese.

On the other hand, L1 Chinese L2 Spanish learners need to (1) learn that the two aspect-related morphological forms (Preterit or Imperfect) in Spanish expresses “either perfectivity or Imperfectivity” (Arche, 2006, 2014; Domínguez et al., 2017); learn that the present perfect form in

Spanish expresses present perfect meaning; (2) redistribute the meanings associated with the perfective marker *le* onto the Preterit in Spanish; remap the meaning associated with the experiential marker *guo* onto the Preterit and present perfect form in Spanish; remap the meanings associated with the Imperfective markers *zhe*, *zai*, and the temporal adverbial *jingchang* onto the Imperfect in Spanish.

Meaning	**Number occasions**	**Status**	**Interval ordering**	**Spanish form**	**Chinese form**	**Time-Relational analysis of Chinese aspect markers**
Perfective (One-time Event)	1	finished	TT (Total) OVERLAP EvT	Preterit Marta estuvo enferma el domingo pasado.	*le* Marta shang zhou bing ***le*** Marta last week ill PERF (Marta was ill last Sunday)	TT OVL PRETIME T-DP AND T-DP
Experiential	1	finished	TT After EvT	Present perfect (El) ha visitado China. He has visited China (El) ha estado en Beijing. He has been to Beijing	*guo* Ta qu ***guo*** Beijing. He went EXP Beijing. (He has visited Beijing)	TT AFERR T-DP
Progressive	1	unfinished	TT (WITH)IN EvT	Imperfect/Periphrasis (copula+V-ndo) Marta cantaba/estaba cantando cuando llegamos.	*zai* Women dao de shihou, We arrive Gen time Marta ***zai*** chang ge. Marta zai sing song. (Marta was singing when we arrived)	TT IN T-DP

Meaning	**Number occasions**	**Status**	**Interval ordering**	**Spanish form**	**Chinese form**	**Time-Relational analysis of Chinese aspect markers**
Continuous	∃	unfinished	TT (WITH)IN EvT	Imperfect Marta estaba enferma cuando la visité.	*zhe* Wo qu kan ta de I went see him Gen Shihou Marta sheng ***zhe*** Time Marta having CONT bing. ill (Marta was ill when I visited her)	TT IN T-DP
Habitual	|>1|	period unfinished, each instance finished	TT (WITH)IN EvT	Imperfect/Periphrasis (soler+Infinitive) Marta cantaba/solía cantar en un coro.	Temporal adverbs Marta ***Jingchang*** zai Marta usually zai hechangdui chan ge choir sing song. (Marta used to sing in a choir)	
Durative	|1|	unfinished.			*Zhe* Ta yibian zoulu yibian chang He while walk while sing ***zhe*** ge. DUR song He is singing while taking a walk.	

Table 5. Characteristics of Viewpoint Aspect in Spanish and Chinese. The Spanish examples from Domínguez et al. (2017)

Meaning	Number occasions	Status	Interval ordering	English form	French form
Perfective (One-time Event)	1	finished	TT (Total) OVERLAP EvT	Simple past Eva slept.	*Passé Composé* Marie **a couru** un kilometre. Marie ran-PC a kilometer (Marie ran a kilometer.)
Experiential	1	finished	TT After EvT	Present perfect Eva has slept.	*Passé Composé* Ils **ont répété** la piéce. They have rehearsed-PC the play (They have rehearsed the play.)
Progressive	1	unfinished	TT (WITH)IN EvT	(Copula + V-ing) Eva was sleeping.	*Imparfait* Hier, à six heures, Nora riait. Yesterday, at six hours, Nora laugh-imp (Yesterday, at six, Nora was laughing.)

Meaning	Number occasions	Status	Interval ordering	English form	French form
Continuous	∃	unfinished	TT (WITH)IN EvT	Past Marta was ill (when I visited her).	*Imparfait* La mer **était** calme. The sea was-IMP calm (The sea was calm.)
Habitual	|>1|	Period unfinished, each instance finished	TT (WITH)IN EvT	Past/Other means (used to/would) Marta used to sing in a choir.	*Imparfait* Amina écrivait un poème en une demi-heure. Amina write-IMP a porm in a half-hour. (Amina used to write a poem in half hour.)

Table 6. Characteritistics of Viewpoint Aspect in English and French. The English examples from Klein (2009), Domínguez et al. (2017), the French examples from Demirdache and Uribe Etxebarria (2014), McManus (2011), Smith (1996).

The mapping of relevant aspectual features onto corresponding forms in Chinese and Spanish is represented in Figure 9. The arrow indicates the mapping direction from the aspectual features which exist both in Chinese and Spanish (except for the durative aspectual reading) to the aspectual forms in Chinese (left) and in Spanish (right).

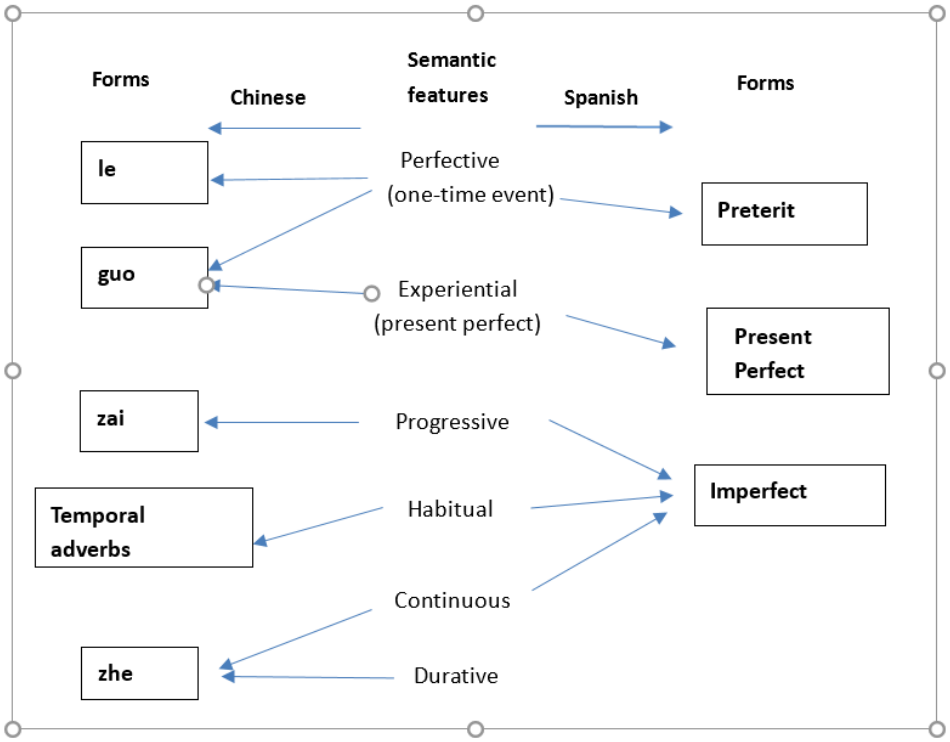


Figure 15. The mapping of aspectual features onto corresponding forms in Spanish and in Chinese.

The research questions

Based on the discussion of the learning task involved in the L2 acquisition of aspectual features in L2 Chinese by L1 Spanish learners and in L2 Spanish by L1 Chinese learners, and following the predictions of the FR and the proposals on the transparency form-meaning mapping, the following research questions are addressed in this thesis.

General research question: What factors affect the extent of L1 influence and the complexity of the learning task at the initial stages of L2 acquisition of a language that has different aspectual marking systems?

- RQ 1: How are L2 learners affected by L1 transfer in the mapping process of the feature reassembly? In particular, do L2 learners map features from the closest equivalent morpholexical item in the L1 to a morpholexical item in the L2 (based on similarity in meaning

or grammatical function)?

- RQ 2: How are L2 learners affected by the transparency of form-meaning mappings in the mapping and reassembly process? Will the initial stages of feature reassembly be challenging for the learners when the same semantic features are expressed by more functional morphemes in the L2? Will the initial stages of feature reassembly be facilitated by the grammaticalization of semantic features in the L1 and L2?

- RQ 3: Are L2 learners able to add a new semantic feature not available in the L1 during the feature reassembly? If so, at what stages?

The general research question of the current thesis inquires what factors affect the extent of L1 influence and the complexity of the learning task at the early stages of L2 acquisition of a language that has different aspectual marking systems. Underneath the general inquiry, three specific research questions are elucidated, addressing the relevant factors that are likely to affect the feature mapping and reassembly processes.

Research question 1 inquires how learners are affected by L1 transfer in the mapping process involved in feature reassembly. In particular, whether learners map features from the closest equivalent morpholexical item in the L1 to the L2 based on similarities in meaning or grammatical function. In relation to this research question, prediction 1 is made.

Prediction 1 (for RQ 1): Learners will initially map features of a morpholexical item in the L2 to a **closest morpholexical counterpart in the L1** based on similarities in meaning and grammatical function.

This prediction is based on the predictions of the Feature Reassembly (Lardiere, 2008, 2009a, b) that in L2 acquisition, learners initially seek for a closest equivalent morpholexical counterpart of a lexical item in the L2 to those in the L1 based on similarities in meaning and grammatical function. Since both learner groups are instructed learners, their initial mapping is also biased by the classroom instructions. For L1 Spanish-L2 Chinese learners, they encounter the perfective interpretation of the aspectual marker *le* in their exposure to the target input much earlier and practice it more often than the other aspectual forms (e.g. the experiential marker *guo*). Consequently, L1 Spanish-L2 Chinese learners are likely to map the perfective marker *le* to their L1 feature set of the Preterit at the early stages of acquisition. Since the Preterit in Spanish encodes the same aspectual reading with the marker *le*, learners will not have difficulties in the interpretation of the marker *le* at the initial mapping process. For L1 Chinese-L2 Spanish learners,

they have exposure to the perfective interpretation encoded by the Preterit much earlier than the meanings encoded by other aspectual forms. Thus, L1 Chinese-L2 Spanish learners will map the Preterit to the perfective interpretation of the perfective marker *le* at the initial stages of acquisition. As a consequence, learners will not have difficulties in the interpretation of the Preterit in the perfective contexts at the initial stages of mapping.

Based on the above analyses, the following predictions are made:

Prediction 1.1 L1 Spanish-L2 Chinese learners will initially map the perfective meaning expressed by the marker *le* onto the Preterit. Thus, the learners will not have difficulty interpreting *le* as a result of positive transfer from the L1.

Prediction 1.2 L1 Chinese-L2 Spanish learners will initially map the perfective meaning encoded by the Preterit onto the marker *le*. Thus, the learners will not have difficulty interpreting the Preterit as a result of positive transfer from the L1.

Prediction 2 (For RC 2): The initial mapping and reassembly process will be problematic when the L1 and L2 **differ in the transparency of form-meaning mapping.**

According to the predictions of the FR, in L2 acquisition, the feature compositions of closest equivalent morpholexical items in the L1 form the basis for assembly and reconfiguration of new lexical items in the L2. At the initial stages of mapping, learners will assume that the level of transparency of form-meaning mapping of a lexical item in the L2 is the same as that of a closest equivalent morpholexical item of the L1. Thus, when the transparency of form-meaning mapping differs between the L1 and L2, learners' interpretation of the target morpholexical item will be problematic due to L1 transfer at the initial mapping process. At the initial feature reassembly process, learners have to reconfigure the initial non-target-like form-meaning mappings in order to accommodate the way form-meaning mappings is achieved in the target grammar. According to the predictions of the FR, the task of reassembling features into different configurations in the L2 is complicated. The following predictions are made on mapping and reassembly of the aspectual interpretations, which are affected by the mismatch between the L1 and L2 in the transparency of form-meaning mapping.

Prediction 2.1 For L1 Spanish-L2 Chinese learners, the initial mapping and reassembly process of the experiential meaning encoded by the Present Perfect to the experiential marker *guo* will be problematic.

While the experiential meaning is encoded by the present perfect periphrasis, which has one-on-one form-meaning mapping in Spanish, this meaning is expressed by the experiential marker *guo* in Chinese, which also encodes perfective meaning. The learning task is complicated by a Poverty-of-the-Stimulus problem. The input does not provide enough evidence on the semantic contrast between the experiential interpretation encoded by the marker *guo* and the perfective interpretation encoded by the marler *le*. Meanwhile, there is a lot more input and practice on the use of the perfective marker *le* than the experiential marker *guo*. The learners will initially assume that since the experiential marker *guo* also expresses perfective interpretation, the perfective marker *le* and the experiential marker *guo* are interchangeable and incorrectly associate the experiential interpretation with *le*. As a result, the learners will have difficulty rejecting the perfective marker *le* in the experiential contexts.

Prediction 2.2 For L1 Spanish-L2 Chinese learners, mapping and reassembling the imperfective meaning (progressive, continuous, habitual) will be problematic at the initial stages of L2 acquisition.

While the Imperfective meanings are mapped onto a single aspectual morpheme—(the Imperfect) in the L1 Spanish, these three meanings are isolated and encoded by separate aspectual morphemes (progressive—*zai,* continuous—*zhe*) and temporal adverbials (habitual—*jingchang* (often) in L2 Chinese. Learners will have difficulty assigning correct semantic contrast to the imperfective forms.

This learning scenario is also linked to prediction 4, which assumes that the learning task is complicated when the same features are expressed by more functional morphemes than the L1. Functional morphology is proposed to be the 'bottleneck' for L2 acquisition (Slabakova, 2006, 2008, 2013), and L2 learners have to acquire the functional morphology before establishing the syntax and semantics (Slabakova, 2014). The development relationship between the functional morphology and semantic features is also discussed by Domínguez et al. (2017), proposing that the acquisition of aspectual morphology precedes the acquisition of aspectual distinctions. In their study, the beginners had knowledge of the Preterit and Imperfect morphology but had problems assigning correct interpretations to the aspectual morphology.

Consultation with teachers and examination of the textbook shows that while the instruction of

the two imperfective markers (progressive marker *zai*, durative marker *zhe*) highlights both the meaning and grammatical function of two markers, however, the instruction of the temporal adverbials only focuses on the lexical meanings. Based on this fact, I assume that learners will initially map the imperfective meanings encoded by the imperfect in Spanish onto the two imperfective markers (*zai*, *zhe*) in Chinese and. Meanwhile, the two imperfective markers (progressive marker *zai*, durative marker *zhe*) in Chinese are taught in the classrooms in a close sequence. Therefore, for the acquisition of the imperfective markers in Chinese by L1 Spanish learners, there are two mapping possibilities of the imperfective markers to the aspectual interpretations of the L1 lexical entry. If learners map the progressive marker *zai* to the Spanish Imperfect, learners will be more accurate in the interpretation of *zai* in the progressive contexts than in the other imperfective contexts. However, learners will assume that the *marker* zai is applicable to all the imperfective contexts and misinterpret the marker *zai* in the other imperfective contexts. If learners map the durative marker *zhe* to the Spanish Imperfect, learners will be more accurate in the interpretation of *zhe* in the continuous contexts. Meanwhile, learners will assume that the marker *zhe* is appropriate in all the imperfective contexts and misinterpret the marker *zhe* in the other imperfective contexts.

Prediction 2.3 For L1 Chinese-L2 Spanish learners, mapping and reassembly of the experiential interpretation expressed by the experiential marker *guo* to the Present Perfect in Spanish will be problematic.

While the experiential interpretation is expressed by the aspectual marker *guo* which also expresses the perfective interpretation in L1 Chinese, this meaning is mapped onto the Present Perfect periphrasis which only expresses the present perfect interpretation. Based on the similarities in semantic meaning and grammatical function, learners will initially map the Present Perfect in Spanish to the experiential marker *guo* in Chinese. Thus, learners will initially assume that the Present Perfect is appropriate in both present perfect and perfective contexts. As a result, the learners will have difficulty rejecting the perfective aspectual reading in the Present Perfect contexts.

Prediction 2.4 For L1 Chinese-L2 Spanish learners, mapping and reassembly the meanings (progressive, habitual, continuous) associated with the Imperfect will be problematic.

While the three meanings (progressive, habitual, continuous) are expressed by a single

grammatical form— the Imperfect in the L2, these three meanings are isolated and mapped onto three separate forms (the progressive marker *zai*, the durative marker *zhe*, the temporal adverbial *jingchang*) in the L1. If learners map the Imperfect to one of the imperfective markers (e.g. the progressive marker *zai*) in Chinese, learners will initially assume that the Imperfect is only appropriate in one imperfective condition (e.g. progressive) since the L1 does not provide any clue that the other imperfective meanings are expected to be encoded by an imperfective form. As a consequence, learners will be accurate in the interpretation of the imperfect in one imperfective context but have problems in the other imperfective contexts.

Prediction 2.5 For both L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners, the imperfective morphemes will be more problematic than the perfective morphemes at the initial stages of feature mapping and feature reassembly.

This prediction is in line with the findings from previous studies examining L2 acquisition of aspect that the perfective morphemes are acquired earlier than the imperfective morphemes (e.g. Gabriele, 2009; Gabriele and McClure, 2011; McManus, 2015; Wang, 2012). There are a few reasons for this prediction. Since the participants of the present study are instructed learners, they receive earlier exposure to the perfective morphology than the imperfective morphology (Salaberry, 1999). Also, in both learning scenarios, the form-meaning mappings of perfective morphemes are more transparent than that of the imperfective morphemes, this non-transparent (one-to-many) form-meaning mapping is expected to be problematic for L2 learners (Dekeyser, 2005; Slabakova, 2009). In addition, the semantic complexity of the imperfective morphemes is higher because they involve more semantic meanings than the perfective morphemes. Thus, acquiring the imperfective morphemes involves more remapping tasks, leading to a higher cognitive load.

Prediction 2.6 The mapping and reassembly process will be difficult if the same semantic features are expressed by more morphemes in the L2 than the L1.

Overall, the initial mapping and reassembly task will be easier for the L1 Chinese-L2 Spanish learners than the L1 Spanish-L2 Chinese learners, as the learning task for L1 Spanish-L2 Chinese learners involves the acquisition of more morphemes.

This prediction shares the same rationale with prediction 2.2, which refers to the difficulty of acquiring functional morphemes and the assumption that learners need to acquire the functional morphemes before establishing the correct semantic interpretations. In Chinese, there are four aspectual morphemes (*le*, *guo*, *zai*, *zhe*) to be acquired, while in Spanish, there are two aspectual morphemes (the Preterit, the Imperfect) to be acquired. This leads to the anticipation that the initial mapping and reassembly process will be more complicated for L1 Spanish-L2 Chinese learners.

Prediction 3: (**For RQ 3**) The initial mapping and reassembly process will be difficult when learners have to **acquire a new semantic feature** not available in the L1.

Prediction 3.1 For L1 Spanish-L2 Chinese learners, the durative meaning of aspect marker *zhe* will be difficult at the initial mapping and reassembly process

As discussed in Chapter 3, the durative marker *zhe* encodes two interpretations: a continuous interpretation which is available in Spanish, and a durative interpretation which is not available in Spanish. Since there is no clue from the L1 that the durative interpretation is to be expected, the durative interpretation of the durative marker *zhe* is expected to be more problematic than the continuous interpretation of the marker *zhe* at the initial mapping process. However, learners' knowledge of the durative interpretation is expected to improve with increased input and practice. As argued by Lardiere (2008,2009a, b), any detectable feature contrast is ultimately attainable.

4.3 Method

This section discusses the experimental study designed to answer the research questions and investigate the interpretation of aspectual forms in Chinese and Spanish and the knowledge of the aspectual features in different contexts by L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners. The tasks for the participants were administrated via the 'iSurvey' website, a UK university survey administrating service. Each task was provided with clear instructions and sample test items in the participants' native language. The learners had no time limit for completing the tasks. However, they cannot return to the previous pages to alter their answers. There were two sets of distinct but equivalent tasks for the two types of participants in this study: L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners. Before conducting the experiment, an ethical

approval was obtained from the University of Southampton Ethics Committee. On the first page of the online survey, the participants were provided with a page of information of consent with a full description of the project in the participants' L1 (although the subject of investigation, the acquisition of aspectual features, was not disclosed to the participants) and were asked to kick the consent button if they were willing to participate. The participants were given permission to participate voluntarily. In the following sections, I will introduce the tasks designed for the two types of learners separately.

4.3.1 L1 Spanish-L2 Chinese learners

4.3.1.1 Participants

The participants were 76 native Spanish speakers studying Chinese as their undergraduate major at the University of Granada, Spain. The participants have Spanish as their L1 and were learning Chinese at the time of testing. The learners were approached through their Chinese language classes. There were 42 participants in the beginner group, whose average score on the proficiency test was 37.98 out of 100. There were 34 participants in the intermediate group, and their average score on the proficiency test was 86.76 out of 100. Meanwhile, 22 native speakers of Chinese in China were recruited as the control group. From the results of the background questionnaire, we found that the beginners have spent an average of 17 months learning Chinese, while the intermediates have spent an average of 25 months learning Chinese. These participants were compensated for their participation.

Table 7. L1 Spanish-L2 Chinese learner profile

Group	Age: Mean (range)	Proficiency level	Number	Mean (SD) in the proficiency test	Average months learning Chinese
L1 Spanish L2 Chinese	24.05 (19-61)	Beginners	42	37.98 (12.69)	17
		Intermediates	34	86.76 (13.31)	25
Chinese Controls	18 (16-19)	Native speakers	22	100(0)	

4.3.1.2 Background questionnaire

Background questionnaires are widely applied in SLA research for collecting information about the participants' identities and their language learning experience (e.g. Ayoun, 2004; Gabriele, 2005; Rogers, 2009; Wright, 2010; McManus, 2011). In the current study, background questionnaires

were designed to investigate the learners' language learning background and the amount of exposure to the second language. The questionnaire consisted of 14 questions (see Appendix A). The first six questions asked about the learners' personal information, such as name, year of birth, place of birth. The second part of the questionnaire asked about learners' language learning experience, for example: what second/foreign languages do they speak at secondary school or university. These questions were facilitative in understanding the participants' length of exposure to the second language. The background questionnaire for L1 Spanish-L2 Chinese learners was first designed in English and was translated into Spanish by a native speaker of Spanish.

4.3.1.3 Chinese proficiency test

A Chinese proficiency test was conducted to gain an insight into L1 Spanish-L2 Chinese learners' Chinese proficiency level. These test items were taken from the previous HSK (Hanyu Shuiping Kaoshi) test and mock test. The HSK test is a standardized test in China, aiming at accessing Chinese language proficiency for non-native speakers of Chinese from beginner to advanced level.

The HSK test includes 6 levels, ranging from level one (beginner) to level six (advanced). The test items selected for this study were from HSK level three, which targeted intermediate learners. In the present study, the proficiency test consisted of four multiple-choice cloze sections, and each section contained five Chinese sentences, amounting to 20 blanks in total. For each blank, the learners were required to choose one answer out of five options. According to the pass rate for the HSK level three test (60%), I divided the participants whose score in this test below 60% into the beginner group and those who score between 60%-100% into the intermediate group.

There are three reasons for using the multiple-choice cloze test as the proficiency test: first, it is a widely used measure to assess language proficiency in a variety of settings, for example, the language placement test; second, the cloze test is not time-consuming and will not increase the total time-length of the experimental study; third, it is a fast and straightforward scoring system for the researcher (Eckes and Grotjahn, 2006).

4.3.1.4 Fill-in-the-blanks task

The fill-in-the-blanks task is a controlled elicitation task, which demands increased cognitive processing of the participants (Chaudron, 2003). Previous studies on L2 acquisition of tense-aspect morphology have employed the fill-in-the-blanks task to gain access to learner's knowledge of the tense and aspectual morphemes. For example, Roldán (2009) employed a fill-in-the-blanks task in

exploring L1 Chinese and L1 Spanish learners' acquisition of the English present progressive and past perfective; Wang (2012) used a fill-in-the-blanks task in the L2 acquisition of aspect research among native Swedish speakers of Chinese; Collins (2002) used a fill-in-the-blanks task to investigate French learners' acquisition of the English simple past.

In the current thesis, a Chinese version and a Spanish version of the fill-in-the-blanks task were designed as a complement to the interpretation task, with the aim of testing whether the learners have assembled the correct aspectual meanings onto the corresponding aspectual forms in L2 Chinese and L2 Spanish. The Chinese version of the fill-in-the-blanks task adopted a few sentences from the test items in Wang (2012) and included some new test items designed according to the language-specific characteristics of the Chinese aspectual system and the learning tasks faced by L1 Spanish-L2 Chinese learners. In total, the fill-in-the-blanks task has 30 test items, which examine two sets of variables: first, the type of aspectual readings in Chinese: the perfective reading by the perfective marker *le*, the experiential by the experiential marker *guo*, the progressive by the progressive marker *zai*, the continuous and durative by the durative marker *zhe* and the habitual by the temporal adverbial *jingchang*; Second, the type of predicates: states and events (see table 3 for a summary). The selection of the variables was based on the feature-based account of the Chinese aspectual system. The type of predicate (stative/eventive distinction) is included in order to see whether learners' interpretation and use of the viewpoint aspect marker is consistent with stative and eventive predicates. There were 6 test items on the perfective contexts, 6 test items on the experiential contexts, and 18 test items on the Imperfective contexts. See table 4 for example test items of each context.

The test items were initially created in Chinese and English and reviewed by a native speaker of Chinese who teaches Mandarin Chinese courses for students at the University of Southampton. After some revision of the task based on feedback from the Mandarin teacher, two rounds of pilot studies were administered among 10 native Chinese speakers studying in the UK. In the pilot study, all the contexts and instructions were provided in Chinese. After receiving feedback from the pilot study, a few modifications were made to the fill-in-the-blanks task. The final version of the task was provided to the participants. The participants were offered the task with the instructions in their L1 Spanish. They were asked to fill in the gaps in the sentences with the five aspectual forms: *le*, *guo*, *zhe*, *zai* and *jingchang*. The sentences were provided in Mandarin Chinese characters and Pinyin (the official romanization system for standard Mandarin Chinese in Mainland China). See table 8 for example test items. The full test is presented in Appendix B.

Table 8. Fill-in-the-blanks task and Sentence-Preference-Matching-Task Design for L1 Spanish-L2 Chinese learners

Situation	Condition	Type of verb	Target form
1	One-time event	Stative	*le*
2	One-time event	Eventive	*le*
3	Experiential	Stative	*guo*
4	Experiential	Eventive	*guo*
5	Progressive	Eventive	*zai*
6	Durative	Eventive	*zhe*
7	Continuous	Stative	*zhe*
8	Habitual	Eventive	*jingchang*

Table 9. Example test items for each condition of the fill-in-the-blanks task for L1 Spanish-L2 Chinese learners

Condition	Target form	Example test items
Perfective (one-time event) (n=6)	*le*	Zuótiān wǒ shàngwǎng chá __ yíxià, Yesterday I online search PERF up fáxiàn zhǐyǒu guójiā túshūguǎn yǒu zhè běn shū. Find only national library have this CL book 'Yesterday, I searched the library catalogue and found that the only available copy of the book I want is in the National Library.'
Experiential (n=6)	*guo*	Zhè tái kōngtiáo cóng gòumǎi zhì jīn, This CL air-conditioner since purchase till today cóngméi chū __ rènhé wèntí never have EXP any problem 'This air conditioner has never had any problem since it was purchased.'
Progressive (n=6)	*zai*	Zuótiān de tǐyù kè shang, Yesterday GEN PE class on gāo niánjí de tóngxué __ dǎ lánqiú senior grade GEN student PORG play basketball 'Yesterday at the PE class, the senior students were playing basketball.'
Durative (n=6)	*zhe*	Zuótiān de tiyù kè shang, dī niánjí de tóngxué ná Yesterday GEN PE class on junior grade GEN student hold __ qiúpāi liànxí pīngpāng qiú. DUR racket practice pingpong 'Yesterday at the PE class, the Junior students were playing Ping-Pong with rackets in their hands.'
Continuous (n=3)	*zhe*	Wǒ dào jiā de shíhou, I arrive home GEN time zhuō shàng fàng ___ liǎng gè bēizi, table on place CONT two CL glass bēizi lǐ yǒu chá. glass in have tea 'When I arrived home, there were two glasses of tea on the table.'
Habitual (n=3)	*jingchang*	Tā niánqīng de shíhou __ pǎobù, dǎ lánqiú. He young CL time often jog , play basketball 'When he was young, he used to go jogging and play basketball.'

4.3.1.5 Sentence-Context-Preference-Matching task

The Sentence-Context Preference Matching task is a form of sentence interpretation task used to

investigate learners' interpretations of target linguistic forms (Slabakova, 2009). This type of task requires learners to judge languages based on intuition, intending to access learner's linguistic competence (White, 2003). Previous studies have used sentence interpretation tasks to explore form-meaning pairings of viewpoint aspects. For example, Domínguez et al. (2011, 2017) employed a sentence interpretation task in exploring L1 English learner's knowledge of the Spanish Preterit and Imperfect; McManus (2011, 2015) used a sentence interpretation task to investigate L1 German and L1 English learners' interpretation of the French *passé composé* and *imparfait*.

In the current thesis, the Sentence-Context Preference Matching Task (SCMT) was used as a main experimental method to investigate the interpretations learners assign to aspectual forms. A Chinese SCMT was designed parallel to the Spanish semantic interpretation task (see Appendix C) from the Spanish Learner Language Oral Corpus (SPLLOC2; splloc.soton.ac.uk) (Domínguez et al., 2011, 2013, 2017). The Chinese SCMT task used in the present study differs from the one in SPLLOC2 in at least three ways. First, the test sentences are written in Mandarin Chinese characters and Pinyin. Second, due to the differences between Chinese and Spanish concerning the language-specific characterizations of viewpoint aspect, the Chinese version of the SCMT includes two additional contexts: the experiential context and the durative context. Third, the test items in the Spanish SCMT, which were designed to bias the acceptance of either a perfective verbal form or an Imperfective verbal form. On the other hand, the test items in the Chinese SCMT task were designed to bias the acceptance of a Chinese aspectual marker from a pair of aspectual markers. These two aspectual markers were combined not based on the perfective/Imperfective distinction but on the nature of the learning task faced by L1 Spanish-L2 Chinese learners. (see details in the following section). Like the fill-in-the-blanks task, the design of the task was also based on two sets of variables: the type of semantic condition (perfective, experiential, progressive, durative, habitual, continuous) and the type of predicates (states, events). These variables were combined to produce 8 situations and 30 test items. Among them, there were 6 test items on the perfective conditions, 6 test items on the experiential conditions, and 18 test items on the Imperfective (progressive, durative, continuous, habitual) contexts. Each test item contains: (i) a written introductory context in the learners' L1; (ii) two Chinese sentences to rate. Learners were requested to rate the sentences in terms of how appropriately they describe the context using a 5-point Likert scale (-2, -1, 0, +1, +2), where (-2) means completely inappropriate and (+2) means completely appropriate. See Figure 10 for a screenshot of a sample test item.

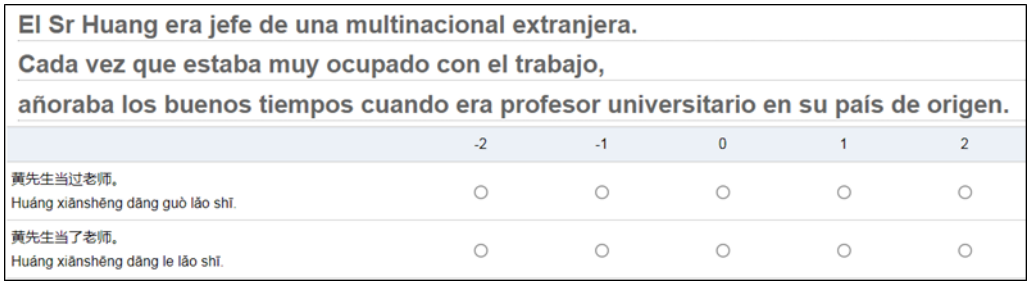


Figure 16. Screenshot of a test item followed by two sentences to rate in the SCMT (L1 Spanish-L2 Chinese learners)

The goal of the test items was to test whether learners have established correct semantic distinctions between two aspectual markers. Table 5 presents the conditions and an example from each condition. The perfective and experiential conditions tested knowledge of the semantic contrast between perfective and experiential aspectual readings. In the perfective conditions, the perfective marker *le* was expected to be accepted, and the experiential marker *guo* rejected. In the experiential conditions, the experiential marker *guo* should be accepted, and the perfective marker *le* rejected. The progressive and durative conditions examined knowledge of the semantic distinctions between the progressive and durative aspectual readings. The progressive conditions biased the acceptance of the progressive marker *zai* and the rejection of the durative marker *zhe*. The durative conditions biased the acceptance of the durative marker *zhe* and the rejection of progressive marker *zai*. The continuous conditions measured the knowledge of the semantic distinction between the continuous the experiential aspectual reading. In these conditions, the durative marker *zhe* was expected to be accepted and the experiential marker *guo* rejected. The habitual conditions tested the semantic distinction between the habitual and the experiential aspectual readings. In these conditions, the habitual adverbial *jingchang* was expected to be accepted and the experiential marker *guo* rejected. See table 9 for example contexts and test items for each condition. The full test is presented in Appendix C.

Table 10. Example contexts and test items for each condition of the SCMT for L1 Spanish-L2 Chinese learners

Condition	Example context and test items
Perfective (one-time event) (n=6)	El Dr. Wang está en estos momentos en una conferencia de tres días en Shanghai. Le encanta viajar a lugares nuevos. '*Dr Wang is currently attending a three-day conference in Shanghai. He always loves traveling to new places*.' a. Wáng bóshì qù le Shànghǎi. (Perfective marker ***le***) *'Dr Wang went to Shanghai.'* b. *Wáng bóshì qù guò Shànghǎi. (Experiential marker ***guo****)* '*Dr Wang has been to Shanghai.'
Experiential (n=6)	Hace poco que Tim ha dejado su carrera como periodista de la BBC en Londres. Ahora ha empezado una vida nueva en Edinburgo. '*Recently, Tim has said farewell to his career as a BBC journalist in London. Now he has started a new life in Edinburgh*.' a. Tim zài lúndūn gōngzuò guo. (Experiential marker ***guo***) '*Tim has worked in London*.' b. *Tim zài lúndūn gōngzuò le. (Perfective marker ***le***) '**Tim worked in London*.'
Progressive (n=6)	Ayer Pedro me envió un video de la costa de Inglaterra. Al principio estaba nublado pero de repente salió el sol que era muy fuerte. Pedro sacó las gafas de sol de su bolsa para protegerse los ojos. *'Yesterday Peter sent me a video of the seaside in Britain. It was cloudy at first, but suddenly the sun came out. The sunlight was very strong. Peter took out his sunglasses from his bag and started to protect his eyes from the sunlight*.' a. Zài zhè duàn duǎnpiān zhōng, Peter zài dài yǎnjìng. (Progressive marker ***zai***) '*In the short video, Peter was putting on sunglasses*.' b. *Zài zhè duàn duǎnpiān zhōng, Peter dài zhe yǎnjìng. (Durative marker ***zhe***) '**In the short video, Peter was wearing sunglasses*.'

Condition	Example context and test items
Durative (n=6)	Juana me envió un video de la costa en Tailandia. El sol era muy fuerte y la cara de Juana estaba roja excepto por la parte donde tenía las gafas. (Jane sent me a video of the seaside in Thailand. The sun was very bright, and the skin on Jane's face was tanned apart from the area covered by the sunglasses.) a. Zài duǎnpiān zhōng, Jane dài zhe mòjìng. (Durative marker ***zhe***) '*In the video, Jane was wearing sunglasses.*' b. *Zài duǎnpiān zhōng, Jane zài dài mòjìng. (Progressive marker ***zai***) '**In the video, Jane was putting on sunglasses*.'
Continuous (n=3)	El verano pasado los entusiastas de la lectura tuvieron un buen sitio donde pasar el tiempo. Los residentes de la ciudad tuvieron acceso a la biblioteca de la universidad durante todas las vacaciones de verano. 'This past summer, bookworms had a good place to spend their time. Residents of Southampton had access to the University library throughout the whole summer holiday.' a. Shǔjià qījiaān, túshūguǎn kāi zhe. (Durative marker ***zhe***) '*During the summer holiday, the library was open.*' b. * Shǔjià qījiaān, túshūguǎn kāi guò. (Experiential marker ***guo***) '**During the summer holiday, the library has been open.*'
Habitual (n=3)	El Sr Li no pudo terminar su primer cuadro de un paisaje ya que tuvo que empezar un trabajo nuevo. Desde que empezó este trabajo no tiene tiempo para pintar. Un mes antes de empezar este nuevo trabajo siempre estaba en su estudio pintando el paisaje. 'Mr Li's first landscape picture was interrupted by his new job. Since he started his new job, he does not have time to paint anymore. A month before the new job started, he was always in his studio working on the same landscape picture.' 1) Zài kāishǐ xīn gōngzuò zhī qián, Lǐ xiānshēng jīngcháng huà yì fú huà. 'Before Li started his new job, he used to paint a picture.' (Temporal adverb ***jingchang***) 2) *Zài kāishǐxīn gōngzuò zhī qián, Lǐ xiānshēng huà guò yì fú huà. '*Before Li started his new job, he has painted a picture.' (Experiential marker ***guo***)

This task was initially created in Chinese and was reviewed by a native speaker of Chinese who teaches Mandarin Chinese Language Courses for students at the University of Southampton. After receiving some feedback from the Mandarin teacher, two rounds of pilot studies were administered among 10 native Chinese speakers studying in the UK. In the pilot studies, all the instructions and introductory contexts were provided in Chinese.

The first round of pilot studies indicated some problems with the test items. For example, with the test items which examined whether learners acquired the semantic distinctions between the progressive aspectual reading encoded by the marker *zai* and the durative aspectual reading encoded by the marker *zhe*, some native Chinese speakers found that it is hard to decide which

mark is more appropriate according to the introductory contexts. Thus, some revisions were made, making the contexts more explicit. In the second round of pilot studies, the overall accuracy rate was higher than that of the first round of pilot testing. The follow-up interview with the participants in the pilot studies revealed that some of them did not accept or reject sentences as expected because they did not read the contexts carefully and therefore misunderstood the contexts. In these cases, they were able to self-correct the answers after rereading the contexts. In the pilot study, there were no issues with the instructions and the use of the Likert scale.

After the pilot study, I translated the instructions and contexts of the task into English and asked an English native speaker to check the appropriacy of the language. Finally, the instruction and introductory contexts of the task were translated into Spanish with the help of a native speaker of Spanish.

The participants were given the task with the Spanish contexts and the Chinese sentences in the form of characters and Pinyin. The participants were also provided with a glossary of the Chinese vocabularies, which are beyond the HSK (a standardized Chinese proficiency test) level 3. The glossary was given to the participants in a separate paper sheet with Spanish translations.

4.3.2 L1 Chinese-L2 Spanish learners

4.3.2.1 Participants

Participants in this study were 81 Chinese undergraduate students enrolled in the School of Foreign Language Studies, Spanish BA program at Hebei Normal University. The students have Chinese as their L1 and were learning Spanish as their second or foreign language. The students were approached in their Spanish classes. The learner participants were divided into two proficiency groups according to the level of courses they were taking and their scores on the proficiency test. There were 39 students in the beginner group, whose mean score on the proficiency test was 40.26 out of 100. There were 42 students in the intermediate group, whose mean score on the proficiency test was 78.69 out of 100. Meanwhile, 11 native speakers of Spanish in Spain were recruited into the control group, and they took the same tasks.

Table 11. L1 Chinese-L2 Spanish learner profile

Group	Age: mean (range)	Proficiency level	Number	Mean (SD) in the proficiency test	Average months learning Spanish
L1 Chinese L2 Spanish	20.4 (18-25)	Beginners	39	40.26 (14.8)	17
		Intermediates	42	78.69(11.2)	25
Spanish Controls	30.8 (20-48)	Native speakers	11	100	

4.3.2.2 Background questionnaire

The Chinese version of the background questionnaire used the same questions as those in the Spanish version of the task. The questions were presented to the participants in Chinese.

4.3.2.3 Spanish proficiency test

A Spanish proficiency test was administered in order to measure L1 Chinese-L2 Spanish learners' proficiency level in Spanish. The test items were selected from previous exam papers for students enrolled in the BA Spanish Course at the University of Southampton. The Spanish proficiency test consists of 20 cloze test items from two previous exam papers of Spanish language stage 4. The Spanish language stage in the University of Southampton ranges from stage 1 (beginner) to stage 7 (proficient). The Spanish language stage 4 corresponds to the B2 level (high intermediate) in the *Common European Framework of Reference for Languages (CEFR).*

The proficiency test consisted of 2 sections. Section A contained two tasks. The first task required the participants to fill in the gaps of a short paragraph using appropriate propositions; the second task asks the participants to fill in the blanks of a short extract of a story using appropriate conjugations of *ser*/*estar*. Section B contains a task that asked the participants to fill in the gaps of the sentences according to the paraphrases of the sentences. See Appendix H for the task.

The answer keys of the cloze test were provided by a Spanish teacher in the Modern Language Department of the University of Southampton. Each test item counted 5 scores, and the total score of the 20 test items was 100. Learners who scored between 0-50% were categorized into the beginner group, and those who scored between 50%-100% were placed into the intermediate group.

In the next chapter, I will present the results of the Sentence-Context-Preference Matching task and the fill-in-the-blanks task from the study on L1 Spanish-L2 Chinese learners and the study on L1 Chinese-L2 Spanish learners.

4.3.2.4 Fill-in-the-blanks task

The Spanish version of the fill-in-the-blanks focused on the use of Preterit, Imperfect and present perfect in Spanish. The design of the task was based on three variables: first, the target grammatical forms in Spanish: Preterit, Imperfect, present perfect; second, the target semantic contexts in Spanish: perfective, progressive, habitual, continuous, present perfect; third, the verb types: states and events (see Table 7 for the design). The selection of variables was based on a feature-based account of the Spanish aspectual system. There were thirty test items in this task, and among them, there were 6 test items on the use and interpretation of the Preterit verb form, 6 test items on the present perfect form, and 18 test items on the Imperfect verb form. The participants were asked to fill in the blanks in each context by selecting one form of the verb among three options (see example 38). Table 8 illustrate sample test items of each condition in the fill-in-the-blanks task. See the full task in Appendix F. The instructions of the task were provided in Chinese.

48) Xiaoming solía estudiar mucho cuando estaba en la secundaria. Para poder acordarse de todo lo que estudiaba _____ sus apuntes todos los días.
'Xiaoming was a very hardworking student when he was in secondary school. In order to remember what he was learning, he used to review his class notes every day.'

Words to choose from: (revisó, revisaba, ha revisado)

The task was first created in English and then was translated into Spanish by a native speaker of Spanish. The task was piloted among 5 Spanish native speakers so as to ensure its validity before being tested among the participants. A few modifications of the task were made based on the feedback from native Spanish speakers before the final version was administered among the participants. See table 12 for example items of the task. The full test is presented in Appendix E.

Table 12. Fill-in-the-blanks task design

Situation	Condition	Type of verb	Target form
1	One-time event	Stative	*Preterit*
2	One-time event	Eventive	*Preterit*
3	Present perfect	Stative	*Present perfect*
4	Present perfect	Eventive	*Present perfect*
5	Progressive	Eventive	*Imperfect*
6	Continuous	Stative	*Imperfect*
7	Habitual	Stative	*Imperfect*
8	Habitual	Eventive	*Imperfect*

Table 13. Example test items for each condition of the fill-in-the-blanks task for L1 Chinese-L2 Spanish learners

Condition	Target form	Example test items
Perfective (one-time event) (n=6)	*Preterit*	Ayer _busqué_ en el catálogo de la biblioteca y **_descubrí**_ que la única copia del libro que necesito está en la biblioteca nacional. 'Yesterday I searched the dictionary via the online library catalogue and found that the only available copy of the book I want is in the national library.'
Present perfect (n=6)		A Xiaoming le encanta escalar montañas. La montaña más alta que _ **ha escalado** _es el Monte Everest. 'Xiaoming is very fond of mountain climbing. The highest mountain he has climbed is Mount Everest'
Progressive (n=6)	*Imperfect*	En la clase de gimnasia de ayer, el profesor **_corría**_ mientras algunos estudiantes **_jugaban**_ al baloncesto. Yesterday, in the PE class, the teacher was running while some students were playing basketball
Continuous (n=3)	*Imperfect*	Cuando vi a Juan en el supermercado el mes pasado, **_estaba**_ muy delgado. 'When I met John in the supermarket last month, he was very slim.'
Habitual (n=6)	*Imperfect*	Xiaoming solía estudiar mucho cuando estaba en la secundaria. Para poder acordarse de todo lo que estudiaba _ **revisaba** __ sus apuntes todos los días. 'Xiaoming was a very hardworking student when he was in secondary school. In order to remember what he has learned, he used to review his class notes every day.'

4.3.2.5 Sentence-Context Preference-Matching task

Following the same rationale of the use of a Sentence-Context-Preference Matching task (SCMT) for L1 Spanish-L2 Chinese learners, a Spanish SCMT was given to L1 Chinese-L2 Spanish learners to test the extent to which Spanish learners have acquired the aspectual interpretations which exist both in L1 and L2 but are mapped onto different morpholexical items in Spanish. The current study adopted the Sentence-Context Preference Matching task from SPLLOC 2 developed by Domínguez et al. (2011, 2013, 2017). The task test two sets of variables: the type of predicate (eventive or stative) and the type of context (one-time event, habitual, progressive, or continuous). There were

7 situations and 32 contexts in this task.

Each context consists of a pair of sentences with either a perfective morphology or Imperfective morphology. Although both sentences are grammatical, only one sentence should be accepted according to the context. In this task, the participants were asked to rate the appropriateness of a pair of Preterit/Imperfect sentences using a 5-point Likert scale (-2, -1, 0, +1, +2), where (-2) means completely inappropriate and (+2) means completely appropriate. The introductory contexts, which were initially in English, were translated into the participants' L1 Chinese in order to make sure that the participants fully understand the contexts. The instructions for the task were provided in Chinese. See Figure 11 for a sample test item. The test items were piloted among 5 native Spanish speakers before being administered among L1 Chinese-L2 Spanish learners. See Appendix F for the test items.

49) Pablo's building company has shut down. It is a pity because his company was involved in a reconstruction program that worked in war zones whenever necessary.

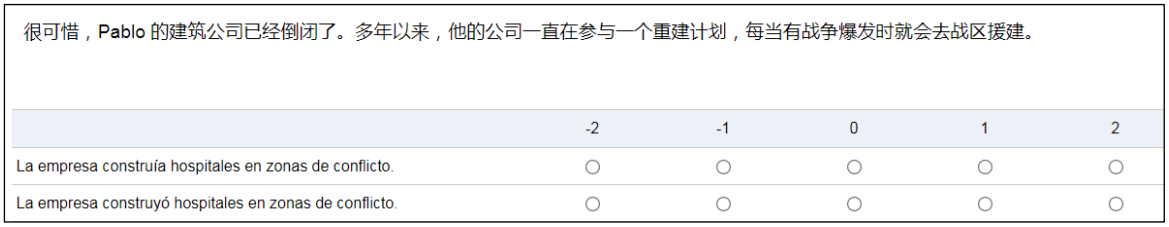


Figure 17. Screenshot of a test item followed by two sentences to rate in the SCMT. (L1 Chinese-L2 Spanish learners)

Chapter 5 Results

5.1 Introduction

This chapter presents results that are obtained in the present study which involves two types of learners: L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners. Each learner group received two major tasks: a Sentence-Context-Preference-Matching task and a fill-in-the-blanks task. The results of the L1 Spanish-L2 Chinese learners are presented first, followed by the results of the L1 Chinese-L2 Spanish learners. In presenting the results of each learner group, there will be an introduction of their proficiency level, followed by an illustration of the results in the Sentence-Context-Preference-Matching task and the fill-in-the-blanks task.

In the present study, each participant's mean scores on each aspectual condition were entered into the SPSS. The standard test for normality suggested that the data is normally distributed. As a result, the ANOVA test was used, which compared mean scores of more than two groups. The ANOVA test reveals any significant difference (<.05) between groups. This test made post hoc comparisons between groups, and the results were automatically adjusted to take into account errors that can occur with multiple comparisons of the same data (the Bonferroni adjustment).

5.2 L1 Spanish-L2 Chinese learners

5.2.1 Results of the proficiency test and the background questionnaire

Results from the proficiency test show that among the 76 L1 Spanish-L2 Chinese learners, 42 participants scored below 60 out of 100, which is the pass rate of the Chinese proficiency test. These participants were divided into the beginner group, and their mean score on the proficiency test was 37.98 out of 100. Meanwhile, there were 34 participants who scored above 60 out of 100. These learners were divided into the intermediate group, and their average score in the proficiency test was 86.76 out of 100. Meanwhile, 22 native speakers of Chinese were recruited as the control group, and their mean score of the proficiency test was 100 out of 100. From the results of the background questionnaire, we found that the beginners have spent an average of 17 months learning Chinese, while the intermediates have spent an average of 25 months learning

Chinese. See table 14 for a summary of the L1 Spanish-L2 Chinese participants' profile.

Table 14. L1 Spanish-L2 Chinese learner profile

Group	Age: Mean (range)	Proficiency level	Number	Mean (SD) in the proficiency test score	Average months learning Chinese
L1 Spanish L2 Chinese	24.05 (19-61)	Beginners	42	37.98 (12.69)	17
		Intermediates	34	86.76 (13.31)	25
Chinese Controls	18 (16-19)	Native speakers	22	100(0)	

5.2.2 Results of the Sentence-Context-Preference-Matching task

In this task, the participants were asked to rate the appropriateness of a pair of imperfective or perfective sentences using a 5-point Likert scale (-2, -1, 0, +1, +2), where (-2) means completely inappropriate and (+2) means completely appropriate. Each context was designed to bias the acceptance of a sentence with a particular Chinese aspectual form. I examine the overall means of correct answers (combining both correct acceptance and correct rejection for the eight Chinese aspectual conditions (perfective state, perfective event, experiential state, experiential event, progressive event, durative event, habitual event, continuous state). By doing so, the correct acceptance scores and correct rejections scores receive a unified standard, which ranges from -2 to 2, with "-2" being the least correct and "2" the most correct.

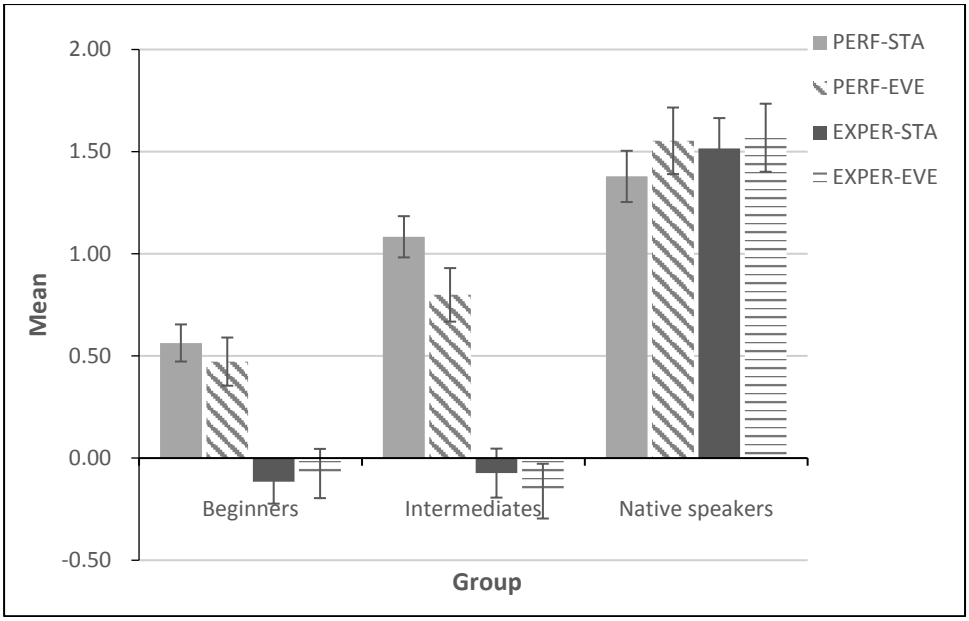


Figure 18. Participant ratings in the Chinese perfective contexts, across groups

Notes. PERF-STA = perfective state; PERF-EVE = perfective event; EXPER-STA = experiential state; EXPER-EVE = experiential event. Error Bars: standard error

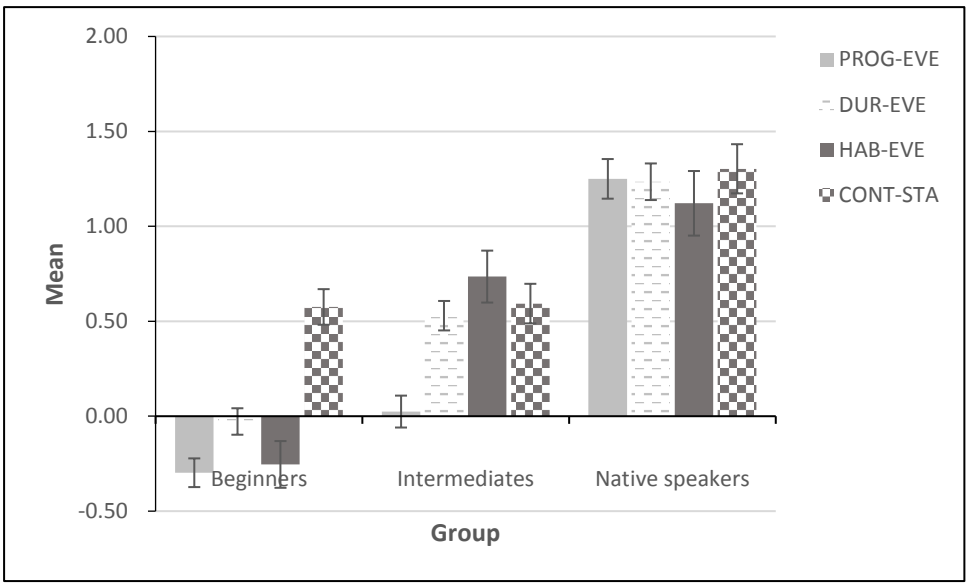


Figure 19. Participant ratings in the Chinese Imperfective contexts, across groups

Note. PROG-EVE = progressive event; DUR-EVE = durative event; HAB-EVE = habitual event; CONT-STA = continuous state. Error Bars: standard error

Figure 18 shows the mean scores of L1 Spanish-L2 Chinese in the Chinese perfective contexts; Figure 19 illustrates the mean scores of the same group in the Chinese imperfective contexts. Figures 18 and 19 demonstrate that the mean correct response rates increased with the increase of proficiency for all but one context (the experiential events), in which the intermediates

performed worse than the beginners. The lowest scores were observed in the experiential contexts even for the intermediates (-0.07 in experiential states and -0.16 in experiential events). The second-lowest scores were observed in the progressive contexts (-0.3 for beginners and -0.02 for intermediates).

A repeated-measures ANOVA was conducted, with semantic context as within-subject factors, including 8 variables, and proficiency as between-subject factors, including 3 variables. The repeated measures ANOVA shows a significant Effect of Condition ($F(7,665) = 14.854$, $p < 0.001$, partial $\eta 2 = .135$), a significant Effect of Group ($F(2,95) = 131.456$, $p < 0.001$, partial $\eta 2 = .735$), and a significant Interaction between the conditions and participants' proficiency level on the participants' performance of comprehension task, ($F(14, 665) = 6.555$, $p < 0.001$, partial $\eta 2 = .121$). This means that participants from different proficiency groups performed differently in different conditions. I then investigated the simple main effect of Condition for each proficiency group. For beginners, there is a significant Effect of Condition $F(7,287) = 10.886$, $p < 0.001$, partial $\eta 2 = .210$). For Intermediate learners, there is a significant Effect of Condition $F(7,231) = 15.888$, $p < 0.001$, partial $\eta 2 = .0325$). For native speakers, there is a significant Effect of Condition ($F(7, 147) = 9.605$, $p < 0.001$, Partial $\eta 2 = .314$).

Next, I examine the pairwise comparisons of different semantic contexts. Table 15 illustrates the pairwise comparison between perfective and experiential contexts. Both beginners and intermediates had significantly higher ratings in perfective contexts than in the experiential contexts. Significant difference was found between perfective state and experiential state context for beginners ($M = 0.68$, $p < 0.001$) and for intermediates ($M = 1.16$, $p < 0.001$). The intermediates had significantly higher ratings in the perfective events than in the experiential events ($M = 0.96$, $p < 0.001$).

Table 15. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (perfective contexts vs. experiential contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**	
	Perfective state *vs.* Experiential state	Perfective event *vs.* Experiential event
Beginners	**0.68** **(.221, 1.137)** **p < 0.001***	0.55 (-0.06, 1.15) p = 0.113
Intermediates	**1.16** **(0.56, 1.75)** **p < 0.001***	**0.96** **(0.38, 1.53)** **p < 0.001***
Native Speakers	-0.13 (-0.33, 0.05) p = 0.51	-0.02 (-0.28, 0.25) p = 1.00

Table 16. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (perfective state vs. imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Perfective state *vs.* Progressive	Perfective state *vs.* Durative	Perfective state *vs.* Habitual	Perfective state *vs.* Continuous
Beginners	**0.86** **(0.5, 1.23)** **p < 0.001***	**0.59** **(0.12, 1.06)** **p = 0.004***	**0.82** **(0.28, 1.35)** **p < 0.001***	-0.01 (-0.46, 0.44) p = 1.00
Intermediates	**1.06** **(0.54, 1.58)** **p < 0.001***	**0.56** **(0.14, 0.97)** **p = 0.002***	0.35 (-0.22, 0.92) p = 1.00	0.49 (-0.05, 1.03) p = 0.11
Native Speakers	0.13 (-0.14, 0.39) p = 1.00	0.14 (-0.09, 0.37) p = 1.00	0.26 (-0.12, 0.63) 0.64	0.76 (-0.17, 0.33) p = 1.00

Table 17. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (perfective event vs. imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Perfective events *vs.* Progressive	Perfective events *vs.* Durative	Perfective events *vs.* Habitual	Perfective events *vs.* Continuous
Beginners	**0.77** **(0.22, 1.32)** **p = 0.001***	0.5 (-0.43, 1.04) p = 0.11	**0.73** **(0.03, 1.41)** **p = 0.03***	-0.10 (-0.65, 0.44) p = 1.00
Intermediates	**0.78** **(0.17, 1.38)** **p = 0.003***	0.27 (-0.21, 0.75) p = 1.00	0.06 (-0.50, 0.63) p = 1.00	0.21 (-0.42, 0.83) p = 1.00
Native Speakers	**0.30** **(0.03, 0.58)** **p = 0.03***	**0.32** **(-0.08, 0.56)** **p = 0.003***	**0.43** **(0.05, 0.81)** **p = 0.015***	0.25 (-0.06, 0.56) p = 0.227

As shown by table 16 and 17, both beginners and intermediates performed better in the perfective contexts compared to imperfective contexts, except for the continuous contexts. The results show that the beginners had significantly higher ratings in the perfective state contexts when compared to the progressive contexts (M = 0.86, $p < 0.001$), and habitual contexts (M = 0.82, $p < 0.001$). The beginner also had significantly higher ratings in the perfective event context when compared to the progressive contexts (M = 0.77, $p = 0.001$), and the habitual contexts (M = 0.73, $p < 0.03$).

Meanwhile, the intermdiates had significantly higher ratings in the perfective state contexts when compared to the progressive contexts (M = 1.06, $p < 0.001$) and durative contexts (M = 0.56, $p = 0.002$). The intermdiates had significantly higher ratings in the perfective event contexts when compared to the progressive contexts (M = 0.78, $p = 0.003$).

Table 18. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (experiential states *vs*. imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Experiential state *vs.* Progressive	Experiential state *vs.* Durative	Experiential state *vs.* Habitual	Experiential state *vs.* Continuous
Beginners	0.18 (-0.29, 0.65) p = 1.00	-0.87 (-0.54, 0.36) p = 1.00	0.14 (-0.48, 0.75) p = 1.00	-0.69 (-0.47, 0.75) p = 1.00
Intermediates	-0.10 (-0.62, 0.43) p = 1.00	**-0.60** **(-1.02, -0.18)** **p = 0.001***	**-0.81** **(-1.50, -0.12)** **p = 0.01***	**-0.67** **(-1.22, -0,11)** **p = 0.007***
Native Speakers	**0.27** **(0.03, 0.50)** **p = 0.02***	**0.28** **(0.08, 0.48)** **p = 0.001***	0.40 (-0.06, 0.73) p = 0.12	0.21 (-0.06, 0.48) p = 0.29

Table 19. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (experiential events vs. imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Experiential event *vs.* Progressive	Experiential event *vs.* Durative	Experiential event *vs.* Habitual	Experiential event *vs.* Continuous
Beginners	0.22 (-0.33, 0.77) p = 1.00	-0.05 (-0.57, 0.47) p = 1.00	0.18 (-0.50, 0.86) p = 1.00	**-0.65** **(-1.23, 0.07)** **p = 0.02***
Intermediates	-0.19 (-0.72, 0.35) p = 1.00	**-0.70** **(-1.15, -0.23)** **p < 0.001***	**-0.90** **(-1.51, -0.28)** **p < 0.001***	-0.76 (-1.42, -0.08) p = 0.16
Native Speakers	**0.32** **(0.04, 0.60)** **p = 0.02***	**0.33** **(0.08, 0.59)** **p = 0.003***	**0.45** **(0.03, 0.86)** **p = 0.03***	0.27 (-0.05, 0.58) p = 0.19

As for the comparison between the experiential context and the imperfective contexts (shown in table 18 and 19), no significant differences were found between the experiential contexst (experiential state, experiential event) and the imperfective contexts (progressive, durative, habitual, continuous) for the beginners, except for the comparison between experiential events and continuous (M = -0.65, $p < 0.02$). Meanwhile, the intermediates had significantly lower ratings in the experiential state context when compared to the durative context (M = -0.6, $p = 0.001$), the habitual context (M = -0.81, $p = 0.01$), and the continuous context (M = -0.67, $p = 0.007$). The intermediates had significantly lower ratings in the experiential event context when compared to the durative context (M = -0.70, $p < 0.001$), the habitual context (M = -0.9, $p < 0.001$).

Table 20. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (progressive *vs*. durative, habitual, continuous)

Group	**Comparisons (mean difference 95% CI; p-value)**		
	Progressive *vs.* Durative	Progressive *vs.* habitual	Progressive *vs.* Continuous
Beginners	-0.27 (-0.64, 0.10) p = 0.53	-0.44 (-0.45, 0.36) p = 1.00	**-0.87** **(-1.27, -0.48)** **p < 0.001***
Intermediates	**-0.51** **(-0.86, -0.15)** **p = 0.001***	**-0.71** **(-1.31, -0.11)** **p = 0.008***	**-0.57** **(-1.07, -0.7)** **p = 0.013***
Native Speakers	0.02 (-0.17, 0.20) p = 1.00	0.13 (-0.18, 0.44) p = 1.00	-0.05 (-0.27, 0.16) p = 1.00

Table 21. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (durative *vs*. habitual, continuous; habitual *vs.* continuous)

Group	**Comparisons (mean difference 95% CI; p-value)**		
	Durative *vs.* Habitual	Durative *vs.* Continuous	Habitual *vs.* Continuous
Beginners	0.23 (-0.30, 0.75) p = 1.00	**-0.60** **(-1.01, -0.20)** **p < 0.001***	**-0.83** **(-1.33, -0.33)** **p < 0.001***
Intermediates	-0.21 (-0.67, 0.26) p = 1.00	-0.06 (-0.47,0.34) p = 1.00	0.14 (-0.49, 0.77) p = 1.00
Native Speakers	0.11 (0.18, 0.40) p = 1.00	-0.07 (-0.24, 0.11) p = 1.00	-0.18 (-0.45, 0.08) p = 0.62

Table 20 and 21 demonstrate the comparison between different imperfective contexts. As shown by table 20, both beginners and intermediates performed better in the other imperfective contexts (durative, habitual, continuous) compared to the progressive contexts. The beginners had significantly lower ratings of the progressive contexts than the continuous contexts (M = -0.87, $p < 0.001$). As shown by table 21, the same group also had significantly lower ratings of the durative contexts compared to the continuous contexts (M = -0.61, $p < 0.001$); and significantly lower ratings of the habitual contexts compared to the continuous contexts. The intermediates had significantly lower ratings of the progressive contexts compared to that of the durative contexts (M = -0.51, $p = 0.001$), the habitual contexts (M = -0.71, $p = 0.008$), and the continuous contexts (M = -0.05, $p = 0.013$).

Next, I examine the comparisons between groups in different semantic contexts. Table 22 shows the comparisons between groups in the four Chinese perfective contexts (perfective state, perfective event, experiential state, experiential event). Tukey's post estimation test reveals that the beginner group's responses are significantly different from those of the intermediate group only in the perfective state context; when compared to the native speaker group, significant difference can be found across the four perfective contexts. The intermediate group's responses are significantly different from the native speaker group in three contexts: perfective events, experiential states, experiential events.

Table 23 shows the comparisons between groups in the four Chinese imperfective contexts (progressive event, durative event, habitual event, continuous state). The beginner group's

responses are significantly different from the other two groups in all the imperfective contexts but for the continuous state context where no significant difference can be found between the lower and upper intermediate groups. The intermediate group's responses are significantly different from the native speaker group in the four imperfective contexts.

Table 22. Between-group difference in the Chinese perfective contexts in the Sentence-Context-Preference-Matching task by Tukey post estimation test

Comparisons	**Tukey's HSD test mean difference (95% CI; p-value) in each context**			
	Perfective state	Perfective event	Experiential event	Experiential state
Beginners compared to…				
Intermediates	-0.52 (-0.84, -0.20; p = 0.001*)	-0.33 (-0.75, 0.09; p = 0.158)	-0.04 (-0.43, 0.34; p = 0.964)	0.09 (-0.34, 0.52; p = 0.881)
Natives	-0.82 (-1.18, 0.45 ; p < 0.001*)	-1.08 (-1.56, -0.60; p < 0.001*)	-1.63 (-2.07, -1.19; p < 0.001*)	-1.64 (-2.13, -1.15; p < 0.001*)
Intermediates compared to…				
Natives	-0.30 (-0.68, 0.09; p = 0.163)	-0.75 (-1.25, -0.26) p = 0.001*)	-1.59 (-2.04, -1.13; p < 0.001*)	-1.73 (-2.24, -1.22; p < 0.001*)

Notes. HSD=honest significant difference

Table 23. Between-group difference in the Chinese imperfective contexts in the Sentence-Context-Preference-Matching task given by Tukey post estimation test

Comparisons	**Tukey's HSD test mean difference (95% CI; p-value) in each context**			
	Progressive event	Durative event	Habitual event	Continuous state
Beginners compared to…				
Intermediates	-0.32 (-0.59, -0.05; p = 0.015*)	-0.56 (-0.81, -0.31; p < 0.001*)	-0.99 (-1.43, -0.55, p < 0.001*)	-0.02 (-0.35, 0.32; p = 0.991)
Natives	-1.55 (-1.85, -1.24; p < 0.001*)	-1.26 (-1.55, -0.98; p < 0.001*)	-1.38 (-1.87, -0.88; p < 0.001*)	-0.73 (-1.11, -0.35; p < 0.001*)
Intermediates compared to…				
Natives	-1.23 (-1.54, -0.91; p < 0.001*)	-0.71 (-1.00, -0.41; p < 0 .001*)	-0.39 (-0.91, 0.13; p < 0.001*)	-0.71 (-1.11, -0.31; p < 0.001*)

Note. HSD=honest significant difference

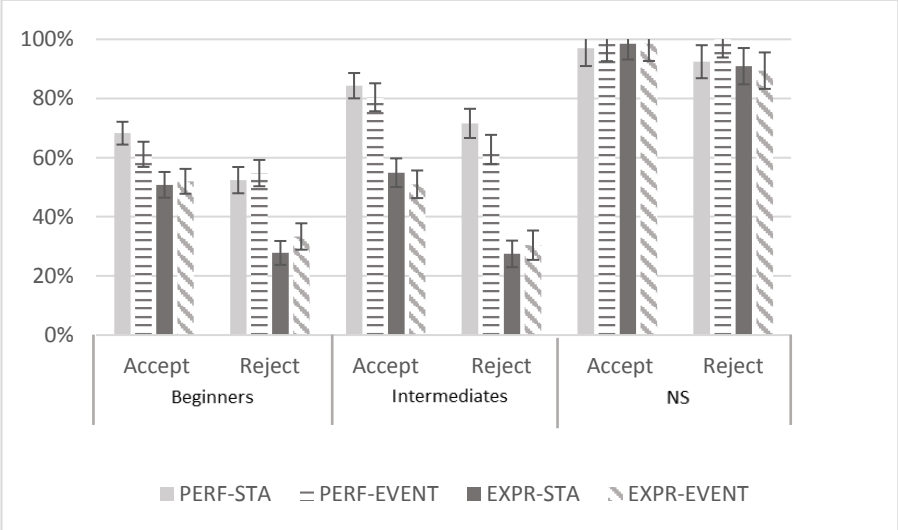


Figure 20. Mean accuracy scores on acceptance and rejection for the two input sentences across the perfective contexts

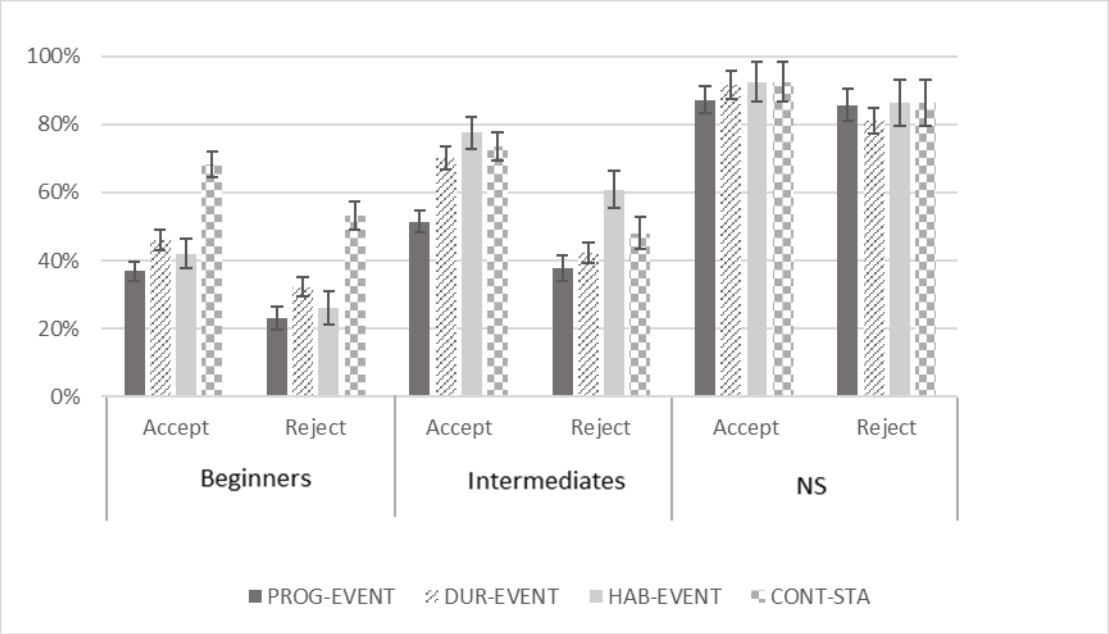


Figure 21. Mean accuracy scores on acceptance and rejection for the two input sentences across the imperfective contexts

Next, I examine the mean percentages for acceptance /rejection for the correct and incorrect options in Figure 20 and Figure 21. Each percentage illustrates the combined proportion of responses for 1 and 2 (accept) and for -1 and -2 (reject) in each of the eight conditions.

Figure 20 shows the mean acceptance and rejection rates in the Chinese perfective contexts. It is shown that the beginners were more accurate in accepting the appropriate sentence than rejecting the inappropriate one. The acceptance rates for the appropriate form range from 51% to 68%. The learners had difficulty accepting the correct sentence in the experiential conditions (51% in experiential states and 52% in experiential events) where the experiential marker *guo* is the accurate form. They performed better in accepting the correct sentence in the perfective conditions (68% in perfective states and 61% in perfective events), where the perfective marker *le* is the correct form. Meanwhile, the beginners' rejection rates for the inappropriate sentence range from 28% to 55%. The learners had a high level of difficulty rejecting the inappropriate form in the experiential conditions (28% in experiential states and 33% in experiential events), where the sentence with the perfective marker *le* should be rejected. In comparison, they had a lower level of difficulty of rejecting the inappropriate form in perfective conditions (52% in perfective states and 55% in perfective events, where the experiential marker *guo* should be rejected.

The intermediate group was also more accurate in accepting the appropriate form than rejecting the inappropriate form. The intermediate group performed better than the beginners in the

perfective conditions, with the highest acceptance rate of 84% and the highest rejection rate of 72% in the perfective state conditions. Like the beginner group, the intermediate learners also had difficulty both in accepting the appropriate sentence and rejecting the inappropriate sentence in the experiential conditions. This group even performed slightly worse than the beginner group in the rejection of inappropriate form in the experiential state condition as well as in both the correct acceptance and correct rejection in the experiential event conditions. The native speakers performed as expected in the perfective contexts.

Figure 21 shows the mean acceptance and rejection rates in the Chinese Imperfective contexts. Like in the perfective contexts, both the beginners and the intermediates were more accurate in accepting the appropriate options than rejecting the inappropriate options. For the beginner group, the lowest correct acceptance rate (37%) and rejection rate (23%) were found in the progressive event conditions. The beginners also had difficulty both in the correct acceptance and correct rejection in the durative event conditions and habitual event conditions. For the intermediate group, the lowest correct acceptance rate (51%) and rejection rate (38%) were also found in the progressive event conditions. They also had difficulty in the correct rejection in the durative event conditions(42%), where the progressive marker *zai* should be rejected; as well as the correct rejection in the continuous state conditions (48%), in which the sentence with the experiential marker *guo* should be rejected. The intermediates performed better than the beginners in the correct acceptance and correct rejection in almost all the imperfective contexts but for continuous state contexts in which the intermediates had lower correct rejection rates than the beginners. The native speakers performed as expected in accepting the appropriate sentences. In the durative event contexts, they did not perform native-like in the rejection of inappropriate sentences (81%), in which the progressive marker *zai* should be rejected.

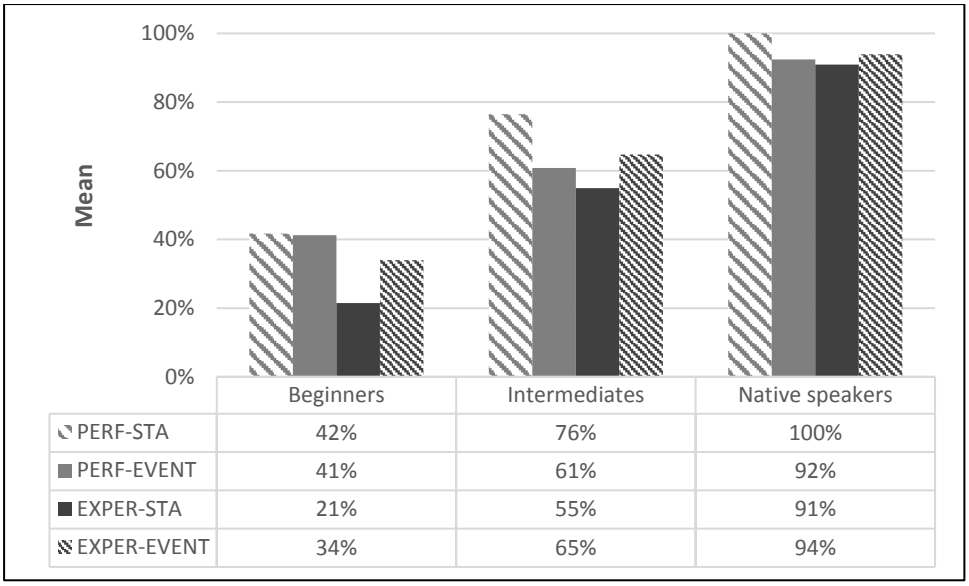
Table 24. Summary of findings of the Sentence-Context-Preference-Matching task

Context	Condition/Aspectual form	Summary of findings
Perfective	Perfective state *le*	● Not problematic for the two proficiency groups. ● Sig. high ratings *compared to* experiential state, progressive, durative, habitual.(beginners) ● Sig. high ratings *compared to* experiential state, progressive, durative. (intermediates)
	Perfective event *le*	● Not problematic for the two proficiency groups ● Sig. high ratings compared to progressive, habitual. (beginners) ● Sig. high ratings compared to experiential state, progressive, durative.(intermediates) ●
	Experiential state *guo*	● Difficult for the two proficiency groups ● The second-lowest scores are found for intermediates. ● Sig. low ratings *compared to* perfective state. (beginners) ● Sig. low ratings *compared to* perfective state, durative, habitual, continuous. (intermediates)
	Experiential event *guo*	● Difficult for the two proficiency groups ● The lowest scores are found for intermediates. ● Sig. low ratings *compared to* continuous. (beginners) ● Sig. low ratings *compared to* experiential event, durative, habitual, continuous. (intermediates)
Imperfective	Progressive event *zai*	● Difficult for the two proficiency groups ● The lowest scores are found for beginners. ● Sig. low ratings *compared to* perfective state, perfective event, continuous.(beginners) ● Sig. low ratings *compared to* perfective state, perfective event, durative, habitual, continuous. (intermediates)
	Durative *zhe*	● Difficult for the two proficiency groups. ● Sig. low ratings *compared to* perfective state, continuous.(beginners) ● Sig. low ratings *compared to* perfective state, progressive.(beginners) ●
	Habitual event *jingchang*	● Difficult for the two proficiency groups. ● The second lowest scores are found for beginners ● Sig. low ratings *compared to* perfective state, perfective event, continuous.(beginners)
	Continuous *zhe*	● Sig. high ratings *compared to* experiential event, progressive, habitual.(beginners) ● Sig. high ratings *compared to* experiential state, progressive.(intermediates)

5.2.3 Results of the Fill-in-the-blanks task

The same 76 L1 Spanish-L2 Chinese learners took part in the fill-in-the-blanks task. In this task, participants were asked to fill in the gaps in the sentences with the five aspectual forms: (the perfective marker *le*, the experiential marker *guo*, the progressive marker *zai*, the durative marker *zhe*, the temporal adverbial *jingchang*).

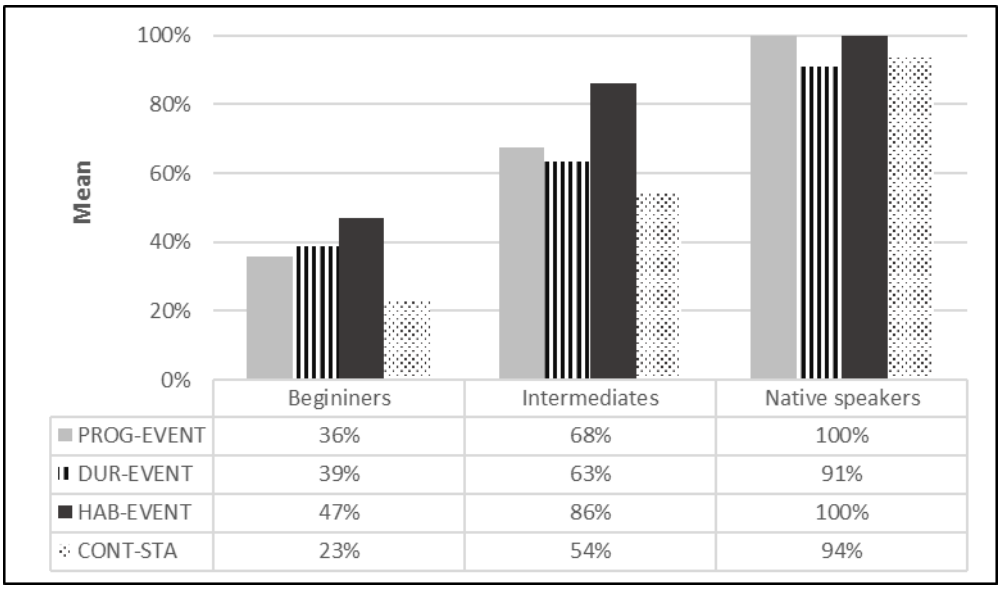
I examine L1 Spanish-L2 Chinese learners' choice of Chinese aspectual forms in eight contexts (perfective state, perfective event, experiential state, experiential event, progressive event, durative event, habitual event, continuous state). Learners' performance is evaluated by their accuracy rate in each type of context. Figure 22 shows learners' mean accuracy rates in the Chinese perfective contexts, and Figure 23 illustrates learners' mean accuracy rates in the Chinese imperfective contexts. Learners' performance improved in all eight contexts with the increase of proficiency. Both beginners and upper intermediates had noticeable low scores in the following contexts: the experiential state contexts (21% for beginners, 55% for intermediates) and the continuous state contexts (23% for beginners, 54% for intermediates). The highest scores were found in the habitual event contexts (47% for beginners and 86% for intermediates). Meanwhile, the beginners also had low accuracy rates in the experiential event contexts (34%), the progressive event contexts (36%), and the durative event contexts (39%).



	Beginners	Intermediates	Native speakers
PERF-STA	42%	76%	100%
PERF-EVENT	41%	61%	92%
EXPER-STA	21%	55%	91%
EXPER-EVENT	34%	65%	94%

Figure 22. Mean accuracy rates in the Chinese perfective Contexts.

Note. PERF-STA=perfective state; PERF-EVENT=perfective event; EXPER-STA=experiential state; EXPER-EVENT=experiential event



	Begininers	Intermediates	Native speakers
PROG-EVENT	36%	68%	100%
DUR-EVENT	39%	63%	91%
HAB-EVENT	47%	86%	100%
CONT-STA	23%	54%	94%

Figure 23. Mean accuracy rates in the Chinese Imperfective contexts.

Note. PROG-EVENT=progressive event; DUR-EVENT=durative event; HAB-EVENT=habitual event; CONT-STA=continuous state

A repeated-measures ANOVA was conducted, with semantic context as within-subject factors, including 8 variables, and proficiency as between-subject factors, including 3 variables. The repeated measures ANOVA shows a significant Effect of Condition ($F(7,665) = 9.081$, $p < 0.001$, partial $\eta 2 = .087$), a significant Effect of Group ($F(2,95) = 122.015$, $p < 0.001$, partial $\eta 2 = .72$), and a significant Interaction between the proficiency group and the contexts on learners' accuracy rate, $F(14, 665) = 2.361$, $p = 0.003$, partial $\eta 2 = .047$). This means that participants from the three groups performed differently in the eight contexts of the fill-in-the-blanks task. I then explored the simple main Effect of Condition for each proficiency group. For beginners, there is a significant effect of Condition ($F(7,287) = 5.159$, $p < 0.001$, partial $\eta 2 = .112$). For intermediates, there is a significant Effect of Condition ($F(7,231) = 6.220$, $p < 0.001$, partial $\eta 2 = .159$). For native speakers, there is a significant Effect of Condition ($F(7,147) = 2.49$, $p = 0.019$, partial $\eta 2 = .106$).

Next, I examine the pairwise comparisons of different semantic contexts.

Table 25 is a summary of the pairwise comparisons between the perfective and experiential contexts in the fill-in-the-blanks task. L1 Spanish-L2 Chinese learners of both proficiency groups had higher ratings of the perfective contexts compared to the experiential contexts. However, no statistical significance was found among these comparisons.

Table 26 and 27 demonstrate the comparison between perfective and imperfective contexts. As shown by table 26, there is no significant difference between the perfective states and the imperfective contexts for both proficiency groups. Table 27 shows that no significant difference can be found between the perfective events and the imperfective contexts for the beginners. Meanwhile, the intermediates had significantly lower ratings of the perfective event contexts compared to the habitual contexts ($M = -0.26$, $p = 0.018$).

Table 25. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (perfective *vs*. experiential).

Group	**Comparisons (mean difference 95% CI; p-value)**	
	Perfective states *vs.* Experiential states	Perfective events *vs.* Experiential events
Beginners	0.2 (-.0.01, 0.42) p = 0.09	0.07 (-0.09, 0.23) p = 1.00
Intermediates	0.20 (-0.01, 0.42) p = 0.09	0.07 (-0.09, 0.23) p = 1.00
Native Speakers	0.09 (-0.09, 0.27) p = 1.00	-0.02 (-0.16, 0.13) p = 1.00

Table 26. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (perfective states *vs*. imperfective contexts

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Perfective states *vs.* Progressive	Perfective states *vs.* Durative	Perfective states *vs.* Habitual	Perfective states *vs.* Continuous
Beginners	0.06 (-0.19, 0.31) p =1.00	0.03 (-0.20, 0.25) p = 1.00	-0.05 (-0.29, 0.18) p = 1.00	0.19 (-0.01, 0.39) p = 0.098
Intermediates	0.09 (-0.16, 0.34) p = 1.00	0.13 (0.09, 0.36) p = 1.00	-0.10 (-0.31, 0.12) p = 1.00	0.23 (-0.03, 0.49) p = 0.162
Native Speakers	0.13 (-0.14, 0.39) p = 1.00	0.14 (-0.09, 0.37) p = 1.00	0.26 (-0.12, 0.63) 0.64	0.76 (-0.17, 0.33) p = 1.00

Table 27. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (perfective events *vs*. imperfective contexts)

Group	Comparisons (mean difference 95% CI; p-value)			
	Perfective events *vs.* Progressive	Perfective events *vs.* Durative	Perfective events *vs.* Habitual	Perfective events *vs.* Continuous
Beginners	0.06 (-0.14, 0.25) p = 1.00	0.02 (-0.15, 0.20) p = 1.00	-0.06 (-0.27, 0.16) p = 1.00	0.18 (-0.02, 0.39) p = 0.138
Intermediates	-0.07 (0.27, 0.14) p = 1.00	-0.02 (-0.22, 0.18) p = 1.00	**-0.26** **(-0.48, -0.03)** **p = 0.018***	0.07 (-0.19, 0.33) p = 1.00
Native Speakers	-0.08 (-0.18, 0.03) p = 0.601	0.01 (-0.12, 0.14) p = 1.00	-0.08 (-0.18, 0.03) p = 0.601	-0.02 (-0.16, 0.13) p = 1.00

Table 28 and 29 illustrate the comparison between experiential and imperfective contexts. Table 28 shows that the beginners had significantly lower ratings of the experiential state contexts compared to the durative contexts (M = -0.18, *p* = 0.003) and the habitual contexts (M = -0.25 p = 0.002). Table 29 shows that the intermediates had significant lower ratings the experiential event contexts compared to the habitual contexts (M = -0.18, *p* = 0.003). The native speakers had significantly higher ratings of the experiential event contexts compared to the progressive contexts (M = 0.32, *p* = 0.02), the durative contexts (M = 0.33, *p* = 0.003), the habitual contexts (M = 0.45, *p* = 0.03), the continuous contexts (M = 0.27, *p* = 0.19).

Table 28. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (experiential states *vs*. imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Experiential states *vs.* Progressive	Experiential states *vs.* Durative	Experiential states *vs.* Habitual	Experiential states *vs.* Continuous
Beginners	-0.14 (-0.30, 0.02) p = 0.126	**-0.18** **(-0.31, -0.04)** **p = 0.003***	**-0.25** **(-0.44, -0.06)** **p = 0.002***	-0.02 (-0.16, 0.13) p = 1.00
Intermediates	-0.13 (-0.31, 0.05) p = 0.59	-0.08 (-0.28, 0.11) p = 1.00	-0.31 (-0.52, -0.11) p = 0.061	0.01 (-0.24, 0.26) p = 1.00
Native Speakers	-0.09 (-0.27, 0.09) p = 1.00	0.00 (-0.20, 0.19) p = 1.00	-0.09 (-0.27, 0.09) p = 1.00	-0.03 (-0.25, 0.19) p = 1.00

Table 29. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (experiential events *vs.* imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Experiential events *Vs.* Progressive	Experiential events *vs.* Durative	Experiential events *vs.* Habitual	Experiential events *vs.* Continuous
Beginners	-0.02 (-0.18, 0.14) p = 1.00	-0.05 (-0.19, 0.09) p = 1.00	-0.13 (-0.31, 0.06) p = 0.706	-0.11 (-0.03, 0.25) p = 0.417
Intermediates	-0.03 (-0.22,0.16) p = 1.00	0.01 (-0.14, 0.17) p = 1.00	**-0.22** **(-0.38, -0.05)** **p = 0.003***	0.11 (-0.11, 0.33) p = 1.00
Native Speakers	**0.32** **(0.04, 0.60)** **p = 0.02***	**0.33** **(0.08, 0.59)** **p = 0.003***	**0.45** **(0.03, 0.86)** **p = 0.03***	**0.27** **(-0.05, 0.58)** **p = 0.19***

Table 30. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (progressive *vs.* durative, habitual, continuous)

Group	**Comparisons (mean difference 95% CI; p-value)**		
	Progressive *vs.* Durative	Progressive *vs.* habitual	Progressive *vs.* Continuous
Beginners	-0.03 (-0.19, 0.12) p = 1.00	-0.11 (-0.27, 0.05) p = 0.806	0.13 (-0.05, 0.30) p = 0.529
Intermediates	0.04 (-0.10, 0.19) p = 1.00	**-0.19** **(-0.35, -0.02)** **p = 0.013***	0.14 (-0.06, 0.33) p = 0.597
Native Speakers	**0.09** **(0.05, 0.13)** **p < 0.001***	0.06 (-0.04, 0.16) p = 1.00	0.06 (-0.04, 0.16) p = 1.00

Table 31. Pairwise comparisons of semantic contexts in the SCPM for L1 Spa-L2 Chi (durative *vs*. habitual, continuous; habitual *vs*. continuous)

Group	**Comparisons (mean difference 95% CI; p-value)**		
	Durative *vs.* Habitual	Durative *vs.* Continuous	Habitual *vs.* Continuous
Beginners	-0.08 (-0.25, 0.09) p = 1.00	**0.16** **(0.03, 0.29)** **p = 0.005***	**0.24** **(0.04, 0.43)** **p = 0.006***
Intermediates	**-0.23** **(-0.35, -0.11)** **p < 0.001***	0.09 (-0.07, 0.26) p = 1.00	**0.32** **(0.13, 0.52)** **p < 0.001***
Native Speakers	**-0.09** **(-0.13, -0.05)** **p < 0.001***	-0.03 (-0.14, 0.08) p = 1.00	0.06 (-0.04, 0.16) p = 1.00

Table 30 and 31 show the comparison between different imperfective contexts. The intermediates had significantly lower ratings of the progressive contexts compared to the habitual contexts (M = -0.09, $p = 0.0013$); The beginners had significantly higher ratings of the durative contexts compared to the continuous contexts (M = 0.16, $p = 0.005$), the same group had significantly higher ratings of the habitual contexts compared to the continuous contexts (M = 0.24, $p = 0.006$). The intermediates had significantly lower ratings of the durative contexts compared to the habitual contexts (M = -0.23, $p < 0.001$); the same group had significantly higher ratings of the habitual contexts compared to the continuous contexts (M = 0.32, $p < 0.001$). The native speakers had significantly higher ratings of the progressive contexts compared to the durative contexts (M = 0.09, $p < 0.001$). The same group had significantly lower ratings of the durative contexts compared to the habitual contexts (M

= -0.09, $p < 0.001$).

Table 32. Between-group difference in the Chinese perfective context in the fill-in the blanks task given by Tukey post estimation test

Comparisons	Tukey's HSD test mean difference (95% CI; p-value) in each context			
	Perfective state	Perfective event	Experiential state	Experiential event
Beginners compared to…				
Intermediates	-0.35 (-0.53, -0.16; p < 0.001*)	-0.20 (-0.37, -0.02; p = 0.021*)	-0.33 (-0.48, -0.18; p < 0.001*)	-0.31 (-0.44, -0.18; p < 0.001*)
Natives	-0.58 (-0.79, -0.37 ; p < 0.001*)	-0.51 (-0.71, -0.32; p < 0.001*)	-0.69 (-0.87, -0.52; p < 0.001*)	-0.60 (-0.75, -0.45; p < 0.001*)
Intermediates compared to…				
Natives	-0.24 (-0.45, -0.02; p = 0.031*)	-0.32 (-0.52, -0.11) p = 0.001*)	-0.36 (-0.54, -0.18; p < 0.001*)	-0.29 (-0.44, -0.14; p < 0.001*)

Notes: HSD=honest significant difference

Table 33. Between-group difference in the Chinese imperfective contexts in the fill-in-the-blanks task

Comparisons	Tukey's HSD test mean difference (95% CI; p-value) in each context			
	Progressive event	Durative event	Habitual event	Continuous state
Beginners compared to…				
Intermediates	-0.32 (-0.45, -0.19; p < 0.001*)	-0.24 (-0.35, -0.14; p < 0.001*)	-0.39 (-0.54, -0.25, p < 0.001*)	-0.31 (-0.44, -0.18; p < 0.001*)
Natives	-0.64 (-0.79, -0.50; p < 0.001*)	-0.52 (-0.64, -0.40; p < 0.001*)	-0.53 (-0.70, -0.36; p < 0.001*)	-0.71 (-0.86, -0.56; p < 0.001*)
Intermediates compared to…				
Natives	-0.32 (-0.48, -0.17; p < 0.001*)	-0.27 (-0.24, 0.01; p = 0.068)	-0.14 (-0.31, 0.04; p = 0.157)	-0.40 (-0.55, -0.25; p < 0.001*)

Notes: HSD=honest significant difference

Table 32 shows the comparison between groups in the four Chinese perfective contexts (perfective state, perfective event, experiential state, experiential event). Beginners' responses were significantly different from the other two groups in all the perfective contexts. Intermediates' responses were significantly different from the native speakers in the progressive event and continuous state contexts. Table 33 shows the comparisons between groups in the four Chinese imperfective contexts (progressive event, durative event, habitual event, and continuous state). Significant differences can be found between beginners and intermediates in all the imperfective contexts. Intermediates' responses were significantly different from those of the native speakers in the progressive event contexts and the continuous state contexts.

I speculate further into the problematic contexts and see which aspectual marker is mostly chosen other than the correct option. In the experiential state contexts and the experiential event contexts, the most common error is to choose the perfective marker *le* rather than the experiential marker *guo*. Recall the discussion in chapter 3, the grammatical function of *le* is to mark perfectivity, whereas the grammatical function of *guo* is not only used to mark perfectivity but also refers to an event having been experienced with respect to a reference time or having been experienced at least once. Example (50a) is a test item for the experiential state contexts. The experiential marker *guo* expresses that the state of 'believing in superstition' has never existed. The perfective marker *le* is incompatible with this context.

The next example (50b) is a test item of the experiential event contexts. The use of the experiential marker *guo* denotes the event of climbing Mount Everest in his past experience. The use of the perfective marker *le* is not compatible with this sentence. Thus, the learners who chose *le* rather than *guo* had not established the correct form-meaning mapping between the experiential marker *guo* and the experiential meaning.

50) a. Wo conglai meiyou xiangxin **guo** fengjianmixin.
I never no believe **EXP** superstition.
(I have never believed in superstition.)

b. ta pa **guo** zuigao de shan shi Zhumulangmafeng.
He climb **EXP** highest gen mountain is Mount Everest.
(The highest mountain he has ever climbed is Mount Everest.)

In the progressive contexts, learners who have not used *zai* tend to use the temporal adverbial *jingchang.*

51) Zuotian de tiyu ke shang, gao nianji de tongxue **zai** da lanqiu.
Yesterday Gen PE class during, senior grade Gen students **PROG** play basketball.
(Yesterday, the senior students were playing basketball at the PE class.)

The example (51) is a test item in the progressive context. The use of the progressive marker *zai* conveys the message that the event of senior students playing basketball was ongoing at the PE class yesterday. On the other hand, the habitual temporal adverbial *jingchang* refers to an event that repeatedly happens within a specific time frame. And such meaning is not compatible with the context that the sentence conveys.

In the durative context, learners tend to misuse the perfective marker *le,* the experiential marker *guo* as well as the progressive marker *zai.* The use of the durative marker *zhe* indicates that a situation is enduring and continuing.

52) Jintian zaoshang wo qushangban de shihou, zou dao yiban faxian mei dai
Today morning I go to work GEN time, walk till half find no carry cell
shouji, yushi wo pao **_zhe_** hui le tang jia.
cellphone thus I run **DUR** go PERF once home.
(On the way to work this morning, I realized I did not bring the cellphone with me, so I went back home running.)

In the example test item for the durative context shown in (52), the use of the durative marker *le* indicates that the enduring action of running back home. The misuse of perfective marker *le* and the experiential marker *guo* indicates that some learners were not able to distinguish between the perfective and Imperfective contexts. The incorrect use of *zai* in this context suggests that some learners have not been able to distinguish the usage between the durative marker *zhe* and the progressive marker *zai.* One of the most obvious differences between the two makers is that *zai* is used in preverbal position, whereas *zhe* is used in the post-verbal position. In this test item, the blank is placed in the post-verbal position, giving a hint that only post-verbal markers are possible. Thus, we can infer that the beginners who misused *zai* in this context cannot distinguish between *zhe* and *zai.*

Table 34. Summary of findings of the Chinese fill-in-the-blanks task

Context	Condition/ Aspectual form	Summary of findings
Perfective	Perfective state *le*	● Not problematic for the two proficiency groups.
	Perfective event *le*	● Not problematic for the two proficiency groups ● Sig. low ratings *compared to* the habitual. (intermediates)
	Experiential state *guo*	● **Difficult** for the two proficiency groups ● The lowest scores are found for beginners and intermediates. ● Sig. low ratings *compared to* the durative and habitual. (beginners)
	Experiential event *guo*	● **Difficult** for the beginners ● Sig. low ratings *compared to* the habitual. (intermediates)
Imperfective	Progressive *zai*	● **Difficult** for the two proficiency groups ● Sig. low ratings *compared to* the habitual. (intermediates)
	Durative *zhe*	● **Difficult** for the two proficiency groups. ● Sig. low ratings *compared to* the habitual. (intermediates)
	Habitual *jingchang*	● Not Difficult for the two proficiency groups. ● Sig. high ratings *compared to* the continuous. (beginners) ● Sig. high ratings *compared to* the progressive, durative, continuous. (beginners)
	Continuous *zhe*	● **Difficult** for the two proficiency groups, second-lowest scores for the two proficiency groups. ● Sig. low ratings *compared to* the durative, habitual. (beginners) ● Sig. low ratings *compared to* the habitual. (intermediates)

Table 35. Summary of findings for L1 Spanish-L2 Chinese learners

Contexts	Conditions/Aspectual forms	Problematic in the **comprehension task**	Problematic in the **fill-in-the-blanks task**
Perfective	Perfective states (*le*)		
	Perfective events (*le*)		
	Experiential states (*guo*)	✔	✔
	Experiential events (*guo*)	✔	✔
Imperfective	Progressive (*zai*)	✔	✔
	Durative (*zhe*)	✔	✔
	Habitual events (*jingchang*)	✔	
	Continuous (*zhe*)		✔

5.3 L1 Chinese-L2 Spanish learners

5.3.1 Results of the proficiency test and the background questionnaire

Results from the proficiency test show that among the 81 L1 Chinese-L2 Spanish learners, 42 participants scored below 50 out of 100, which is the pass rate of the Spanish proficiency test. These participants were divided into the beginner group, and their mean score on the proficiency test was 40.26 out of 100. Meanwhile, there were 42 participants who scored above 50 out of 100. These learners were divided into the intermediate group, and their average score in the proficiency test was 78.69 out of 100. Meanwhile, 11 native speakers of Chinese were recruited as the control group, and their mean score of the proficiency test was 100 out of 100. From the results of the background questionnaire, we found that the beginners have spent an average of 17 months learning Spanish, while the intermediates have spent an average of 25 months learning Spanish. See table 36 for a summary of the L1 Chinese-L2 Spanish participants' profile.

It is important to note that there is no significant difference in the proficiency scores between the L1 Chinese-L2 Spanish beginners and L1 Spanish-L2 Chinese beginners. Meanwhile, there is no significant difference in the proficiency scores between the L1 Chinese-L2 Spanish intermediates and L1 Spanish-L2 Chinese intermediates.

Table 36. L1 Chinese-L2 Spanish learner profile

Group	Age: mean (range)	Proficiency level	Number	Mean (SD) in the proficiency test	Average months learning Spanish
L1 Chinese L2 Spanish	20.4 (18-25)	Beginners	39	40.26 (14.8)	17
		Intermediates	42	78.69(11.2)	25
Spanish Controls	30.8 (20-48)	Native speakers	11	100	

5.3.2 Results of the Sentence-Context-Preference-Matching task

In this task, the participants were asked to rate the appropriateness of a pair of imperfective and perfective sentences using a 5-point Likert scale (-2, -1, 0, +1, +2), where (-2) means completely inappropriate and (+2) means completely appropriate. Each context was designed to bias the acceptance of a sentence with either the Preterit form or the Imperfect form.

I examine the overall means of correct answers (combining both correct acceptance and correct

rejection for the six Spanish aspectual contexts (perfective state, perfective event, progressive event, habitual state, habitual event, continuous state). By doing so, the correct acceptance scores and correct rejections scores receive a unified standard, which ranges from -2 to 2, with "-2" being the least correct and "2" most correct.

A repeated-measures ANOVA was conducted, with semantic context as within-subject factors, including 6 variables, and proficiency as between-subject factors, including 3 variables. The repeated measures ANOVA shows no significant Effect of Condition ($F(5,445) = 2.039$, $p = 0.072$, partial $\eta 2 = .022$), a significant Effect of Group ($F(2,89) = 58.560$, $p < 0.001$, partial $\eta 2 = .568$), and no significant effect of Interaction ($F(10,445) = 1.746$, $p = 0.68$, partial $\eta 2 = .038$). I then investigated the simple main effect of Condition for each proficiency group. For beginners, there is a significant Effect of Condition ($F(5,190) = 7.880$, $p < 0.001$, partial $\eta 2 = .172$). For intermediates, there is no significant Effect of Condition ($F(5,205) = 1.284$, $p = 0.265$, partial $\eta 2 = .03$). For native speakers, there is a significant Effect of Condition ($F(5,50) = 2.663$, $p = 0.033$, partial $\eta 2 = .210$).

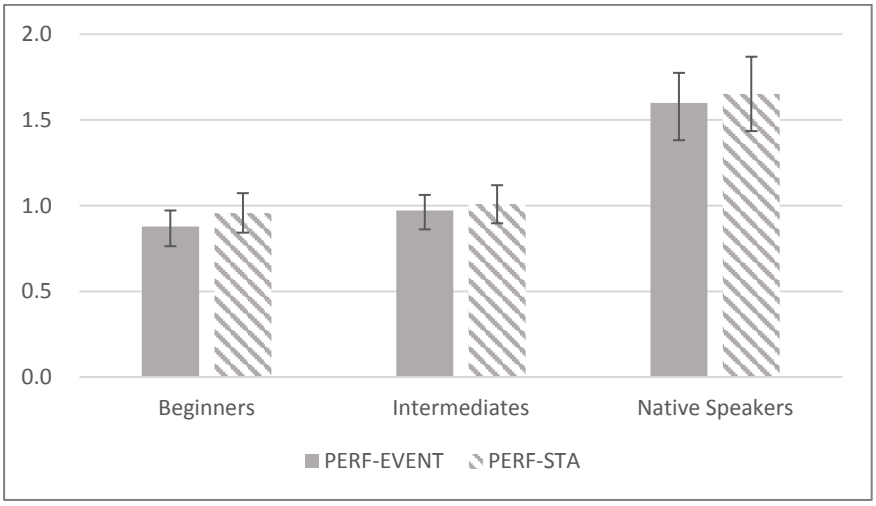


Figure 24. Participant ratings in the Spanish perfective contexts, across groups
Note. PERF-STA = perfective state; PERF-EVE = perfective event

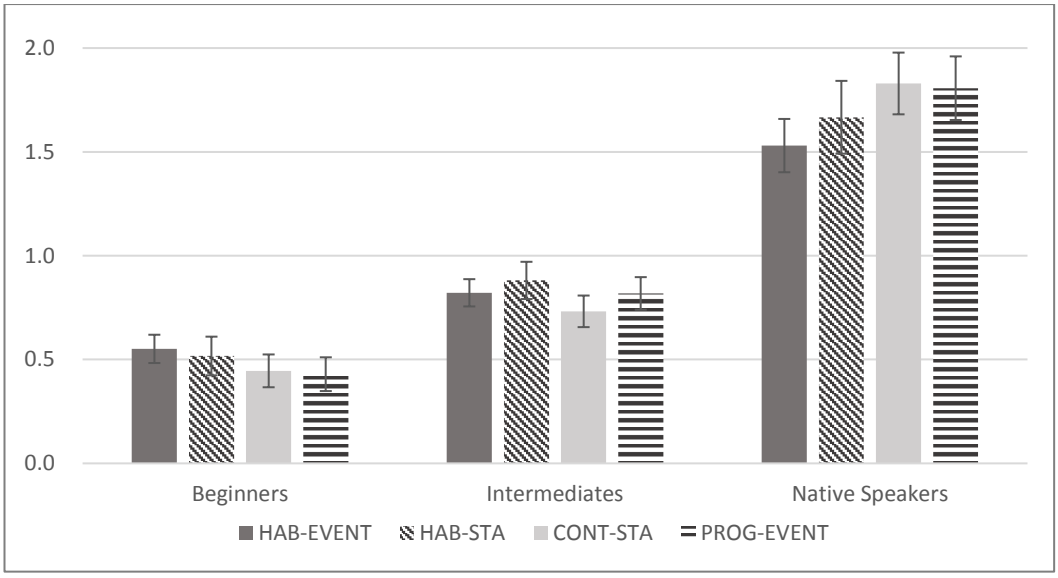


Figure 25. Participant ratings in the Spanish imperfective contexts, across groups
Note. HAB-STA = habitual state; HAB-EVE = habitual event, CONT-STA = continuous state; PROG-EVE = progressive event

Figure 24 and Figure 25 demonstrate that L1 Chinese L2 Spanish learners' scores increased with the increase of proficiency level in the six contexts, although the increase was not obvious in the two perfective contexts. For the beginners, the lowest scores were observed in the progressive event contexts (0.43), and the second-lowest scores were observed in the continuous state contexts (0.45). For the intermediates, the lowest scores were observed in the continuous state contexts (0.73), and the second-lowest scores were found in the habitual event contexts and the progressive event contexts (0.82).

Table 37. Pairwise comparisons of semantic contexts in the SCPM for L1 Chi-L2 Spa (perfective event *vs*. imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Perfective event *vs.* Progressive	Perfective event *vs.* Continuous	Perfective event *vs.* Habitual event	Perfective event *vs.* Habitual state
Beginners	**0.5** **(0.1, 0.8)** **p = 0.004***	**0.43** **(0.14, 0.73)** **p = 0.001***	0.33 (-0.03, 0.68) p = 0.101	**0.36** **(0.06, 0.66)** **p =0.007***
Intermediates	0.15 (-0.28, 0.58) p = 1.00	0.24 (-0.17, 0.65) p = 1.00	0.15 (-0.24, 0.54) p = 1.00	0.09 (-0.28, 0.46) p = 1.00
Native Speakers	-0.21 (-0.65, 0.24) p = 1.00	-0.23 (-0.63, 0.17) p = 0.765	0.07 (-0.37, 0.51) p = 1.00	-0.07 (-0.27, 0.14) p = 1.00

Table 38. Pairwise comparisons of semantic contexts in the SCPM for L1 Chi-L2 Spa (perfective state *vs.* imperfective contexts)

Group	**Comparisons (mean difference 95% CI; p-value)**			
	Perfective state *vs.* Progressive	Perfective state *vs.* Continuous	Perfective state *vs.* Habitual event	Perfective state *vs.* Habitual state
Beginners	**0.53 (0.15, 0.9) p = 0.001***	**0.51 (0.11, 0.92) p = 0.005***	**0.41 (0.05, 0.77) p = 0.017***	**0.44 (0.07, 0.82) p =0.011***
Intermediates	0.19 (-0.29, 0.66) p = 1.00	0.28 (-0.11, 0.66) p = 0.48	0.19 (-0.32, 0.69) p = 1.00	0.13 (-0.38, 0.63) p = 1.00
Native Speakers	-0.16 (-0.39, 0.08) p = 0.43	-0.23 (-0.63, 0.17) p = 0.77	0.12 (-0.40, 0.64) p = 1.00	-0.02 (-0.25, 0.22) p = 1.00

Next, I examine the pairwise comparisons of different semantic contexts. Table 37 and 38 demonstrate the pairwise comparison between perfective and imperfective contexts. A general tendency was found that both beginners and intermediates had higher ratings in the perfective contexts compared to imperfective contexts. The results show that the beginners had significantly higher ratings in the perfective event contexts when compared to the progressive context (M = 0.5, $p = 0.004$), continuous context (M = 0.43, $p = 0.001$), and habitual state context (M = 0.36, $p = 0.007$). The beginner also had significantly higher ratings in the perfective state context when compared to the progressive context (M = 0.53, $p = 0.001$), and continuous context (M = 0.51, $p = 0.005$)

Table 39 and table 40 show the pairwise comparison between different imperfective contexts. Table 38 shows that both beginners and intermediates have no significant contrast in the progressive contexts compared to the habitual and continuous contexts. Meanwhile, for both groups, no significant difference can be found between the continuous and habitual contexts.

Table 39. Pairwise comparisons of semantic contexts in the SCPM for L1 Chi-L2 Spa (progressive *vs*. habitual state, habitual event, continuous)

Group	**Comparisons (mean difference 95% CI; p-value)**		
	Progressive *vs.* Habitual state	Progressive *vs.* Habitual event	Progressive *vs.* Continuous
Beginners	-0.09 (-0.52, 0.35) p = 1.00	-0.12 (-0.51, 0.27) p = 1.00	-0.02 (-0.33, 0.30) p = 1.00
Intermediates	-0.06 (-0.44, 0.31) p = 1.00	0.00 (-0.36, 0.35) p = 1.00	0.09 (0.22, 0.40) p = 1.00
Native Speakers	-0.09 (-0.52, 0.35) p = 1.00	-0.12 (-0.51, 0.27) p = 1.00	-0.02 (-0.33, 0.30) p = 1.00

Table 40. Pairwise comparisons of semantic contexts in the SCPM for L1 Chi-L2 Spa (continuous *vs.* habitual state; habitual state *vs*. habitual event)

Group	**Comparisons (mean difference 95% CI; p-value)**		
	Continuous *vs.* Habitual state	Continuous *vs.* Habitual event	Habitual state *vs.* Habitual event
Beginners	-0.07 (-0.46, 0.32) p = 1.00	-0.11 (-0.44, 0.23) p = 1.00	-0.03 (-0.44, 0.37) p = 1.00
Intermediates	-0.15 (-0.52, 0.22) p = 1.00	-0.09 (-0.42, 0.24) p = 1.00	0.66 (-0.28, 0.40) p = 0.11
Native Speakers	0.16 (-0.15, 0.48) p = 1.00	0.30 (-0.25, 0.84) p = 0.93	0.14 (-0.21, 0.48) p = 1.00

Table 41. Between-group difference in the Spanish perfective contexts in the Sentence-Context-Preference-Matching task given by Tukey post estimation test

Comparisons	Tukey's HSD test mean difference (95% CI; p-value)	
	Perfective state	Perfective event
Beginners compared to…		
Intermediates	-0.05 (-0.43, 0.33; p = 0.946)	-0.09 (-0.40, 0.22; p = 0.749)
Natives	-0.69 (-1.28, -0.11; p = 0.016*)	-0.72 (-1.19, -0.25; p = 0.001*)
Intermediates compared to…		
Natives	-0.64 (-1.22, -0.06; p = 0.026	-0.63 (-1.10, -0.16; p = 0.006*)

Notes: HSD=honest significant difference

Table 41 illustrates the comparisons between groups in the two Spanish perfective contexts (perfective state, perfective event). There was no significant difference between the beginners and the intermediates in the two perfective contexts. However, both two proficiency groups' responses were significantly different from those of the native speaker group.

Table 42. L1 Chinese-L2 Spanish between-group difference in the Spanish imperfective contexts in the Sentence-Context-Preference-Matching task given by Tukey post estimation test

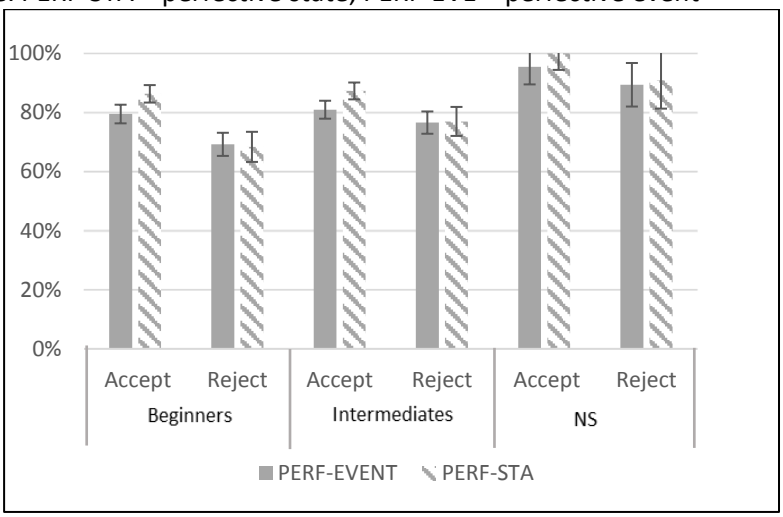
Comparisons	Tukey's HSD test mean difference (95% CI; p-value) in each context			
	Habitual state	Habitual event	Continuous state	Progressive event
Beginners compared to…				
Intermediates	-0.36 (-0.67, -0.06; p = 0.016*)	-0.27 (-0.50, -0.04; p = 0.015*)	-0.29 (-0.55, -0.03, p = 0.028*)	-0.39 (-0.66, -0.12; p = 0.002*)
Natives	-1.15 (-1.62, -0.68; p < 0.001*)	-0.98 (-1.33, -0.63; p < 0.001*)	-1.38 (-1.79, -0.98; p < 0.001*)	-1.38 (-1.79, -0.96; p < 0.001*)
Intermediates compared to…				
Natives	-0.79 (-1.26, -0.32; p < 0.001*)	-0.71 (-1.05, -0.37; p < 0.001*)	-1.10 (-1.50, -0.70; p < 0.001*)	-0.99 (-1.40, -0.58; p < 0.001*)

Notes: HSD=honest significant difference

Table 42 shows the comparisons between groups in the four Spanish imperfective contexts (habitual state, habitual event, continuous state, progressive event). The beginner groups' response was significantly different from the other two groups in all contexts. The intermediate group's response was significantly different from the native speaker group in all contexts.

Figure 26. Mean accuracy scores on acceptance and rejection for the two input sentences across the perfective contexts

Note. PERF-STA = perfective state; PERF-EVE = perfective event



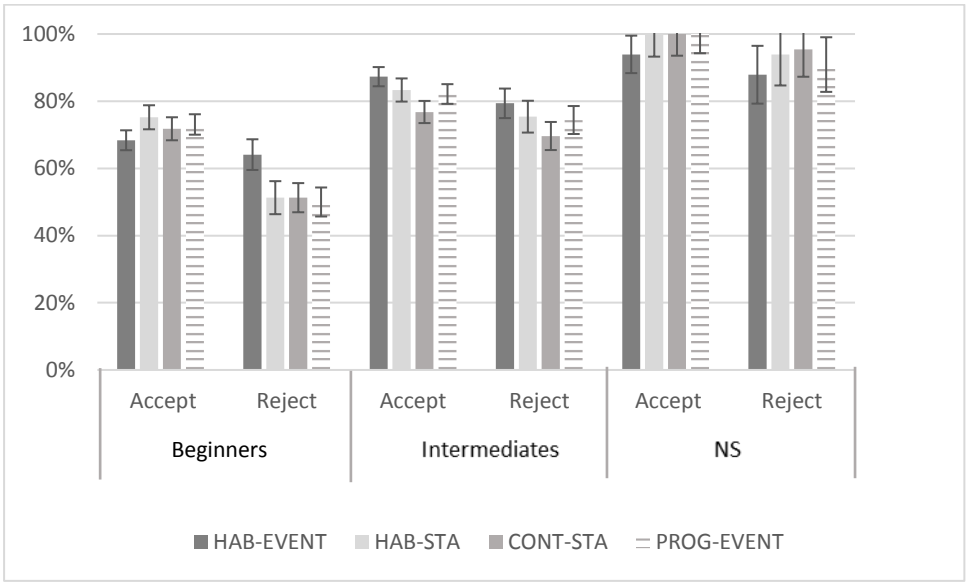


Figure 27. Mean accuracy scores on acceptance and rejection for the two input sentences across the imperfective contexts
Note. HAB-STA = habitual state; HAB-EVE = habitual event; CONT-STA = continuous state; PROG-EVE = progressive event

Next, I examine the mean percentages for acceptance /rejection for the correct and incorrect options in Figure 26 and Figure 27. Each percentage illustrates the combined proportion of responses for 1, and 2 (accept), and for -1 and -2 (reject) in each of the eight conditions. Figure 26 shows L1 Chinese-L2 Spanish learners' correct mean acceptance and mean rejection percentages in the Spanish perfective contexts, while Figure 21 shows the same participants' performance in

the Spanish imperfective contexts. In both the perfective and imperfective contexts, the beginners and the intermediates were more accurate in accepting the appropriate options than rejecting the inappropriate options. The beginner group was observed to perform better in the perfective contexts than in the imperfective contexts. It was problematic for the beginners to reject the inappropriate sentences in the habitual states (51%), continuous states (51%), and progressive events (50%). The intermediates performed better than the beginners in all contexts in both the acceptance of appropriate sentences and the rejection of the inappropriate sentences. In general, the Spanish native controls performed as expected

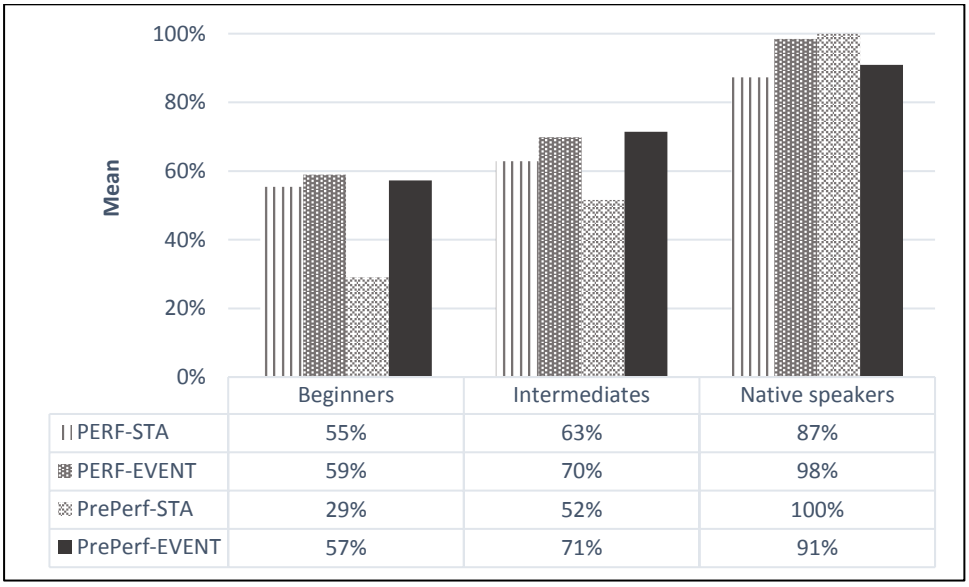
Table 43. Summary of findings of the Sentence-Context-Preference-Matching task

Context	Condition/Aspectual form	Summary of findings
Perfective	Perfective state *Preterit*	● Not problematic for the two proficiency groups. ● Sig. high ratings compared to progressive, continuous, habitual event, habitual state.(beginners)
	Perfective event *Preterit*	● Not problematic for the two proficiency groups ● Sig. high ratings compared to progressive, continuous, habitual state.(beginners)
Imperfective	Habitual state *Imperfect*	● **Difficult** for the beginner group ● Sig. low ratings compared to perfective state, perfective event, continuous.(beginners)
	Habitual event *Imperfect*	● **Difficult** for the beginner group ● Sig. low ratings compared to perfective state. (beginners)
	Progressive *Imperfect*	● **Difficult** for the two proficiency groups, the lowest scores are found for the two proficiency groups ● Sig. low ratings compared to perfective state, perfective event. (beginners)
	Continuous *Imperfect*	● **Difficult** for the two proficiency groups, the second-lowest scores are found for the two proficiency groups ● Sig. low ratings compared to perfective state, perfective event. (beginners)

5.3.3 Results of the Fill-in-the-blanks task

The same 81 L1 Chinese-L2 Spanish learners took part in the fill-in-the-blanks task. In this task, participants were asked to fill in the gaps in the sentences with the three aspectual forms: (the Preterit, the Imperfect, the present perfect). In this section, I examine L1 Chinese-L2 Spanish learners' choice of Spanish aspectual forms in the eight Spanish contexts (perfective state, perfective event, present perfect-state, present perfect event, progressive event, continuous state,

habitual state, habitual event). Learners' performance was evaluated by the accuracy rates in each type of context. Figure 22 demonstrates learners' mean accuracy rates in the perfective contexts and the present perfect contexts; Figure 23 illustrates learners' mean accuracy rates in the imperfective contexts. The lowest scores for both groups were found in the present perfect state contexts (29% for lower intermediates, 52% for upper intermediates). The accuracy rates increased with the increase of proficiency in most contexts. However, there was no obvious increase in the accuracy rate in the progressive event contexts (75% for beginners, 79% for intermediates) as well as in the habitual event contexts (60% for beginners, 61% for intermediates).



	Beginners	Intermediates	Native speakers
PERF-STA	55%	63%	87%
PERF-EVENT	59%	70%	98%
PrePerf-STA	29%	52%	100%
PrePerf-EVENT	57%	71%	91%

Figure 28. Mean accuracy rates in the Spanish perfective and present perfect contexts in the fill-in-the-blanks task.
Note: PERF-STA=perfective state; PERF-EVENT=perfective event; PrePerf-STA=present perfect state; PrePerf-EVENT=present perfect event

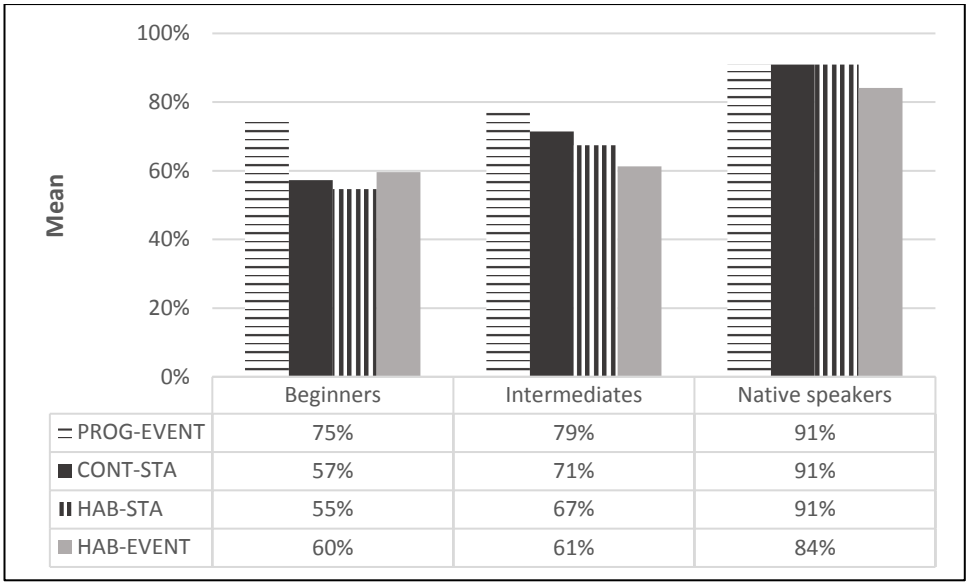


Figure 29. Mean accuracy rates in the Spanish Imperfective context in the fill-in-the-blanks task. *Note*. PROG-EVENT=progressive event; CONT-STA=continuous state; HAB-STA=habitual state; HAB-EVENT=habitual event

A repeated-measures ANOVA was conducted, with semantic context as within-subject factors, including 6 variables, and proficiency as between-subject factors, including 3 variables. The repeated measures ANOVA shows a significant Effect of Condition ($F(7,623)=3.557$, $p = 0.001$, partial $\eta 2 = .038$), a significant Effect of Group ($F(2,89) = 28.414$, $p < 0.001$, partial $\eta 2 = .390$), and no significant Effect of Interation ($F(14,623) = 2.052$, $p = 0.013$, partial $\eta 2 = .044$.) I then investigated the simple main effect of condition for each proficiency group. For beginners, there is significant Effect of Condition ($F(7,266) = 9.454$, $p < 0.001$, partial $\eta 2 = .199$). For intermediates, there is no significant Effect of Condition ($F(7,287) = 3.510$, $p = 0.001$, partial $\eta 2 = .079$). For native speakers, there is significant Effect of Condition ($F(7,70) = 2.550$, $p = 0.021$, partial $\eta 2 = .203$).

Next, I examine the pairwise comparisons of different semantic contexts.

Table 44 shows the comparison between the perfective contexts and present perfect contexts. Both beginners and intermediates had higher ratings in the perfective contexts compared to the present perfect contexts. However, a significant difference was only attested in the beginners' performance between the perfective state contexts and present perfect state contexts ($M = 0.26$, $p < 0.001$).

Table 44. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (perfective *vs.* present perfect)

Group	Comparisons (mean difference 95% CI; p-value)	
	Perfective state *vs.* PrePerf state	Perfective event *vs.* PrePerf event
Beginners	**0.26** **(.041, 0.49)** **p < 0.001***	0.17 (-0.08, 0.42) p = 0.77
Intermediates	0.11 (-0.15, 0.37) p = 1.00	0.12 (-0.13, 0.37) p = 1.00
Native Speakers	-0.13 (-0.33, 0.08) p = 0.73	-0.02 (-0.08, 0.05) p = 1.00

Table 45 and table 46 illustrate the comparison between the perfective contexts and imperfective contexts. Unlike the results from the sentence-context-preference-matching task in which learners in general performed better in the perfective contexts compared to the imperfective contexts, in the fill-in-the-blanks task, the learners of both groups did not have significantly higher ratings in the perfective contexts compared to the imperfective contexts. The beginners had significantly lower ratings of the perfective event contexts compared to the progressive contexts (M = 0.26, $p < 0.001$*). The same group also had significantly lower ratings of the perfective state contexts compared to the progressive contexts (M = -0.26, $p < 0.001$*).

Table 45. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (perfective event *vs*. imperfective)

Group	Comparisons (mean difference 95% CI; p-value)			
	Perfective event *vs* Progressive	Perfective event *vs* Continuous	Perfective event *vs* Habitual event	Perfective event *vs* Habitual state
Beginners	**-0.16** **(-0.32, 0.001)** **p = 0.05***	0.02 (-0.14, 0.18) p = 1.00	-0.01 (-0.17, 0.15) p = 1.00	0.04 (-0.18, 0.27) p =1.00
Intermediates	-0.09 (-0.24, 0.06) p = 1.00	-0.02 (-0.22, 0.19) p = 1.00	-0.09 (-0.09, 0.26) p = 1.00	0.02 (-0.17, 0.22) p = 1.00
Native Speakers	0.08 (-0.11, 0.26) p = 1.00	0.08 (-0.10, 0.25) p = 0.76	0.14 (-0.14, 0.43) p = 1.00	0.08 (-0.14, 0.30) p = 1.00

Table 46. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (perfective state *vs*. imperfective).

Group	Comparisons (mean difference 95% CI; p-value)			
	Perfective state *vs* Progressive	Perfective state *vs* Continuous	Perfective state *vs* Habitual event	Perfective state *vs* Habitual state
Beginners	**-0.20** **(-0.36, -0.03)** **p = 0.009***	-0.02 (-0.18, 0.15) p = 1.00	-0.04 (0.24, 0.15) p = 1.00	0.01 (-0.19, 0.21) p =1.00
Intermediates	-0.16 (-0.30, -0.01) p = 0.02	-0.09 (-0.25, 0.08) p = 1.00	0.02 (-0.16, 0.19) p = 1.00	-0.05 (-0.24, 0.15) p = 1.00
Native Speakers	-0.04 (-0.31, 0.24) p = 1.00	-0.03 (-0.33, 0.25) p = 1.00	0.03 (-0.28, 0.35) p = 1.00	-0.04 (-0.40, 0.31) p = 1.00

Table 47 and table 48 illustrate the comparison between the present perfect contexts and the imperfective contexts. These tables show that both beginners and intermediates had lower ratings in the present perfect contexts compared to the imperfective contexts. The beginners had significantly lower ratings in the present perfect event contexts compared to the progressive contexts (M = -0.33, $p < 0.001$*). The same group also had significantly lower ratings in the present perfect state contexts compared to the progressive contexts (M = -0.30, $p < 0.001$*), the continuous contexts (M = -0.28, $p = 0.01$*), and the habitual event contexts (M = -0.31, $p = 0.003$*).

Table 47. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (PrePerf event *vs*. imperfective)

Group	Comparisons (mean difference 95% CI; p-value)			
	PrePerf event *vs* Progressive	PrePerf event *vs* Continuous	PrePerf event *vs* Habitual event	PrePerf event *vs* Habitual state
Beginners	**-0.33** **(-0.56, -0.11)** **p < 0.001***	-0.15 (-0.39, 0.08) p = 0.91	-0.18 (-0.42, 0.07) p = 0.52	-0.13 (-0.37, 0.11) p =1.00
Intermediates	-0.21 (-0.42, 0.01) p = 0.06	-0.14 (-0.37, 0.10) p = 1.00	-0.03 (-0.31, 0.24) p = 1.00	-0.10 (-0.33, 0.14) p = 1.00
Native Speakers	0.09 (-0.07, 0.25) p = 1.00	0.09 (-0.06, 0.24) p = 0.70	0.16 (-0.10, 0.42) p = 0.73	0.09 (-0.11, 0.29) p = 1.00

Table 48. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (PrePerf state *vs*. imperfective)

Group	Comparisons (mean difference 95% CI; p-value)			
	PrePerf state *vs.* Progressive	PrePerf state *vs.* Continuous	PrePerf state *v.s* Habitual event	PrePerf state *vs.* Habitual state
Beginners	**-0.50** **(-0.68, -0.24)** **p < 0.001***	**-0.28** **(-0.52, -0.04)** **p = 0.01***	**-0.31** **(-0.54, -0.07)** **p = 0.003***	-0.26 (-0.53, 0.02) p =1.00
Intermediates	-0.21 (-0.42, 0.01) p = 0.06	-0.14 (-0.37, 0.10) p = 1.00	-0.03 (-0.31, 0.24) p = 1.00	-0.10 (-0.33, 0.14) p = 1.00
Native Speakers	0.16 (-0.10, 0.42) p = 0.73	0.09 (-0.11, 0.29) p = 1.00	0.09 (-0.07, 0.25) p = 1.00	0.09 (-0.06, 0.24) p = 0.70

Table 49 and table 50 illustrate the comparison between difference imperfective contexts. The beginners had significantly higher ratings in the progressive contexts compared to the habitual states (M = 0.20, p = 0.02*), habitual events (M = 0.15, *p* = 0.04*), and continuous contexts (M = 0.18, *p* = 0.01*). The intermediates had significantly higher ratings in the progressive contexts compared to the habitual event (M = 0.17, *p* = 0.05*). No significant contrast was detected in learners' performance between the continuous contexts and the habitual contexts.

Table 49. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (progressive *vs*. habitual state, habitual event, continuous)

Group	Comparisons (mean difference 95% CI; p-value)		
	Progressive *vs*. Habitual state	Progressive *vs.* Habitual event	Progressive *vs.* Continuous
Beginners	**0.20** **(0.02, 0.39)** **p = 0.02***	**0.15** **(0.00, 0.30)** **p = 0.04***	**0.18** **(0.03, 0.33)** **p = 0.01***
Intermediates	0.11 (-0.04, 0.26) p = 0.42	**0.17** **(0.00, 0.35)** **p = 0.05***	0.07 (-0.10, 0.24) p = 1.00
Native Speakers	0.00 (-0.26, 0.26) p = 1.00	0.07 (-0.22, 0.36) p = 1.00	-0.02 (-0.19, 0.19) p = 1.00

Table 50. Pairwise comparisons of semantic contexts in the fill-in-the-blanks for L1 Spa-L2 Chi (continuous *vs*. habitual state, habitual event; habitual state *vs.* habitual event)

Group	Comparisons (mean difference 95% CI; p-value)		
	Continuous vs Habitual state	Continuous vs Habitual event	Habitual state vs Habitual event
Beginners	0.03 (-0.17, 0.22) p = 1.00	-0.02 (-0.22, 0.17) p = 1.00	-0.05 (-0.31, 0.21) p = 1.00
Intermediates	0.04 (-0.17, 0.25) p = 1.00	0.10 (-0.09, 0.30) p = 1.00	0.06 (-0.12, 0.25) p = 1.00
Native Speakers	0.07 (-0.22, 0.36) p = 1.00	0.7 (-0.14, 0.28) p = 1.00	0.07 (-0.25, 0.39) p = 1.00

Table 51. Between-group difference in the Spanish perfective and present perfect contexts in the fill-in-the-blanks task by Tukey's post estimation task

Comparisons	Tukey's HSD test mean difference (95% CI; p-value) in each context			
	Perfective state	Perfective event	PrePerf state	PrePerf event
Beginners compared to…				
Intermediates	-0.07 (-0.21, 0.06; p = 0.399)	-0.11 (-0.25, 0.03; p = 0.159)	-0.23 (-0.42, 0.03; p = 0.018*)	-0.16 (-0.33, 0.01; p = 0.071*)
Natives	-0.32 (-0.53, -0.11 ; p = 0.001*)	-0.40 (-0.61, -0.18; p < 0.001*)	-0.71 (-1.01, 0.41; p < 0.001*)	-0.58 (-0.84, -0.32; p < 0.001*)
Intermediates compared to…				
Natives	-0.24 (-0.45, -0.04; p = 0.018*)	-0.29 (-0.50, -0.07) p = 0.005*)	-0.48 (-0.78, 0.19; p = 0.001*)	-0.42 (-0.68, -0.16; p = 0.001*)

Notes: HSD=honest significant difference

Table 51 shows the comparison between groups in the Spanish perfective (perfective state and perfective event) contexts and present perfect (present perfect state, present perfect event) contexts. There was no significant difference in the accuracy rates between the beginner group and intermediate group in the two perfective contexts. However, in the two perfective contexts, both two proficiency groups' responses were significantly different from that of the native speakers. The beginner group's responses were significantly different from the other two groups in the two present perfect contexts. Meanwhile, the intermediate group's responses were significantly different from those of the native speaker group in the two present perfect contexts.

Table 52. Between-group difference in the Spanish imperfective contexts in the fill-in the blanks task given by Tukey post estimation test

Comparisons	Tukey's HSD test mean difference (95% CI; p-value) in each context			
	Progressive event	Continuous state	Habitual state	Habitual event
Beginners compared to…				
Intermediates	-0.04 (-0.17, 0.10; p = 0.794)	-0.14 (-0.29, 0.00; p = 0.056)	-0.13 (-0.29, 0.04, p = 0.163)	-0.02 (-0.18, 0.14; p = 0.966)
Natives	-0.16 (-0.36, 0.04; p = 0.151)	-0.34 (-0.56, -0.11; p = 0.001*)	-0.36 (-0.62, -0.11; p = 0.003*)	-0.24 (-0.49, 0.00; p = 0.052)
Intermediates compared to…				
Natives	-0.12 (-0.32, 0.08; p =0.311)	-0.19 (-0.42, 0.03; p = 0.094)	-0.23 (-0.49, 0.02; p = 0.074)	-0.23 (-0.47, 0.02; p = 0.073)

Notes: HSD=honest significant difference

Table 52 shows the comparison between groups in the four Spanish imperfective contexts (progressive event, continuous state, habitual state, habitual event). No significant difference can be found between the beginners' responses and the intermediates' responses in the four imperfective contexts. Beginners' responses were significantly different from those of the intermediate group in the continuous event and habitual state contexts. There was no significant difference between the intermediates and the native speakers in the imperfective contexts.

I explore further into the problematic conditions in the fill-in-the-blanks task and see which forms were chosen other than the correct form. In the perfective state conditions, the average selection rate for the present perfect by the beginners was 32%, which was higher than that of the Imperfect (11%). In the perfective event contexts, which were difficult for beginners, the mean selection rate of the present perfect was 23%, which was higher than that of the Imperfect (11%). In the present perfect state conditions, both the beginners and the intermediates had higher average selection rates with the Preterit form (40% for beginners, 30% for intermediates) than with the Imperfect (29% for beginners, 18% for intermediates).

In the present perfect event conditions, the beginners had higher mean selection rates for the Preterit (30%) than that in the Imperfect (11%). In the continuous conditions, which were found to

be difficult for beginners, the mean selection rate for the Preterit was 31% which was higher than that of the Imperfect (10%). In the habitual conditions, the beginners had higher mean selection rates in the Preterit (40%) than in the present perfect (5%) contexts.

Table 53. Summary of findings of the Spanish fill-in-the-blanks task

Context	Condition/ Aspectual form	Summary of findings
Perfective	Perfective state *Preterit*	● **Difficult** for the two proficiency groups ● Sig. high ratings *compared to* present perfect state; Sig. low ratings compared to progressive.(beginners)
	Perfective event *Preterit*	● **Difficult** for the two proficiency groups ● Sig. low ratings *compared to* progressive.(beginners)
Present Perfect	Present perfect state *Present perfect*	● **Difficult** for the two proficiency groups, the lowest scores are found for the two proficiency groups ● Sig. low ratings *compared to* progressive, continuous, habitual event. (beginners)
	Present perfect event *Present perfect*	● **Difficult** for the beginners ● Sig. low ratings *compared to* progressive.(beginners)
Imperfective	Habitual state *Imperfect*	● **Difficult** for the beginner group ● Sig. low ratings *compared to* progressive (beginners).
	Habitual event *Imperfect*	● Sig. high ratings *compared to* present perfect state; Sig. low ratings *compared to* progressive.(beginners) ● Sig. low ratings *compared to* progressive.(intermediates)
	Progressive *Imperfect*	● Not problematic for the two proficiency groups, the lowest scores are found for the two proficiency groups ● Sig. high ratings *compared to* habitual state, habitual event. (beginners) ● Sig. high ratings *compared to* habitual event. (intermediates)
	Continuous state *Imperfect*	● **Difficult** for the beginner group ● Sig. high ratings *compared to* present perfect state. (intermediates)

Table 54. Summary of findings for L1 Chinese-L2 Spanish learners

Context	Condition/ Aspectual form	Problematic in the **comprehension task**	Problematic in the **fill-in-the-blanks task**
Perfective	Perfective state (*Preterit*)		✔
	Perfective event (*Preterit*)		✔
Present perfect	Present perfect state (*present perfect*)		✔
	Present perfect event (*present perfect*)		✔
Imperfective	Habitual state (*Imperfect*)	✔ (beginner)	✔
	Habitual event (*Imperfect*)	✔ (beginner)	✔
	Progressive event (*Imperfect*)	✔	
	Continuous State (*Imperfect*)	✔	✔

In summary, this chapter presents results obtained from the Sentence-Context-Preference-Matching task and the fill-in-the-blanks task conducted among L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners. In the next chapter, I will discuss how the results correspond to the research predictions and the research questions.

Chapter 6 Discussion

6.1 Introduction

In this thesis, I have investigated what factors affect the extent of L1 transfer and the complexity of the learning tasks in the L2 acquisition of aspect-related features in Chinese and Spanish. The study's findings are presented in Chapter 5, following data collection procedures presented in Chapter 4. In this chapter, the discussion will be presented in terms of how the results elucidate the research questions and research predictions. Theoretical implications will also be discussed regarding the key factors influencing the extent of L1 transfer and the complexity of the learning task at the initial stages of feature mapping and feature reassembly.

As discussed in Chapter 2, feature reassembly is considered two have two processes: feature mapping and feature reassembly. Since the mapping process precedes the reassembly process, in the present study, I focus on the examination of beginners' data to identify the learnability problems in the mapping process and on the intermediate learners' data to identify the learnability problems in the reassembly process.

6.2 Factors affecting the extent of L1 transfer and the complexity of the learning task at the initial stages of mapping and reassembly

6.2.1 Similarities in semantic meaning and grammatical function

Research question 1 inquires how L2 learners are affected by L1 transfer in the mapping process involved in feature reassembly. In particular, do L2 learners map features from the closest equivalent morpholexical item in the L1 to a morpholexical item in the L2 (based on similarity in meaning or grammatical function)? In line with this question, prediction 1 proposes that learners will initially map features of a morpholexical item in the L2 to a closest morpholexical counterpart in the L1 based on similarities in meaning and grammatical functions. This prediction is based on Lardiere's (2008, 2009) assumption that L2 learners will initially look for the closet morpholexical equivalents in the L2 to those in their L1 on the basis of semantic meaning and grammatical function.

There are two specific predictions corresponding to this general prediction.

Prediction 1.1: L1 Spanish-L2 Chinese learners will initially map the perfective meaning which is expressed by the perfective marker *le* onto the Preterit. Thus, the learners will not have difficulty in the interpretation of the perfective marker *le* as a result of positive transfer from the L1. The prediction follows the assumption that learners will initially assume that the perfective marker *le* is an equivalent form of the Preterit, and the mapping of the marker *le* to the perfective meaning encoded by the Preterit in L1 Spanish will be straightforward. As discussed in Chapter 4, in order to test whether L2 Spanish learners have acquired the morphological distinction between the perfective marker *le* and the experiential marker *guo*, the test items on the perfective contexts are designed to be only appropriate if the perfective marker *le* is accepted.

This prediction is partially supported by results from the Sentence-Context-Preference-Matching task (comprehension) and the fill-in-the-blanks task. In the comprehension task, learners from both groups did well in the acceptance of the sentences marked by the perfective marker *le* in perfective contexts (61%-68% for beginners and 80%-84% for intermediates). From the data of this task, evidence of a significant difference between the beginners and the intermediates can be observed. While the beginners had low correct rejection rates of the sentences marked by the experiential marker *guo* in perfective contexts (51%-52%), the intermediates did significantly better than the beginners in the rejection of the marker *guo* in perfective contexts(63%-72%). Meanwhile, in the fill-in-the-blanks task, the beginners' accuracy rate in the perfective conditions is quite low (42% in perfective states, 41% in perfective events) while the intermediates did significantly more accurately than the beginners in the perfective conditions (76% in perfective states, 61% in perfective events).

These results reveal that learners have learned that the perfective marker *le* is a form available in Chinese to mark perfectivity from the initial mapping stage, during which they were able to identify a correspondence between the perfective marker *le* in L2 Chinese to the Preterit in L1 Spanish. However, learners' morphological competence at the initial stage of mapping seems to be unstable. The beginners demonstrate uncertainty in using the perfective marker *le* in the fill-in-the-blanks task. This task is likely to pose an extra level of challenge to beginners by asking them to identify the correct interpretations of the perfective marker *le* along with four other aspectual forms. Results from the fill-in-in-the blanks task also reveal that the intermediates performed significantly better than the beginners in the perfective conditions. Such results demonstrate that morphological competence with the perfective interpretation of the aspect marker *le* improves in

the reassembly process.

Prediction 1.2: L1 Chinese-L2 Spanish learners will initially map the perfective meaning which is encoded by the *Preterit* in L2 Spanish onto the perfective marker *le* in L1 Chinese. Thus, the learners will not have difficulty in the interpretation of *Preterit* in the mapping process as this is facilitated by direct mapping between the Preterit in the L2 to the perfective marker *le* in the L1.

This prediction is well-supported by the comprehension data, as both beginners and intermediates had high correct response rates. However, results from the fill-in-the-blanks task only partially support this prediction. The beginners' mean accuracy rate was not high in perfective contexts (55% in perfective states, 59% in perfective events). The intermediates' performance in the fill-in-the-blanks task provides evidence of improvement (63% in perfective states, 70% in perfective events). The contrast between the beginners and intermediates reveals substantial improvement in the right direction, although the difference in the accuracy rates between the two proficiency groups was not statistically significant.

The learners' good performance in the comprehension task suggests that the initial mapping process was facilitated by L1-L2 similarity in the one-on-one mapping between the form and the meaning. The instructional bias also plays a role since the early exposure to the *Preterit* guides the appropriate mapping between the perfective meaning and the *Preterit* form. Learners' knowledge of the perfective interpretation of the *Preterit* appears to be unstable at the initial mapping stage, as demonstrated by the fill-in-the-blanks task. The correct mapping appears to be more stable when it comes to intermediate level, with more exposure to L2 input.

As shown in the case of L1 Spanish-L2 Chinese's performance with the perfective marker *le* and L1 Chinese-L2 Spanish learners' performance with the *Preterit*, the assumptions of the Feature Reassembly (Lardiere, 2008, 2009a, b) on the initial stage of L2 development was confirmed that learners initially seek for a morpholexical item in the L1 that seems to be the closest equivalent morpholexical item in the L2. As demonstrated in the comprehension data of both types of learners, similarities in grammatical functions and grammatical meaning between the L1 and L2 appeared to play a facilitative role in the initial mapping process. The contrast between the comprehension data and the data from the fill-in-the-blanks task is consistent with the argument of the Syntax-before-Morphology (White, 2003; Lardiere, 1998a, b), proposing that L2 morphological variability is not necessarily an indication of a lack of L2 morphosyntactic features. Instead, morphological

variabilities in L2 acquisition manifest a mapping problem between the abstract morphosyntactic features and overt morphology (Haznedar and Schwartz, 1997; Prévost and White, 2000). As manifested in the fill-in-the-blanks data, the problems of inaccurate use of the perfective marker *le* and the *Preterit* are temporary, and learners' accuracy improves with the increase of proficiency.

6.2.2 Transparency of form-meaning mapping

Research question 2 explores the role of transparency of form-meaning mappings in the L2 feature mapping and feature reassembly processes. In line with this research question, prediction 2 proposes that the initial mapping and reassembly process will be difficult when the L1 and L2 differ in the transparency of form-meaning mapping. As discussed in Chapter 2, the transparency of form-meaning mapping describes the complexity of form-meaning correlations in terms of the number of meanings encoded by a form (Dekeyser, 2005). The rationale behind prediction 2 is that learners will initially transfer the way that a form-meaning mapping relationship is realized by an equivalent morpholexical item in the L1 (i.e. how many features are expressed by the form) and assume that the target morpholexical item in the L2 expresses the same number of features as the L1 equivalent form does. Once the initial mapping was established, learners have to reassemble the initial non-target-like feature configurations so as to accommodate target grammar.

Under this general prediction, there are four specific predictions on the acquisition of aspectual features in L2 Spanish and L2 Chinese.

Prediction 2.1: For L1 Spanish-L2 Chinese learners, the initial mapping and reassembly process of the experiential meaning to the experiential marker *guo* will be problematic. While the experiential meaning is encoded by the *present perfect*, which has a straightforward one-on-one form-meaning mapping in the L1, this meaning has a less transparent form-meaning mapping in the L2: the experiential meaning is expressed by the experiential marker *guo* in Chinese which encodes both experiential meaning and perfective meaning. Recall the characterization of perfective meaning introduced in chapter 3: there are two types of perfective meanings: the completion of a situation with a clear boundary and the termination of a situation without a clear boundary. The experiential marker *guo* can express the meaning of the completion of an action. Thus, the perfective marker *le* and the experiential marker *guo* are interchangeable only in the perfective contexts expressing completed eventuality. In the experiential contexts, only the experiential marker is acceptable. Thus, the complex form-meaning mapping of experiential marker *guo* leads to difficulty at the initial stages of L2 acquisition. Since there are not enough details in the input on the semantic

meaning and grammatical functions of the experiential marker *guo*, learners would initially assume that the perfective marker *le* and experiential marker *guo* is interchangeable both in the perfective contexts and experiential contexts. Thus, it is predicted that The learners will have difficulty disentangling the experiential meaning from perfective meaning in the experiential contexts.

Results of both tasks fully support this prediction. In the Sentence-Context-Preference Matching task, both beginners and intermediates had low correct mean acceptance rates with the sentences where *guo* should be accepted (51%-52% for beginners, 51%-55% for intermediates) and even lower correct mean rejection rate with the sentences which *le* should be rejected (27%-28% for beginners, 30%-33% for intermediates). Meanwhile, in the fill-in-the-blanks task, the beginners had low accuracy rates in the experiential conditions (21%-34%), and the intermediates had low accuracy rates in the experiential state (55%) condition. A significant difference in the correct response rates between the beginners and the intermediates can only be observed in the fill-in-the-blanks task. In this task, 39% of beginners and 26% of intermediates misused *le* in experiential contexts.

These results suggest that at the initial mapping stage, learners have not mapped the experiential meaning onto the aspect marker *guo.* At the initial stages of feature reassembly, it is difficult for the learners to dissociate the perfective meaning from the experiential meaning. The fact that there was no significant difference between the beginners and intermediates in the experiential context in the fill-in-the-blanks task suggests that it is difficult for learners to recover from the initial non-target-like mapping. As shown in the fill-in-the-blanks task, both the beginners and intermediates misused *le* in experiential conditions, suggesting that the learners initially assume that *le* and *guo* are interchangeable in experiential contexts. The experiential contexts appeared to be more problematic than the perfective contexts. In the sentence interpretation task, both the beginners and intermediates performed significantly better in the perfective contexts than in the experiential contexts. In addition, the experiential contexts seemed to be more difficult than the imperfective contexts. This is demonstrated that the beginners had significantly lower ratings of the experiential event context than the continuous contexts; whereas the intermediates had significantly lower ratings of the experiential contexts than the durative, habitual and continuous contexts.

The difficulty with the experiential interpretation can partly be traced to the existing mismatches between the L1 and L2 in the transparency form-meaning mapping. In the learners' L1 Spanish, there is a one-on-one form meaning between the experiential meaning and the *present perfect*.

Whereas in the learners' L2 Chinese, the aspectual marker *guo* encodes both perfective and experiential interpretations. Since there is only one perfective morpheme in L1 Spanish, there is no clue from the L1 that another morpheme expressing perfectivity is to be expected. Also, the fact that there is a lot more input and practice of the perfective marker *le* than for the experiential marker *guo*, learners are likely to use the marker *le* as a default form (Haznedar and Schwartz, 1997; Prévost and White, 2000) in the experiential contexts because it is easy to access in their mental lexicon.

Prediction 2.2: For L1 Spanish-L2 Chinese learners, the imperfective meanings (progressive, continuous, habitual) will be problematic at the initial stages of feature mapping and reassembly. While the imperfective meanings are mapped onto a single form in the L1, these three meanings are distinctively encoded by aspectual morphemes (progressive--*zai*, continuous--*zhe*) and temporal adverbials (habitual--*jingchang* (often)) in Chinese. Learners will have difficulty accepting the appropriate forms and rejecting the inappropriate forms in the progressive, continuous and habitual contexts.

The prediction that learners have problems with the imperfective interpretations is fully supported by the findings. However, it is not clear from the results which imperfective marker is initially mapped to the Imperfect in Spanish. I predicted two two mapping possibilities of the imperfective markers. First, if learners map the progressive marker *zai* to the Spanish Imperfect, learners will be more accurate in the interpretation of *zai* in progressive contexts than in the other imperfective contexts. However, learners will assume that the *marker* zai is applicable in all the imperfective contexts and misinterpret the marker *zai* in other imperfective contexts. Second, if learners map the durative marker *zhe* to the Imperfect, learners will be more accurate in the interpretation of *zhe* in continuous contexts. Meanwhile, learners will assume that the marker *zhe* is appropriate in all the imperfective contexts and misinterpret the marker *zhe* in other imperfective contexts.

Results from both tasks show counterevidence for the first mapping possibility that learners map the marker *zai* to the Imperfect. In the Sentence-Context-Preference-Matching task, the lowest mean scores for both the beginners and the intermediates were found in the progressive conditions (mean correct acceptance rate of the sentences in which the progressive marker *zai* should be accepted: 37% for beginners, 51% for intermediates; mean correct rejection rate of the sentences in which the durative marker *zhe* should be rejected: 23% for beginners, 51% for intermediates). In the fill-in-the-blanks task, the beginners had low correct accuracy rates of using the marker *zai* in

progressive contexts. Such results suggest that learners have not mapped the progressive marker *zai* to the progressive aspectual features of the L1 lexical entry. Meanwhile, for the second mapping possibility that learners map the durative marker *zhe* to the continuous interpretation of the Imperfect, the results of the two tasks are not consistent. In the Sentence-Context-Preference-Matching task, both beginners and intermediates show high correct mean acceptance rates of the marker *zhe* in the continuous contexts (68% for beginners, 74% for intermediates). However, the beginners and intermediates had problems rejecting the experiential marker *guo* in the continuous contexts (53% for beginners, 48% for intermediates). As for the performance in the fill-in-the-blanks task, both beginners and intermediates had low correct accuracy rates in the continuous contexts (23% for beginners, 54% for intermediates). Such results indicate that while learners seem to have mapped the continuous interpretation to the durative marker *zhe* as shown from the correct acceptance of the marker *zhe*, this knowledge is not stable.

I further speculate which aspectual forms learners use other than the correct forms in the fill-in-the-blanks task. It is found that in the progressive contexts, 39% of beginners and 21% of the intermediates misused the durative marker *zhe*, and 21% of the beginners and 11% of the intermediates misused temporal adverbial *jingchang* (often) instead of the progressive marker *zai.* In continuous contexts, 35% of the beginners and 29% of the intermediates misused the progressive marker *zai* instead of the durative marker *zhe.* These results show that learners seem to assume that the imperfective markers are interchangeable in all of the imperfective contexts. Although it is not clear from the results which imperfective marker in Chinese is mapped to the feature entry of the Imperfect in Spanish, a strong L1 transfer effect is detected at the initial stages of L2 acquisition since the learners assume that like the imperfect in Spanish, an individual imperfective marker in Chinese is associated with more than one imperfective meaning.

In both tasks, significant differences can be found between the beginners' and the intermediates' performance in the four imperfective conditions. This implies that learners' knowledge of the aspectual interpretations of the imperfective marking in Chinese improves as proficiency and experience increases.

These results confirmed the prediction that in the initial mapping and reassembly process, L1 Spanish-L2 Chinese learners would have difficulty in attributing the correct interpretation to the imperfective meanings: progressive, habitual, and continuous, which exist both in the L1 and L2 but are expressed with different levels of transparency of form-meaning mapping in the L1 and L2.

At the initial mapping process, learners appeared to be greatly influenced by the way the form-meaning mapping is achieved in the L1, assuming a one form-many meanings relationship of the imperfective markers in L2 Chinese. However, restructuring from inappropriate form-meaning mappings to target-like form-meaning mappings was detected as the intermediate did significantly better than the beginners.

Prediction 2.3: For L1 Chinese-L2 Spanish learners, mapping and reassembling the experiential meaning expressed by the experiential marker *guo* in L1 Chinese to the Present Perfect in L2 Spanish will be problematic. While the experiential meaning is expressed by an aspectual marker *guo* which also encodes perfective meaning in L1 Chinese, the experiential meaning is mapped onto the Present Perfect which has one-on-one form-meaning mapping in L2 Spanish. Learners will initially have difficulty rejecting the 'perfective' meaning in the present perfect contexts.

Beginners' performance in the present perfect conditions supported this prediction. In the fill-in-the-blanks task, the beginners' accuracy rate was not target-like in neither the perfective nor the *present perfect* conditions. However, the beginners' accuracy rate in the perfective state contexts was significantly higher than that in the present perfect contexts. These learners mostly incorrectly used the Preterit in the Present Perfect conditions. The beginners also had significantly lower ratings in the present perfect contexts compared to the progressive contexts. Meanwhile, there was a significant difference between the beginners and the intermediates on the accuracy rate in the *present perfect* contexts. These findings suggest that L1 Chinese-L2 Spanish learners had difficulty in the interpretation of *present perfect* in the 'present perfect' contexts at the initial stages of mapping process. In the restructuring process, learners started to overcome the initial non-target-like mapping.

There is evidence that the initial mapping problem with the *present perfect* context was caused by the discrepancy between the L1 and L2 in the transparency of this form-meaning mapping. L1 Chinese-L2 Spanish learners initially mapped the experiential meaning onto the *Preterit*, assuming that the *Preterit* is an equivalent morpheme with the experiential marker *guo* in Chinese that encodes both perfective and experiential meaning. With increased input, learners were able to recover from the initial non-target-like mapping by dissociating the experiential meaning from the *Preterit* and mapping it onto the *present perfect*.

Prediction 2.4: For L1 Chinese-L2 Spanish learners, acquiring the meanings associated with the

Imperfect will be problematic. While the *Imperfect* encodes three Imperfective meanings (progressive, habitual, continuous) in L2 Spanish, these three meanings are isolated and mapped onto three separate forms (progressive marker *zai*, durative marker *zhe*, temporal adverbial *jingchang*) in L1 Chinese.

This prediction is supported by the performance of the beginner group in the written comprehension task. The beginners had difficulty rejecting the inappropriate sentences in the habitual states, the continuous states, and progressive events conditions. Significant differences were attested between the beginners and intermediates in the Imperfective contexts, suggesting that the correct reassembly of the progressive, continuous, and habitual meanings improved with the increase in proficiency.

Overall, these results are in line with the prediction that the transparency of form-meaning L1-L2 mappings plays an important role in predicting the extent of L1 transfer and the complexity of the learning task at the initial stages of feature mapping and reassembly. When there is a mismatch of the level of the transparency of form-meaning mapping between the L1 and L2, a strong L1 transfer effect is to be expected at the initial mapping process. This non-target-like mapping leads to difficulties in the reassembly process. It takes a certain level of cognition of the target-like configurations of the aspectual morphemes for the learners to accommodate target grammar.

Dekeyser (2015) argues that rather than form, meaning, or form-meaning mapping, it is the transparency of form-meaning mapping that determines the level of difficulty in L2 acquisition. Slabakova (2015) claims that acquisition challenges can be anticipated when there is a form-meaning mismatch between the L1 and L2 in the realization of semantic interpretations. Evidence from the present study corroborates Dekeyser's (2015) argument that transparency of form-meaning mappings between the L1 and L2 plays a key role in determining the difficulty of L2 acquisition. Next, I discuss which type of learning task is more difficult when there is a discrepancy between the L1 and L2 in the transparency of form-meaning mapping.

Prediction 2.5 For both L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners, the mapping task and feature reassembly task will be more difficult for the acquisition of imperfective morphemes than for the perfective morphemes. There are a few reasons behind this prediction. To begin with, in both learning scenarios, the form-meaning mapping of perfective morphemes is more transparent than that of the imperfective morphemes. In addition, the acquisition of

imperfective morphemes involves more complex semantic computations and higher cognitive load as it encodes more semantic interpretations than the perfective morphemes, resulting in more remapping tasks. Previous literature on L2 acquisition of aspect has identified that the success of the acquisition of aspectual morphology is determined by whether the same features need to be reconfigured so as to accommodate form-meaning associations in the target grammar (Domínguez et al., 2013, 2017; McManus, 2015). Instruction also plays a role in the difficulty with the acquisition of imperfective morphology at the early stages of acquisition. Since both types of learners are instructed learners, they have early exposure to perfective morphology compared to imperfective morphology.

This prediction is overall supported by the performance of the two types of learners in both tasks. For L1 Spanish-L2 Chinese learners, problems when attributing correct interpretations to imperfective markers were exemplified at the initial stages of feature mapping and reassembly. As shown in the results of the sentence interpretation task, the L1 Spanish-L2 Chinese beginners had significantly higher accuracy in the perfective contexts than the progressive and habitual context, the intermediates performed significantly better in the perfective contexts than the progressive and durative contexts. Meanwhile, for the L1 Chinese-L2 Spanish learners, the obstacles with the imperfective markers were observed in the initial mapping process. As shown from the results of the sentence interpretation task, the beginners had significantly higher ratings in the perfective contexts compared to the progressive, continuous and habitual contexts. Results from the fill-in-the-blanks task show that the beginners had significantly higher accuracy compared to the progressive contexts.

Evidence emerging from the study shows an asymmetry in the acquisition of the perfective morphology and imperfective morphology for both types of learners. The fact that the perfective/imperfective aspectual distinctions are overtly realized by morphemes in Chinese and Spanish does not facilitate the acquisition of imperfective morphology, as illustrated by the divergence in grammars of the imperfective morphology in L2 Chinese and L2 Spanish. What seems to be relevant predictors of the difficulty of the acquisition task is the transparency of form-meaning mapping in the L1 and L2 and the number of new morpholexical forms to be acquired in establishing L2 form-meaning mapping. To better illustrate the argument mentioned above, I compare the results of the present study to previous studies in terms of what causes difficulties in L2 acquisition.

To begin with, researchers working with L2 acquisition of form-meaning mapping have proposed that whether features are overtly realized in the L1 and L2 is a relevant predictor of the level of difficulty of the learning task. Roberts and Liszka (2013) argue that L2 acquisition of tense and aspect would be facilitated when the native language grammaticalizes aspect. Their study explored advanced French and German learners' acquisition of the English aspect. They proposed that although French and English encode aspect in different ways (for example, French expresses the imperfective/perfective distinctions while English encodes progressive/non-progressive distinctions), the fact that aspect is overtly realized in both languages gives French learners an advantage over the German learners, whose native language does not have any overt aspectual marking. Their argument is not compatible with findings from the present study. For instance, why L1 Spanish-L2 Chinese learners find the Imperfective markers more problematic than the perfective markers when both Chinese and Spanish have overt aspectual markings in expressing perfective/Imperfective distinctions.

In refining the predictions of the FR in terms of what is easy and what is difficult for L2 acquisition, Slabakova (2009) and Cho and Slabakova (2014) put forth the cline of difficulty proposal, which claims that in L2 acquisition, features that are covertly realized through context will be more challenging than features that are overtly realized through morphemes. However, findings from the present study were not consistent with the cline of difficulty proposal. The habitual meaning in Chinese is not realized through overt morphemes but instead expressed through covert means of using temporal adverbials. Results from the two tasks in the present study show that although L1 Spanish-L2 Chinese learners' interpretation of the habitual meaning is problematic at the initial stage, this meaning is not more challenging than the progressive and continuous meanings which are realized by overt aspectual morphemes.

The results of the present study are consistent with Domínguez et al.'s (2017) argument that whether or not an aspectual feature is overtly realized in the native language grammar is not a sufficient predictor of the level of difficulty of the L2 learning task. What seems to be relevant is whether aspectual features are assembled onto forms that express the same meaning in the native language and the target language (Lardiere, 2007,2008,2009a,b) and whether the transparency of form-meaning mapping is the same for both languages.

Next, I argue that findings from the present study reveal that the level of difficulty of the learning task is predicted by properties of both the native language and the target language in terms of

transparency and the number of morpholexical forms involved in expressing the same features.

Prediction 2.6 The mapping and reassembly process will be difficult if the same semantic features are expressed by more morphemes in the L2 than the L1.

Overall, the initial mapping and reassembly task will be easier for the L1 Chinese-L2 Spanish learners than the L1 Spanish-L2 Chinese learners, as the learning task for L1 Spanish-L2 Chinese learners involves the acquisition of more morphemes.

While both types of learners have more difficulties with the imperfective morphology than with the perfective morphology, the initial mapping and feature reassembly of the imperfective features appeared to be more difficult for L1 Spanish-L2 Chinese learners than for the L1 Chinese-L2 Spanish learners. While L1 Chinese-L2 Spanish learners at the intermediate level already show a high level of correct response rate (70%-87%) with the Imperfective interpretations encoded by the Imperfect, the L1 Spanish-L2 Chinese learners at the intermediate level still have problems in assigning correct interpretations to the Imperfective markers. For instance, the progressive was the most problematic aspectual interpretation for the L1 Spanish-L2 Chinese intermediates as they have a low correct acceptance rate (51%) with the sentences where the progressive marker *zai* is used and low correct rejection rate (38%) with the sentence where the durative marker *zhe* is used.

Such results are in line with Gabriele and McClure's (2011) proposal that the difficulty of L2 acquisition is not solely predicted by properties of the native language but also the properties of the target language. The results also correspond to the claim that there is a hierarchy of learning difficulties in the mapping and reassembly process according to different L1/L2 combinations (Gil and Marsden, 2013). In the present study, the task of acquiring the Imperfective markers in L2 Chinese faced by L1 Spanish learners involves mapping features that are conflated into a single form in the L1 but are divided and mapped onto separate forms in the L2, a learning situation which is argued to be one of the most difficult types of form-meaning remapping task (Collins, 2004; Izquierdo, 2009). This finding suggests that the difficulty of the learning task can be predicted by the type of remapping task needed in L2 acquisition, which is determined by the transparency of form-meaning mapping in both the L1 and L2.

Another relevant theoretical proposal for the high level of difficulty with the acquisition of Chinese aspect markers by L1 Spanish speakers is that the acquisition of functional morphology should be

an important predictor of the acquisition task (Slabakova, 2013). Since the semantic meanings are universal (Ramchand and Svenonius, 2008), the learning task involves mapping features onto morphemes. In other words, acquiring the functional morphology is a prerequisite for establishing the syntax and semantics of a second language (Slabakova, 2006, 2008, 2013). Evidence from previous research (Domínguez et al., 2017) has shown that the acquisition of the morphological forms of the L2 precedes the acquisition of the new L2 form-meaning mappings. In the study of Domínguez et al. (2017), L1 English-L2 Spanish learners of intermediate level already manifested knowledge of the morphological distinction between the Preterit and the Imperfect but still have problems rejecting the Preterit in continuous and habitual contexts as a result of the L1 transfer. In the present study, the representational difficulty with the Chinese aspectual interpretations is indicative of L1 Spanish learners' inadequate knowledge of the aspectual forms in Chinese. As shown in the fill-in-the-blanks task, some L1 Spanish learners of Chinese at beginners' level incorrectly used perfective marker *le* and experiential marker *guo* in some imperfective contexts. Such results show that L1 Spanish-L2 Chinese learners have not established the knowledge of Imperfective morphemes. Results from the Sentence-Context-Preference-Matching task show that L1 Spanish-L2 Chinese learners of both beginners and intermediates had difficulty assigning the correct interpretations onto the aspect markers (progressive marker *zai*, durative marker *zhe* in Chinese), suggesting that it is difficult to recover from L1 transfer effect when the same semantic meanings are mapped onto more morphemes in the L2.

It should be noted that the aspectual morphology in Spanish themselves can present acquisition difficulty for Chinese learners. While in Chinese the aspectual features are realized by aspectual particles and each particle has a single form, in Spanish the aspectual features are realized by inflectional morphology which change dependent on person and number. Chinese learners of Spanish have the learning task of not only mapping the aspectual interpretation onto the aspectual forms in Spanish but also establishing the correct person and number information onto the form.

Previous studies have shown that Chinese learners have difficulty with inflectional morphology. A longitudinal case study with a L1 Madarin and Hokkein speakers of English (Lardiere, 2003,2006) identifed problems of supplying past tense (*ed*) and third person singular (*s*) after a lot of years of emersion in L2 English. In Goad et al.'s (2003) study, the L1 Mandarin Chinese learners had low production of tense and agreement in the description of pictures. However, there is also evidence that Chinese learners are also able to acquire the inflectional morpholgy. The learners in Goad et al.'s (2003) showed knowledge of the inflectional morpholgy in the grammatility judgement task

instead of the production task.

The L1 Chinese-L2 Spanish learners of the current study had more problems with the Spanish aspectual morphology in the fill-in-the-blanks task than in the sentence interpretation task. Such results show that L1 Chinese learners have mental representations of the aspectual features but have problems mapping the features onto overt inflection in a task that requires higher cognitive load (Prévost & White, 2000).

To summarize, this section discusses how the results from the study explain the role of the transparency of form-meaning mapping in the L1 and L2 in determining the level of difficulty of L2 acquisition. In comparing the results of the present study with previous findings, I argue that whether features are overtly realized is not a sufficient predictor of the difficulty of the acquisition task. What determines the difficulty of the learning task is the transparency of form-meaning mapping in the L1 and L2, as well as the number of new morpholexical items to be acquired in L2 acquisition.

6.2.3 Acquisition of a new semantic feature

Research question 3 examines whether learners could acquire a new semantic feature not available in the L1 during the feature reassembly. If so, at what stage does this happen? In relation to this question, prediction 3 proposes that the initial mapping and reassembly process will be difficult when learners have to acquire a new semantic feature not available in the L1. The rationale behind this prediction is that since the L1 does not provide any clue that a new semantic meaning is to be expected, the appropriate mapping will be delayed. In line with this, prediction 3.1 proposes that for L1 Spanish-L2 Chinese learners, the 'durative' meaning of aspect marker *zhe* will be difficult in the initial mapping and reassembly process. As discussed in Chapter 3, the durative marker *zhe* encodes two interpretations: the continuous interpretation and the durative interpretation. When the durative marker *zhe* marks non-stative verbs (e.g. activities), it expresses durative interpretation, depicting the state resulting from an activity. Such aspectual reading is not available in Spanish. It is predicted that the durative interpretation of the durative marker *zhe* will be more problematic than the continuous interpretation of the marker *zhe* at the initial mapping process.

The prediction that the durative interpretation is problematic at the initial stages of feature reassembly is partially supported by the beginners' performance in the written comprehension task and the fill-in-the-blanks task. In the comprehension task, the beginners showed low correct mean responses with both the acceptance of the durative marker *zhe* (46%) and the rejection of the

progressive marker *zai* (32%) in durative contexts. Concerning the performance of the intermediate learners, they had high correct mean response rates (70%) in the acceptance of the durative marker *zhe*, but low correct mean rejection rates with the progressive marker *zai* (47%). Significant differences between the beginners and the intermediates were attested both in the acceptance of the appropriate form and in the rejection of the inappropriate form. In the fill-in-the-blanks task, the beginners had low mean accuracy rates in the durative contexts (39%), while the performance of the intermediates (68%) was significantly higher than that of the beginners.

These findings suggest that the acquisition of a new semantic feature is difficult during the initial mapping process. Learners appeared to have initially mapped the durative meaning onto the progressive marker *zai* as they had considerable difficulties rejecting the progressive marker *zai* in the durative context. Learners' morphological competence with the durative marker *zhe* significantly improves with the increase of proficiency. However, the restructuring of this inappropriate mapping is not instantaneous as the intermediates learners still have difficulty rejecting the inappropriate form.

The prediction that the durative interpretation is more problematic than the continuous interpretation at the initial mapping process is partially supported by the beginners' performance in the Sentence-Context-Preference-Matching task. In this task, the beginners did significantly better in the continuous contexts than in the durative contexts, both in the acceptance of the correct form and rejection of the incorrect form. Meanwhile, the durative interpretation is not found to be more problematic than the progressive and habitual interpretations. The beginner did significantly better in the durative contexts than in the progressive contexts in both tasks. These results show that although the acquisition of a new feature presents difficulties at the initial mapping process, it is not necessarily more problematic than the task of mapping existing features onto new lexical items with different configurations in the L2.

The present study is one of the very few studies which explores the acquisition of a new feature not instantiated in the L1 at the initial stages of feature reassembly. For instance, Tuniyan (2018) found that L1 Russian and L1 Chinese learners of English were able to acquire a new feature constraint of definiteness from the intermediate level.

The results concerning L1 Spanish-L2 Chinese learners' acquisition of the durative interpretation of the marker *zhe* are in contrast with the proposals from the Representational Deficit approach

(Eubank, 1993, 1994; Beck, 1998; Hawkins and Chan 1997; Hawkins and Liszka, 2003), which hypothesizes that formal features which are present in the L2 but not selected by the L1 would not be attainable in L2 acquisition. These results are in line with the arguments from the Interpretability Hypothesis (Hawkins and Hattori, 2006; Tsimpli and Dimitrakopoulou, 2007) that interpretable features are acquirable. In addition, L1 Spanish-L2 Chinese Learners' difficulty acquiring the 'durative' meaning at the initial mapping process and improvement in the interpretation of the meaning at the reassembly process provides evidence to the FR that any breakdown in the mental representations of features will not be permanent, and any detectable feature contrast is ultimately attainable.

White (2009) argues that the acquisition of a new feature can be regarded as a special case for feature reassembly. L1 Spanish-L2 Chinese learners' performance with the durative interpretation shows that acquiring a new feature not instantiated in the L1 is not necessarily more difficult than acquiring new morpholexical configurations of features selected by the L1.

6.2.4 The role of input

As both of the two types of learners in this study were classroom learners, the learning behaviors were reflective of the role of instruction at the early stages of L2 acquisition (Salaberry, 1999). A review of the textbook syllabus of aspect morphology for L1 Chinese-L2 Spanish learners and L1 Spanish-L2 Chinese learners in Chapter 3 shows that the meaning and grammatical function of the perfective morpheme(s) are introduced much earlier than that of the imperfective morphemes. Early exposure to instruction plays a facilitative role in the appropriate initial mapping of the perfective marker *le* in Chinese and the Preterit in Spanish. It also contributes to the fact that perfective morphemes appear to be less difficult and acquired earlier than the imperfective morphemes for both types of learners.

The findings also reveal that reduced input can lead to defective morphological knowledge. L1 Spanish-L2 Chinese learners' difficulty of dissociating the 'perfective' meaning from the 'experiential' meaning is indicative of the fact that there is very limited coverage of the usage of the experiential marker *guo* in classroom instructions. The lack of input of the experiential marker *guo* leads to the delay in establishing mapping and reassembly. L1 Spanish-L2 Chinese learners' problem of distinguishing between the two imperfective markers could be attributed to a lack of clear instruction and practice in helping the learners establish the correct semantic contrast of the imperfective markers. Such analysis is consistent with Gabriel's (2009) argument that the

transparency of input cues plays a role in whether learners can overcome L1 transfer effect.

In addition, I discuss whether the non-transparent input for the experiential marker *guo* and the imperfective marker *zhe* and *zai* constitute a Poverty-of-the-Stimulus (PoS) situation. For child native learners, the PoS refers to the fact that the amount of linguistic input was inadequate to account for the ultimate attainment of the L1 linguistic knowledge (Chomsky, 1986). The PoS situation for non-native language acquisition involves acquiring the unacceptability of certain constraints that are neither initiated in the native language nor present in the input (Schwarts and Sprous, 2013).

The L1 Spanish-L2 Chinese learners have the learning task of establishing new form-meaning mappings of aspectual interpretations which are expressed by overt morphemes both in the L1 and L2 but with different configurations. Transfer from the native language provides cues that the aspectual interpretations are expressed by overt morphemes in the target languages. In this case, even there is not enough clear instruction dedicated to the grammatical rules of these markers, learners are able to make initial mappings of the aspectual interpretations onto aspectual markers resorting to alternative ways of L2 input, e.g., watching Chinese videos and films or having conversations with native speakers of Chinese. A corpus study with the aspectual markers in Chinese (Xiao and McEnery, 2004) demonstrates that the four aspectual markers are highly frequent in Chinese speakers' spoken discourse. Thus, learners of Chinese can hardly have a bankruptcy of stimulus of the aspectual markers. I argue that the acquisition of aspectual morphemes in Chinese for L1 Spanish speakers is not a Poverty-of-the-Stimulus situation.

6.2.5 The role of previously acquired language(s)

This section is dedicated to a discussion of how learners' previously acquired language(s) affect the acquisition of viewpoint aspect in Spanish and Chinese. Such discussion is included in order to explain L2 acquisition problems arising in the findings, which could not solely be explained by the role played by L1 transfer and the mismatch between the L1-L2 in the transparency of form-meaning mapping. For example, why the L1 Spanish-L2 Chinese learners have problems rejecting the perfective marker *le* in experiential contexts at the initial mapping process.

According to the data from the Background Questionnaire, the participants in the present study are, in fact, multilingual learners. Both types of participants in the present study have acquired one

or two languages in instructed settings prior to the acquisition of Chinese or Spanish. The L1 Spanish-L2 Chinese learners have acquired French with a self-accessed proficiency level of beginners to intermediates and English with a self-accessed proficiency level of intermediates to advanced. Meanwhile, the L1 Chinese-L2 Spanish learners have acquired English with a self-accessed proficiency level of intermediates. For the purpose of discussion, in this section, I will refer to the L1 Spanish-L2 Chinese learners as [L1 Spanish-L2 English/French-L3 Chinese] learners, while the L1 Chinese-L2 Spanish learners as the [L1 Chinese-L2 English-L3 Spanish] learners.

The term L3 acquisition, denoted as L3/Ln acquisition refers to the acquisition process of a learner who has acquired at least one foreign language (Hammarberg, 2001, 2009). Theoretical models on L3 transfer proposes that linguistic transfer can come from either L1 or L2, depending on the similarities or differences between the background languages and the target L3 languages (e.g. the Typological Primacy model by Rothman (2010, 2011, 2013, 2015); the Scalpel Model by Slabakova, (2016)). Recently, researchers propose that the Feature Reassembly (Lardiere, 2008, 2009a, b) could well be applied to make more precise predictions of the L3 behaviours. Slabakova (2012) applied four L2 acquisition hypotheses (the Feature Reassembly (Lardiere, 2007, 2008, 2009); the Bottleneck Hypothesis (Slabakova, 2009,2013); the Interpretability Hypothesis (Hawkins and Hattori, 2006; Tsimpli and Dimitrakopoulou, 2007); the Interface Hypothesis (Sorace, 2000, 2003)) into exploring the data found in four L3 acquisition studies. The examination of the data suggests that although none of the L2 proposals can fully account for L3 learners' behaviours, the main tenants of the Feature Reassembly can contribute to more detailed predictions of the learning difficulties in L3 acquisition. Clement (2017) adopted a feature-based account of the linguistic transfer for L3 acquisition of Chinese null and overt argument by L1 English-L2 Spanish-L3 Chinese learners [+SP] and L1 English-L2 (non-null subject language)-L3 Chinese [-SP] learners. Both Spanish and Chinese allow null subjects, and English and Chinese use overt subject in a similar way. The results show transfer from both L1 English (overt subject) and L2 Spanish (null subject), suggesting that transfer can occur from both the L1 and L2 depending on the specific linguistic property to be acquired.

In order to examine whether transfer from previously acquired language plays a role in causing the difficulties in the acquisition of Chinese viewpoint aspect by L1 Spanish learners and the acquisition of Spanish viewpoint aspect by L1 Chinese learners, I present a feature-based account of the realization of aspectual features in French and English.

- Viewpoint aspect in French and English

Similar to Spanish, French grammaticalizes viewpoint aspect by using overt morphemes. The perfective meaning is expressed by the *Passé Composé*: the use of the present tense of the verb *avoir* (to have) or *être* (to be) with the past participle form of the main verb, such as *given*, *finished* and *done* in English. Meanwhile, the *Passé Composé* also encodes present perfect interpretation. On the other hand, the imperfective meanings (progressive, habitual, continuous) are expressed by the *Imparfait* (Smith, 1996, Labeau, 2005, 2011; McManus, 2011, 2015). See example (43a-e) for the expression of aspectual meanings in French:

53) a. Marie **a couru** un kilometre. (**perfective**)
Marie ran-PC a kilometer
'Marie ran a kilometer.' (McManus, 2011)
b. Ils **ont répété** la piéce. (**present perfect**)
They have rehearsed-PC the play
'They have rehearsed the play.' (Smith, 1996)
c. La mer **était** calme. (**continuous**)
The sea was-IMP calm
'The sea was calm.' (McManus, 2011)
d. L'enfant **pleurait**. (**progressive**)
The child was crying-IMP
'The child was crying.' (McManus, 2011)
e. Jacques **jouait** au foot (chaque jeudi). (**habitual**)
Jacques played-IMP to football (every Thursday).
'Jacques used to play football.' (McManus, 2015)

English does not grammaticalize perfective/Imperfective distinctions. The simple past is an ambiguous form that expresses both perfective and Imperfective meanings (continuous, habitual) (Arche, 2014). The progressive meaning is expressed by *copula+ving* periphrasiss. Meanwhile, present perfect is expressed by the use of auxiliary (have)+past participle form of the verb. See example (44a-e) for the expression of aspectual meanings in English.

54) a.Marta was ill last Sunday. (**perfective**)
b.Marta was ill when I visited her. (**continuous**)
c. Marta used to sing in a choir. (**habitual**)
d. Marta was singing when we arrived. (**progressive**)
(examples from Domínguez et al. (2017))
e. Marta has watched the game. (**present perfect**)

Based on L3 acquisition models (Rothman, 2010, 2011, 2013, 2015; Slabakova, 2016) that assume linguistic transfer can come either from the L1 or L2, I argue that L2 transfer can affect the complexity of the learning task if there is a difference between the L1 and L2 in the form-meaning

mapping of an aspectual feature. In this case, when the aspectual form of the target language has the same configurations (e.g. same level of form-meaning mapping) as that of the closest equivalent form in the L2, the acquisition process will be facilitated. When the aspectual form of the target language has different configurations (e.g. same level of form-meaning mapping) with that of L2 morphelexical equivalent, the acquisition process will be more complicated. On the other hand, if an aspectual feature is realized by the same configurations in the L1 and L2, L2 transfer will not make a difference to the complexity of the learning task.

Next, I will discuss how L2 transfer can explain the learning problems faced by the two types of learners.

- L1 Spanish-L2 French/English-L3 Chinese learners

This section discusses how L1 Spanish learners of Chinese are likely to be affected by transfer from previously acquired languages: French and English.

Transfer from French

French and Spanish viewpoint aspect works in a similar way from a feature-based perspective in terms of the encoding of perfective/imperfective distinction. However, French and Spanish differ in the form-meaning mapping of perfective and present perfect. In Spanish, the perfective meaning and present perfect meaning are isolated and mapped onto separate forms, whereas in French, the perfective meaning and present perfect meaning are mapped together onto the *Passé Composé.* Meanwhile, in Chinese, the perfective meaning is expressed by the perfective marker *le*, while the present perfect (experiential) interpretation is expressed by the experiential marker *guo*.

Thus, I assume that transfer from French will not make a difference to the task of the acquisition of Chinese imperfective markers faced by L1 Spanish learners. The imperfective meanings (progressive, continuous, habitual) are expressed by the imperfective morphology in French and Spanish with the same configurations and the same level of transparency of form-meaning mappings. However, transfer from French will make a difference to the complexity of the learning task of aspectual interpretations which are expressed with different configurations between Spanish and French. The aspectual interpretations which are likely to be affected by transfer from French are perfective meaning encoded by the perfective marker *le* and experiential meaning encoded by the experiential marker *guo.* Applying the predictions of the Feature Reassembly

(Lardiere, 2008, 2009a, b) to L3 acquisition, learners will initially seek a correspondence between morpholexical items in the L3 to the closest equivalent forms in the L1 or L2. Considering the instructional sequence of the Chinese aspectual markers (that the perfective *le* is the first aspect marker introduced to the learners), I predict that learners will initially assume that the *Passé Composé* in L2 French is the closest equivalent form of the perfective marker *le* in L3 Chinese. Consequently, the learners will map the perfective and present perfect meaning encoded by the *Passé Composé* in L2 French onto the perfective marker *le* in L3 Chinese. In doing so, they will have problems rejecting the perfective marker *le* in the experiential contexts.

Results from the Sentence-Context-Preference-Matching task support this prediction. The beginners and intermediates had low correct rejection rates of the perfective marker *le* in experiential contexts (28%-33% for beginners, 27%-30% for intermediates). The difficulty of rejecting the perfective marker *le* in the experiential contexts is indicative of the fact that learners initially map the interpretations of the *Passé Composé* in L2 French: the perfective and present perfect onto the perfective marker *le in* L3 Chinese as a result of identifying the *Passé Composé* as the closet equivalent form of the perfective marker *le* in L3 Chinese guided by instructions. The fact that the problem of rejecting the perfective marker *le* persists till the intermediate level shows that the mismatch in the transparency of form-meaning mapping between L2 French and L3 Chinese delays the reconfiguration of non-target-like form-meaning mapping into target-like morphological configuration.

Thus, it can be argued that transfer from L2 French appeared to add to the complexity of the acquisition of the experiential aspectual reading in Chinese for L1 Spanish learners as a result of the difference between the L2 and L3 in the transparency of form-meaning mapping.

Transfer from English

Since all the L1 Spanish learners of Chinese have also acquired English prior to the acquisition of Chinese, I argue that transfer from English can affect the complexity of the learning task of acquiring Chinese viewpoint aspect by L1 Spanish learners. Unlike Spanish and Chinese that grammaticalize perfective/imperfective distinctions, English does not grammaticalize such distinction and has an ambiguous form—simple past which can express both perfective interpretation and imperfective interpretations: habitual and continuous. Crucially, the transparency of form-meaning mappings differs on the realizations of two imperfective interpretations (habitual and continuous) among L1 Spanish, L2 English, and L3 Chinese. While habitual and continuous are mapped together onto the

simple past which also expresses perfective in English, these two meanings are isolated and mapped onto separate forms in Chinese: habitual is expressed by temporal adverbials (e.g. *jingchang*), and continuous is expressed by the aspectual marker *zhe.* Thus, the initial stages of acquisition of the two meanings will be difficult since learners not only have to overcome the difference in the transparency of form-meaning mapping between L1 Spanish and L2 Chinese, but also have to overcome transfer from L2 English in rejecting the use of perfective morphology (perfective marker *le* and experiential marker *guo*) in habitual and continuous contexts.

Learners' performance in the Sentence-Context-Preference-Matching task indicates transfer from English. The beginners had problems rejecting the sentence with the perfective morphology (the marker *guo*) in habitual (26%) and continuous (53%) contexts. The intermediates performed significantly better than the beginners in rejecting the experiential interpretation in habitual contexts. In the continuous context, the problem of not being able to reject the experiential marker *guo* became more serious for intermediates level (48%) compared to that of the beginners, although the correct acceptance rate of the marker *zhe* (77%) in continuous contexts was significantly higher than that of the beginners (68%). Thus, the problem with the continuous and habitual interpretation supports the prediction that transfer from L2 English can add to the complexity of the learning task for L1 Spanish learners of Chinese.

- L1 Chinese-L2 English-L3 Spanish learners

For L1 Chinese learners of Spanish who have acquired English prior to the acquisition of Spanish, transfer from English can affect the complexity of the learning task of Spanish viewpoint aspect. As discussed in the previous section, the transparency of form-meaning mapping of the habitual and continuous interpretation differs in English, Spanish and Chinese. In English, the habitual and continuous interpretations are mapped onto the perfective morpheme (simple past). While in Spanish and Chinese, the imperfective meanings (progressive, continuous, habitual) are expressed by the imperfective morpheme(s).

Applying the predictions of FR to L3 acquisition, learners will initially map a morpholexical item in the L3 to the closest equivalent morpholexical items in the L1 or L2. I argue that the L1 Chinese-L2 English-L3 Spanish learners will initially assume that the simple past in L2 English is the closest equivalent form of the Preterit in L3 Spanish. Thus, affected by transfer from L2 English, learners will initially map the continuous and habitual interpretations encoded by the simple past in L2 English onto the Preterit. As a consequence, learners will have difficulties rejecting the Preterit in

continuous and habitual contexts.

As shown in the results, beginners' performance in the comprehension task provides partial evidence for this prediction. While the beginners did not have difficulty in accepting the Imperfect in habitual and continuous conditions, they had problems rejecting the Preterit in the habitual state contexts (51%) and continuous (51%) contexts. The difficulty of rejecting the Preterit in habitual and continuous contexts was mediated with the increase of proficiency as the intermediate learners did significantly better in the correct rejection of the Preterit in the habitual state (79%), habitual event (75%), and continuous (70%) contexts.

The performance of L1 Spanish-L2 English-L3 Chinese learners and L1 Chinese-L2 English-L3 Spanish learners suggests that both L1 and L2 can be a source of transfer for L3 acquisition. And the findings also show that L2 transfer can present obstacles for L3 acquisition when the transparency of form-meaning mapping of the linguistic properties differs between the L2 and L3. However, it is not clear from the results of the current study the extent of L2 transfer. According to the predictions on the effects of L2 transfer for both types of learners in the present study, learning English as an L2 will lead to the difficulty of dissociating the perfective meanings from the Imperfective form(s) in habitual and continuous contexts in L3 Chinese and in L3 Spanish. Although results from the Sentence-Context-Preference-Matching task indicate problems with the interpretation of habitual and continuous meanings, it is difficult to tell whether the problems are caused by transfer from both the L1 and L2 or only from L2. I argue that in the present study, the main source of transfer is L1, and L2 transfer plays a secondary role. Slabakova (2016) argues that L1 and L2 must have the same level of cognitive and epistemic status so as to be equally influential for the acquisition of the L3. In the present study, both types of learners are tested in their native-speaking countries: China and Spain, where Chinese and Spanish are the dominant languages. So, learners are more cognitively active in the linguistic knowledge of their native language in comparison to their L2(s). Also, the instruction and the contexts of the Sentence-Context-Preference-Matching task were provided to the learners in their native languages. Thus, learners were biased to tap into the linguistic representations of their native languages.

The proposal that L1 transfer plays a primary role at the initial stages of feature reassembly can be supported if we compare the learning behaviors of the L1 Chinese-L2 English-L3 Spanish learners in the present study to the L1 English-L2 Spanish learners in Domínguez et al.'s (2017) study. The present study uses the same comprehension task as the latter. In their study, the L1 English-L2

Spanish learners at the beginners level showed indeterminacy with all the imperfective contexts while the intermediates had difficulty rejecting the Preterit in the continuous and habitual contexts. In the present study, the L1 Chinese-L2 English-L3 Spanish learners at the beginners level performed quite well in accepting the correct options in all the imperfective contexts but had problems rejecting the Preterit in habitual and continuous contexts. Meanwhile, at the intermediates level, the L1 Chinese-L2 English-L3 Spanish learners in the present study were more accurate than the L1 English-L2 Spanish learners in Domínguez et al.'s (2017) study in the rejection of Preterit with habitual and continuous contexts. This comparison suggests that the transfer from English in the form-meaning mapping of aspectual features is much stronger for L1 English-L2 Spanish learners than for the L1 Chinese-L2 English-L3 Spanish learners.

6.3 Theoretical implications

The findings emerging from the present study have theoretical implications for the field of generative second language acquisition research and specifically feature reassembly research.

Consistent with predictions of the Feature Reassembly (Lardiere, 2008, 2009a, b) and Full Transfer (Schuwartz and Sprouse, 1994, 1996), results from the study show that at the initial stages of L2 development, learners transfer the way form-meaning mapping is realized in the L1. The effect of L1 transfer is visible in the initial mapping process: the beginners are strongly influenced by the way form-meaning mapping is realized in the L1. In the reassembly process, there is evidence of reconfiguration and reassembly of the initial non-target-like mapping constrained by the L1, as shown by the significant difference between the intermediates and beginners on the morphological knowledge of some viewpoint aspectual features. However, the extent of recovery from L1 transfer varies among different aspectual features in the reassembly process. This finding provides supports to White's (2007) claim that some linguistic properties may receive a more persistent L1 effect than others.

Meanwhile, the findings also show that the acquisition task of aspectual interpretations in L2 Chinese and L2 Spanish do not receive the same level of complexity at the initial stages of feature mapping and feature reassembly. Such results correspond to Slabakova's (2009) proposal that different types of morpholexical configuration can lead to different acquisition challenges for L2 learners. Overall, the findings implicate that a few factors conspire to determine the extent of L1

transfer and the complexity of the learning task at the early stages of L2 feature mapping and feature reassembly.

In line with predictions of Feature Reassembly, results from the study show that at the initial stages of feature reassembly, learners are guided by similarities in meaning and grammatical function in identifying the closest equivalent morpholexical correspondence in the L1. Results from the empirical study of both types of learners show that morpholexical forms in the L2 which have similar meanings and grammatical functions to the closet equivalent morpholexical items in the L1 tend to be easy at the initial stages of feature reassembly as illustrated by the performance with the interpretation of the perfective marker *le* by L1 Spanish-L2 Chinese learners and the Preterit by L1 Chinese-L2 Spanish learners.

While the results indicate that similarities between L1 and L2 in semantic meaning and grammatical function facilitate learning, the findings of the present study also reveal that differences between the L1 and L2 in the transparency of form-meaning cause difficulties at the initial stages of feature reassembly. The mismatch in the complexity of form-meaning correlations between the L1 and L2 requires the learners to reassemble the initial non-target-like mapping (as a result of L1 transfer) so as to accommodate target grammar. The complexity of this learning task is demonstrated by L1 Spanish-L2 Chinese learners' difficulty with the interpretation of the experiential marker *guo* and the Imperfective forms (*zai*, *zhe*, *jingchang*) in Chinese, as well as L1 Chinese-L2 Spanish learners' difficulty with the interpretation of the Present Perfect and the Imperfect in Spanish.

In addition, the results are in line with the view that acquisition of functional morphology plays an important role in determining the level of difficulty in L2 acquisition (Slabakova, 2009, 2013), and the acquisition of new morpholexical forms in the L2 precedes the acquisition of new mappings (Domínguez et al., 2017). In the present study, the learning task appeared to be more difficult for L1 Spanish-L2 Chinese, as a result of the fact that there are more new morphological forms to be acquired in L2 Chinese than in L2 Spanish, which leads to more complex remapping and reassembly task.

Contrary to arguments of the Representational Deficit Hypotheses (Eubank, 1993, 1994; Beck, 1998; Hawkins and Chan 1997; Hawkins and Liszka, 2003) which propose that abstract morphosyntactic features of the L2 which do not share the same parametric settings of that of the L1 cannot be acquired in L2 acquisition, results from the present study support the proposals that interpretable

features are acquirable in L2 acquisition (Hawkins and Hattori, 2006; Tsimpli and Dimitrakopoulou, 2007) and that any detectable feature contrast is ultimately attainable (Lardiere, 2008, 2009). As shown from the findings of the study, the acquisition of a new feature—the durative interpretation in the L2 Chinese by L1 Spanish learners is difficult but learnable at the initial stages of feature reassembly. L1 Spanish-L2 Chinese learners had non-target-like representations with the durative interpretation encoded by the marker *zhe* at the initial mapping process. However, the learning task of acquiring a new feature not instantiated in the L1 is not necessarily more difficult than the task of mapping existing features onto new L2 items with different configurations. Learners are able to reconfigure the non-target-like form-meaning of the new feature with the increase of proficiency.

Findings from the study also support the view of Missing Surface Inflection Hypothesis (Haznedar and Schwartz, 1997; Prévost and White, 2000) and Syntax before Morphology (White, 2003; Lardiere, 1998a,b) that divergence in L2 grammar is not caused by the deficiency in morphosyntactic features but instead comes from the difficulty in mapping abstract features to functional morphemes. The discrepancy in the results from the Sentence-Context-Preference-Matching task and the fill-in-the-blanks task in the acquisition of the perfective marker *le* by L1 Spanish-L2 Chinese learners and the acquisition of the Preterit by L1 Chinese-L2 Spanish learners reveals learners' knowledge of the abstract morphosyntactic features and problems of mapping the features onto functional morphemes.

In terms of the role played by input at the initial stages of feature reassembly, two relevant factors are attested. First, the sequence of classroom instruction plays a role. Early exposure to a grammatical form (for instance, the Preterit in L2 Spanish) guides the learners to map this form to a closest equivalent form in the L1 (e.g. perfective marker *le* in L1 Chinese). Second, the quality of classroom instruction. The Poverty-of-the-Stimulus situation on the meaning and usages of grammatical forms (e.g. the experiential marker *guo* in L2 Chinese) impedes restructuring from non-target-like form-meaning mapping. Clear and transparent instruction is needed in order to help learners construct appropriate L2 knowledge.

Regarding the role played by previously acquired language knowledge, I argue that since the dominant language for the two types of learners in the present study is their native language, L1 is the main source of transfer at the initial stages of feature reassembly, supporting the view that an important factor of transfer is the cognitive and epistemic status of the previously acquired language (Slabakova, 2016). However, transfer from the previously acquired language(s) can

complicate the learning task when the morpholexical configurations of the L2 (s) (e.g. the transparency of form-meaning mappings) differ from that in the L1 and the target languages. Such results support the argument by Slabakova(2012) that both the L1 and L2 can be a source of transfer and essential difficulties come from the syntax-semantic mismatches between the previously acquired languages (L1/L2) and the target language as predicted by the Feature Reassembly.

To summarize, findings of the present study are consistent with the predictions of the Feature Reassembly (Lardiere, 2008, 2009a; Hwang and Lardiere, 2013) that prior language knowledge (L1 influence) plays a constraining role in L2 acquisition and reassembling features which are realized differently between the L1 and L2 is problematic. In addition, the results of the present study bring new insights to the Feature Reassembly that a number of factors work in concert in determining the complexity of the learning task and the extent to which learners are able to recover from L1 transfer at the initial stages of L2 acquisition.

6.4 Pedagogical implications

Findings from the present study also have some implications for language teaching practices.

The generative approach to SLA research is devoted to examining the cognitive process of establishing mental representations of linguistic properties in the second language (White, 1989, 2003). Although the main agendas of GenSLA research do not involve teaching, GenSLA research can have important implications for language teaching practices (Whong et al., 2013). In reviewing articles on how GenSLA theories and findings can be applied to language classrooms, Whong et al. (2013) suggest that an understanding of theoretical principles will facilitate classroom instruction on the complex linguistic phenomena.

Thus, second language acquisition theories which provide testable predictions on the L2 learning task, such as the Feature Reassembly (Lardiere, 2008, 2009a, b), can inform language pedagogy. I argue that the results of the current thesis, which aims to provide a refined account of the acquisition of features at the syntax-semantics interfaces at the initial stages of feature reassembly, can have direct applications to language pedagogy.

Results from this study suggest that at the initial stages of L2 acquisition, the linguistic properties to be acquired lead to different levels of learning difficulty. Learning an L2 morpholexical form,

which has a closest equivalent morpholexical form in the L1 with similar meanings and grammatical functions, is easy at the initial stages of acquisition. Meanwhile, the feature which has different levels of transparency in form-meaning mapping between the L1 and L2 can cause learning difficulties. Results also show that learners have difficulty distinguishing between two aspectual forms. For instance, the L1 Spanish-L2 Chinese learners have difficulty in telling apart the difference between the durative marker *zhe* and progressive marker *zai*.

These results suggest that teachers should be aware of the similarities and differences in the realization of form-meaning mappings in the L1 and L2 and understand which morpholexical items are more problematic than the others for L2 acquires and why they are difficult (Lardiere, 2012; Slabakova, 2013). Difficult linguistic properties should be introduced in language classrooms in an abundant, meaningful context (Slabakova, 2008, 2013) and should receive adequate practices in the language classroom (Slabakova, 2014). Specific to the pedagogy of viewpoint aspect in L2 language classrooms, the distinction between two aspectual forms should be highlighted at the initial stages of learning, with not only positive evidence of the meaning and grammatical function but also negative evidence. For example, L1 Spanish-L2 Chinese learners need some negative evidence of ill-formed sentences in which the progressive marker *zai* is applied to a context that expresses durative interpretation. This can help learners understand why a particular aspectual form (e.g. progressive marker *zai*) is incompatible with another aspectual interpretation (e.g. durative) encoded by a different aspectual form (e.g. durative marker *zhe*).

Chapter 7 Conclusions

7.1 Conclusion of the study

The thesis examines the L2 learnability problems of features at the syntax and semantics interface. To be specific, the thesis explores what factors affect the extent of L1 influence and the complexity of the learning task in reassembly aspectual features onto L2 morpholexical items at the initial stages of L2 acquisition by conducting a bidirectional study by L1 Spanish-L2 Chinese learners and L1 Chinese-L2 Spanish learners.

In introducing the theoretical background of the thesis, I have discussed that features (phonological, syntactic, semantic) and the way they are mapped onto lexical items of each language are at the core of cross-linguistic variation (Chomsky, 1995, 1998, 2001, 2004, 2007). In Chapter 2, I presented a review of the development of the theoretical account on the cause of divergence in L2 grammar within the generative approach to L2 acquisition, illustrating that L2 learnability problems are not considered to be caused by the need of resetting a parameter or the selection of features not instantiated in the L1, but the need of reassembling features which exist both in the L1 and L2 but are mapped onto new morpholexical items in the L2 with different configurations (Lardiere, 2008, 2009a,b).

The current thesis approaches the L2 learnability problem from two dimensions: First, based on syntax and semantics literature, Chapter 3 is dedicated to a definition of viewpoint aspect and how they are expressed in languages under investigation in this study (Chinese and Spanish) based on the Referential Approach to Tense and Aspect (Arche, 2006; Arche, 2014; Demirdache and Uribe-Etxebarria 2000, 2014; Klein 1994; Stowell, 1993, 1996, 2007; Sun, 2014; Zagona, 1990;). Second, Chapter 4 formulates the exact learning task and predictions of the acquisition of viewpoint aspect by adopting a feature-based contrastive approach to L2 acquisition (Feature-Reassembly (Lardiere, 2008, 2009a,b)) as well as the proposals on the role of transparency of form-meaning mapping in L2 acquisition (Dekeyser, 2005; Slabakova, 2015).

The bidirectional investigation on the Chinese-Spanish language combination in this thesis contributes to a more refined account of the conditions which determine the extent of L1 transfer and the complexity of the learning task at the initial stages of feature reassembly in L2 acquisition.

Consistent with the main tenets of FR (Lardiere, 2008, 2009a, b) findings of the study provide evidence that L1 is the basis for comparison for L2 acquisition at the initial stages of feature mapping and reassembly. Learners initially identify a morpholexical item in the L1 as a closest equivalent morpholexical item in the L2 based on similarities in semantic meaning and grammatical function. Difficulty in L2 acquisition arises from the need to reassemble features from the way these are realized by morpholexical items in the L1 onto new lexical items with different configurations in the L2.

Results of the study highlight the role played by the transparency of form-meaning mapping in L2 acquisition as proposed by Dekeyser (2005) and Slabakova (2015). Evidence from both empirical studies shows that discrepancy between the L1 and L2 in the transparency of form-meaning mapping impedes acquisition at the initial stages of feature reassembly. In discussing both learner groups' problems with the comprehension of imperfective aspectual readings, I argue that the difficulties caused by differences between Chinese and Spanish in the transparency of form-meaning mapping of the realization of imperfective meanings override the possible edge given by the fact that both languages use overt morphemes to express perfective/imperfective aspectual distinctions.

The fact that the learning patterns of the L1 Spanish-L2 Chinese learners and the L1 Chinese-L2 Spanish learners are asymmetrical at the initial stages of feature reassembly suggests that properties of both the native language and target languages affect the complexity of remapping tasks faced by learners. The added difficulty faced by L1 Spanish-L2 Chinese learners is attributed to the fact the there are more aspect-related morphemes to be acquired in L2 Chinese. Learners have to acquire the functional morphemes before establishing the syntax and semantics (Slabakova, 2009).

The findings of the study also provide evidence for a learning situation not specified by the predictions of Feature Reassembly—the acquisition of a new semantic feature in the L2. As demonstrated by L1 Spanish-L2 Chinese learners' performance with the durative aspectual reading encoded by the marker *zhe,* acquisition of a new semantic feature is problematic at the initial mapping process. However, learners' knowledge of the new semantic feature improved in the reassembly process with increased input and practices.

In addition, the findings of the study also shed light on the potential role played by L2 input and

previously acquired languages at the initial stages of feature reassembly. Overall, the findings in the present study advance our understanding of the factors that affect the extent of L1 transfer and the complexity of the learning task at the initial stages of feature reassembly in the L2 acquisition of features at the syntax-semantics interface.

7.2 Limitations and suggestions for future research

This section discusses the possible limitations of the study and suggestions for future research. Recall that the methods employed in this study include a sentence interpretation task (Sentence-Context-Preference-Matching task) and a controlled-elicitation task (fill-in-the-blanks task) with the aim of assessing whether learners have assigned correct interpretations to aspectual forms (see chapter 4 for details). However, the methodology of the present study does not include spontaneous production tasks. Myles (2004:139) argues that production data is 'an important window into their (L2 learners) mental representations.' This is especially the case for oral production data than for written production data, as oral production data is freer of metalinguistic interference and monitoring than written data. In order to have a better understanding of the nature of learners' metalinguistic knowledge of aspectual forms at the initial stages of feature reassembly, future studies should combine the use of interpretation task, controlled-elicitation task, and spontaneous oral production task.

The second limitation of the study concerns the fact that the present study only collected information about the proficiency level of learners' previously acquired languages on a self-assessed basis instead of administering a proficiency test. There might be a gap between learners' self-accessed proficiency level and the actual proficiency level of the previously acquired languages at the time of testing. In order to have a better understanding of the extent to which learners' previously acquired languages can affect the acquisition of the target language, future research should include a proficiency test of previously acquired languages.

On a suggestive note, an interesting direction for future research would be expanding the bidirectional study and investigate the acquisition of viewpoint aspect in L2 Spanish and L2 Chinese by English native speakers. Since English does not grammaticalize perfective/Imperfective distinctions while Spanish and Chinese use overt morphemes to mark grammatical distinctions, an additional investigation of English learners' acquisition of viewpoint aspect in L2 Chinese and L2

Spanish will reveal whether the learning task of reassembly features from an L1 (e.g. English) which does not grammaticalize aspectual distinctions onto an L2 (e.g. Chinese) which grammaticalizes aspectual distinctions will be more difficult than that when both the L1 (e.g. Spanish) and L2 (e.g. Chinese) grammaticalize aspectual distinctions. I argue that such investigation will further our current understanding of the role of the transparency of form-meaning mapping in L2 acquisition.

Appendix A Background questionnaire

About you

1.Your name:

(for administrative purposes only, you will remain anonymous in this study)

2. Gender: F/M/or prefer not to say

3. Year of birth:

4. Place of birth:

5. Occupation:

6. Highest qualification held: secondary/college/university

About your languages

7. Which language(s) would you consider to be your first, or native, language(s) (the language(s) you grew up speaking at home from birth):

8. Which other language(s) do you speak (second or foreign languages)? For each language, please give an indication of proficiency (beginner/intermediate/advanced).

9.Of these second/foreign languages, which did you learn at up to or including secondary school? (Educación Secundaria Obligatoria or equivalent)

10. Approximately how many hours per week do you estimate you spent learning each of these languages at the secondary school level?

11. Of these second/foreign languages, which did you learn at up to or including upper secondary school level? (Bachillerato or equivalent)

12. Approximately how many hours per week do you estimate you spent learning each of these languages at the upper secondary school level?

13. Of these second/foreign languages, which do you currently study at the university level?

14. Approximately how many hours per week do you estimate you spend learning each of these languages at the university level?

Appendix B Fill-in-the-blanks task for L1 Spanish-L2 Chinese learners

Instruction[2]

Please fill-in one of the following characters in each blank: "了 *le*", "过 *guo*", "着 *zhe*", "在 *zai*", 经常 *jingchang*.

(*pinyin* and necessary translations are given. You can write either in Chinese characters or *pinyin*.)

For example:

菜单上写_着_每个菜的价钱

Càidān shàng xiě _zhe_měi gè cài de jiàqián.

1. 我昨天去拜访了李老师，他当时在英国南安普顿大学的办公室里。 墙上挂 _着_两幅中国画。 沙发上坐_着__几个学生_在_和李老师聊天儿。学生们去_过__中国。 他们在北京爬__了__长城。 李老师说他以前在北京住_过__一年。
   Wǒ zuótián qù bài fǎng le Lǐ lǎoshī, tā dǎngshízài Yīngguó Nánānpǔdùn dàxué de bàngōngshì lǐ. Qiáng shàng guà **_zhe_** liǎng fú zhōngguó huà. Shāfā shàng zuò **_zhe_** jǐgè xuéshēng _ **zài** _ hé Lǐ Lǎoshī liáotiǎn'r. Xuéshēng men qù _ **guò**_ zhōnguó. Tā men zài Běijīng pá _le_ ChángChéng. Lǐ Lǎoshǐ shuō tā yǐqiaán zài Běijīng zhù _ **guò**_ yìnián.

   (Yesterday I went to visit Mr Li at his office at the University of Southampton in the UK. There were two Chinese paintings hanging on the wall. There were some students sitting on the sofa chatting with Mr Li. These students have been to China. They climbed the Great Wall in Beijing. Mr Li has lived in Beijing for a year.)

2. 昨天她哭_着_打电话给我的时候，我_在_看小说。
   Zuótiān tā kū_ **zhe** _ dǎ diànhuà gěi wǒ de shíhou, wǒ_ **zài** _ kàn xiǎoshuō.

   (Yesterday, when she was talking to me on the phone and crying, I was reading a novel.)

3. 小明上高中的时候，是个很努力的学生。为了考出好成绩，他_经常_复习课堂笔记。Xiǎo míng shàng gāozhōng de shíhòu, shì gè hěn nǔlì de xuéshēng . Wèi le kǎo chū hǎo chéngjì, tā **_jīngcháng** _ fùxí kètáng bǐjì.
   (When Xiaoming was in Highschool, he was a very hardworking student. In order to have a good grade, he used to review class notes.)

4. 去年王爷爷退休后，跟_着_老师练习了好几个月的书法。昨天我去他家的时候，

[2] The instruction for L1 Chinese-L2 Spanish learners and for L1 Spanish-L2 Chinese learners was provided in the learners' L1.

看到他_在_写书法。

Qù nián wáng yé yé tuì xiū hòu , gēn zhe lǎoshī liànxí le hǎo jǐ gè yuè de shūfǎ. Zuó tiān wǒ qù tā jiā de shí hòu, kàn dào tā **_zài** _xiě shū fǎ.

(After Mr Wang retired last year, he practiced calligraphy for a few months following the teachers' instructions. When I went to visit him yesterday, I saw him writing calligraphy.)

5. 昨天的体育课上，高年级的同学_在_打篮球；而低年级的同学正拿_着_球拍练习乒乓球。

Zuótiān de tǐyù kè shang, gāo niánjí de tóngxué **_zài_** dǎ lánqiú; er dī niánjí de tóng xué zhèng ná **_ zhe** _ qiúpāi liànxí pīngpāng qiú.

(Yesterday at the PE class, the senior students were playing basketball, while the Junior students were playing Ping-Pong with rackets in their hands)

6. 这台空调从购买至今，从没出__ 任何问题。

Zhè tái kōngtiáo cóng gòumǎi zhì jīn, cóng méi chū **_guò__** rènhé wèntí.

(This air conditioner has never had any problem since it was purchased.)

7. 他是个登山爱好者。他爬__最高的山是珠穆朗玛峰。
Tā shì gè dēng shān ài hào zhě. Tā pá **_ guò**_zuì gāo de shān shì zhūmùlǎngmǎ Fēng.

(He likes mountain climbing. The highest mountain he has climbed is Mount Everest)

8. 我从来没有相信__迷信。
Wǒ cóngméi xiāngxìn **_guò__** míxìn

(I have never believed in superstition.)

9. 这个房子很好，附近环境也不错。这是我住_过_最好的房子。
Zhè gè fángzi hěn hǎo , fù jìn huán jìng yě bú cuò. Zhè shì wǒ zhù **_guò**_zuì hǎo de fángzi.

(This house has a nice surrounding environment. This is the best house I have ever lived in.)

10. 昨天我上网查_了_一下，发现只有国家图书馆有这本词典。
Zuótiān wǒ shàngwǎng chá **_le_** yíxià, fáxiàn zhǐ yǒu guójiā túshūguǎn yǒu zhè běn cí diǎn.

(Yesterday, I searched for this dictionary online and found only the National Library has a copy.)

11. 今天早上我去上班的时候，走到一半发现没带手机。于是我跑_着_回了趟家。

Jīntiān zǎoshàng wǒ qù shàngbān de shíhòu , zǒu dào yī bàn fā xiàn méi dài shǒujī. Yú shì wǒ pǎo _zhe _huí le tàng jiā.

(On the way to work this morning, I realized I did not bring the cellphone with me, so I ran back home.

12. 玛利亚在大学期间，对中国文化的了解越来越多。这跟她_经常_看中文报纸和电影有很大关系。
Mǎ lì yà zài dàxué qījiān ，duì zhōngguó wénhuà de liǎo jiě yuè lái yuè duō.
Zhè gēn tā **_jīngcháng_** kàn zhōngwén bàozhǐ hé diànyǐng yǒu hěndà guānxì 。

(When Maria was in University, she became more and more familiar with Chinese culture. This is largely because of the fact that she used to read Chinese newspapers and watch Chinese films.)

13. 他年轻的时候_经常_跑步，打球。现在他虽然年纪大了，但是还是坚持每天锻炼。
Tā niánqīng de shíhòu **_jīng cháng** _pǎobù, dǎqiú. Xiànzài tā suīrán niánjì dà le, dànshì hái shì jiānchí měitiān duànliàn.

(When he was young, he used to go jogging and play basketball. Although he is an elderly man now, he keeps doing a workout every day.

14. 我刚到家的时候，桌上放__两个杯子，杯子里有茶。
Wǒ gāng dào jiā de shíhou, zhuō shàng fàng _ **zhe** _ liǎng gè bēizi, bēizi lǐ yoǔ chá.

(When I arrived home, there were two cups of tea on the table.)

15. 两年前周洁刚出国留学时，总是想__让别人帮她。后来她慢慢学会了自己独立解决事情。
liǎngnián qián zhōujié gāng chūguó liúxué shí, zǒngshì xiǎng **_zhe** _ràng biérén bāng tā.
Hòulái tā màn màn xuéhuì le zìjǐ dúlì jiějué shìqíng.

(When Zhoujie first started studying abroad, she always thought about receiving help from other people. Later on, she has gradually learned to solve problems independently.)

16. 昨天早饭后，小吴就在地铁站等_着_。
Zuótiān zǎofàn hòu, Xiǎowú jiù zài dìtiězhàn děng _ **zhe** _ .

(Xiaowu waited at the underground station after breakfast yesterday.

17. 上个星期，公园的花都开_了_，颜色很漂亮。昨天我去公园的时候，看到很多小朋友_在_画这些花。
Shàng gè xīngqī, gōngyuán de huā dōu kāi **_le** _, yánsè hěn piāoliàng . Zuótiān wǒ qù gōngyuán de shhòu, kàndào hěnduō xiǎopéngyǒu **_zài** _ huà zhèxiē huā.

(Last week, the flowers in the park blossomed with beautiful colors. When I went to the park yesterday, I saw many children were drawing these flowers.)

18. 小丽跳舞跳得很好，她去年参加 _了_5 场舞蹈比赛，没有输 _过_任何一场。

Xiǎolì tiàowǔ tiào dé hěnhǎo , tā qùnián cānjiā **_le** _ wǔ chǎng wǔdǎo bǐsài, méiyǒu shū **_guò** _rènhé yìchǎng .

(Xiaoli is very good at dancing. She took part in five dancing competitions last year, and she has not lost any one of the competitions.)

19. 小萍上个星期很难过，因为她相信_了_不该相信的人。
Xiǎopíng shànggè xīngqī hěn nánguò, yīnwéi tā xiàngxìn **_le_** bù gāi xiāngxìn de rén.

(Xiaoping was very upset last week because she trusted someone whom she should not has trusted.)

Appendix C Sentence-Context-Preference-Matching task for L1 Spanish-L2 Chinese learners

Instruction:
In this section, you will be given 30 contexts in Chinese/Spanish. Each context is followed by two Chinese sentences. Please rate the sentences according to the appropriateness in this context with the 5 points: (*-2 Completely Inappropriate; -1 Inappropriate; 0 Not Sure; 1 Appropriate and +2 Completely appropriate.*)

1. Xiaoming solía tener que ir al trabajo andando. Después de obtener su permiso de conducir, se hizo un regalo para poder ir al trabajo más fácilmente.
   (Xiaoming used to have to walk to work. After he received his driving license, he bought himself a gift in order to make it more convenient for him to go to work.)

   - 小明有了一辆新车。
     Xiǎomíng yǒu le yī liàng xīn chē.
     (XiaoMing had a new car.)
   - 小明有过一辆新车。
     Xiǎomíng yǒu guò yī liàng xīn chē.
     (Xiaoming has had a new car)

2. El septiembre pasado, Wenwen terminó su doctorado. Decidió que se daría un mes de vacaciones y no haría mucho trabajo académico aunque todavía venía a la universidad todos los días.
   (Last September, Wenwen completed her doctorate. She decided that she would give herself a month off and not engage in much academic work even though she still came into the university every day.)

   - 去年整个十月，雯雯放松了她的学业。
     Qùnián zhěng gè shíyuè, wénwén fàngsōng le tā de xuéyè 。
     (Last October, Wenwen relaxed her academic work.)
   - 去年整个十月，雯雯放松过她的学业。
     Qùnián zhěng gè shíyuè, wénwén fàngsōng guò tā de xuéyè
     (Last October, Wenwen has relaxed her academic work.)

3. Después de una semana de vacaciones durante la navidad, hoy los estudiantes pueden entrar a la biblioteca que vuelve a abrirse 24 horas otra vez.
   (After a week of closure during Christmas, today, students have access to the library, which is open for 24 hours again.)

- 今天，图书馆的门开了。
  Jīntiān, túshūguǎn de mén kāi le.
  (Today, the door to the library was open.)
- 今天，图书馆的门开过。
  Jīntiān, túshūguǎn de mén kāi guò.
  (Today, the door to the library has been open.)

4. El Dr. Wang está en estos momentos en una conferencia de tres días en Shanghai. Le encanta viajar a lugares nuevos.
   (Dr Wang is currently attending a three-day conference in Shanghai. He always loves traveling to new places.)

   - 王博士去了上海。
     Wáng bóshì qù le shànghǎi.
     (Dr Wang went to Shanghai.)
   - 王博士去过上海。
     Wáng bóshì qù guò shànghǎi.
     (Dr Wang has been to Shanghai.)

5. Desde que se graduó hasta hace poco, Zhaoliang ha sido un presentador de televisión. Ahora Zhaoliang ya no es presentador. Le encanta ayudar a alumnos a conseguir sus sueños.
   (From graduation until recently, Zhaoliang used to be a broadcaster. Now Zhaoliang is no longer a broadcaster. He really enjoys helping students getting closer to their dreams.

   - 赵亮当了老师。
     Zhàoliàng dāng le lǎoshī.
     (Zhaoliang became a teacher.)
   - 赵亮当过老师。
     Zhàoliàng dāng guò lǎoshī.
     (Zhaoliang has been a teacher.)

6. Xiao Chen nunca ha tenido antecedentes criminales. Sin embargo, ayer se le declaró culpable de homicidio.
   (Xiao Chen has never had a criminal record. However, yesterday he was found guilty of murder.)

   - 小陈进了监狱。
     Xiǎochén jìn le jiānyù.
     (Xiao Chen went to jail.)
   - 小陈进过监狱。
     Xiǎochén jìn guò jiānyù.
     (Xiao Chen has been in jail.)

7. En la casa del Sr Li había un famoso cuadro de Van Gogh que ahora está en una exhibición de la Galería Nacional.
   (In Mr Li's home, there used to be a very famous Van Gogh painting, which is now on exhibition at the National Gallery.)

- 李先生的房间挂过一幅梵高的画。
  Lǐ xiānshēng de fángjiān guà guò yīfú fàngāo de huà.
  (There has been a painting of Vangogh hanging in Mr Li's room.)
- 李先生的房间里挂了一副梵高的画。
  Lǐ xiānshēng de fángjiān guà le yīfú fàngāo de huà.
  (A painting of VanGagh hung in Mr Li's room)

8. La familia Jiang eran mis vecinos. Hace un año, esta familia se trasladó a otra ciudad.
   (The Jiang family used to be my neighbours. A year ago, this family moved away to another city.)

   - 在我隔壁住了江先生一家人。
     Zài wǒ gébì zhù le jiāng xiānshēng yī jiā rén.
     (The Jiang family lived next door to my house.)
   - 在我隔壁住过江先生一家人。
     Zài wǒ gé bì zhù guò jiāng xiān shēng yī jiā rén.
     (The Jiang family has lived next door to my house.)

9. Hace unos años Ruirui hizo su Masters en el Reino Unido. Durante aquel tiempo, se lo pasó muy bien en la Universidad y conoció a mucha gente de varias culturas. Ahora trabaja en un instituto de educación en China.
   (A few years ago, Ruirui completed her Master's degree in the UK. At that time, she really enjoyed being on campus and making friends with people from different cultures. She is now working in an educational institute in China.)

   - 她有过一段在英国的快乐学习时光。
     Tā yǒu guò yīduàn zài yīngguó de kuàilè xuéxí shíguāng.
     (She has had a happy time studying in the UK.)
   - 她有了一段在英国的快乐学习时光。
     Tā yǒu le yīduàn zài yīngguó de kuàilè xuéxí shíguāng.
     (She had a happy time studying in the UK.)

10. Al profesor Liu le encanta viajar a ciudades nuevas. Acaba de volver de una conferencia de tres días en Shanghai.
    (Professor Liu always loves traveling to new cities. She has just returned from a three-day conference in Shanghai.)

    - 刘教授去过上海。
      Liú jiāoshòu qù guò shànghǎi.
      (Professor Liu has been to Shanghai.)
    - 刘教授去了上海。
      liú jiāo shòu qù le shàng hǎi.
      (Professor Liu went to Shanghai.)

11. Hace poco que Tim ha dejado su carrera como periodista de la BBC en Londres. Ahora ha empezado una vida nueva en Edinburgo.
(Recently, Tim has said farewell to his career as a BBC journalist in London. Now he has started a new life in Edinburgh.)

    - 蒂姆在伦敦工作过。
      Tim zài lúndūn gōngzuò guò.
      (Tim has worked in London.)
    - 蒂姆在伦敦工作了。
      Tim zài lún dūn gōng zuò le.
      (Tim worked in London.)

12. Wanglong es un bailarín profesional. En una competición de baile, se cayó del escenario y se hirió la pierna. No fue hasta hace un año que pudo volver a un escenario y pudo bailar como antes.
(Wanglong is a professional dancer. In a dancing competition he fell down from the stage, and his leg was seriously injured. It was not until a year ago that he was able to stand on the stage again and danced as he did in the past.)

    - 王龙摔断过腿。
      Wáng lóng shuāi duàn guò tuǐ.
      (Wanglong has broken his leg.)
    - 王龙摔断了腿。
      Wáng lóng shuāi duàn guò tuǐ.
      (Wanglong broke his leg.)

13. En un reality show, la actriz principal Xiaonan tuvo que llevar un cubo de agua a mil kilómetros de distancia. Cuando estaba a punto de empezar su marido vino a ayudarla. Lo vio agacharse, coger el asa del cubo y levantarse despacio.
(In a reality show, the movie star Xiaonan was challenged to move a bucket of water a thousand miles away. As soon as she was about to start, her husband came to help. She saw him squat down, grabbing the handle of the bucket and standing up slowly.)

    - 当小楠准备出发时，她的丈夫在提水桶。
      Dāng xiǎonán zhǔnbèi chūfā shí, tā de zhàngfū zài tí shuǐtǒng.
      (When Xiaonan was ready to go, her husband was picking up the bucket.)
    - 当小楠准备出发时，她的丈夫提着一桶水
      Dāng xiǎonán zhǔnbèi chūfā shí, tā de zhàngfū tí zhe shuǐtǒng.
      (When Xiaonan was ready to go, her husband was holding the bucket.)

14. Cuando Huanhuan estaba a punto de salir a la universidad, se encontró una carta que habían pasado por debajo de la puerta. Se agachó extendiendo la mano para poder ver de quién era la carta.
(When huanhuan was about to go to the campus, he found a letter which was delivered underneath his door, he stooped down, reaching out his hand so as to know what letter was about.)

- 当欢欢准备出门时，他在拿一封信。
  Dāng huānhuān zhǔnbèi chūmén shí, tā zài ná yī fēng xìn.
  (When Huanhuan was about to leave his house, he was picking up a letter.)
- 当欢欢准备出门时，他拿着一封信。
  Dāng huānhuān zhǔnbèi chūmén shí, tā ná zhe yī fēng xìn.
  (When Huanhuan was about to leave his house, he was holding a letter.)

15. Ayer Pedro me envió un video de la costa de Inglaterra. Al principio estaba nublado pero de repente salió el sol que era muy fuerte. Pedro sacó las gafas de sol de su bolsa para protegerse los ojos.
  (Yesterday Peter sent me a video of the seaside in Britain. It was cloudy at first, but suddenly the sun came out. The sunlight was very strong. Peter took out his sunglasses from his bag and started to protect his eyes from the sunlight.)

    - 在这段短片中，彼得在戴墨镜。
      Zài zhè duàn duǎnpiàn zhōng , Peter zài dài mòjìng.
      (In the short video, Peter was putting on sunglasses.)
    - 在这段短片中，彼得戴着墨镜。
      Zài zhè duàn duǎnpiàn zhōng , Peter dài zhe mòjìng.
      (In the short video, Peter was wearing sunglasses.)

16. Linlin me invitó a su casa un día que hacía mucho calor. Sin embargo, por culpa del aire acondicionado hacía mucho frio en su habitación. Linlin le pidió a su hijo que estaba sentado en el sofá que se pusiera algo de ropa.

    (I was invited to Linlin's home on a very hot day. However, the air conditioning made it increasingly cold in her room. Linlin asked his son, who was sitting on the sofa, making himself warm.)

    - 当房间变冷的时候，琳琳的儿子在盖被子。
      Dāng fáng jiān biàn lěng de shí hòu, lín lín de ér zǐ zài gài bèi zǐ.
      (When the room became cold, Linda's son was putting on a quilt.)
    - 当房间变冷的时候，琳达琳的儿子盖着被子。
      Dāng fáng jiān biàn lěng de shí hòu, lín lín de ér zǐgài zhe bèi zǐ.
      (When the room became cold, Linda's son was covered by a quilt.)

17. Cuando llegué al gimnasio ayer, el Sr Chen estaba enseñando a un alumno cómo levantar unas pesas. Lo vi agacharse, cogiendo las pesas y levantándose despacio.
  (When I arrived at the gym yesterday, Mr Chen was demonstrating weight-lifting movements to his trainee. I saw him squat down, grabbing the barbell and then standing up slowly.)

    - 昨天我到健身房的时候，陈教练在举杠铃。
      Zuó tiān wǒ dào jiàn shēn fáng de shí hòu, chén jiāo liàn zài jǔ gàng líng.
      (When I arrived at the gym yesterday, Mr Chen was lifting up the barbell.)
    - 昨天我到健身房的时候，陈教练举着杠铃。
      Zuó tiān wǒ dào jiàn shēn fáng de shí hòu, chén jiāo liàn jǔ zhe gàng líng.

(When I arrived at the gym yesterday, Mr Chen was holding the barbell.)

18. Juana me envió un video de la costa en Tailandia. El sol era muy fuerte y la cara de Juana estaba roja excepto por la parte donde tenía las gafas.
    (Jane sent me a video of the seaside in Thailand. The sun was very bright, and the skin on Jane's face was tanned apart from the area covered by the sunglasses.)

- 在短片中，简在戴墨镜。
  Zài duǎn piàn zhōng, jiǎn zài dài mò jìng.
  (In the video, Jane was putting on sunglasses.)
- 在短片中，简戴着墨镜。
  Zài duǎn piàn zhōng, jiǎn dài zhe mò jìng.
  (In the video, Jane was wearing sunglasses.)

19. En 2018, el Sr Chan asistió a la conferencia sobre Desarrollo Sostenido de las Naciones Unidas como delegado de China. En las imágenes de televisión en directo se podía ver que los delegados de los diferentes países iban muy bien vestidos.
    (As the delegate of China, Mr Chan attended the 2018 United Nations Sustainable Development Conference. From the live TV broadcast at that time, we could see that the delegates from all the different countries were very formally dressed.)

- 在 2018 年联合国可持续发展大会上，代表们穿着西服。
  Zài 2018nián lián hé guó kě chí xù fāzhǎn dàhuì shàng , dàibiǎo men chuān zhe xīfú.
  (In the 2018 UN Sustainable development Conference, the delegates were wearing suits.)
- 在 2018 年联合国可持续发展大会上，代表们在穿西服。
  Zài 2018nián lián hé guó kě chí xù fāzhǎn dàhuì shàng , dàibiǎo men zài chuān xīfú.
  (In the 2018 UN Sustainable Development Conference, the delegates were putting on suits.)

20. Linda me invitó a su casa un día cuando hacía mucho calor. Cuando llegué, hacía bastante frio en su habitación por el aire acondicionado. Sin embargo el hijo de Linda estaba calentito en el sofá.
    (I was invited to Linda's home on a very hot day. When I arrived, the room was quite cold due to the air conditioning. But Linda's son looked very warm on the sofa.)

- 我在琳达家的时候，她的儿子在盖被子。
  Wǒ zài lín dá jiā de shí hòu , tā de ér zǐ zài gài bèi zǐ.
  (When I visited Linda's house, her son was putting on a quilt.)
- 我在琳达家的时候，她的儿子盖着被子。
  Wǒ zài lín dá jiā de shí hòu , tā de ér zǐgài zhe bèi zǐ.
  (When I visited Linda's house, Linda's son was covered by a quilt.)

21. Mi amiga Hannah me llamó por teléfono el domingo por la tarde. Me contó que su coche se había roto mientras estaba de compras en el centro comercial y que estaba volviendo a su casa a pie con la compra.
    (I received a call from my roommate Hannah on Sunday evening. She said that her car had broken down after she did some shopping in the mall and that she was already coming home

on foot with the shopping.)

- 汉娜打电话的时候，她在提购物袋。
  Hàn nà dǎ diàn huà de shí hòu , tā zài tí gòu wù dài.
  (When I answered the phone, Hannah was picking up the shopping bags.)
- 汉娜打电话的时候，她提着购物袋。
  Hàn nà dǎ diàn huà de shí hòu , tā tízhe gòu wù dài.
  (When I answered the Phone, Hannah was holding the shopping bags.)

22. Después de la clase de ayer por la tarde, Jessie vino a hablar conmigo. Me contó que había ido a la oficina de la facultad esa mañana para recoger las notas de los exámenes finales. Quería saber mi opinión sobre las notas de cada asignatura.
    (After the seminar yesterday afternoon, Jessie came to see me. She told me that she went to the student office in the morning and received her transcript for the final exams. She wanted to hear my suggestions regarding the marks of each subject.)

- 昨天下课后，杰西在拿成绩单。
  Zuó tiān xià kè hòu , jié xī zài ná chéng jì dān.
  (After yesterday's seminar, Jessie was picking up the transcript.)
- 昨天下课后，杰西拿着成绩单。
  Zuó tiān xià kè hòu , jié xī ná zhe chéng jì dān.
  (After yesterday's seminar, Jessie was holding the transcript.)

23. Cuando llegué al gimnasio ayer, Xiaoliang estaba cronometrando cúanto tiempo podía el Sr Li levantar unas pesas por encima de su cabeza.
    (When I arrived at the gym yesterday, Xiaoliang was doing the timekeeping for Mr Li, in order to see how long he could hold the barbell above his head.)

- 昨天我到健身房的时候，李先生举着杠铃。
  Zuó tiān wǒ dào jiàn shēn fáng de shíhòu , lǐ xiānshēng jǔ zhe gàng líng.
  (When I arrived at the gym yesterday, Mr Li was holding the barbell.)
- 昨天我到健身房的时候，李先生在举杠铃。
  Zuó tiān wǒ dào jiàn shēn fáng de shíhòu , lǐ xiānshēng zài jǔ gàng líng.
  (When I arrived at the gym yesterday, Mr Li was lifting up the barbell.)

24. El Sr Li no pudo terminar su primer cuadro de un paisaje ya que tuvo que empezar un trabajo nuevo. Desde que empezó este trabajo no tiene tiempo para pintar. Un mes antes de empezar este nuevo trabajo siempre estaba en su estudio pintando el paisaje.
    (Mr Li's first landscape picture was interrupted by his new job. Since he started his new job, he did not have time to paint anymore. A month before the new job started, he was always in his studio working on the same landscape picture.)

- 在开始新工作之前，李先生经常画一幅画。
  Zài kāi shǐ xīn gōng zuò zhī qián, lǐ xiān shēng jīng cháng huà yī fú huà.
  (Before Li started his new job, he used to paint a picture.

- 在开始新工作之前，李先生画过一幅画。
  Zài kāi shǐ xīn gōng zuò zhī qián, lǐ xiān shēng huà guò yīfú huà.
  (Before Li started his new job, he had painted a picture.)

25. Jack soñaba que se convertiría en un autor de novelas. Antes de empezar la universidad siempre pasaba su tiempo libre escribiendo su primera novela. Después de empezar la universidad, siguió escribiendo la novela durante un tiempo pero tuvo que dejarlo ya que tenía demasiado trabajo.
    (Jack once had a dream of becoming an author of a full-length novel. Before attending university, he always spent his free time working on his first novel. After he started university, he carried on writing this novel for some time, but soon afterward, he stopped writing since he became so busy in his coursework.)
- 上大学之前杰克经常写一部小说。
  Shàng dà xué zhī qián jié kè jīng cháng xiě yī bù xiǎo shuō.
  (Before Jack entered university, he used to write a novel.)
- 上大学之前杰克写过一部小说。
  Shàng dà xué zhī qián jiékè xiě guò yī bù xiǎo shuō.
  (Before Jack entered University, he had written a novel.)

26. Cuando Juan estaba en la universidad se comprometió a componer una sinfonía usando elementos de música tradicional china. Solía pasar los fines de semana en el estudio de música trabajando en varias partes. Es una lástima que perdiera la partitura cuando ya había escrito bastante.
    (During University, Joe had a personal goal of composing a symphony using some elements of traditional Chinese folk music. He would spend each weekend in the music room developing different sections. It's a shame that he lost the only copy when he had made some progress.)
- 上大学时，胡安经常创作一部交响乐。
  Shàng dà xué shí, hú ān jīng cháng chuàng zuò yī bù jiāoxiǎng yuè.
  (Juan used to compose a symphony when he was in University.)
- 上大学时，胡安创作过一部交响乐。
  Shàng dà xué shí, hú ān chuàng zuò guò yī bù jiāoxiǎng yuè.
  (Joe had composed a symphony when he was in University.)

27. El verano pasado los entusiastas de la lectura tuvieron un buen sitio donde pasar el tiempo. Los residentes de la ciudad tuvieron acceso a la biblioteca de la universidad durante todas las vacaciones de verano.
    (This past summer, bookworms had a good place to spend their time. Residents of Southampton had access to the University library throughout the whole summer holiday.)
- 暑假期间，图书馆开着。
  Shǔ jiǎ qī jiān , tú shū guǎn kāi zhe.
  (During the summer holiday, the library was open.)
- 暑假期间，图书馆开过。
  Shǔ jiǎ qī jiān , tú shū guǎn kāi guò.
  (During the summer holiday, the library has been open.)

28. Cuando fui a ver a Shanshan en su casa la semana pasada estaba en cama y estaba muy pálida. La llamé ayer y me dijo que todavía tiene fiebre.

(When I visited Shanshan at her house last week, she was in bed and looked very pale. Yesterday I called her, and she told me she still has a fever.)

- 上个星期，姗姗生着病。
  Shàng gè xīng qī, shān shān shēng zhe bìng.

  (Last week, Shan Shan was ill.)
- 上个星期，姗姗生过病。
  Shàng gè xīng qī, shān shān shēng guò bìng..
  (Last week, Shan shan had been ill.)

29. Durante la fiesta de primavera mi vecina decoró su casa con linternas chinas que se veían muy bonitas y muy bien hechas. Aunque el festival ya ha terminado, a todos les gustaron tanto las linternas que ha decidido dejarlas puestas.
    (During the Spring Festival celebration, my neighbour decorated her house with Chinese Lanterns, which were delightful in the festive atmosphere. Although the Spring Festival is over, everybody liked the lanterns so much that she decided to leave them up permanently.)

- 春节期间，我隔壁的住宅挂着中国灯笼。
  Chūn jiē qī jiān ,wǒ gé bì de zhù zhái guà zhe zhōng guó dēnglóng.
  (During the Spring Festival, there were some Chinese lanterns hanging in my neighbour's house.)
- 春节期间，我隔壁的住宅挂过中国灯笼。
  Chūn jiē qī jiān ,wǒ gé bì de zhù zhái guà guò zhōng guó dēnglóng.
  (During the Spring Festival, there have been some Chinese lanterns hanging in my neighbour's house.)

30. Cuando fui a ver a Xiaoxiao en su casa esta tarde, me pidió que esperara tres minutos para que pudiera ponerse la ropa del gimnasio
    (When I went to meet xiaoxiao at her house this afternoon, she asked me to wait for three minutes so that she can get ready in the shoes for the gym.)

- 我去潇潇家找她的时候，她穿着运动鞋。
  Wǒ qù xiāo xiāo jiā zhǎo tā de shí hòu , tā chuān zhe yùn dòng xié.
  (When I visited Xiaoxiao at her house, she was wearing a pair of sneakers.)
- 我去潇潇家找她的时候，她在穿运动鞋。
  Wǒ qù xiāo xiāo jiā zhǎo tā de shí hòu , tā zài chuān yùn dòng xié.
  (When I visited Xiaoxiao at her house, she was putting on a pair of sneakers.)

Appendix D Chinese Proficiency test

Instruction

There are four exercises in this section. In each, complete the texts by choosing one of the six options provided below(A-E). Mark your answer by choosing your choice from A-E.

HSK (Level 3: May 2013) Q 51 – 55.

(Example) 例如：她说话的（E）多好听啊！

1．从地图上看，黄河很（___）一个“几”字。

2．我相信在她的帮助下，你的汉语水平一定会（___）的。

3．谁能（___）黑板上的这个问题？

4. (___）到会议结束，大家也没想出办法来。

5．你是不是忘记把牛奶放冰箱里了？

两包都（___）了。

A 像	B 坏	C 一直	D 提高	E 声音
Xiang	huai	yizhi	tigao	shengyin
‘like’	‘bad’	‘always’	‘increase’	‘sound’

HSK (Level 3: May 2013) Q 56 – 60. (Example) 例如： A：你有什么（D）？ B：我喜欢体育。

6. A：我们在哪儿（___）？ B：国家体育馆北门吧，那儿离你家和我家都近。

7. A：昨天我生日，儿子送给我一（___）他画的画儿。 B：那你一定很高兴吧？

8. A：对不起，李经理，我迟到了。 B：没关系，先坐下开会吧，以后（___）点儿。

9. A：明天 30 号了，记得还（___）。 B：放心，我今天中午就去银行。

10. A：桌子上有蛋糕，你吃不吃？ B：不吃了，我在爷爷家吃（___）了才回来的。

A 饱	B 信用卡	C 见面	D 爱好	E 张	F 注意
Bao	Xinyongka	Jianmian	aihao	Zhang	zhuyi
‘full’	‘credit card’	‘meet’	‘hobby”	‘zhang’	‘watch out’

HSK (Level 3: May 2010) Q 51 – 55.

例如：她说话的（ E ）多好听啊！

11．电影马上就要开始了，（ ）手机关了吧。

12．他很高，这张桌子太低，坐着很不（ ）。

13．您可以选择火车站（ ）的宾馆，住那儿会更方便。

14．天气冷，你多穿点儿衣服，小心（ ）。

15．对一个女人来说，漂亮、聪明都很重要，但（ ）更重要的是快乐。

A 其实	B 感冒	C 附近	D 舒服	E 声音	F 把
Qishi	ganmao	fujin	shufu	shengyin	ba
‘actually’	‘cold’	‘nearby’	‘comfortable’	‘sound’	‘ba’

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example：A：你有什么（ D ）？

B：我喜欢体育。

16．A：请问，现在是十一点吗？

B：现在十一点十五了，您的表慢了一（ ）。

17．A：最近怎么（ ）没看见他？

B：他去旅游了，可能这个周末才能回来。

18．A：牛奶呢？

B：一定是（ ）猫喝了。

19．A：你家的厨房真干净！

B：当然了，为了欢迎你，我已经（ ）了两个多小时了。

20．A：买这么多鲜花，今天是谁的生日啊？

B：今天是 9 月 10 日，教师（)！这是为老师准备的。

A 刻	B 一直	C 节	D 爱好	E 被	F 打扫
Ke	yizhi	jie	aihao	bei	dasao
‘quarter”	‘always’	‘festival’	‘hobby’	‘bei’	‘cleaning’

Appendix E Fill-in-the-blanks task for L1 Chinese-L2 Spanish learners

Instruction
In this section, you are asked to fill in the blanks in each sentence by choosing one of the three options provided after each sentence.

Ayer por la tarde fui a la oficina del profesor Li en la universidad de Southampton. Algunos estudiantes estaban 1 ..... (*A.**charlaron**; B.charlaban; C.han charlado*) con el profesor Li. Estos estudiantes 2. .....*(A han estado; **B estuvieron**; C estaban*) en China. 3. .....
***(A. subieron**; B. subían; C. han subido)* la Gran Muralla y 4..... *(A. **comieron**; B. comían; C. han comido)* pato al estilo de Beijing.
(Yesterday afternoon, I went to Professor Li's office at the University of Southampton. Some students were chatting with Professor Li. These students have been to China. They climbed the Great Wall and ate Beijing roast duck.

Xiaoming solía estudiar mucho cuando estaba en la secundaria. Para poder acordarse de todo lo que estudiaba 5.....*(A. revisó; B. **revisaba**; C. ha revisado)* sus apuntes todos los días.
(Xiaoming was a very hardworking student when he was in secondary school. In order to remember what he was learning, he reviewed his class notes every day.)

Xiaoming le encanta escalar montañas. La montaña más alta que 6..... *(A.escaló; B. escalaba; C. **ha escalado**)* es el Monte Everest.

(Xiaoming is very fond of mountain climbing. The highest mountain he has climbed is Mount Everest.)

En la clase de gimnasia de ayer, el profesor 7.....*(A.corrió; B. **corría**; C. ha corrido)* mientras algunos estudiantes 8.....*(A.jugó; B.**jugaban**; C. ha jugan)* al baloncest
(In PE class yesterday, the teacher was running while some students were playing basketball)

Este aire acondicionado nunca 9.....*(A.tuvo; B. tenía; C. **ha tenido**)* ningún problema desde que lo compramos.
(This air-conditioner has never had any problem since it was purchased.)

Nunca 10.....*(A. creí; B. creía; C. **he creído**)* en las supersticiones.
(I have never believed in superstition.)

Esta casa está en muy buenas condiciones y en una zona muy buena. Mi mujer piensa que es la mejor casa en la que 11.....*(A. vivió; B. vivía; C**. ha vivido**)*
(This house is in good condition. My wife thinks it is the best house she has lived in.)

Cuando era más joven, Maria se interesó por la cultura china así que 12.....*(A.leyó; B.* ***leía****; C. ha leído)* novelas en chino y 13..... *(A.* ***veía****; B. ha visto; C.vio)* películas chinas.
(Maria was getting more familiar with Chinese culture, as she used to read Chinese novels and watch Chinese films.

Cuando vi a Juan en el supermercado el mes pasado, 14.....*(A. estuvo;* ***B. estaba****;*
C. ha stado) muy delgado.
(When I met John in the supermarket last month, he was very slim.)

Después de empezar el doctorado en el 2017, a Xiaojing le 15.....*(A. gustó;* ***B. gustaba;***
C.ha gustado) ir a seminarios.

María 16.....*(A. creyó;* ***B.creía****; C. ha creído)* que si practicaba mucho, podría aprender a tocar el piano.
(Maria believed that if she practiced hard, she would learn to play the piano. (imperfective, continuous)

Tim 17.....*(A. tuvo; B****.tenía****; C. ha tenido)* un catarro cuando lo visité la semana pasada.
(Tim had a cold when I visited him last week.)

Antes, Sally siempre 18. .....***(A. se acordó****; B. se acordaba; C. se ha acordado)* de cuando estaba con su exnovio pero ahora ha empezado una nueva relación.
(Before, Sally used to think of the days when she was with her ex-boyfriend. But now she has started a new relationship.)

Juan 19. .....***(A. tuvo****; B. tenía; C. ha tenido)* un accidente en la pierna el invierno pasado. No se recuperó hasta este verano.
(Jack had a leg injury last winter. It was not until this summer that he fully recovered.)

Empecé a jugar al ajedrez cuando era pequeño. 20. .....*(A. participé;*
*B. participaba; C****. he participado****)* en veinte torneos en los últimos años.
(I started playing chess when I was little. I have participated in twenty tournaments in recent years.)

Fui a ver al Sr Wang a su casa ayer. Estaba escribiendo caligrafía china mientras su esposa 20.....
*(A****. leía;*** *B. leyó; C. ha leído)* una novela y su hijo 21.... *(A.* ***veía;*** *B. vio; C. ha visto)* la tele.
(I went to see Mr Wang at his house yesterday. He was writing Chinese calligraphy while his wife was reading a novel and his son was watching TV.)

Cuando fui a ver a Juan el fin de semana pasado 22. ..... *(A. pareció; B.* ***parecía;*** *C. ha parecido*)
muy cansado. Ha estado trabajando mucho preparando los exámenes finales.
(When I went to see Juan last weekend, he seemed very tired. He has been working hard preparing for the final exams.)

La semana pasada hice una videollamada con mi amiga Yuan quien está estudiando en Xiamen.
Me dijo que 23. ..... *(A. hizo;* ***B. hacía****; C. ha hecho)* mucho calor en Xiamen por el verano.
(Last week, I made a video call with my friend Yuan who was studying in Xiamen. He told me that it was very hot in Xiamen in the summer.)

Cuando Jessy estaba en la secundaria no era muy buena con las matemáticas.

24. ..... *(A. necesitó;* ***B. necesitaba****; C. ha necesiado)* ayuda extra de su tutora cada vez que iba a tener un examen de matemáticas.
(When Jessy was in high school, she wasn't very good at math. She needed extra help from her tutor every time she was going to have a math test.)

El año pasado José se mudó a un piso nuevo con vecinos muy tranquilos. Antes,
25. ..... *(A****. oía;*** *B. oyó; C. ha oído)* el ruido de los vecinos ruidosos que tenía y no podía concentrarse en sus estudios.
(Last year, José moved to a new apartment with very quiet neighbors. Before, he would hear the noise of the noisy neighbors he had, and he could not concentrate on his studies.)

Cuando Lucía se bajó del tren ayer en Shanhai, 26. ....*(A. oía,* ***B. oyó****, C. ha oído)*
a alguien llamarla por su nombre. Se giró y vio que era su buen amigo Paul.
(When Lucia got off the train yesterday in Shanghai, she heard someone call her by her name. She turned and saw that it was her good friend Paul.)

Cuando Xiaohua estaba en su último año de secundaria no 27. .... *(A****.necesitó****, B. necesitaba, C. ha necesitado)* prepararse para la selectividad ya que había decidido no ir a la universidad.
When Xiaohua was in his last year of high school, he did not need to prepare for the university entrance examination as he had decided not to go to university.

Ayer 28.....***(A.busqué****; B.buscaba; C.he buscado)* en el catálogo de la biblioteca y 29. .....
*(****A.descubrí****, B.descubría, C.he descubierto*) que la única copia del libro que necesito está en la biblioteca nacional.
(Yesterday I searched the library catalogue, and found that the only available copy of the book I want is in the national library.)

Pedro 30. ..... *(A. jugó;* ***B. jugaba****; C. ha jugado)* al fútbol cuando era joven. Aunque ya se está haciendo mayor, todavía hace ejercicio todos los días.
(Peter used to play football when he was young. Although he is getting older, he still works out on a daily basis.)

Nunca 31. .....(A. estuve B. estaba C. **he estado**) en África, así que he decidido viajar a Egipto las próximas navidades.
(I have never been to Africa, so I decided to travel to Egypt this coming Christmas.)

El mes pasado me hice amigo de Liuxin en Peking. 32. ..... **(A.recibió** B. recibía C. ha recibido) el primer premio en un concurso literario cuando estudiaba en la Universidad.
(Last month, I made a new friend Liuxin in Beijing. She received the first prize in an international speech literary competition when she was in university.)

La semana pasada mi amigo Jeff quien trabaja para Microsoft me dijo que había ido a China por trabajo desde Estados Unidos. En julio los jefes de la compañía .....*(A.* ***tuvieron****, B. tenían, C. han tenido)* una reunion para avanzar sus neocios en el mercado chino.
(Last week, my friend Jeff who works in Microsoft told me that he had gone to work in China from the US. In July this year, the chief executives in the company had a meeting to advance their business in the Chinese market.)

Ayer recibí un regalo de mi amiga Jessy. Hace un mes, Jessy y su marido
34. .....***(A. viajaron****; B. viajaban; C. han viajado)* a Australia y Nueva Zelanda.

(Yesterday I had a gift from Jessy. A month ago, she and her husband traveled to Australia and New Zealand.)

Appendix F Sentence-context preference matching task for L1 Chinese-L2 Spanish learners

Instruction

In this section, you will be given 30 contexts in Chinese/Spanish. Each context is followed by two Chinese sentences. Please rate the sentences according to the appropriateness in this context with the 5 points: (*-2 Completely Inappropriate; -1 Inappropriate; 0 Not Sure; 1 Appropriate and +2 Completely appropriate.*)

1. Pablo's building company has shut down. It's a pity because his company was involved in a reconstruction programme that worked in war zones whenever necessary.

- La empresa construía hospitales en zonas de conflicto.
- La empresa construyó hospitales en zonas de conflicto.

2. Juan says that he has fond memories of his childhood, especially when he went on picnics with his grandparents.

- Juan comió en el parque
- Juan comía en el parque

3. I was always a bit lazy when I was in secondary school, and it was always difficult for me to wake up early on school days.

- Yo llegaba tarde a clase
- Yo llegué tarde a clase

4. When Ana was a child, she had a very close friend, Amy, and she liked to spend a lot of time at her house after school.

- Ana estuvo mucho en casa de Amy al salir del colegio
- Ana estaba mucho en casa de Amy al salir del colegio

5. When my brother Sam was in secondary school, he did not do very well in his classes whenever he was going out with a girl.

- Sam necesitaba ayuda con los deberes cuando tenía novia
- Sam necesitó ayuda con los deberes cuando tenía novia

6. Marta has moved to a different flat in a much quieter part of town. Before, she was too close to a train station and couldn't sleep well at all.

- Marta oyó los trenes de madrugada
- Marta oía los trenes de madrugada

7. My friend Pippa is very caring. She prefers to spend her holidays volunteering and helping others in less fortunate parts of the world. For example, this Christmas she was in Honduras working to build an orphanage.

- Pippa construía un orfanato
- Pippa construyó un orfanato

8. My mum is such a bookworm. She reads whenever she gets a chance. This past Christmas, I gave her the last Harry Potter book and on Boxing Day she was threatening to give the ending away.
- Mi mamá leyó el último libro de Harry Potter.
- Mi mamá leía el último libro de Harry Potter.

9. It was so warm and nice that Juan decided to go out for a walk during his break and have lunch outdoors.

- Juan comía en el parque
- Juan comió en el parque

10. My brother is 18 and has never had a girlfriend. But this morning my mum found a handbag in the car, which forced my brother to explain what he did last night.

- Mi hermano salió con su novia
- Mi hermano salía con su novia

11. Heath Ledger is an example of an actor who might win an Academy Award this year, but there is no chance of him being there to accept it.

- Heath Ledger moría.
- Heath Ledger murió.

12. I woke up very late and I missed the bus to school. So, I had to phone my mum and ask her to take me to school.

- Yo llegué tarde a las clases
- Yo llegaba tarde a las clases

13. Rachel's grandma is normally very healthy. However, last winter she caught a cold that became very complicated and she ended up in hospital for a month.
- Su abuela estaba muy enferma
- Su abuela estuvo muy enferma

14. My mum told me yesterday morning that my friend Sam had phoned to cancel our revision session for that afternoon. Later, I found out that he had got the class notes from somebody else.

- Sam no necesitó ayuda con los deberes
- Sam no necesitaba ayuda con los deberes

15. Last night, Marta got very scared when she was in bed. Around 2 am there was a loud car crash in her street and it woke her up.

- Marta oía un ruido.
- Marta oyó un ruido.

16. Last weekend I spent some time with my neighbour Juan. He has been having lots of problems with his new puppy Oliver.

- Cuando visité a Juan, su perro pareció muy cansado
- Cuando visité a Juan, su perro parecía muy cansado

17. My husband and I have moved to the south of Spain looking for some sun. Although we liked Scotland, we were a bit tired of the cold weather.

- En Escocia hacía mucho frío
- En Escocia hizo mucho frío

18. We had plans to go to a Chinese restaurant last Saturday after watching the new Bond movie. On our way to the restaurant the bus broke down so we arrived very late.

- Cuando llegamos, el restaurante estuvo cerrado
- Cuando llegamos, el restaurante estaba cerrado

19. Our Pedro has been a bit depressed lately: his girlfriend has left him and he is not doing well in his classes. Last weekend we ran into him on our way to the sports centre.

- Pedro se sentía muy triste
- Pedro se sintió muy triste

20. We went to the teachers' room to look for Miss Garcia, the new Spanish language assistant, but she wasn't there. Instead, Ms Robinson the English teacher was there, working on our final exam.

- La profesora de inglés preparó el examen final
- La profesora de inglés preparaba el examen final

21. I have just come back from visiting my cousin Oscar. He had just come back from school and was keeping himself occupied until dinner time.

- Oscar leía un libro
- Oscar leyó un libro

22. My sister was invited to a concert but she got there late. When she finally arrived, the pianist had already started playing.

- El pianista tocó el piano cuando llegó mi hermana
- El pianista tocaba el piano cuando llegó mi hermana

23. Susana has just broken up with her boyfriend and she is not her usual happy self. She hasn't been going out much and I haven't seen her in a while.

- Cuando Susana salía con Alberto siempre estaba contenta
- Cuando Susana salió con Alberto siempre estaba contenta

24. Watching Sports news I learnt about a guy who died very close to the top of a high mountain.

- El deportista alcanzó la cima cuando se quedó sin oxígeno
- El deportista alcanzaba la cima cuando se quedó sin oxígeno

25. My grandparents were very lucky to make it to my birthday party last weekend. Although they had arrived late at the station, the train had engine problems at departure and was delayed.

- El tren salía cuando se estropeó el motor
- El tren salió cuando se estropeó el motor

26. When my Mum was a little girl she had a horse called Elsa. Poor Elsa got very sick once because of an infected wound, and they were expecting her to die. The vet was able to give her a few shots of penicillin and mum was able to ride her again.

- El caballo se murió de una infección
- El caballo se moría de una infección

27. My best friend had been preparing herself for the London marathon for two years. However she was really unlucky because when she was one metre from the finish line, she broke her ankle so badly that she could not get up.

- Cuando llegaba a la meta se rompió el pie
- Cuando llegó a la meta se rompió el pie

28. I saw that Antonio had taken down all the notices he had put up about selling his guitar. Apparently he loved it too much and had a change of heart at the last minute.

- Antonió vendió su guitarra
- Antonio vendía su guitarra

29. John wanted to get a new kitten so last week he had a look at the classifieds section in the

newspaper. He got the number of a woman who was giving away two lovely Persian cats and gave her a ring, only to find out that she had changed her mind and had decided to keep the cats herself.

- La mujer regalaba dos gatos
- La mujer regaló dos gatos

30. Martha and Ruth were going to the 7 p.m. session at the cinema last night. When they arrived there at 10 to 7, they found that the film had started a long while ago and complained to the manager.

- La película era a las 7.
- La película fue a las 7

31. Your brother was waiting for you at Heathrow at 9. By 9.45 your flight had still not arrived so he checked at the desk and learned the flight was delayed by one hour.

- El vuelo llegó a las 9.
- El vuelo llegaba a las 9.

32. You play the drums in a band and your parents were very excited about going to your concert last Friday evening. However, when they got to the club they were told that your performance had been rescheduled

- El grupo actuaba por la noche.
- El grupo actuó por la noche.

Appendix G Spanish proficiency test

Section A Instruction:
Read these extracts that we offer below and choose the most appropriate word that should complete each of the gaps.

Preposiciones (5)
Este domingo, más (1) ___ un millón (2) ___ personas cantaban, gritaban y reían -banderas europeas, españolas y catalanas en mano- en la manifestación convocada (3) ___ contra (4) ___ la independencia (5) ___ Cataluña.
¿Ser o Estar? (9)
Si (6) ___ aquí conmigo en la manifestación, habríais conocido a María Jesús y a Benigna, ambas (7) ___ ciudadanas catalanas, madre e hija. ¿Por qué no cantan? A su alrededor, el Paseo de Gracia de Barcelona tiene más ambiente que el París de 1923. "¡Quee viiiva España!", corean los manifestantes. Uno de ellos les pregunta: "Disculpen señoras, ¿por qué (8) ___ tan serias? Esto (9) ___ una fiesta, ¿no?". "¿Qué quiere que celebremos?, ¿que Cataluña (10) ___ rota?" Responde María Jesús, (el silencio es sepulcral). "Nosotras no (11) ___ contentas. ¿(12) ___ claro? Además… como nosotras, hay mucha gente mayor que también (13) ___ aterrorizada. Si (14) ___ posible, haría desaparecer este trocito de la historia."

Section B Instruction
The Brazilian photographer Sebastião Salgado, remembers the Uruguayan writer Eduardo Galeano (1940-2015). Complete the conditional sentences that we propose to you in order to convey the same idea.

15. Eduardo era un excelente escuchador. Y en realidad fue un gran contador en la literatura.
Si no (15a)___ , no (15b)___ un gran contador en la literatura
16. El escritor uruguayo murió este lunes por un cáncer de pulmón.
Si no (16a)___ cáncer de pulmón, el escritor uruguayo no (16b)___ este lunes.
17. Había muchas cosas en común entre nosotros, por eso dimos muchas conferencias juntos.
Si no (17a)___muchas cosas en común entre nosotros, no (17b)___ muchas conferencias juntos.

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