

The Effect of Lexical Aspect and Discourse Grounding in the Acquisition of Spanish Past Tense Aspect by Mandarin Chinese Speakers: Replicating the Approach Used in Salaberry (2011)¹

El efecto del aspecto léxico y la información del discurso en la adquisición del aspecto del tiempo pasado en español por aprendices sinohablantes: Replicando el enfoque utilizado en Salaberry (2011)

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Abstract

In this work, we replicate the approach of Salaberry (2011). Based on an a written 40 item discourse based forced-choice task, we analyze the influence of lexical aspectual class and grounding information in discourse on the use of perfective and imperfective verbal morphology of Spanish by Chinese learners of three levels of proficiency (B1, B2, C1 of the CEFR). Our results show that the preference to use prototypical associations predicted by the LAH and the DH coincide with Salaberry's (2011) results. However, we found that our L1 Mandarin Chinese learners show a particular developmental pattern compared with the L1 English learners in Salaberry (2011).

Keywords: Lexical aspectual class, grounding information in discourse, L3 acquisition of Spanish aspect, L1 Mandarin Chinese, developmental pattern.

Resumen

En este trabajo, replicamos el enfoque de Salaberry (2011). En función a una tarea escrita de elección múltiple de 40 ítems basada en el discurso, analizamos la influencia que tienen la clase aspectual del verbo y la información de foco y fondo discursivos sobre el uso de la morfología verbal perfectiva e imperfectiva del español por aprendices sinohablantes de los niveles B1, B2, C1 (del MCER). Nuestros resultados muestran que la preferencia por usar asociaciones prototípicas predichas por la LAH y la DH coincide con los resultados de Salaberry (2011). Sin embargo, descubrimos que nuestros estudiantes de L1 chino mandarín muestran un patrón de desarrollo particular en comparación con los estudiantes de L1 inglés de Salaberry (2011).

Palabras Clave: Clases aspectuales-léxicas, información de foco y fondo discursiva, adquisición del español como L3, L1 chino mandarín, patrón de desarrollo.

INTRODUCTION

Recent studies of second language (L2) acquisition of Spanish past tense aspect focus on linguistic functions at different levels, such as the lexical-semantic level and the pragmatic-discourse level. The Lexical Aspect Hypothesis (LAH) (Andersen, 1991; Andersen & Shirai, 1994; Salaberry, 1999) is the most researched topic at the lexical-semantic level, whereas the Discourse Hypothesis (DH) (Bardovi-Harlig, 1994) is the most studied at the pragmatic-discourse level. The LAH predicts that the semantic properties of a predicate affect the selection of the perfective or the imperfective aspect morphology; whereas, according to DH (Bardovi-Harlig, 1994), the foreground and background information in the discourse narratives guide learners in the use of the perfective and imperfective aspect.

Research about these topics in L2 Spanish has not reached a consensus so far, especially research on the LAH. Ramsay (1990) and Sánchez-Quintana (2005) support the LAH. In contrast, Salaberry (1999, 2002, 2008) and Quesada (2006) postulate that L2 lower-level learners tend to take the Spanish perfective grammatical aspect as a default marker for past tense. The reason why these studies have drawn different conclusions could be mainly explained due to: 1) the different aspectual patterns of subjects' first language (L1) in the experiment, which may be transferred by the learners to their L2 aspect usage pattern (McManus, 2015; González & Quintana, 2018) or 2) due to the differences in the type of tasks used in the research carried out (open task, semi-guided writing, and cloze tests) (Bonilla, 2013; Domínguez, Arche & Myles, 2017; Sun, Díaz & Taulé, 2019; Sun, González, Mauder, Chikd, Díaz & Taulé, 2019). Research on the L2 acquisition of Spanish past tense aspect that considers the interaction effect at both the lexical and discourse levels, also shows divergence in learning patterns. For instance, Lafford (1996) claims that '[the effect of] grounding overrides telicity', whereas, López-Ortega (2000) shows an opposite result, that is, the lexical aspect may override discourse principles. Salaberry (2011) postulates that

grounding information plays an important role in distinguishing between the language production of native and non-native subjects. Moreover, some recent research also pay attention to the effect of L2 transfer to the acquisition of Spanish aspect as L3. Eibensteiner (2019), based on German speaking learners of Spanish as L3, suggests that the grammatical rules of the learners' L2 English bring positive transfer to their acquisition of the aspect in L3 Spanish in both the prototypical and non-prototypical situations. Diaubalick, Eibensteiner and Salaberry (2020) found that German speaking learners with a higher proficiency level of L2 Romance language have a more native-like performance in their use of aspect in L3 Spanish. However, Diaubalick et al. (2020)'s claim is that German is a language which lacks aspect marker at the level of grammatical mechanism. Therefore, both studies only analyze language transfer from the perspective of L2. The interactive effect of L1 and L2 transfer in the acquisition of an L3 remains still waiting for further discussion.

In this work we focus on the L3 acquisition of Spanish past-tense aspect by Mandarin-speaking learners who have English as their L2. Strictly speaking, as English is a compulsory course at primary and middle schools in China, all the participants in this study had knowledge of English when they began to learn Spanish at the university. Therefore, Spanish is an L3 for them. Specifically, we replicate Salaberry's (2011) work, in which he analyzes the interaction effect of lexical aspect and discourse grounding on the use of L2 Spanish aspectual tenses, *pretérito indefinido* 'indefinite preterite' (PIN) and *pretérito imperfecto* 'imperfect'(preterite) (PIM), by English learners. Based on the analysis of responses to a written 40 item discourse based forced-choice task, the author states that "as learners gain more experience with the target language, the effect of both lexical aspect and grounding on past tense marking increases" (Salaberry, 2011: 184), contrary to the predictions of the LAH. In our research, we aim to test Salaberry's findings with data of our L1 Mandarin Chinese learners of Spanish with different levels of L3 proficiency (B1; B2; C1 according to *CEFR*). We chose to replicate his multiple-choice test based on a *vignette* by the well-known cartoonist Quino (Lavado, 1986). This task allows us to test both the LAH and DH in an integrated way that can be applied across the different proficiency levels targeted. Moreover, such replication allows us to validate whether the previous findings in the patterns of acquisition for English-Spanish hold for Mandarin Chinese-Spanish. If the comparative analysis of results between our work and Salaberry's (2011) shows divergence, then it may be attributable to the particular transfer from their Mandarin Chinese aspectual mechanisms to their use of aspect in Spanish. In addition, we considered this elicitation methodology easy to carry out as a meaningful classroom activity, not disruptive, which facilitates data collection.

1. Aspect in Spanish and Mandarin Chinese

1.1. Lexical Aspect and Grammatical Aspect

Tense and aspect are two different concepts, the former indicates where an event can be placed in the temporal line (in the past, present, or future), while aspect indicates the internal structure of an event (Comrie, 1976; Klein, 1994). Information relating to these different internal structures can be conveyed at the lexical-semantic level (lexical aspect) and at the morphological level (grammatical aspect) (Smith, 1997).

Classical lexical aspect classification is based on the features of the verb and its predicate, such as the dynamicity, telicity, and durativity. The most cited lexical aspect classification is Vendler's (1967). According to Vendler (1967), there are four types of predicates depending on their lexical properties: states, activities, accomplishments, and achievements (see Table 1). This classification was first proposed for English, and has been applied to other languages, including Spanish (De Miguel, 1999) and Mandarin Chinese (Smith, 1997; Chu, 2006).

Table 1. The properties of Vendler's (1967) aspectual class classification.

Aspectual Class	Features			Examples
States	state (non-dynamic)	atelic	durative	<i>be, think, like</i>
Activities	dynamic	telic		<i>run, swim, see</i>
Accomplishments			<i>draw a picture, build a house</i>	
Achievements			punctual	<i>arrive, win, open</i>

De Swart and Verkuyl (1999), based on verbal features (stative *vs.* dynamic) and noun phrase (NPs) features (specified quality of the NPs *vs.* unspecified quality of the NPs), simplified Vendler's (1967) classification into three categories: 1) states (stative + specified or unspecified quality of the NPs), which correspond to the states in Vendler's (1967) classification; 2) processes (dynamic + unspecified quality of the NPs), which correspond to activities; and 3) events (dynamic + specified quality of the NPs), which correspond to accomplishments and achievements. This model seems to provide a solid framework in the line of Salaberry's (2011) proposal of three categories (states, activities, and telic events). Therefore, in the present work, following Salaberry's (2011) study for L1 English-L2 Spanish, we replicated his work for L1 Chinese-L3 Spanish applying the same three categories: states, activities (processes), and telic events (in which accomplishments and achievements are merged).

Certain grammatical devices can also convey this aspectual information. The grammatical aspect refers to grammaticalized linguistic devices (inflections and/or auxiliaries) that allow the speaker to impose a bounded or unbounded perspective on a situation or event. In the case of grammatical aspect of Spanish, the PIN and the PIM forms are the past tense aspects that carry this information (examples 1 and 2).

- (1) Ayer Juan jugó al baloncesto una hora.
 Yesterday Juan played-PFV/PIN the basketball for an hour
 'Yesterday Juan played basketball for an hour.'

- (2) Antes Juan jugaba al baloncesto.
 In the past Juan played-IPEV/PIM the basketball
 'In the past, Juan used to play basketball.'

In (1), the PIN inflexion (*jugó*) conveys an event that has an end point, and the event is terminated at the last moment of the time scope (one hour + yesterday) of this sentence. In contrast, in (2) the PIM inflexion (*jugaba*) conveys an event that does not have an explicit end point.

The situation is different in the case of Mandarin Chinese. Instead of the morphological inflexion, the expression of grammatical aspect in this language employs a rich aspectual repertoire of markers, such as *-le*, *-guo*, *zai-*, and *-zhe*, as well as a null form, the *zero marker* (Smith, 1997; Xiao & McEnery, 2004). Among these markers, *-le* and *-guo* are considered perfective markers and *-zhe* and *zai-* are considered imperfective markers. The marker *-le* presents a situation in its entirety as a bounded event (Klein, Li & Hendriks, 2000) (see example 3) and traditionally it is considered that the marker *-le* cannot co-occur with state verbs (Smith 1997) (see example 4a and 4b). The marker *-guo* is an experiential marker. Although it provides a perspective from the exterior, like the marker *-le*, it focuses on the result of an experienced event in the past. At the time of speaking, this result no longer exists (Klein et al. 2000; Xiao & McEnery, 2004) (see example 5). Consequently, it is different from the perfective aspect of past tense in English (simple past) and in Spanish (PIN).

- (3) Ta hua-le yi fu hua.
 He/She draw-*le* one CLF picture
 'He/She drew a picture.'
- (4a) *Ta xihuan-le zhe bu dianying
 He/She like-*le* this CLF film
 'He/She liked this film.'
- (4b) Ta xihuan zhe bu dianying
 He/She like this CLF film
 'He/She liked this film.'
- (5) Ta hua-guo yi fu hua.
 He draw-*guo* one CLF picture
 'He has drawn a picture.'

The markers *-zhe* and *zai-* denote an imperfective perspective. Traditionally, the former is considered a durative marker and the latter a progressive marker. The durative marker *-zhe* indicates a state or condition that results from the action indicated by the verb (Smith, 1997). In addition, this aspect marker basically only co-occurs with states, activities and semelfactives (Xiao & McEnery 2004) (see example 6). The marker *zai-* is a progressive marker and has a dynamic meaning (Xiao &

McEnergy, 2004). Therefore, this marker cannot co-occur with states. In addition, it is not compatible with achievements due to its durative property (see examples 7a, 7b, and 7c).

- (6) zhi shang xie-zhe si ge zi.
 Paper on write-*zhe* four CLF word
 ‘There are four words written on the paper.’
- (7a) *Ta zai-xihuan zhe bu dianying
 He/She *zai*-like this CLF film
 ‘He/She is liking this film.’
- (7b) *Ta zai-dao xuexiao.
 he/she *zai*-arrive school
 ‘He/She is arriving at school.’
- (7c) ta zai-xie zi.
 he/she *zai*-write word
 ‘He/She is writing words.’
- (8) wo kan wan zhe pian xiaoshuo hou bian xiang [...]²
 I read finish this CLF story after then think
 ‘Having finished reading this story, I though [...]’
- (9) Wang tongchang he pijiu².
 Wang usually drink beer
 ‘Wang usually drinks beer.’

Furthermore, there are non-overt aspect markers (the zero-marker) in Mandarin Chinese, which means that there are sentences that are not marked for aspect. Xiao and McEnergy (2004) postulated that the zero-marker in Mandarin Chinese is neutral between perfective and imperfective when it is considered in isolation, but its aspectual information can be conveyed explicitly in the discourse (example 8 has perfective interpretation while example 9 has imperfective interpretation). These authors argued that, in Mandarin Chinese, state verbs ‘do not have to be marked for aspect’, whereas dynamic verbs with the zero-marker have two readings: *irrealis* imperfectives (future, habitual or conditional) (see example 9) or perfective without aspect marking. According to Xiao and McEnergy (2004), the interpretation of the zero-marker in Mandarin Chinese is ‘either perfective or imperfective, depending on the context’. Therefore, syntactically the zero-marker in Mandarin Chinese is a neutral marker, but semantically the perfective and imperfective information can be conveyed by the discourse.

1.2. A Cross-Linguistic Comparison of Aspectual Systems

In research tracking L2 acquisition of Spanish past tense aspect by L1 English speakers, differences in the aspectual systems of these two languages have been widely analyzed (Montrul & Slabakova, 2002; Salaberry, 2011, Domínguez et al., 2017;

González & Quintana, 2018). These works postulate that if the English simple past (the *-ed* form) co-occur with state verbs, the translation in Spanish can be either with PIN or with PIM as in (10). This divergence in the selection and matching of features between the L1 and L2 could bring ambiguity to learners in their use of PIN and PIM in Spanish. For example, Cuza (2010) supports that the English-speaking learners show an overextended use of PIN in their production in Spanish.

- (10) She was ill.
 Ella estar-PST enferma
 ‘Ella estuvo/estaba enferma.’

The relationship between the aspectual system of Mandarin Chinese and Spanish is more complex. The marker *-le* conveys the perfective interpretation, but it only co-occurs with dynamic verbs (see example 3). In the case of state verbs, the most used form is *zero-marker* (see example 4a and 4b). As mentioned in Section 2.1, state verbs in Mandarin Chinese do not need to be marked for aspect because of the internal properties of this type of verbs. So, in Mandarin Chinese, the internal [-bounded] properties of state verbs exclude the possibility that this type of verbs can co-occur with aspect markers, since it would be redundant for them to co-occur with imperfective markers, and it is contradictory for them to co-occur with perfective aspect makers. Therefore, state verbs in Mandarin Chinese convey inherently the imperfective property and appear in zero-marker form. Moreover, the zero-marker also appears in the habitual interpretation (a subcategory like *irrealis* mentioned in Section 2.1) in Mandarin Chinese (see example 8), while the other two imperfective aspect markers, *-zhe* and *zai-*, correspond to the continuous reading and progressive reading respectively in Spanish, and cannot co-occur with achievements (a subcategory of telic events) (see example 6 and 7).

Table 2. Aspectual systems in Mandarin Chinese, Spanish and English.

Mandarin Chinese		Spanish	English
state verbs	dynamic verbs		
<i>zero-marker</i>	<i>-le</i>	<i>PIN</i>	<i>-ed</i> (simple past)
	<i>-zhe</i> (durative)	<i>PIM</i> (continuous)	
	<i>zai-</i> (progressive)	<i>PIM</i> (progressive)	<i>-ing</i> (progressive)
	<i>zero-marker</i> (habituality)	<i>PIM</i> (habituality)	<i>used to</i> (habituality)

As we can see in Table 2, compared to Spanish, in Mandarin Chinese, the neutral *zero-marker* is used for states, and syntactically the perfective or imperfective information is ambiguous. In this case, aspect information is conveyed by the discourse information. Moreover, imperfective is less used for telic events in Mandarin Chinese because imperfective markers cannot co-occur with achievements (a subcategory of telic events). In English, however, perfective (*-ed*) is more extensively

used than in Spanish, because it can be applied to both perfective and imperfective contexts in English.

Considering the above-described differences in the aspectual system of Mandarin Chinese, English and Spanish (shown in Table 2), we propose two possible patterns of language transfer in the production of non-native Spanish by Chinese speaking learners. Firstly, if L1 Mandarin Chinese's transfer is more dominant, learners will prefer PIM for stative verbs, and PIN for achievement verbs. Secondly, if L2 English exerts more effect in the acquisition of Spanish aspect, data will show overextension of PIN in their production of Spanish.

2. Related Work

2.1. Previous Research on LAH and DH

Recent research on L2 aspect acquisition focuses mainly on three different perspectives: lexical (LAH), discourse (DH), and interlinguistic (L1 transfer). The LAH postulates that the pattern of aspectual morphology used in the interlanguage of L2 learners depends on the lexical properties of verbs. For example, learners tend to combine the imperfective aspect with state verbs because of their non-dynamic, atelic, and durative properties, expanding later to activity, accomplishment, and achievement verbs with the development of proficiency in the target language. In contrast, they tend to combine the perfective aspect with achievement verbs because of their dynamic, telic, and non-durative properties, expanding later to accomplishment, activity, and state verbs with the development of proficiency in the target language (Andersen, 1991; Andersen & Shirai, 1994). Research based on this hypothesis has not reached a consensus: some works support the prediction of the LAH (Ramsay, 1990; Bardovi-Harlig & Reynolds, 1995; Sánchez-Quintana, 2005), whereas others refute this prediction (Salaberry, 1999, 2002, 2008, 2011; Quesada, 2006), claiming that the perfective aspect is used as a default morphological inflection for all verbs in the interlanguage of L2 learners with a lower proficiency level.

Regarding the discursive function, according to Hopper (1979), the information in the discourse can be classified into foreground information and background information. The former relates to events belonging to the skeletal structure, and the latter provides support material that elaborates on or evaluates the event in the foreground. A similar point of view can be found in Reinhart (1984), Fleischman (1985) and Bardovi-Harlig (1995). According to these works, which deal with discourse functions in different languages, foreground information (the main line in the narrative) contains information features, such as narrativity, punctuality, and uses aspectual marked perfective verbs; whereas background information provides information such as description, motivation and evaluation as supportive material, and uses aspectual marked imperfective verbs, such as state or durative verbs. Therefore, according to these authors, discursive information guides the selection of aspect

morphology for L2 learners (Bardovi-Harlig 1994). This means that L2 learners tend to select the perfective form for predicates which appear in the foreground and tend to select the imperfective form for those which appear in the background. Some empirical studies on L2 Spanish argue that these prototypical associations of PIN with foreground and PIM with background tend to be stronger with the development of learners' proficiency (Sánchez-Quintana, 2005; Domínguez, Tracy-Ventura, Arche, Mitchell & Myles, 2012).

Moreover, learners' L1 pattern of aspect has been reported to play an important role and is transferred to L2 acquisition of aspect. According to Selinker, Swain and Dumas (1975), L1 transfer refers to an apparent application of the rules of native language of the learners to the forms of the target language. Based on previous research, it can be summarized that dynamicity is the main verbal property for L1 English learners for selecting PIN or PIM in their L2 interlanguage (Salaberry, 1999, 2011; Domínguez, et al., 2012; González & Quintana, 2018). Some studies proposed that this aspectual pattern of L1 English may be transferred by L2 Spanish learners. Cuza (2010) found that English-speaking learners of L2 Spanish overextended the PIN with both stative and eventive predicates in the case where PIM is preferred by native speakers (such as the habitual or continuous contexts). With respect to other learners of Spanish, for example, for L1 Dutch learners, terminative and durative properties are the relevant information for their L2 aspect acquisition (González & Quintana, 2018). For L1 French and L1 Japanese learners, PIM and PIN are the default aspect markers respectively (Sánchez-Quintana, 2005). For L1 Mandarin Chinese learners, the pattern is not clear: for Chin (2008), who analyzed only three categories (states, accomplishments, and achievements), all three are problematic; for Díaz, Bekiou and Bel (2008), who analyzed data from a broader group of Asian speakers, the lack of markers that distinguish the telic and atelic aspects in Spanish morphology causes difficulties for their acquisition by L2 Spanish learners; and the results reported by Mao (2009) support the prototypical association predicted by the LAH.

In recent years, some studies also focused on the interaction effect from both L1 and L2 in the acquisition of L3 Spanish aspect. Eibensteiner (2019) analyzed the acquisition of L3 Spanish by learners with German as L1 and English as L2. The author pointed out that, as learners' L1 German does not possess any aspectual inflection at grammatical level, they may rely on English in their production of Spanish. For example, as English stative verbs are marked as simple past (the *-ed* form), learners would transfer this pattern into their use of Spanish, assuming that stative verbs are only compatible with PIN, even though this association between PIN and statives is non-prototypical in Spanish. The other work based on L1 German learners of Spanish was conducted by Diaubalick et al. (2020). This work focused on the transfer of learners' L2 (a Romance language) to their acquisition of aspect in L3

Spanish, and the results show that in a prototypical situation, learners who have a higher proficiency level of L2 have a more native-like performance in their use of aspect in L3 Spanish.

Other previous studies analyzed the interaction effect between these different factors rather than the individual effect on the acquisition of the aspect in L2. For example, some research focus on the primacy that the lexical aspect and grounding information have in discourse in the acquisition of L2 aspect. Lafford (1996) claims that the influence of discourse information overrides lexical properties in Spanish L2 acquisition. López-Ortega (2000) claims that evidence can be found to support the prototypical associations predicted by both the LAH and the DH in the data of Spanish L2 learners. Moreover, Bardovi-Harlig (1998) analyzes the interactive influence of the lexical-semantic and discourse-semantic levels in the acquisition of L2 English aspect. Results demonstrate that the punctual semantic property of achievement verbs can cover the discourse information with the result that the L2 learners in her study show a preference for the perfective aspect in achievements for both the foreground and the background levels. Nevertheless, this tendency cannot be detected in accomplishments and activities in which both lexical-semantic properties and discourse information play a key role in learners' use and selection of aspect forms.

2.2. A Review of Salaberry (2011)

Salaberry (2011) focused on the interaction effect of both the LAH and the DH on L1 English learners of L2 Spanish in the selection of PIN and PIM morphology as well as the interactive influence of those two linguistic levels in the acquisition of Spanish aspect by L1 English speakers. The participants in his research were Spanish learners of L1 English in the USA at four different proficiency levels (2nd, 3rd, 4th, and 5th semester at university) and a control group (monolingual native speakers of Spanish from Mexico and Uruguay). The elicitation instrument used was a 40 item discourse based forced-choice written task, adapted from a *vignette* by the cartoonist Quino (Lavado, 1986) (See section 5 for more details of this test).

The conclusion of his research was that both lexical aspect and grounding information in discourse affect the learners' selection of PIN and PIM. Moreover, different situations should be considered when discussing this problem: if the combination between lexical aspect and discourse information is prototypical, then lexical properties play a stronger role. In contrast, if the combination between lexical aspect and discourse information is non-prototypical, then discourse information should be taken into consideration. It also reveals that this conditioning increases, rather than decreases, with the development of learners' language skills. This tendency is contrary to the LAH, which states that the lexical effect is more obvious in the initial stage of L2 learners' interlanguage. Salaberry (2011) pointed out that the reason

for this contradiction could be attributed to the language input (without monitoring) which guides L2 learners to produce prototypical combinations like native speakers (also see Shirai, 2004). In addition, Salaberry also claimed that grounding information in discourse is the factor determining the differences found in patterns used by native and non-native speakers, since he observed that native speakers selected the use of PIN and PIM according to discursive mechanisms (background and foreground). In contrast, non-native speakers based their choice on lexical aspect when selecting PIN and PIM, but only in the case of prototypical associations. This observation also shows that grounding information is more challenging for non-native speakers than lexical properties.

Our study, by replicating the methodology used in Salaberry (2011), excludes the influence of variables caused by test-type in the acquisition of L2/L3 Spanish aspect. Therefore, the cause of the differences observed in the patterns in our study and those reported by Salaberry (2011) can be attributed to the influence of L1 transfer (L1 Mandarin Chinese vs. L1 English), as well as to the differences in the curricula at the universities in both countries. Moreover, as English is the L2 of our learners, results of this study can shed some light on the interaction influence of both L1 Mandarin Chinese and L2 English on the acquisition of aspect in L3 Spanish.

3. Hypotheses

Based on the prediction of the LAH and the DH as well as previous research, especially the work of Salaberry (2011), we formulate the following hypotheses:

H1. Based on the LAH and the DH, our data should show prototypical associations irrespective of L1: the prototypical association between lexical aspect and grammatical aspect is that state verbs are associated with imperfective and telic verbs with perfective, and the prototypical association between grounding information in discourse and grammatical aspect is that background information will be associated with the imperfective, and foreground information with the perfective.

H2. Based on previous research on L1 English L2 Spanish, especially Salaberry (2011), our data should show a contradiction to the developmental pattern predicted by the LAH and the DH: with the development of learners' proficiency, the effect of the lexical aspect and grounding information in discourse in their use of PIN and PIM morphology of Spanish will increase and the combination of the prototypical associations stated in the H1 will be stronger.

H3. Regarding the interaction effect between the lexical aspect and grounding information in discourse, as Salaberry (2011) posits, grounding information in discourse can differentiate most clearly the options taken in the use of PIN and PIM by native speaker from the options taken by non-native speakers. Native speakers select the use of PIN and PIM according to discursive mechanisms (background and

foreground). In contrast, non-native speakers will base their choice on lexical aspect when selecting PIN and PIM, but only in the case of prototypical associations. In the present research we expect to find this same pattern for L1 Mandarin Chinese speakers of Spanish.

H4. Considering the typological differences between Chinese, English and Spanish, we expect to find differences in our Spanish-Chinese data compared with Salaberry's Spanish-English data, especially in the case of states and telic verbs. In the case of these two situations, the differences between Spanish and Mandarin Chinese are more substantial since L1 transfer favors the association of state verbs with PIM. In the case of telic events, as in Mandarin Chinese achievement verbs cannot occur with PIM, the L1 transfer favors the association of PIN with telic verbs in the Spanish interlanguage patterns of Chinese learners. In contrast, if the transfer of our learners' L2 English is more dominant than the transfer from their L1 Mandarin Chinese, the result of this work will support the pattern found in Eibensteiner (2019). According to it, our learners will prefer to associate state verbs with PIN.

4. Methodology and participants

The elicitation task used in this work follows Salaberry (2011). It consists of a modified version of a *vignette* by cartoonist Quino (Lavado, 1986) (see Appendix 1), accompanied by a fill in the blanks exercise with a multiple-choice task (see Appendix 2). The only difference with Salaberry's fill in the blanks text is that we replaced Latin American Spanish vocabulary with Peninsular Spanish vocabulary in order to make the exercise clearer for our study groups, learning the latter Spanish system. For instance, we used “*mecedora* ‘rocking chair’, and “*coche* ‘car’” instead of Salaberry's “*hamaca* ‘rocking chair’” and “*carro* ‘car’”.

The text consists of a narrative sequence including forty blanks corresponding to forty verbs with two options (PIN and PIM), offered immediately after in brackets (for example: *meció-mecía* ‘rock’) required for carrying out the discourse completion task. Before taking out the test, subjects received three materials: the narrative text with the two options in brackets, the *vignette*, and a list of new vocabulary (agreed on their teachers). Learners were asked to fill in the blanks in the narrative text by selecting only one of the options in the brackets according to the images in the *vignette*. The list of new vocabulary consisted of the presentation of a plain Spanish word mapped with an image depicting the object/action in the *vignette* to ensure that all Chinese learners could understand the whole text (see Appendix 3).

The 40 items in the narrative task were 14 states, 11 activities (process), and 15 telic events. This test included items of both prototypical associations (states/activities in the background and telic events in the foreground) and non-prototypical associations (states/activities in the foreground and telic events in the background) (See Table 3).

Table 3. Occurrence of items by lexical aspect and grounding information in the task (Salaberry, 2011: 191).

Lexical Aspect	Foreground	Background	Total
States	10	4	14
Activities	9	2	11
Telic events	5	10	15
Total	24	16	40

The experimental groups consisted of 75 Chinese learners of Spanish from Nanjing University Jinling College in China. They were enrolled in 3rd, 5th, and 7th semesters of a Spanish philology course. They were divided into three groups: non-native speakers B1 (NNB1); non-native speakers B2 (NNB2); and non-native speakers C1 (NNC1) according to the exams taken at the end of each semester in college, which are based on CEFR (2000) (See Table 4). In addition, there was a native speaker group (marked as NS group) made up of 25 students from Pompeu Fabra University (UPF) in Barcelona whose Spanish is Peninsular Spanish. They were bilinguals Spanish-Catalan, two Romance languages³ (balanced bilinguals), who had also English as L2⁴.

In this study, all the Chinese learners have English as their L2. In the national curriculum of China, English is a compulsory subject since primary school. In addition, the university students should pass the national College English Text of Level 4 (CET-4) to qualify for graduation. Spanish, on this other hand, is a new foreign language for our Chinese learners at university. Being students majored in Spanish, the course about this language is intensive and systematic during the university year. In the classroom learning environment and textbooks, indefinite and imperfect preterits are taught by explicit grammatical instruction, bringing in examples of daily life, texts with discourse information, and exercises. Teachers may also prepare supplementary material and training. That is to say, in the grammatical section, interpretations of these two aspects (such as the perfective interpretation of PIN and progressive or habitual interpretations of PIM) are summarized as explicit grammatical rules. The followed examples can improve learners' comprehension of these interpretation. In the text section, the function of perfective and imperfective is taught at a wider discourse context and finally, in the exercises section, teachers evaluate learners' mastering of PIN and PIM based on their feedback.

Table 4. Distribution of the subjects across levels.

Group	No. of subjects
NNB1(3 rd)	24
NNB2(5 th)	24
NNC1(7 th)	27
NS (Control Group)	25
TOTAL (N)	100

The experiment reported in this study took place in a classroom through a test. After distributing the *vignette* (appendix 1), the fill in blanks task (appendix 2), and the support image for new vocabulary (appendix 3), the teacher delivered in Mandarin Chinese the instructions for the test. The participants were asked to select one of the given choices in the blankets (either the PIN or the PIM form) according to their interpretation of the context for each one of the *vignettes* in 15 minutes.

5. Results

The elicitation instrument was designed to obtain 4,000 tokens from the 100 subjects described in the previous section, that is 40 items per subject. However, 25 items were omitted by subjects (they did not answer these items) during the test: 5 in NNB1 (0.5%), 7 in NNB2 (0.7%), 7 in NNC1 (0.6%), and 6 in NS (0.6%). Therefore, the total number collected was 3975 tokens.

To evaluate the contrast between the usage patterns of PIN and PIM forms in students' production, we considered three factors taken as independent variables in our analysis: proficiency level (NNB1, NNB2, NNC1, and NS), grounding information in discourse (background and foreground), and aspectual classes (states, activities, and telic events). The dependent variable, which is the subjects' answers, was marked with 0 when PIN was selected and with 1 when PIM was selected. Salaberry (2011) conducted three analyses of the interactive effect of aspectual classes and grounding information in discourse on the selection of PIN/PIM, the effect of grounding information across lexical aspect classes and the occurrence of categorical answers in each group. In line with Salaberry, we conduct a global statistical analysis in section 6.1 and then in sections 6.2, 6.3, and 6.4 we conduct the same analyses as in Salaberry (2011) for grounding and lexical classes in discourse, respectively.

5.1. Global statistical analysis

As a first step, we carried out a binary logistics regression⁵ to evaluate the significance between the dependent variable (the use of PIN or PIM in learners' answer) and independent variables (proficiency level groups, aspectual-class, and grounding information).

Results show that there is no significant difference between answers (the use of PIN and that of PIM) by learners from the different proficiency groups. However, we observed a significant difference between the answers for different aspectual class and grounding information in discourse: the use of PIM in activities (O.R. = 0.788, $p = .017$) and in telic verbs (O.R. = 0.394, $p = .000$) is less than in stative; moreover, the use of PIM in background is more than the use in foreground (O.R. = 14.191, $p = .000$).

Overall, the global analysis shows that the proficiency level of Spanish does not have a significant effect on our learners' use of PIN and PIM. Nevertheless, our learners show a significant preference of PIM in stative verbs, and this preference decreases gradually in activities and telic verbs. In addition, the effect of grounding information is even more robust, as in the case of background, where the use of PIM is 14.191 times higher than in the context of foreground.

5.2. The effect of aspectual classes and grounding information in discourse on the selection of PIN/PIM

We conducted an ANOVA analysis in order to compare the production results between our learners and those in Salaberry (2011), to evaluate the relationship between the dependent variable (the use of PIN or PIM in learners' answer), and to study the interaction effect of independent variables (proficiency level groups, aspectual-class, and grounding information). Firstly, data were grouped according to subjects' proficiency level, grounding information in discourse and aspectual class. The two-way interaction effects proved to be significant: between group and lexical aspect ($F = 5.874$, $df = 6$, $p = .000$), between group and grounding information ($F = 26.969$, $df = 3$, $p = .000$), and between lexical aspect and grounding information ($F = 77.228$, $df = 2$, $p = .000$). The three-way interaction effect between group, lexical aspect, and grounding information proved to be significant ($F = 2.337$, $df = 6$, $p = .030$). These results are in line with those presented by Salaberry (2011).

Furthermore, we broke down the three effects (proficiency level, grounding information in discourse, and lexical aspect) to compare the interaction effects between proficiency group and aspectual class and the interaction effects between proficiency group and grounding information in discourse. Figures 1 and 2 show the mean values of answers when proficiency groups are considered as a variable and separated according to lexical aspect and grounding information in discourse respectively.

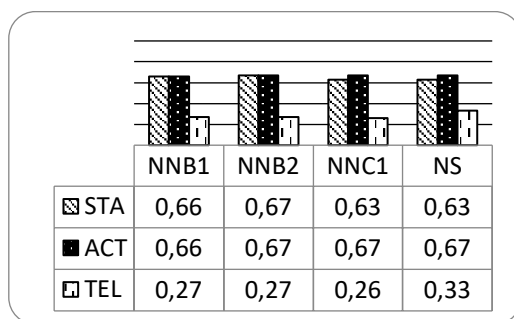


Figure 1. Distribution of mean values according to lexical aspect.

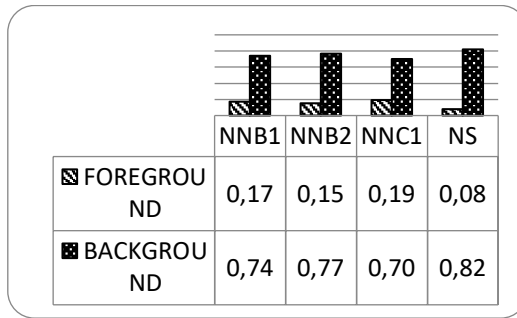


Figure 2. Distribution of mean according to grounding.

An analysis of the difference between proficiency and lexical aspect in terms of the interaction effect (see Table 5) is only significant in the case of the NNC1 and NS groups, though only for telic verbs (std. error = .032, $p = .048$). That is to say, in this case native speakers show a significant preference for the use of PIM compared to subjects in NNC1, whereas no significant difference can be found between proficiency groups in the case of states and activities. This is an unexpected result because the NNC1 group shows a less native-like pattern compared to the groups NNB1 and NNB2 in the case of telic verbs. Table 6 shows significant differences between the native speaker group and all non-native groups for both foreground and background information. Moreover, there is a significant difference between the non-native NNB2 and NNC1 groups in the case of background information. This means that native speakers show categorical preference for using PIN in the foreground and PIM in the background compared with all the non-native speaker groups. Moreover, the difference between NNB2 and NNC1 in the case of background suggests that, in this condition, the use of PIM by NNC1 is even less than in NNB2. This result shows again that the NNC1 group is less native-like than the NNB2 group in this case. Therefore, grounding information in discourse plays a key role in distinguishing the targeted selection of PIN and PIM by native and non-native speaker groups. This effect of grounding information in discourse is stronger than the effect of lexical aspect in the selection of the PIN or PIM by native speakers. In addition, answers by learners in NNC1 are less native-like in the case of telic verbs and background information.

Table 5. Two-way significant interaction effects by aspectual class decomposed.

Aspectual classes	Significant comparison between groups	Std. error	Significance
States	None		
Activities	None		
Telic events	NNC1 vs. NS	.032	.048*

Table 6. Two-way significant interaction effects by grounding decomposed.

Grounding information	Significant comparison between groups	Std. error	Significance
Foreground	NNB1 vs. NS	.025	.000***6
	NNB2 vs. NS	.025	.009**
	NNC1 vs. NS	.025	.000***
Background	NNB1 vs. NS	.025	.000***
	NNB2 vs. NNC1	.024	.008**
	NNB2 vs. NS	.025	.005**
	NNC1 vs. NS	.024	.000***

A decomposed three-way interaction effect is presented in Table 7. According to this table, telic events show the clearest pattern compared to activities and states. There are significant differences between native speakers and all the non-native speaker groups in both foreground and background information. Considering the mean values classified by aspectual class in Figure 3 and Figure 4, this means that for telic event verbs, native speakers show preference for using PIN in the foreground and PIM in the background compared to all the non-native speaker groups.

Table 7. Three-way significant interaction effects decomposed.

Lexical aspect	Grounding information	Significant comparison between groups	Std. error	Significance
States	Foreground	NONE		
	Background	NNB2 vs. NNC1	.039	.046*
Activities	Foreground	NNB1 vs. NNB2	.078	.018*
		NNB1 vs. NS	.078	.000***
		NNB2 vs. NNC1	.076	.008**
		NNC1 vs. NS	.075	.000***
	Background	NNB1 vs. NS	.040	.010*
		NNC1 vs. NS	.039	.021*
Telic events	Foreground	NNB1 vs. NS	.017	.014*
		NNB2 vs. NS	.017	.049*
		NNC1 vs. NS	.017	.001**
	Background	NNB1 vs. NS	.052	.000***
		NNB2 vs. NS	.052	.000***
		NNC1 vs. NS	.050	.000***

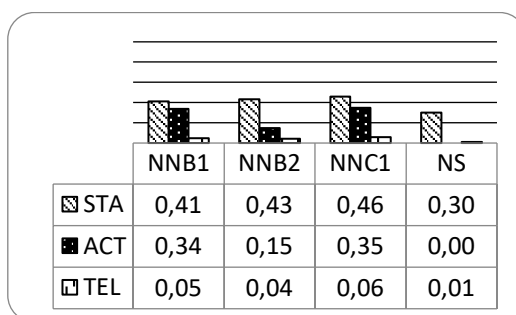


Figure 3. Distribution of scores according to lexical aspect in FOREGROUND.

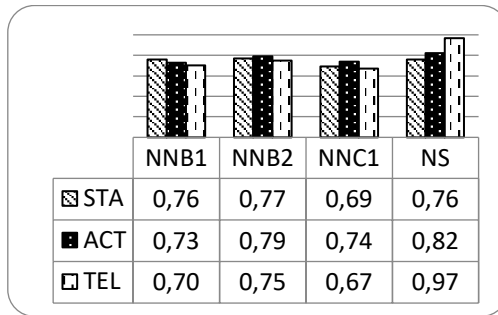


Figure 4. Distribution of scores according to lexical aspect in BACKGROUND.

Activities show the second clearest pattern. Native speakers show significant differences from NNB1 and NNC1 in the cases of both foreground and background information. In addition, the data from NNB2 do not show significant differences compared to native speakers; in fact, this group shows significant differences with both NNB1 and NNC1. This means that compared to subjects in NNB1 and NNC1, both the NS and NNB2 groups share a similar pattern and show a preference for using PIN in the foreground and PIM in the background for activities (see Figures 3 and 4).

Finally, there are significant differences between groups in terms of states. A significant difference can be attested between NS and NNB1 as well as between NS and NNC1, only in the case of background information, which means that subjects in NNC1 show less preference for using PIM in the background with states compared to both the NNB2 and NS groups (see Figure 3 and Figure 4).

5.3. The effect of discourse information across lexical aspect classes

Following Salaberry (2011), we conducted a second data analysis to test the effect of discourse information across lexical aspect classes. When the score of an item approaches 1, it means that the tendency is to select PIM; and when the score approaches 0, the tendency is to select PIN. Therefore, the differential score values between the background score and the foreground score for each lexical aspect class can reveal the intensity of the effect of grounding information on the use of PIN and PIM across groups and aspectual classes. These differential score values are listed below in Table 8, separated by groups and lexical aspect classes.

Table 8. Differential scores for lexical aspect classes according to grounding (background scores – foreground scores).

	States	Activities	Telic events	Mean value
NNB1	0.35	0.40	0.65	0.47
NNB2	0.34	0.64	0.71	0.56
NNC1	0.23	0.39	0.61	0.41
NS	0.46	0.82	0.96	0.75
Range	0.23	0.43	0.35	0.34

According to Table 8, the native speaker group shows a more noticeable gap in differential scores compared to all the non-native speaker groups for all lexical aspect classes, especially in the case of activities and telic events (0.46 in states, 0.82 in activities and 0.96 in telic verbs). Therefore, our results did show again that grounding information in discourse plays a stronger role among native speakers than among non-native speakers in guiding their selection between PIN and PIM. In addition, among non-native speaker groups, the differential score for NNC1 is the least robust in all lexical aspectual classes (0.23 in states, 0.39 in activities and 0.61 in telic events), whereas the NNB1 shows the most obvious differences in states (0.35), and the NNB2 shows more obvious differences in activities (0.64) and telic events (0.71). This means that there does not exist a positive relationship between differential score values and language proficiency between non-native speaker groups. In a nutshell, our data shows that for non-native speakers a higher proficiency in Spanish does not result in a better application of grounding information to their PIN/PIM selection.

The value of *Range* (the last row of Table 8), which represents the difference between the highest and lowest values in the set of the data, is obtained by subtracting the minimum value from the maximum value in the same column. Table 8, therefore, reveals the effect of grounding information in discourse on the selection of PIN/PIM across lexical classes by different groups. The results show that the ranges are clearer in activities, followed by telic events, and states. Therefore, language proficiency has more effect on activities, and less effect on states. In addition, in this analysis, a developmental pattern across proficiency levels cannot be found, because, as shown in Table 8, the highest values occur in the NS group across all lexical aspect classes, but the lowest values occur in NNC1, instead of in NNB1, as intuitively expected.

5.4. Analysis of categorical answers

The final analysis focuses on the mean values of each item separately. As Salaberry (2011) postulated, this analysis can reveal ‘whether specific groups were more categorical than others in their choices of Preterit and Imperfect’, because ‘the more categorical the answer for a specific group is, the more homogenous their responses are (cf. Coppieters, 1987).’ Therefore, if the mean value of an item approaches 0, the answers tend categorically to be PIN. In contrast, if the mean value approaches 1, the

answers tend categorically to be PIM. In this analysis, we adopted Salaberry's (2011) criteria: those items whose mean values are equal to or less than 0.2 and whose mean values are equal to or greater than 0.8 are taken as categorical answers. The occurrences of categorical answers and their percentages for each group are listed separately in Table 9.

Table 9. Categorical selection by per proficiency groups.

Groups	Occurrence of categorical answers Total=40	Percentage of categorical selection
NNB1	18/40	45%
NNB2	23/40	57.5%
NNC1	16/40	40%
NS	38/40	95%

Our results show that the NS group has a higher percentage of categorical answers than the three non-native speaker groups. That is to say, the selection between PIN and PIM by native speakers is the most homogeneous. Among the non-native speaker groups, the occurrences of categorical answers increase from NNB1 to NNB2 but decrease from NNB2 to NNC1. Finally, the NNC1 group has the lowest percentage of all non-native groups. Therefore, our data do not show a developmental pattern of categorical answers by proficiency levels, because the highest peak appears in the NNB2 group instead of in the NNC1 group. In the NS group, there are 38 categorical answers out of 40. They only show neutral choice between PIN and PIM in the 2nd and 6th items (average valor = 0.47 in 2nd item and average valor = 0.46 in 6th item). As shown in the following examples, both items describe information at the background level. The 2nd item contains the stative verb *ir* (Fue – Iba) ‘go’ and the 6th item contains the activity verb *visitar* (visité – visitaba) ‘visit’ as target verbs. The three non-native speaker groups, however, show preference to the use of PIM for these two items, except the case of NNB2 in the 6th item. The average values of each group in these two items are: 0.92 for NNB1, 0.92 for NNB2 and 0.74 for NNC1 in 2nd item; 0.65 for NNB1, 0.46 for NNB2 and 0.63 for NNC1 in 6th item. This result prove again that the grounding information is a stronger factor in guiding Chinese speakers’ choice between PIN and PIM.

2nd item: 2 (Fue – Era) la casa en la que (pasé – pasaba) muchas de las horas más felices de mi infancia.

6th item: 6 (visité – visitaba) pero todavía (conservó – conservaba) muchos recuerdos de las veces que a mi abuelo.

Regarding the mean values of those items with non-prototypical associations between lexical aspect and grounding information (states and activities with foreground and telic events with background), the NS group selected their answer (PIN or PIM) based on the grounding information in all items, except for item 40 (see

Table 10). According to Table 10, when items appear in the foreground, the answers of the NS group tended categorically to PIN (approaching 0); whereas when items appear in the background, the answers of the NS group tended categorically to PIM (approaching 1).

Table 10. Distribution of mean values in non-prototypical associations for all groups according to proficiency⁷.

Items	Grounding	Lexical Aspect	NNB1	NNB2	NNC1	NS
12	FOREGROUND	STATE	0.29	0.46	0.41	<i>0.09</i>
21	FOREGROUND	STATE	0.38	0.46	0.42	<i>0.08</i>
32	FOREGROUND	STATE	0.33	<i>0.13</i>	0.26	<i>0.05</i>
40	FOREGROUND	STATE	0.63	0.67	0.73	<i>1.00</i>
13	FOREGROUND	ACTIVITY	0.29	<i>0.08</i>	0.33	<i>0.00</i>
16	BACKGROUND	TELIC	<i>0.88</i>	<i>0.83</i>	<i>0.89</i>	<i>0.88</i>
17	BACKGROUND	TELIC	0.63	0.63	0.67	<i>1.00</i>
25	BACKGROUND	TELIC	0.67	0.71	0.59	<i>0.97</i>
29	BACKGROUND	TELIC	0.43	0.79	0.48	<i>1.00</i>
31	BACKGROUND	TELIC	<i>0.92</i>	0.78	0.70	<i>0.97</i>

This data show that the answers of the non-native speaker groups are ambiguous, as the lack of categorical answers shows. In the case of atelic verbs (states and activities), there are only two categorical answers which occur in NNB2: one corresponds to item 13 (0.08) and the other to item 32 (0.13), also both involve the association of atelic/foreground. In the case of telic verbs (accomplishments and achievements), there are four categorical answers: item 16 for NNB1, NNB2 and NNC1; and item 31 for NNB1. Therefore, our results demonstrate that native speakers show a more homogenous pattern in the selection of PIN and PIM than the non-native speaker groups. An analysis of non-prototypical association shows that native speakers based their selection on grounding information in discourse but not on the lexical aspect. This tendency is not observed in the data of non-native speaker groups. Moreover, among the three non-native speaker groups, NNB2 have more homogeneous answers (3 homogenous answers) compared to NNB1 and NNC1 (1 homogeneous answer respectively). Finally, our ranking of non-native homogeneous answers does not show a progression according to L3 proficiency.

6. A comparative analysis with Salaberry's (2011) data

Three main conclusions can be drawn from the research of Salaberry (2011) based on L1 English learners of L2 Spanish:

C1. The data from L1 English L2 Spanish support the prototypical associations predicted by the LAH and the DH. That is, the associations of telic verbs with PIN and atelic verbs with PIM, and the associations of the foreground with PIN and the fact that background with PIM in Spanish are priority selections for L1 English speakers.

C2. His results do not support the developmental patterns predicted by the LAH and the DH. Based on the prediction of the LAH and the DH, effects at the lexical aspect level and at the discourse grounding level are highly associated with the selection of PIN and PIM at the initial stage of L2 acquisition. However, the results in Salaberry (2011) show that these effects increase, rather than decrease, with the development of learners' proficiency in Spanish.

C3. Regarding the interaction effect between lexical aspect and grounding information in discourse, Salaberry (2011) points out that the effect of grounding information in discourse is “the construct that most clearly distinguishes learners from native speakers.” (p.184)

Our data, based on L1 Mandarin Chinese L3 Spanish learners, support Conclusion 1 (C1) in Salaberry (2011), since our results show that our learners of Spanish also show a preference to associate PIN with telic verbs or PIN with the foreground, and PIM with atelic verbs or PIM with the background (see Figures 3 and 4). Therefore, our results corroborate Hypothesis 1 (H1) in this research.

Concerning Salaberry's (2011) C2, neither the results of this work nor the results in Salaberry (2011) support the existence of the developmental pattern mentioned in our Hypothesis 2 (H2). However, specific patterns can be found in both studies for L1 English learners and for L1 Mandarin Chinese learners, although they are different. In Salaberry (2011), the effects of lexical aspect and grounding information in discourse increase with the development of L2 learners' proficiency. Our results in this work with Chinese learners show that these effects reached their peak in the NNB2 group but decreased in the NNC1 group. These are the most outstanding results of our work, as shown in Tables 7, 8, and 9.

Salaberry's (2011) explanation for the increase in the effects of lexical aspect and grounding information in discourse with the development of language proficiency is the input. For him, verbs are clearly biased towards PIN or PIM in the production of Spanish native speakers (Tracy, 2007), which means that this particular patterned-input guides L2 learners towards “an ever-increasing native-like competence” (Salaberry, 2011: 198). However, this explanation raises a question based on the results of our work: why our Mandarin Chinese learners of Spanish do not follow the same pattern and why do these effects decrease in NNC1?

Our tentative answer is that it is due to the university curriculum in the Spanish department in Nanjing University Jinling college in China and to the calendar of examinations. These Chinese university students must take part in a national Spanish test (*Examen Nacional para Estudiantes de Licenciatura de Filología Española Nivel 4*, EEE-4) at the end of their second academic year (4th semester) and at the end of the fourth academic year (8th semester) they will take the exam of level 8 (EEE-8). The EEE-4 exam assesses the basic language skills, including grammatical rules, translation, and

listening comprehension, etc. The EEE-8 exam, in its turn, assesses the capacity of language use and the socio-cultural expertise on Spanish-speaking countries. As a result, the different focus of the EEE-4 and EEE-8 is reflected in the curriculum Chinese universities. For example, before the exam EEE-4 takes place, the teaching activities in the universities from the 1st to 4th semester focus on grammatical training and the practice of language skills. The principal course during this period, “Basic Spanish”, is taught by Chinese teachers. Normally, the main objective of this course is the learning of basic grammatical rules by reading, writing, listening, and speaking. Therefore, students receive an intensive grammatical practice, both oral and written, during class time and after class with homework. However, after the exam EEE-4 and before the EEE-8 takes place, the teaching activities from the 5th to 8th semesters focus on extensive reading history, culture, and literature of Spain and Latin America. During this period, native Spanish-speaking teachers teach most courses. The main objective of the courses in this period is to acquire knowledge of the Spanish-speaking countries culture and society, leaving formal aspects to incidental learning. Therefore, it is not a surprise for us that our NNB2 subjects (in their 5th semester), who have just taken the EEE-4 exam before summer vacation, show a more native-like grammatical competence in Spanish than the other two groups (including the advanced) when they face a grammatical test. From our point of view, the grammatical competence in Spanish of subjects in the NNC1 group decreases due to the lack of continuity in their grammatical training—for more than one year—even though their global language proficiency is supposed to be higher than the other two non-native speaker groups. This curriculum-based fact has important implications for assessing the teaching of Spanish at Chinese universities. It is worth reconsidering how to strike a balance between grammatical skills training and cultural focus (and incidental learning) in advanced courses in the curriculum of Chinese universities.

Regarding our Hypothesis 3 (H3), which is related to Salaberry’s (2011) C3, our results also support Salaberry’s (2011) claim: the grounding information in discourse distinguishes more clearly native speakers from non-native speakers than the lexical aspect. In our work, the difference between the native speaker group and non-native speaker groups can be clearly attested when grounding information in discourse is considered as a variable (see Table 6). This is so, especially in the case of the foreground, in which significant differences can be attested between the native speaker group and all non-native speaker groups. However, when the lexical aspect is taken into account as a variable (see Table 5), significant differences can be attested only in the case of telic events, concretely between the NNC1 and NS groups. Moreover, Table 9 shows that in the case of non-prototypical associations between lexical aspect and grounding information in discourse, the effect of grounding information in discourse overrides the effect of lexical aspect for guiding native speakers’ selection of PIN and PIM, whereas non-native speakers’ selections are more ambiguous since they are affected by both the lexical aspect and grounding

information in discourse in this situation. Salaberry (2011) explains that the effect of grounding information in discourse is stronger for native speakers because grounding information in discourse requires a broader level of contextualization than the lexical aspect. This constitutes a more challenging task for non-native speakers when they face the selection between PIN and PIM.

Hypothesis 4 (H4), in which the typological differences between Chinese, English, and Spanish are considered as a variable, can also be confirmed. As discussed in H2, there is a difference in the developmental pattern of PIN and PIM between L1 English and L1 Mandarin Chinese learners of Spanish. Moreover, this work also finds that an analysis of the interaction effect between lexical aspect and proficiency groups only shows significant differences in telic events between the NNC1 and NS groups (see Table 5). However, the results of Salaberry (2011) demonstrate that the only case where a significant difference is attested is with activities, between the native speaker group and all non-native speaker groups. Based on the comparison of the aspectual systems (see Section 2.1 and 2.2), the imperfective aspect marker cannot co-occur with achievements (a subcategory of telic event verbs) in Mandarin Chinese. Therefore, Chinese learners show a preference for using PIN with telic events in Spanish, although a significant difference is only attested between the NNC1 and NS groups (see Figure 2 and Table 5); whereas L1 English learners show a preference for using PIM with activities in Spanish (see Figure 1 and Table 4 in Salaberry, 2011). However, there is also a difference between Mandarin Chinese and English in terms of the usage of statives at the grammatical mechanism: why in this study the L1 transfer from Mandarin Chinese can only be observed in telic verbs but not in statives? As in Mandarin Chinese, achievements cannot co-occur with imperfective aspect marker, but English and Spanish share a similar pattern according to which both perfective (*-ed* form in English and PIN in Spanish) and imperfective (*-ing* form in English and PIM in Spanish) are compatible with this aspectual verb class. Therefore, the pattern in Mandarin Chinese is probably transferred by learners in their use of Spanish. In the case of statives, there are differences among all the three languages: in Mandarin Chinese statives co-occur with *zero-marker*, in English statives can only co-occur with perfective form (*-ed*), and in Spanish statives can co-occur with both perfective (PIN) and imperfective (PIM) forms. We propose that the difference of the usage pattern between these three languages offsets the influence of language transfer. As a result, our learners did not show any preference for PIN or PIM in their production of Spanish. Considering Eibensteiner (2019), who postulates that L1 German and L2 English learners of Spanish only rely on their knowledge of English in their production of Spanish (since German is a language without aspectual mechanism at grammatical level), the principal effect of language transfer is based on learners' L2 English. However, in this study, both learners' L1 (Mandarin Chinese) and L2 (English), have aspectual mechanisms at the grammatical level. Our results of L3 (Spanish) provide evidence that learners could rely on their acquired knowledge in L1

as well as in their L2 in the production of L3. Therefore, if one of their acquired languages (be it the L1 or the L2) has a pattern that differs from the target language (L3), then this difference may be transferred to their L3 production. On the contrary, in the case that both the L1 and the L2 patterns differ from L3, then their influence can be integrated by learners, leaving no observable trace or effect in the data, as supported our study.

To sum up, the conclusion of this work supports the prototypical patterns predicted by LAH and DH, that is, the associations of PIN with telic verbs in foreground, and PIM with atelic verbs in background as the prototypical in Spanish for our Chinese learners. Moreover, our learners' developmental pattern differs from the pattern found in Salaberry (2011). In our work, the NNB2 group, rather than the NNC1 group, shows a more native-like pattern in their production. This result opens a reflection on the curriculum and testing strategy of Spanish at (Chinese) universities. Finally, the most important finding of the present study is the attested interaction effect of L1 Mandarin Chinese and L2 English in the use of aspect in L3 Spanish.

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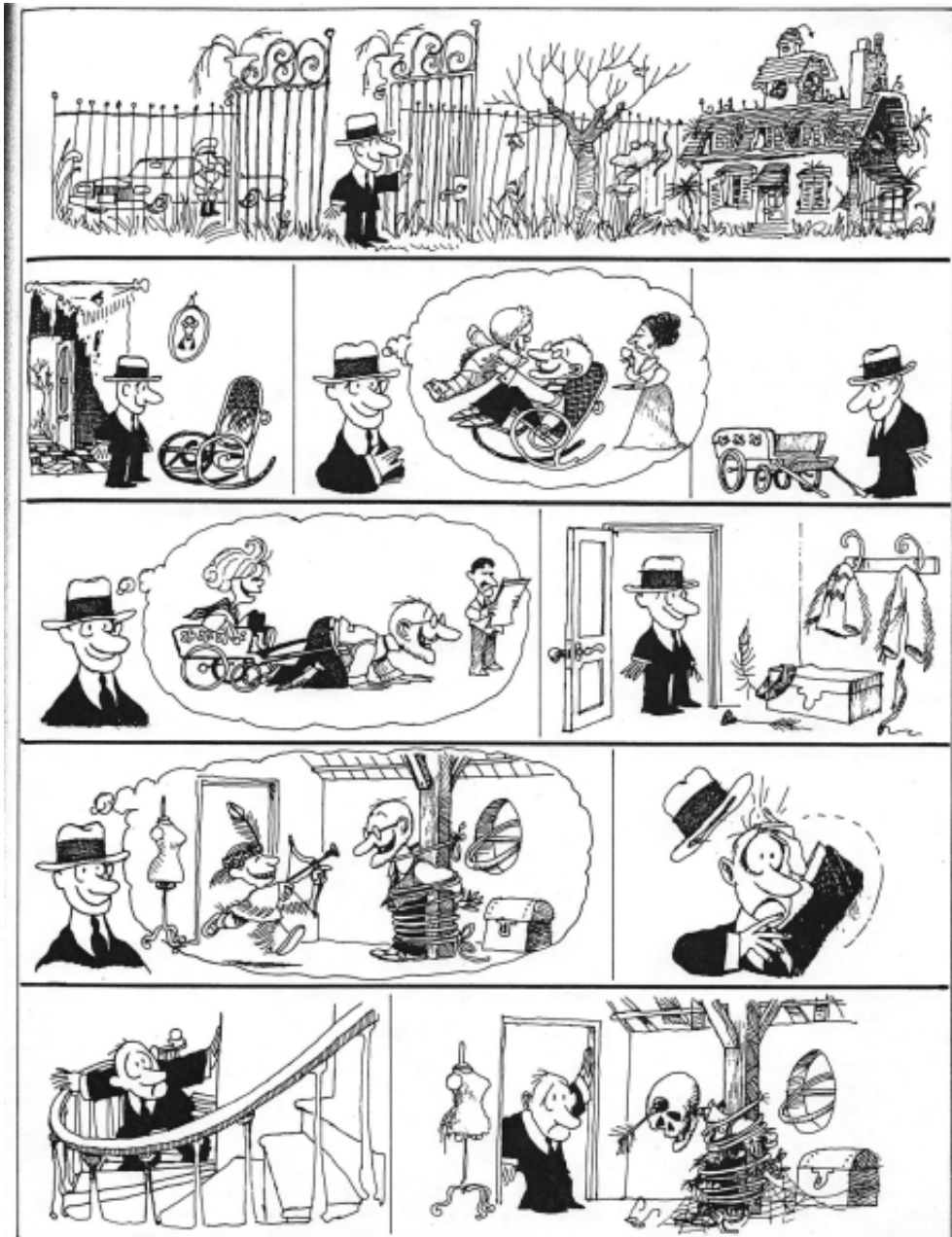
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APPENDIX

1. Vignette of Quino



2. Fill-in-the-blanks Task

Ayer 1 (fui – iba) a visitar la antigua casa de mi abuelo. 2 (Fue – Era) la casa en la que 3 (pasé – pasaba) muchas de las horas más felices de mi infancia. La casa 4 (estuvo – estaba) abandonada, pero todavía 5 (conservó – conservaba) muchos recuerdos de las veces que 6 (visité – visitaba) a mi abuelo.

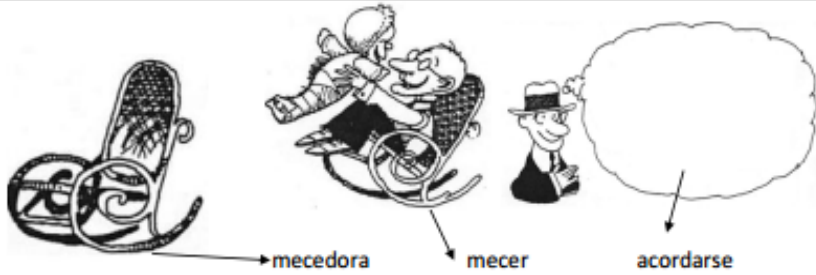
Al entrar 7 (vi – veía) la mecedora y de inmediato 8 (me acordé – me acordaba) de las veces que mi abuelo 9 (me meció – me mecía) mientras mamá 10 (tomó – tomaba) té. 11 (Fue – Era) una época maravillosa.

En ese momento 12 (quise – quería) ver el resto de la casa. Así es que 13 (continué – continuaba) caminando por la casa y 14 (vi – veía) un carrito. 15 (Fue – Era) el carrito al que 16 (até – ataba) a mi abuelo. Él 17 (hizo – hacía) el papel de caballo y me 18 (llevó – llevaba) por la casa, mientras mi papá 19 (leyó – leía) el periódico. ¡Ah! 20 (Fueron – Eran) años de infancia hermosos.

Entonces 21 (quise – quería) explorar más y 22 (fui – iba) al altillo en el que 23 (hubo – había) ropa de indio y un arco con flechas. Cuando 24 (visité – visitaba) a mi abuelo 25 (me puse – me ponía) la ropa de indio y 26 (jugué – jugaba) con mi abuelo. Él 27 (fue – era) mi prisionero y yo 28 (fui – era) un indio armado con arco y flechas. Lo 29 (até – ataba) a una columna del altillo y 30 (jugamos – jugábamos) horas y horas hasta que 31 (se hizo – se hacía) de noche. 32 (Fue – Era) en ese momento cuando me 33 (di cuenta – daba cuenta) de que la última vez que 34 (jugué – jugaba) con él, 35 ¡(me olvidé – me olvidaba) de desatarlo! 36 (Fui – Iba) a buscarlo donde 37 (estuvo – estaba) aquella columna. 38 (Subí – Subía) las escaleras a toda prisa, y entonces 39 (encontré – encontraba) a mi abuelo.

¡Qué horror! Allí 40 (estuvo – estaba) el esqueleto de mi abuelo atado a la columna.

3. New vocabulary and supporting image



NOTES

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² Example 8 is taken from Xiao & McEnery (2004) and Example 9 is taken from Smith (1991).

³ Both Catalan and Spanish behave in the same way for PIM, although Catalan has a system for perfectives in which Spanish PIN corresponds to ‘preterite perfect’ (a form with an auxiliary), used instead of the simple past (which remains only as a literary form). Since the task involved is far from being confused with any archaizant or literary piece, there is no possibility of error in the perfective form choice (simple or perfect). In fact, Catalan students have problems in inflecting this particular paradigm of simple past. Therefore, Catalan influence cannot cause any interference in this particular area.

⁴ UPF students are bilinguals (Catalan & Spanish); all have passed a language test for each of the three languages to have access to University studies (Catalan and Spanish as L1; and a test of B1.2 English as L2).

⁵ The statistics presented in this paper were obtained using SPSS (version 19).

⁶ *** indicates the p value ≤ 0.001 ; ** indicates $0.001 < p$ value ≤ 0.01 ; * means $0.01 < p$ value ≤ 0.05 .

⁷ We use italics in order to highlight categorical answers.