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Aspectual Tenses in Spanish L2 Acquisition: A UG Perspective

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Abstract

In this article we report on an experimental study investigating the ways in which adult L2 learners of Spanish learn to connect form and meaning in the temporal and aspectual domain. Our aim is to assess the linguistic intuitions of intermediate and advanced Spanish learners with respect to the subtle semantic nuances associated with Preterite/Imperfect tense morphology. Following Giorgi and Pianesi (1997), we assume that grammatical aspect falls within the range of UG-constrained phenomena and is encoded in a functional category Aspect Phrase (AspP), where the features [± perfective] are checked overtly in the syntax. In order to investigate the learners' linguistic competence, we devised an instrument to test knowledge of the semantic entailments of the Preterite/Imperfect distinction in a contextualized way. Overall results indicate that learners contrast the Preterite and Imperfect tenses in meaning, even at the lowest level of proficiency tested.

1. Introduction

Research within the Universal Grammar (UG) and Second Language Acquisition (SLA) has focused on the question of access to UG in adulthood for more than two decades. Most attention has been concentrated on whether learners of a second language have acquired knowledge of the L2 grammar (syntactic) principles and parameters, as manisfested in, for example, judging the grammaticality of L2 sentences. Recently, however, there has been increased interest in the acquisition of the semantic aspects of the second language (Dekydtspotter, Sprouse, and Anderson 1997; Dekydtspotter, Sprouse, Swanson, and Thyre 1999). One manifestation of this line of research is the investigation of the types of meanings learners attribute to constructions in the target language. For example, Dekydtspotter et al, 1997 investigates the sensitivity of 90 English learners of French to the process-result distinction with respect to the licensing of multiple postnominal genitives. Despite lack of direct positive or negative evidence for this contrast in the input, the authors find support for such a distinction in the learners' grammars, and argue that the UG-governed map between syntactic structures and semantic interpretation guides the development of interlanguage grammars. The present article extends this line of investigation to the area of temporal and aspectual distinctions.

An important domain of extensive study in second language research has been the development of temporal-aspectual systems in interlanguage (see Andersen and Shirai 1996, and Bardovi-Harlig 1999 for recent surveys of the approaches and findings of this research). As Bardovi-Harlig points out, "two main strands of inquiry can be distinguished: the investigation of the expression of semantic concepts through various linguistic devices and the investigation of the distribution of verbal morphology as an indicator of the underlying semantic system of interlanguage (Bardovi-Harlig,1999: 345)". Both of these lines of inquiry have relied predominantly on spontaneous and elicited production data (see Table 1 and Table 2 in Bardovi-

Harlig 1999 for a survey of designs). The approach we take here tackles the problem of tense-aspect development from a slightly different point of view. Taking advantage of recent advances in the theoretical linguistic literature on tense and aspect (Giorgi and Pianesi 1997, Bonomi 1997), we investigate more directly the interpretations that learners assign to sentences with the Preterite and Imperfect tense morphology. In our test, learners have to demonstrate, based on comprehension of an L2 clause, what semantic implications they attribute to that clause. Thus, our approach reveals another piece of the aspectual tense development puzzle.

Within the generative approach to SLA, a principled distinction has been made between functional and lexical categories. The latter include verbs, nouns, adjectives, adverbs and prepositions, which carry categorial features and combine to bring about the idiosyncratic meaning of each sentence. For example, the two nouns *John, an apple,* and the verb *eat* compositionally denote the event of John's eating an apple. Note that at this point of mere combination and ordering of lexical items, the speaker is not committed to whether the event took place in the past, is happening at present, or will obtain in the future (tense meanings); neither is she indicating whether the event is complete or still in progress (aspectual meanings). These latter facets of the linguistic message are grammatical meanings and are reflected in functional categories on a phrase structure tree.

Functional categories have to do with the instantiation of inflectional morphology or closed-class words (e.g. in English: past and present tense morphemes *-ed*, *-s,* progressive aspect morpheme *-ing,* person and number agreement marker *-s*, relative clause complementizer *that*, etc.). Importantly, however, they are argued to be a meeting point of form and meaning; that is, they encode the functional (or grammatical) meanings related to the particular inflectional morphemes, including tense and aspect morphology. Recent developments in linguistic theory, particularly Chomsky's (1995) Minimalist Program, conceive of functional categories and their feature specifications as the locus of all cross-linguistic differences. This approach has important implications for language acquisition. The general assumption is that if learners have acquired a specific functional projection, they will have knowledge both of the inflectional morphology (or other closed-class lexical items) and the semantics associated with this projection. UG ensures that there is no dissociation between morphology and semantics. The issue will be discussed in more detail in section 4.

As linguistic theory and language development researchers have observed, languages differ parametrically as to what aspectual meanings they encode in their inflectional morphology. Giorgi and Pianesi (1997) have used a semantic contrast between English and Romance aspectual tenses to argue for a parametric distinction between those languages, explaining various syntactic and semantic effects that affect the whole temporal-aspectual system. Within the functional categories paradigm outlined above, a theory of this kind would predict that learners who have mastered a particular tense morphology of the target language will also have acquired the semantic peculiarities of the same tense. The present study adopts the same approach in a second language acquisition context. Based on Giorgi and Pianesi's parametric analysis, we continue and expand the L2 research focusing on the semantics of temporal-aspectual systems.

2. Terminology and background

The term ‘aspect’ refers to the internal temporal structure of events as described by verbs, verbal phrases (VP) and sentences (Comrie 1976, Chung and Timberlake 1985, Smith 1991/97). It is the property which makes it possible for a sentence to denote a bounded (terminated) or an unbounded (continuing) event.

It is important to distinguish between two types of aspectual marking in natural language (Smith 1991/1997). The first type, ‘situation aspect’ (also known as VP aspect, or lexical aspect) refers to aspectual classes of verbs (the Vendler-Dowty classification). Verbal phrases are distributed among the four lexical classes as given in (1), where states and activities are the atelic classes, and accomplishments and achievements are the telic classes:

(1)

Atelic		Telic	
Stative		Dynamic	
state	activity	accomplishment	achievement
know	*run*	*run a mile*	*notice*

‘Viewpoint aspect’ (also called IP aspect, sentential aspect, or grammatical aspect) is indicated by perfective and imperfective tense morphemes. The latter reflect “different ways of viewing the internal temporal constituency of a situation” (Comrie 1976:3). The perfective looks at the situation from outside and disregards the internal structure of the situation. This is how Smith (1991/1997) visualizes the fact that the initial (I) and final (F) moments of the event of building a house are included in the event described by the perfective sentence *Laura built a house*.

(2) Laura built a house.
[/////////]
I F

The imperfective, on the other hand, looks at the situation from inside and is concerned with the internal structure without specifying the beginning or end of the situation. Thus, by definition the imperfective viewpoint subsumes the habitual (“event takes place from time to time”) and the progressive (“event is in progress at the moment of reference”) meanings. The English Progressive Tense falls broadly within the imperfective marking.

(3) Laura was building a house.
[. . //// . .]
I F

The perfective/imperfective aspectual distinction is realized in Spanish by the inflectional morphology of the Preterite/Imperfect contrast.

(4) *Laura construyó una casa*. PRETERITE = PERFECTIVE
Laura build.PRET a house

[/////////]
I F

(5) *Laura construía una casa.* IMPERFECT=IMPERFECTIVE
Laura build.IMP a house
[. . ////. .]
I F

But the differences between English and Spanish do not stop here. It is not the case that Spanish Imperfect and the English Progressive are equivalent in meaning. Spanish has a further distinction within the marking of imperfective meaning: it distinguishes between Simple and Progressive tenses as well. Thus, Spanish exhibits a four-way contrast within the past tenses while English has only a binary contrast. The following table gives examples of the respective contrasts.

(6)	SPANISH	ENGLISH
PRETERITE	*Julieta practicó tenis.*	Juliette practiced tennis.
IMPERFECT	*Julieta practicaba tenis.*	–
IMPERFECT PROGRESSIVE	*Julieta estaba practicando tenis.*	Juliette was practicing tennis.
PRETERITE PROGRESSIVE	*Julieta estuvo practicando tenis.*	–

The Spanish Imperfect can often (but not always) be translated into English with the progressive. The Simple Past tense can convey a habitual meaning when the VP itself (*practice tennis)* is atelic. What is more, English has other lexical means to mark (grammatical) aspect, such as the use of the verbs *used to/would* to convey, to some extent, the meanings of the Spanish Imperfect with habituals. For example, the Spanish Imperfective form can be translated in the following ways, depending on the context:

(7) *Julieta practicaba tenis*. = Juliet was practicing tennis (when I saw her yesterday at noon). PROGRESSIVE MEANING

= Juliet practiced tennis (but no longer does it on a regular basis). HABITUAL MEANING

= Juliet used to practice tennis. HABITUAL MEANING

Another difference between Spanish and English aspectual tenses involves the distribution of lexical classes with the respective tenses. In Spanish, all aspectual classes can be

expressed both with Preterite and Imperfect. In English, the Simple Past goes with all classes (see translations), while the Progressive is generally infelicitous with states.[1]

	PRETERITE	IMPERFECT
STATE		
(8)	a. *El auto me costó $20.000.* 'The car cost me $20.000.'	b. *El auto me costaba $20,000.* 'The car cost/would cost/*is costing me $20,000.'
ACTIVITY		
(9)	a. *Juan durmió en el sofá.* 'Juan slept on the sofa.'	b. *Juan dormía en el sofá.* 'Juan was sleeping/would sleep on the sofa.'
ACCOMPLISHMENT		
(10)	a. *Juan corrió 5 kms.* 'John ran 5 kms.'	b. *Juan corría 5 kms.* 'Juan was running/would run 5 kms.'
ACHIEVEMENT		
(11)	a. *El hielo se derritió.* 'The ice melted.'	b.?*El hielo se derretía.* 'The ice was melting/would melt.'

A main problem, then, for the English speaker learning Spanish is that the Simple Past in English is sometimes ambiguous (or neutral) and can convey the bounded/unbounded meanings of the Preterite and Imperfect in Spanish. This can be most clearly illustrated with states in embedded clauses in Sequence of Tense (SOT) Phenomena. For example, the English sentence in (12) can have both interpretations in Meaning 1 and Meaning 2, while in Spanish the two meanings are distinguished with Preterite and Imperfect morphology in (13a) and (13b).

(12) Peter said that María was pregnant.
Meaning 1= María is still pregnant.
Meaning 2= María was pregnant and is no longer pregnant.

(13) a. *Pedro dijo que María estaba embarazada.*
Pedro said that Maria is.IMP pregnant
'Pedro said that María was pregnant' (She was pregnant at that time and she might still be pregnant)

b. *Pedro dijo que María estuvo embarazada.*
Pedro said that Maria is.PRET pregnant
'Pedro said that María was pregnant.' (Maria was pregnant and is no longer pregnant)

Another example of the same phenomenon demonstrates different entailments of the Simple Past in English: both (14a) and (14b) are possible sentences. Hence, the English verbal

[1] Statives are not grammatical with the progressive in Spanish either (e.g. **El auto me está costando $20,000* 'The car is costing me $20,000').

form itself does not convey whether the endpoint of the first clause event has been attained or not.

(14) a. The concert lasted 3 hours and that is why I went home in the middle of it.
b. The concert lasted 3 hours and I heard all of it.

No such ambiguity exists in Spanish with the Preterite and Imperfect tenses:

(15) a. *El concierto duraba 3 horas y por eso me fui a casa antes de que*
the concert last.IMP 3 hours and that is why I went home before
terminara.
it ended
'The concert lasted 3 hours and that is why I went home before the end.'
b. *El concierto duró 3 horas y lo escuché hasta el final.*
the concert last.PRET 3 hours and it heard to the end
'The concert lasted 3 hours and I heard it until the end.'

In sum, the choice of the Imperfect or the Preterite in Spanish has effects on the semantic interpretation of the event. Preterite denotes a bounded event and Imperfect an unbounded event. English lexicalizes some aspectual distinctions (*used to, would*) and neutralizes others (as with states in the Simple Past). Thus the acquisition of the Preterite/Imperfect contrast is notoriously difficult for English learners of Spanish. It is the mismatch in the morphology that might cause learners to have difficulties with the semantics. The different interactions between viewpoint and situation aspect further complicate acquisition. In some cases (as with accomplishments and achievements) learners can rely on the progressive and *used to/ would* to interpret the progressive and habitual meanings of the Imperfect. In other cases, however, as with stative predicates, where English neutralizes the distinction morphologically and semantically, learners might be at a loss. In this paper, we investigate whether, despite the morphological mismatch, L2 learners eventually acquire the semantic opposition in Spanish and whether they are aware of how viewpoint aspect interacts with situation aspect.

3. Previous L2 acquisition studies of the Spanish Temporal/Aspectual distinction

As pointed out by Bardovi-Harlig (1999), previous studies of tense and aspect in L2 acquisition have focused on two aspects of the learners' competence: how different semantic concepts are expressed (her "concept-oriented approach") and how different morphological forms are used in interlanguage production (her "form-oriented approach"). We give the main findings of the two approaches in brief, our intent is to show that these studies have addressed different research questions from the question of the present study.

Within the concept-oriented approach, a number of L2 studies completed as part of the European Science Foundation Project (Klein and Perdue 1992; Dietrich, Klein, and Noyau 1995) have tried to determine the principles which constrain the mapping of grammatical function onto linguistic form. The studies found no marking of tense or aspect in the earliest stages of acquisition (the "Basic Variety" in their terminology). Instead, the learners resorted to gestures, boundary-marking lexical items like *start* and *finish*, and later, to adverbial phrases (e.g. *yesterday, Tuesday*) in order to capture the notions of temporality in their L2. Since no

morphological marking of tense/aspect (T/A) was observed, the question of what meaning learners attributed to the (very limited) T/A morphology does not arise with this approach. We will discuss a theoretical proposal related to this approach in the next section.

Within the form-oriented approach, The Primacy of Aspect Hypothesis (POA) (Andersen 1991, Andersen and Shirai 1994, 1996; Bardovi-Harlig 1992, 1994, 1997; Robison 1990, 1995; Salaberry 1997, see also chapters ?, ?? in this volume) asserts that lexical aspectual classes, or telicity marking, guide the learner in acquiring the T/A markers. Perfective morphology appears initially on eventive (telic) predicates, imperfective morphology appears initially on states and later spreads to activities. Studies on the acquisition of Spanish mainly follow this approach, providing evidence either for or against it (Hasbún 1995, Lafford 1996, Liskin-Gasparro 1997, Salaberry 1997). In his study of the acquisition of Spanish by two native speakers of English in Puerto Rico, Andersen (1991) finds that the children use the inherent lexical class of the verb phrases to acquire Spanish Preterite and Imperfect morphology. L2 studies working with the POA hypothesis do not usually address the question of the actual meaning attributed to the past verbal morphology by the learners at the different stages of their linguistic development. Instead, researchers report percentages of Preterite and Imperfect tense morphology that appear in each lexical class. Since theoretical interpretation is based on findings of percentage of use in appropriate context, these studies indirectly assume that learners are aware of tense morphology meanings. However, research in this vein does not explicitly address the issue with experimental means.

Still within the form-oriented approach, the Discourse Hypothesis (Bergström 1995, Kumpf 1984, Reid 1980, Wallace 1982) argues that verbal morphology acquisition is based on narrative structure, telic events being mapped on the foreground and atelic events being mapped on the background. Again, this approach only indirectly implies that learners are indeed aware of T/A semantics but does not test this experimentally.

The Distributional Bias Hypothesis (Andersen and Shirai 1996, Robison 1990) has been proposed as an explanation of the findings of the POA. It claims that L2 learners reflect the distributional bias of native speaker input as to lexical class: A/T marker correlations. Clearly, the latter hypothesis assumes that if learners closely follow native speakers in the percentage of past tense/progressive tense that appears with each aspectual class of verbs, then learners also mirror native speaker knowledge of T/A meanings. However, no experimental findings confirm this assumption.

In summary, most of the theories surveyed briefly above focus on the interaction of lexical aspect and verbal morphology marking. The extent to which these theories address the issue of viewpoint aspect is to investigate how often the correct morphology appears in the appropriate context in production data. None of the major approaches to T/A acquisition directly addresses the issue of whether learners really know what the target language T/A morphology stands for. What is more, most of the existing research is based on elicited or spontaneous production data. Thus, the research question that the present study addresses with experimental means, namely, what semantic implications learners attribute to Preterite/Imperfect morphology in comprehension, complements the existing T/A development inquiry.

4. Theoretical Account

Recent advances in linguistic theory can help us gain more precise knowledge of the nature of temporal-aspectual interpretations in interlanguage. As mentioned in the introduction, within the (Chomskian) Principles and Parameters framework (Chomsky 1986, 1995, a.o.) a principled distinction is made between lexical and functional categories in a phrase structure representation. The lexical categories verb (V), noun (N), adjective (A) and preposition (P) head what is known as lexical phrases VP, NP, AP, PP, respectively. Apart from those projections, a phrase structure tree also includes functional projections like Agreement phrase (AgrP), Tense phrase (TP), etc. Lexical phrases are assumed to be projected by words with idiosyncratic lexical information combined with categorial features (e.g. ±N, ±V), while functional phrases are argued to host inflectional morphology or closed class items, and to impart grammatical meaning to the sentence. For example, the VP *eat an apple* has to be combined with the inflectional morphology of the past tense, bounded aspect and agreement in order to attribute the meaning of complete past event to the sentence *Julietta ate an apple.* Sentence meaning is determined compositionally, by combining the functional (grammatical) and the lexical meanings.

How does Universal Grammar constrain acquisition? Acquiring a functional category entails acquiring both the correct inflectional morphology and the interpretation that it brings about. Semantic interpretations are captured by formal features. UG provides (and constrains) an array of all formal features that are possible to express in a natural language. In addition, features can be specified as strong or weak. When they are strong, they trigger overt syntactic movement for feature-checking purposes; when they are weak, movement is covert. The status of functional categories and their feature value specifications vary across languages. Acquiring a first language, the child has to learn which particular features are expressed with the functional categories in her language. Acquiring a second language, the learner is faced with one of three alternatives of unequal difficulty: 1) the features of a functional category in the native language are exactly the same as the features of the target language category; 2) a particular functional category in the L2 is not instantiated in the mother tongue, in which case the learner has to acquire both morphological realization and formal features; 3) a particular functional category is instantiated in the L2, but with a different formal feature specification. In the latter case, the learner has to acquire the new feature specification, correct interpretation being an indication of successful acquisition.

The idea that aspectual meanings are among the grammatical meanings reflected in functional categories has been gaining theoretical and empirical support (Borer 1993, Chomsky 1995, Travis 1991,1994, among many others). One recent L2 acquisition proposal that assumes functional status for aspectual categories is based on the data from the European Science Foundation project (see previous section). Klein and Perdue (1997) propose that the Basic Variety (the stage of interlanguage characterized by no use of verbal morphology but successful expression of temporality through adverbials and other lexical means) is constrained by UG and can be explained with the help of feature specifications. It is usual in the linguistic literature to assume a strong link between overt morphology and strong features of a particular functional category; no morphology usually correlates with weak features. Thus, the Basic Variety is argued to be the perfect internalized grammar (I-language) in the sense that in this learner variety all features of functional categories are weak. As a result, learners do not produce any morphology but are aware of temporal aspectual meanings. We will not discuss this proposal in detail (see

various critiques in the same journal issue, Second Language Research ??????) but we follow it in assuming that aspectual categories are constrained by UG.

Our analysis generally follows Giorgi and Pianesi (1997), a parametric study of sentential aspect in Germanic and Romance languages within the Minimalist Program (Chomsky 1995). English verbs, they argue, are "naked" forms that can express several verbal values, such as the bare infinitive, the first and second person singular, and the first, second and third person, plural. Many English words are even categorially ambiguous in that they can either identify an "object" or an "action", such as *cry, play, drive,* and many others. Giorgi and Pianesi (1997) propose that verbs are disambiguated in English by being marked (invisibly) with the aspectual feature [+perfective]. English verbs (of the dynamic aspectual classes only, cf (1)) acquire categorial features by being associated with the aspectual marker [+perfective]. Thus children acquiring English can distinguish verbal forms from nominals, whose feature specification bundle will exclude the feature [+perfective]. In Romance languages, on the other hand, all verbal forms have to be inflected for person, number and tense. The Spanish verb, for example, is associated with typical verbal features as [+V, person, number] and it is recognizable and learnable as a verb because of these features. Nominal inflections are distinguishable from verbal ones. Spanish verbs are therefore not associated with a [+perfective] feature.

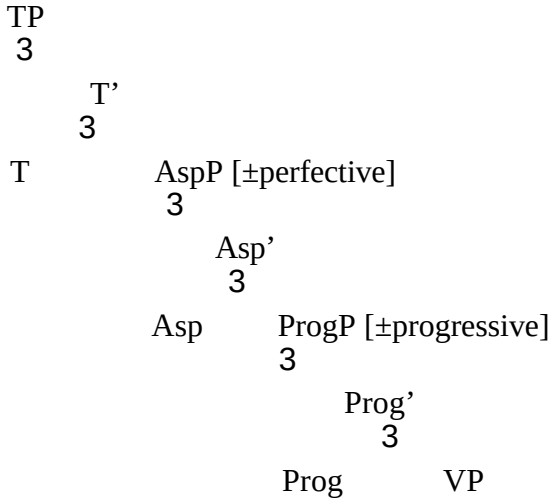
Evidence for this claim comes from the fact that the English bare form always denotes a bounded (closed, or perfective) event. Notice the following contrast:

(16) a. John saw Mary eat an apple.
b. John saw Mary eating an apple.
c. *Juan vio a Maria comer una manzana*.
Juan saw Maria eat.INF an apple

In English, perception verbs can take as their complements either "naked" verbs (e.g. infinitive without *to*), or present participle (e.g. *eating*). It is well known that naked forms allow only a perfective reading. Therefore (16a) means that John saw an event of Mary eating an apple, and that event is already bounded, or complete. There is nothing left of the apple at the present moment. On the other hand, the complement verbal form in (16b) is progressive, and the event is interpreted as unbounded. Even in the case of the apple being only half-eaten, the truth conditions of (16b) are still going to be satisfied. The Spanish equivalent of (16a) is (16c). It is ambiguous between a bounded and an unbounded interpretation: the apple can be wholly consumed; but also the event could have been interrupted before the complete consumption of the apple.

The two types of aspectual meanings distinguished by Smith (1991/97), viz. situation aspect and viewpoint aspect, have been argued to be located in two different syntactic positions (see Kempchinsky 1999 for this claim in Spanish). Since this paper discusses viewpoint aspect only, we will not review proposals about the relative position of lexical (situation) aspect, and those aspectual projections are omitted in the tree below.

(17)



In our analysis of the distinctions between English and Spanish grammatical aspect, we argue that minimally two functional projections are necessary for capturing the Spanish facts. As we have shown above (see examples in (6)), Spanish has both progressive and Preterite/Imperfect affixes, giving rise to a four-way distinction. Thus our analysis is driven by the necessity to overtly check the formal features of those aspectual morphemes. We have labeled the lower ProgressiveP (ProgP) and the upper, AspectP (AspP). The progressive inflectional morphology and the perfective/imperfective morphology are located in the heads of these projections and, if filled, both are checked sequentially when the verb moves up the tree. In English, the ProgP projection alone suffices to capture the binary aspectual opposition, thus the upper AspP may not be projected at all.

Keeping this analysis in mind, we argue that the learning task of the English-speaking L2 learner of Spanish will involve the following steps:

1. Learning that verbs in Spanish are not morphologically "naked";
2. Learning the appropriate morphological distinction between Preterite and Imperfect:

a. Associate Preterite morphology with the feature [+perfective], that is, the event is bounded, terminated.

b. Learn that Imperfect morphology is aspectually neutral to the [+/-perfective] value (see Giorgi and Pianesi 1997 for more justification for this claim).

c. Learn that stative verbs are not excluded from the Preterite/Imperfect contrast.

5. The Study

Hypotheses

It is well known that L2 learners of Spanish at early stages of development have difficulty mastering the Preterite/Imperfect morphology. We set out to investigate whether L2 learners experience difficulty in the interpretative domain as well. The following general research questions are at the basis of our experimental study: Are learners capable of acquiring the bounded/unbounded semantic contrast between these two tenses, irrespective of the semantic class of the verbs? Furthermore, what is the interaction between lexical classes and tense

interpretation? In other words, is acquisition of the semantics influenced by the lexical features of the predicate?

We hypothesize that knowledge of the Preterite/Imperfect morphological distinction will be a sufficient condition for the acquisition of the semantic features [± perfective] associated with each tense. This general hypothesis follows from our approach to the acquisition sequence proceeding by learning whole functional categories, overt morphological realization and semantic features together.[2]

Furthermore, based on the assumption of L1 transfer of functional categories (Schwartz and Sprouse 1996), we suggest that (beginning) learners of Spanish will assume some parallels between the Imperfect tense in Spanish and the English progressive tense. The Imperfect and the Progressive are in binary opposition to the Preterite and the English simple past tense, respectively, the latter being the [+perfective] marked tenses. Such parallels, of course, will be justified in the case of eventive (telic) predicates but not in the case of stative predicates.

Finally, as a third research question, we test whether the The Primacy of Aspect (POA) hypothesis extends to the interpretative domain. Recall that the POA made predictions about the emergence of Preterite and Imperfect morphology with different aspectual classes. learners first use perfective marking on telic classes and later extend it to atelic classes; learners first use imperfective marking on statives, then extend it to activities, and finally to telic classes. In fact, Salaberry 1997, in a movie retell task, found this biassed production not only in his beginner subjects, but through all the proficiency groups he tested, including the advanced learners. If the POA extends to the semantic domain, we expect learners to be more accurate with states in the Imperfect than states in the Preterite, and vice versa, to be more accurate with the telic classes in the Preterite than in the Imperfect.

Based on the above considerations, the following specific hypotheses were formulated:

Hypothesis 1: Learners will be aware of the semantic contrast between Preterite and Imperfect tense meanings.

Hypothesis 2: Learners will be able to acquire the semantic contrast with telic predicates partly assisted by L1 transfer. Since the acquisition of the contrast in stative predicates works differently in Spanish, we expect states to present some problems for learners initially.

Hypothesis 3: Some differential acquisition of the semantic properties of either Preterite or Imperfect with the various lexical classes of verbs is expected, following the POA.

Methodology

Sixty adult English-speaking learners of Spanish participated in the experiment. Their mean age was 24.6 years, and they had started learning Spanish on average at the age of 13. They had studied and, at the time of the experiment, some were still studying Spanish in a formal classroom setting. All participants were undergraduate and graduate students at two major research universities in the US. They had started using Spanish for communication after puberty. The subjects were paid for their participation. A control group of seventeen Spanish native speakers (mean age 35.3 years) were also tested.

[2] However, we do not concentrate on the acquisition of the tense morphology in this paper, except to test whether it is successful for all our subjects. For a study focusing on the morphology-semantics connection see Montrul and Slabakova (in progress).

The tests included a Spanish Proficiency Test (adapted from adapted from the *Diploma de Español como Lengua Extranjera* (DELE) (Embajada de España, Washington, DC) consisting of a cloze passage with 20 blanks and a multiple-choice vocabulary test. Second, we administered a Morphology Test, consisting of the "Psycho" passage from the textbook *Pasajes* (Bretz, Dvorak and Kirschner, 1992), based on Salaberry (1997). Participants had to select from two choices the correct form of the verb in the past. The test had a total of 30 blanks, correct answers included 15 Preterite, and 15 Imperfect verb forms. We excluded cases in which both forms of the verb were appropriate. The purpose of this test was to check whether learners could choose correctly between the two past forms based on the ample context that the story provided. Here is an example sentence from the morphology test with the translation below:

(18) *El jefe le (1) daba/dio el dinero a la empleada para depositarlo en el banco. La empleada (2) trabajó/trabajaba para la compañía pero no (3) estuvo/estaba contenta con su trabajo y (4) quiso/quería otro trabajo. . . .*
"The boss gave the money to the employee to be deposited in the bank. The employee worked for the company but was not happy with her job and wanted another job . . ."

The main task of the experiment was the Sentence Conjunction Judgment Task (based on Slabakova 1997). Subjects had to judge the combinatory felicity of two conjoined clauses. The purpose of the test was to find out whether learners are aware of the semantic implications of the specific past tense form. Thus, in example (18), the Imperfective tense in the first clause allows the negative meaning of the second clause, since the first event is not viewed as bounded, or terminated. The expected answer was 2.

(19) *La clase era a las 10 pero empezó a las 10:30.*
The class was-IMP at 10 but started at 10:30.

-2 -1 0 1 (2)

In (20), on the other hand, the use of the Preterite precludes the second clause from negating the first clause, hence the expected answer was –2.

(20) *La clase fue a las 10 pero empezó a las 10:30.*
The class was-PRET at 10 but started at 10:30.

(-2) -1 0 1 2

The test comprised a total of 56 sentences, equally distributed into 28 logical and 28 illogical combinations. Furthermore, three different lexical classes of verbs were used. The test items included 14 achievements, 14 accomplishments, and 14 stative VPs, 7 each in the Preterite and Imperfect tenses, as well as 14 distractors, 7 logical and 7 illogical. The distractors were included in order to ascertain that the learners were capable of judging felicity of clause combinations in general, independent of the past tense morphology.

Results

The results of the proficiency test (see Table 1) allowed us to divide the participants into advanced and intermediate learners. The means of the two groups are significantly different.

Table 1. *Performance on the Proficiency Test*

	Intermediate learners (n = 33)	Advanced learners (n = 27)
Range (n=50)	20 - 36	37 - 49
Mean	28.76	43.88
SD	4.59	3.87

ANOVA (1,55) = 45.92 $p < 0.0001$

As Table 2 shows, the intermediate learners were on average 77.5% accurate on the Morphology test. The advanced learners were 92.8% accurate as a group. Even though these means are statistically different, we can still accept that both groups are sufficiently proficient with the Preterite and Imperfect morphology in the context of a narrative.

Table 2. *Performance on the Morphology Test*

	Intermediate learners (n = 33)	Advanced learners (n = 27)
Range (n=30)	14 - 28	21 - 30
Mean	23.26	27.85
SD	3.78	2.06

ANOVA (1,55) = 38.937, $p < 0.0001$

Group Results

The mean scores of the different participant groups on the Sentence Conjunction Judgment Task are visualized in Figure 1 below.

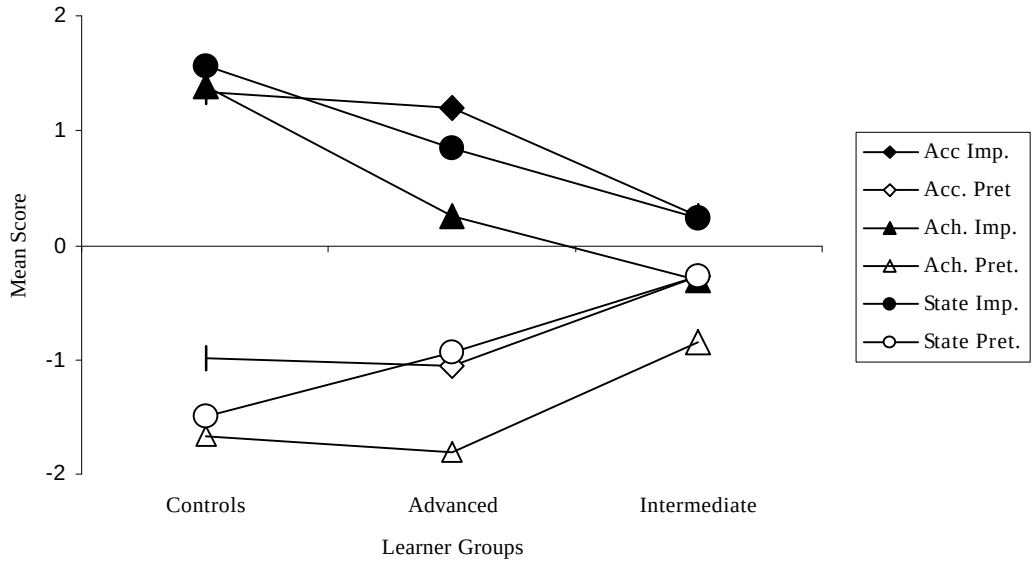


Figure 1. *Test of Semantic Interpretation: Overall Mean by Proficiency Group*

We are interested in seeing whether the learner groups distinguish significantly between the semantic implications of the Preterite and Imperfect tenses. A clause in the Imperfect (the outline symbols) can be negated by a subsequent clause, making the whole combination plausible, hence high positive scores are expected. A clause in the Preterite (the filled symbols), however, cannot be negated by a second clause, and the combination is implausible, or semantically unacceptable, hence negative scores are expected. As Figure 1 shows, the native speakers are sufficiently aware of this contrast, and so are the advanced learners, while the judgements for the Intermediate group are much closer together. In what follows, we will examine each contrast in turn.

Let us start with the contrast for the distractors, or fillers. Some subjects did not demonstrate recognition of the contrast between logical and illogical fillers. Since our main test was based on recognizing the combinatorial felicity of clauses in a complex sentence, these subjects (three learners from the intermediate group) were eliminated from further consideration. The test items comprised logical and illogical combinations of clauses. As Figure 2 indicates, both learners and controls are capable of judging the contrast correctly. Single factor ANOVA shows $p < 0.0001$ for all groups ($F(1,34) = 832$ for the controls; $F(1,54) = 1494$ for the advanced learners; $F(1,58) = 554$ for the intermediate learners).

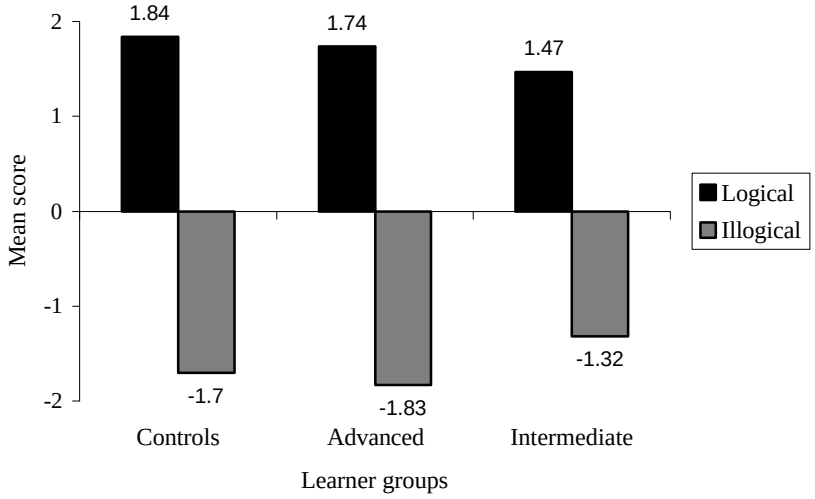


Figure 2. *Mean Score for Distractors*

Figure 3 demonstrates the contrast for the lexical class of accomplishments. No particular difficulties were expected in this category of test items, since Spanish Imperfect and English Progressive have more or less the same semantic implications (e.g *Marisa leía un cuento por las noches pero no llegó al final* 'Marisa was reading a story in the evenings but she didn't finish it). The contrast is highly significant for the three groups ($F(1,34) = 145$, $p < 0.0001$ for the controls; $F(1,54) = 125$, $p < 0.0001$ for the advanced learners; $F(1,58) = 5.54$, $p = 0.02$ for the intermediate learners).

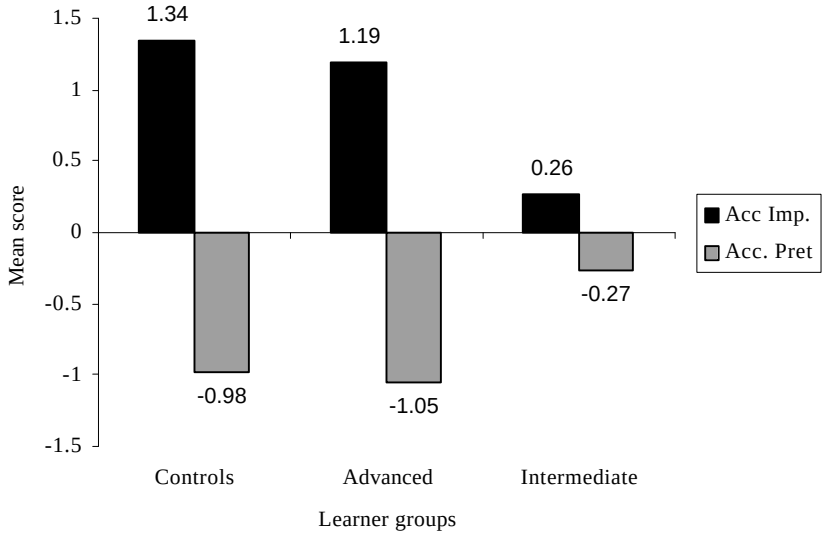


Figure 3. *Mean Score for Accomplishments*

The judgment means for achievements (see Figure 4) present a somewhat different picture from the judgment means for accomplishments. Although both learner groups demonstrate that they distinguish between sentences in the Preterite and in the Imperfect ($F(1,34) = 387$, $p < 0.0001$ for the controls; $F(1,54) = 129$, $p < 0.0001$ for the advanced learners; $F(1,58) = 6.97$, $p = 0.01$ for the intermediate learners), both means are on the negative side.

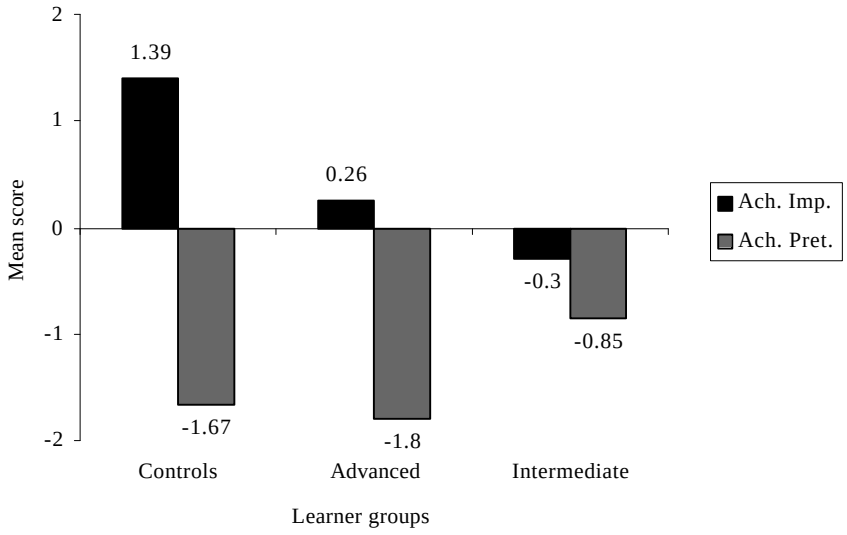


Figure 4. *Mean Score for Achievements*

Unlike native speakers, the English speaking learners as groups do not judge achievement VPs in the Imperfect to be quite felicitous followed by a negating clause (e.g. *Los González vendían la casa pero nadie la compró* 'The Gonzalez family were selling their house but no one bought it'). This is certainly the product of the interaction between the telic aspectual class and the unfinished nature of the aspectual tense, in other words, the interaction between situation and viewpoint aspect. Still, learners judge negated achievements in the Preterite to be much worse. In other words, the contrast Preterite/Imperfect is part of their grammar.

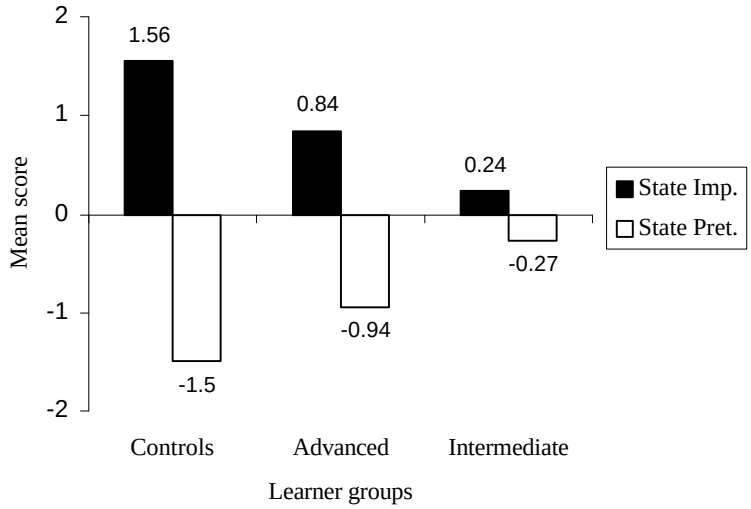


Figure 5. *Mean Score for States*

Figure 5 illustrates the mean score for the stative test items (e.g. *El BMW me costó (PRET) $80,000 pero no lo compré* 'The BMW cost me $80,000 and I didn't buy it'versus *El yate me costaba(IMP) $1,000,000 pero no lo compré* 'The yacht cost me $1,000,000 and I didn't buy it'). Note that English stative verbs in the past neutralize the Spanish distinction. All contrasts are again significant ($F(1,34) = 336$, $p < 0.0001$ for the controls; $F(1,54) = 86$, $p < 0.0001$ for the advanced learners; $F(1,58) = 6$, $p = 0.017$ for the intermediate learners). Recall that it was predicted (cf Hypothesis 2) that learners would have more difficulty with the stative examples, since English and Spanish differ in this respect. These results indicate that the [± perfective] contrast extending to states is also part of their grammar.

If the POA hypothesis extended to the semantic domain (cf our Hypothesis 3), one would expect the intermediate group of learners to do better on states in the Imperfect than on states in the Preterite; and vice versa, to do better on telic classes in the Preterite than on telic classes in the Imperfect. In order to check this hypothesis, the scores of the learners were converted to accuracy scores based on distance from zero. For example, if a learner judged a sentence like (19) *La clase era (IMP) a las 10 pero empezó a las 10:30* with +2, their accuracy score was again 2, the integer distance from zero. If a learner judged a sentence like (20) *La clase fue (PRET) a las 10 pero empezó a las 10:30* with -2, their accuracy score was still 2, since the integer distance from zero is exactly the same as in the previous example. Three separate one-way ANOVAs were performed on the accuracy scores for the states, accomplishments and achievements classes of the intermediate learners. It was considered inappropriate to extend this test to the advanced learners, since in this group the effects of the POA are usually deemed to have been long overcome by the meaningful L2 input and/or by the learning curve (but see Salaberry 1997). As visualized in Figures 3 and 5, the intermediate learners were equally

accurate with accomplishments in the Imperfect and in the Preterite ($F(1, 58) = 0.002$, $p = 0.97$); and also equally accurate with states in the Imperfect and Preterite ($F(1, 58) = 0.019$, $p = 0.89$). As Figure 4 indicates, however, the learners were significantly more acccurate on achievements in the Preterite compared to achievements in the Imperfect ($F(1, 58) = 31.5$, $p < 0.0001$). This result can be explained with the English native speakers' consistently lower acceptance of achievements in the Imperfect (compare also the mean scores of the advanced learner group). We claim that this rejection is due to pragmatic considerations, and we return to the issue in the discussion below.

Individual Results

Group results are only half of the picture when we are interested in ultimate acquisition and developmental sequences. The contrast between the aspectual tenses' meanings have to be demonstrated in the grammars of individual learners. To evaluate the level of acquisition of each learner, the following procedure was established. A paired t-test compared the raw scores for each participant for each lexical class in Imperfect and Preterite. Thus we ended up with three results for each learner, indicating whether they had acquired the contrast with accomplishments, with achievements, and with states. Every t-test was significant at the $p < 0.05$ level. The following table gives the individual results.

Table 3. *Number of Participants in Each Group who Demonstrate/Do Not Demonstrate the Contrast*

	Accomplishments		Achievements		States		Distractors	
	YES	NO	YES	NO	YES	NO	YES	NO
Controls	17	0	17	0	17	0	17	0
Advanced	20	7	22	5	18	9	27	0
Intermediate	6	24	6	24	6	24	30	0

Note that all participants with no exception can distinguish between logical and illogical combinations of clauses in the distractor items of the test. In fact, the three intermediate learners who did not accomplish this were eliminated from further consideration. All of the controls demonstrated significant contrasts between Preterite and Imperfect sentences for all lexical classes. In the advanced group, the contrast in states has not been acquired by 9 participants, compared to 5 for achievements and 7 for accomplishments. Only one fifth of the intermediate learners have acquired one or another contrast.

Still, Table 3 does not indicate whether, for example, the six intermediate learners who have acquired the contrast with achievements are the same six learners who have acquired the contrast with accomplishments. The Venn diagrams in Figures 6 and 7 illustrate how subjects were distributed among the different lexical classes. Each circle represents a lexical class. The number of subjects who are in the intersection of three circles (the middle one) have acquired the contrast with all three classes; the number of subjects in the intersection of two circles, say accomplishments and achievements, have acquired the contrast in both of those telic classes; the number of subjects in a single circle have acquired the contrast with only that class.

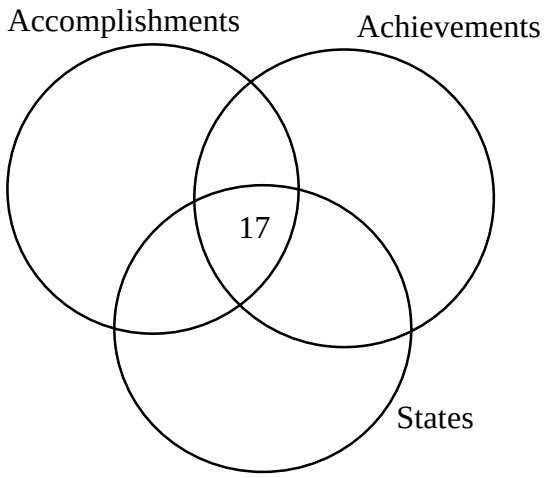


Figure 6. *Number of controls who have acquired the contrast with three lexical classes*

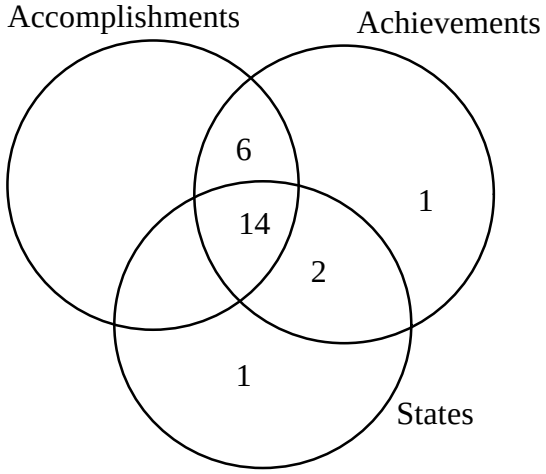


Figure 7. *Number of advanced learners who have acquired the contrast with one/two/three lexical classes*

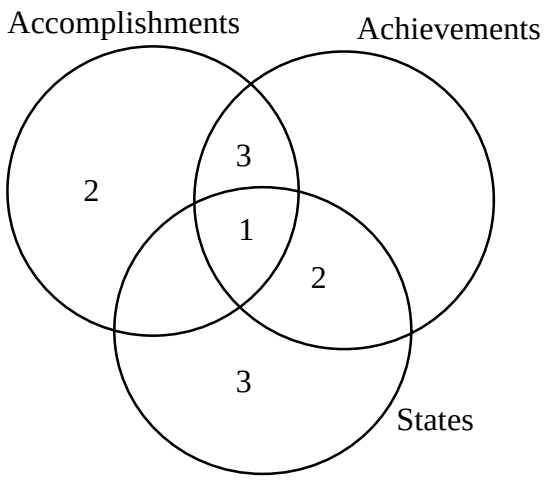


Figure 8. *Number of intermediate learners who have acquired the contrast with one/two/three lexical classes*

The comparison between Figures 6, 7, and 8 clearly demonstrates the acquisition sequence of the semantic contrast with the different lexical classes. All native speakers demonstrate the contrast with all lexical classes. In the advanced learners' group, the majority of learners (n=14) have acquired all the contrasts, which is consistent with our Hypothesis 1. Of the rest, six demonstrate knowledge of the contrast with the telic classes but not with states, thus suggesting that states would pose more difficulty for English native speakers, since in English, they do not appear in the Progressive tense (cf Hypothesis 2). In the intermediate group, however, the picture is notably different from the advanced group. There is only one learner who has acquired the three contrasts, the one in the middle of the three circles. Three learners have acquired the contrast with the two telic classes, three others have acquired the contrast in states, etc. The suggestion that states would pose more difficulty for English native speakers is not confirmed by the individual results of the intermediate learners. Three advanced learners and nineteen intermediate learners demonstrate knowledge of no contrast. In sum, there is a clear developmental trend in acquiring the interpretative properties of Spanish Imperfect and Preterite tenses, with the intermediate learners starting to acquire the contrast, and the majority of advanced learners having already acquired it.

6. Discussion

The purpose of this study was to investigate whether intermediate and advanced learners of Spanish as a second language were aware of the semantic implications of the Preterite and Imperfect aspectual tenses. All learners were divided into two groups on the basis of their proficiency in Spanish. It was ascertained that both groups passed a test of aspectual morphology, that is, they were capable of choosing the correct form in appropriate context at least 77% of the times. The results of the Sentence Conjuction Judgement Task indicate that intermediate learners as a group show sensitivity to the semantic contrast with all aspectual

classes, although their mean scores are statistically different from the advanced and native groups. Thus, our specific Hypothesis 1 was supported by the results. The advanced learners as a group seem to have learned to differentiate the semantic features [±perfective] associated with each tense.

Hypothesis 2, based on L1 transfer and predicting that the contrast in states will be more difficult for the learners than the contrast with the telic classes, was not strongly supported (see individual results). If L1 transfer of functional categories was operative in the grammar of the learners, we would expect the intermediate learners to assume some parallels between the progressive tense in English and the Imperfect. That would lead to their assumption that the perfective/imperfective contrast is not marked on stative verbs, which is incorrect. Thus, we would have expected the intermediate learners to be less accurate with states than with the telic aspectual classes. In fact, the individual results do not show such a dissociation in accuracy. These results would point to the conclusion that L1 transfer is not operative in the interpretative domain, but there is reason to believe that this conclusion would be too strong. It is possible that our intermediate subjects were too advanced to demonstrate L1 transfer, and that they are already well on their way to acquiring the Spanish contrast. Further investigation into this issue is necessary.

It was also hypothesized that the POA will extend into the semantic domain (Hypothesis 3). This does not seem to be supported by our results. The POA would predict that beginner and intermediate learners would be more accurate with the meaning of accomplishments and achievements in the Preterite than in the Imperfect (since they predominantly use the Preterite with telic classes), and again, more accurate with the meaning of states in the Imperfective than in the Preterite (since they predominantly use states in the Imperfect). In other words, different lexical classes would interact differently with the aspectual tenses. No such differentiation was detected in our data. As mentioned above, however, it is possible that our learners are too advanced to demonstrate such a differential treatment of telic and atelic lexical classes.

The results of the advanced and intermediate learners with achievements are unexpected, and deserve some comment. Our participants as a group tend to reject achievements in the Imperfect, although they rate achievements in the Preterite even lower, thus demonstrating knowledge of a contrast. This is indeed an intriguing interaction between viewpoint and situation aspect. Achievements are a class of predicates where the change of state is momentary, e.g. *notice, realize, find.* It takes but a brief moment to realize or notice something. There are some achievements, however, in which the actual change of state is still instantaneous, but the process leading up to this moment of change can be extended, e.g. *reach the top, win a game.* Games take time to unfold, and even if winning comes at the very end and is over in a second, the English sentence *Eric was winning the game when he fell unconscious* is a possible and logical sentence. The progressive tense applied to the achivement predicate *win the game* makes it clear that the process leading up to winning was in progress at the moment of reference, but Eric's actual winning of the game never came to pass. This process of extending the period leading up to the change of state in achievements is a matter of pragmatics (see De Swart 1998 for a semantic treatment along these lines). Although English native speakers are perfectly capable of using this pragmatic mechanism in their native language, they do not readily transfer it to their L2, although Spanish uses a similar mechanism. We must tentatively conclude that pragmatics is outside of Universal Grammar, and acquisition of pragmatic contrasts are not guided by the same principles that guide the acquisition of the viewpoint contrast.

The individual acquisition results indicate that there is a developmental sequence in the acquisition of the Preterite/Imperfect semantic contrast. This contrast begins to emerge in the intermediate group, but only single individuals show that they have acquired the semantic contrast with one class or another. In most of the advanced learners, however, this process is already completed, and they demonstrate semantic knowledge comparable to that of native speakers. This developmental sequence does not seem to be different for the different lexical classes of predicates. Our results do not clearly indicate that the contrast in the telic classes of predicates is acquired earlier than the contrast in the stative predicates. However, as we acknowledged before, this could be an artifact of the proficiency groups selected in this study.

7. Conclusion and directions for further research

In this study, we have assumed that the acquisition of the Preterite/Imperfect semantic contrast falls within the range of UG phenomena (contra Coppieters 1987). There are two main reasons for that assumption: the contrast involves inflectional morphology, and is describable in terms of a universal classification of aspectual meanings (Comrie 1976, Smith 1991/1997). Languages vary with respect to the functional categories they project and to the different formal features of those categories. Both the individual and the group results support our main research hypothesis, namely, that English native speakers are capable of acquiring the semantic contrast between the Spanish aspectual tenses. Thus, they are capable of acquiring features of functional categories that are not instantiated in their native language (see also Dekydtspotter, Sprouse, and Anderson 1997).

This study leaves open the question of how strong the morphology-semantics connection is. In other words, is it only learners who have mastered the morphology that exhibit knowledge of the semantics, or is it the case that the two are not related in the acquisition process? It is pertinent to continue this line of research with expanding the proficiency levels of the participants and focusing on establishing the morphology-semantics relationship. We take up these tasks in a further experimental study: Montrul and Slabakova (in preparation).

References

Andersen, R. 1991. “Developmental sequences: The emergence of aspect marking in second language acquisition”. In *Crosscurrents in Second Language Acquisition and Linguistic Theories*, T. Huebner and C. A. Ferguson (eds), 305-324. Amsterdam: John Benjamins.

Andersen, R. and Shirai, Y. 1994. “Discourse motivations for some cognitive acquisition principles”. *Studies in Second Language Acquisition,* 16, 133-156.

Andersen, R. and Shirai, Y. 1996. “The primacy of aspect in first and second language acquisition: The pidgin-creole connection”. In *Handbook of Second Language Acquisition*, W. C. Ritchie and T. K. Bhatia (eds), 527-570. San Diego, CA: Academic Press.

Bardovi-Harlig, K. 1992. “The relationship of form and meaning: A cross-sectional study

of tense and aspect in the interlanguage of learners of English as a second language". *Applied Psycholinguistics*, 13, 253-278.
Bardovi-Harlig, K. 1994. "Reverse-order reports and the acquisition of tense: Beyond the principle of chronological order". *Language Learning*, 44 (2), 243-282.
Bardovi-Harlig, K. 1997. "Another piece of the puzzle: The emergence of the present perfect". Language Learning, 47 (3), 375-422.
Bardovi-Harlig, K. and A. Bergström. 1996. "The acquisition of tense and aspect in second language and foreign language learning: Learner narratives in English (SL) and French (FL)". *Canadian Modern Language Review*, 52, 2, 308-330
Bardovi-Harlig, K. 1999. "From morpheme studies to temporal semantics". *Studies in Second language Acquisition,* 21, pp. 341-382.
Bergström, A. 1995. *The expression of past temporal reference by English-speaking learners of French.* Unpublished PhD dissertation, The Pennsylvania State University.
Borer, H. 1994. "The projection of arguments". In *Functional projections*. *UMass Occasional Papers in Linguistics 17*, E. Benedicto and J. Runner (eds), 19-47. Amherst, MA: GLSA.
Chomsky, N. 1986. *Knowledge of Language*. New York: Praeger.
Chomsky, N. 1995. *The Minimalist Program*. MIT Press.
Chung, S. and A. Timberlake. 1985. "Tense, aspect, and mood". In *Language Typology and Syntactic Description,* T. Schopen (ed), Cambridge: Cambridge University Press.
Comrie, B. 1976. *Aspect*. Cambridge, UK: Cambridge University Press.
Coppieters, R. 1987. "Competence differences between native and near-native speakers". *Language*, 63: 544-573.
De Swart, H. 1998. "Aspect shift and coercion". *Natural Language and Linguistic Theory*, 16 (2), 347-385.
Dekydtspotter, L., Sprouse, R., and Anderson, B. 1997. "The interpretive interface in L2 acquisition: The process-result distinction in English-French interlanguage". *Language Acquisition*, 6 (4), 297-332.
Dekydtspotter, L., Sprouse, R., Swanson, K., and Thyre, R. 1999. "Semantics, Pragmatics and Second Language Acquisition: The Case of *Combien* Extractions". *Proceedings of the Annual Boston University Conference on Language Development*; 23, 1, pp.162-171.
Dietrich, R., Klein, W., and Noyau, C. 1995. *The Acquisition of Temporality in a Second Language.* Amsterdam: John Benjamins.
Giorgi, A. and Pianesi, F. 1997. *Tense and Aspect: From Semantics to Morphosyntax* . New York and Oxford: Oxford University Press.
Hasbún, L., 1995. "The role of lexical aspect in the acquisition of the tense/aspect system in L2 Spanish". Unpublished PhD dissertation, Indiana University.
Kempchinsky, P. 1999. Georgetown conference handout ??????
Klein, W. and Perdue, C. 1992. *Utterance Structure: Developing Grammars Again.* Amsterdam: John Benjamins.
Klein, W. and Perdue, C. 1997. "The Basic Variety (or: Couldn't natural languages be much simpler?)". *Second Language Research,* 13, 4, 301-347.
Kumpf, L. 1984. "Temporal systems and universality in interlanguage: A case study". In *Universals in Second Language Acquisition,* F.R. Eckman, L.H. Bell, and D. Nelson (eds), 132-143. Rowley, MA: Newbury House.
Lafford, B. 1996. "The development of tense/aspect relations in L2 Spanish narratives: Evidence to test competing theories". Paper presented at SLRF 96, Tucson, AZ.

Liskin-Gasparro, J. 1997. “The acquisition of temporality in Spanish oral narratives: Exploring learners’ perceptions”. Paper presented at the Annual meeting of the AAAL 1997, Orlando, FL.

Montrul, S. and Slabakova, R. (in preparation) “Acquiring morphosyntactic and semantic properties of aspectual tenses in L2 Spanish”. In *The Acquisition of Spanish Morphosyntax: The L1-L2 Connection.* A.-T. Perez-Leroux and J. Liceras (eds), Dordrecht: Kluwer.

Reid, W. 1980. “Meaning and narrative structure”. *Columbia University* W*orking Papers in Linguistics 5: 12-20.*

Robison, R. E. 1990. “The primacy of aspect: Aspectual marking in English interlanguage”. *Studies in Second Language Acquisition,* 12, 315-330.

Salaberry, R. 1997. *The Development of Spanish Past Tense Aspect among Adult Academic L2 Learners*, Unpublished PhD dissertation, Cornell University, Ithaca, NY.

Shirai, Y. 1991. *Primacy of Aspect in Language Acquisition: Simplified Input and Prototype.* Unpublished PhD thesis, UCLA, Los Angeles, CA.

Shirai, Y. 1993. “Inherent aspect and acquisition of tense/aspect morphology in Japanese”. In *Argument Structure: Its Syntax and Acquisition*, H. Nakajima and Y. Otsu (eds), 185-211. Tokyo: Kaitakusha.

Shirai, Y. and R. Andersen. 1995. “The acquisition of tense-aspect morphology: A prototype account”. *Language*, 71, 4, 743-762.

Slabakova, R. 1997. *Zero Acquisition: Second Language Acquisition of the Parameter of Aspect.* Unpublished Ph.D dissertation, McGill University, Montreal.

Travis, L. 1991. “Derived objects, inner aspect and the structure of VP”. Talk given at NELS, University of Delaware.

Travis, L. 1994. “Event Phrase and a theory of functional categories”. In *Proceedings of the Canadian Linguistic Association Meeting at the University of Calgary, Toronto Working Papers in Linguistics*, P. Koskinen (ed).

Wallace, S.1982. “Figure and ground: the interrelationships of linguistic categories”. In *Tense-Aspect: Between Syntax and Pragmatics.* P. Hopper (ed), Philadelphia: John Benjamins.