

**Beyond morphological use: what semantic  
knowledge tells us about aspect in L2 portuguese**

**Além do uso morfológico: o que o conhecimento  
semântico nos diz sobre o aspecto em português como L2**

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**ABSTRACT**

This study investigates the acquisition of [ $\pm$ perfective] aspect in L2 Portuguese via knowledge of the [ $\pm$ accidental] distinction that obtains between the Preterit and Imperfect in adverbially quantified sentences (LENCI; BERTINETTO, 2000; MENÉNDEZ-BENITO, 2002). Crucially, we show that intermediate L2 learners demonstrate phrasal semantic knowledge that we argue is accessed via the acquisition of new L2 features. As a result, we contend that the data support theories of adult UG-continuity (DUFFIELD; WHITE, 1999; SCHWARTZ; SPROUSE, 1996) and provide evidence

\* About the authors see page 259.

*in contra* so-called Failed Features accounts of SLA (BECK, 1998; HAWKINS; CHAN, 1997). Furthermore, we discuss these data in light of probabilistic approaches to SLA, which interpret errors in morphological use at this level as evidence of underlying deficits in L2 mental representations. With others, we argue that morphological performance alone is neither a direct nor an exact measure of linguistic competence (PRÉVOST; WHITE, 2000; LARDIERE, 1998, 2006).

### KEYWORDS

L2 acquisition. Aspect in L2 portuguese. Theories of adult UG-continuity.

### RESUMO

*Esse estudo investiga a aquisição do aspecto [±perfeito] em português L2, mediante conhecimento da distinção [± acidental] que ocorre entre o pretérito perfeito e imperfeito em frases com quantificação adverbial (LENCI; BERTINETTO, 2000; MENÉNDEZ-BENITO, 2002). Mostramos que os aprendizes L2 intermediários demonstram conhecimento da semântica sintagmática, que conforme argumentamos é acessível por meio da aquisição de novos traços da L2. Como resultado, propomos que os dados dão suporte a teorias de continuidade da GU (DUFFIELD; WHITE, 1999; SCHWARTZ; SPROUSE, 1996) e oferecem evidência contra as assim chamadas propostas de Traços Malsucedidos (FAILED FEATURES; BECK, 1998; HAWKINS; CHAN, 1997) para ASL (aquisição de segunda língua). Além disso, discutimos tais dados considerando abordagens probabilísticas para ASL, que interpretam erros de uso morfológico nesse nível como evidência de déficits subjacentes das representações mentais de L2. Em consonância com outros autores, argumentamos que o desempenho morfológico não é por si só uma medida direta ou exata da competência linguística (PRÉVOST; WHITE, 2000; LARDIERE, 1998, 2006).*

### PALAVRAS-CHAVE

*Aquisição de L2. Aspecto em português como L2. Teorias de continuidade da GU.*

## 1 Introduction

The acquisition of [±perfective] aspect has received a

considerable amount of attention from various approaches to adult second language acquisition (SLA) research (see Bardovi Harlig 2000 and Montrul & Salaberry 2003). Most available studies are couched within cognitive-perceptual, lexical/semantic, narrative and other non-generative perspectives of SLA. They investigate patterns to the surfacing of overt morphology in beginning and intermediate stages of inter-language development. Implicitly, these studies assume a morphology-before-syntax approach, presuming that target-deviant use of morpho-phonological forms entails deficiencies at the level of competence. This important body of research tells us a great deal about the emergence and production of morphology; however, implications from recent generative L2 research, which has demonstrated that L2 syntax and semantics is often native-like despite extremely deficient morphological performance, suggest that this position is problematic (e.g. PRÉVOST; WHITE, 2000; LARDIERE, 1998, 2005, 2006; GOAD; WHITE, 2006; ROTHMAN, 2007). Assuming both syntax-before-morphology and semantics-before-morphology positions, which anticipate possible performance-level differences between L2 and native [ $\pm$  perfective] aspect morphological use notwithstanding target syntactic and semantic competence, it is not clear that examining L2 Preterit and Imperfect morphological use alone achieves the intended goal of gauging underlying grammatical competence in this domain.

Under the assumption that L2 knowledge of *poverty-of-the-stimulus* (POS) semantic entailments accessed via the acquisition of associated syntactic features provides evidence of morphosyntactic competence (e.g. DEKYDTSPOTTER ET AL., 1997; DEKYDTSPOTTER; SPROUSE, 2001; SLABAKOVA, 2006), generative studies have tested for L2 knowledge of POS phrasal semantics in this domain (e.g., GOODIN-MAYEDA; ROTHMAN, 2007; SLABAKOVA; MONTRUL, 2003; ROTHMAN; IVERSON, 2008). This study continues this line of investigation, considering new data of the L2 acquisition of [ $\pm$ perfective] aspect in L2 Portuguese. Crucially, we demonstrate that adult English L2 learners of Portuguese have knowledge of [ $\pm$ accidental] phrasal

semantic restrictions on interpretations between the preterit and imperfect at the intermediate level. We show how this difference is grammatical in Portuguese and could only be acquired via its association to [ $\pm$  perfective] features (LENCI; BERTINETTO, 2000; MENÉNDEZ-BENITO, 2002). The present data indicate target-like L2 morphosyntactic and semantic competence at the intermediate level, a level at which the above studies from other perspectives have demonstrated deficits in morphological use. We conclude that the data provide evidence in favor of syntax-before-morphology and semantics-before-morphology (SLABAKOVA, 2006) approaches and question the accuracy of methodologies that do not dovetail the examination of L2 morphological production with a direct examination of semantic interpretation.

This article is set up in the following manner. Section 2 explains grammatical aspect within the generative framework in general as well as what needs to be acquired by the English learner of L2 Portuguese. In particular, we discuss properties of the semantic entailment we test. Section 3 cursorily reviews previous L2 research on the acquisition of grammatical aspect. The remainder details the methodology, results and discussion of the present study.

## 2 Grammatical and lexical aspect

Unlike English, Romance languages morphologically distinguish perfective and imperfective aspect in the past. The Preterit, or [+perfective] aspect, most often corresponds to an episodic interpretation. It is anchored in time by a clearly defined beginning and ending point.

(1) *A Maria viu o João ontem na festa.*  
 “Mary saw João yesterday at the party.”

In contrast, the imperfect, or [-perfective] aspect, must take a habitual or progressive reading.<sup>1</sup>

<sup>1</sup> Space limitations do not allow for an exhaustive description of grammatical aspect (see KEMPCHINSKY; SLABAKOVA, 2005, for greater details).

*A Maria via o João com frequência quando era menina.*  
 “Mary used to see João often when she was a child.”

Following Giorgi and Pianesi (1997) and others, we assume that [ $\pm$  perfective] aspect—as seen in the preterit/imperfect morphological contrast in Romance languages—derives from the specification of morphosyntactic features associated with the functional category higher AspP, as in Figure 1, and therefore falls under the phenomena accounted for by UG.

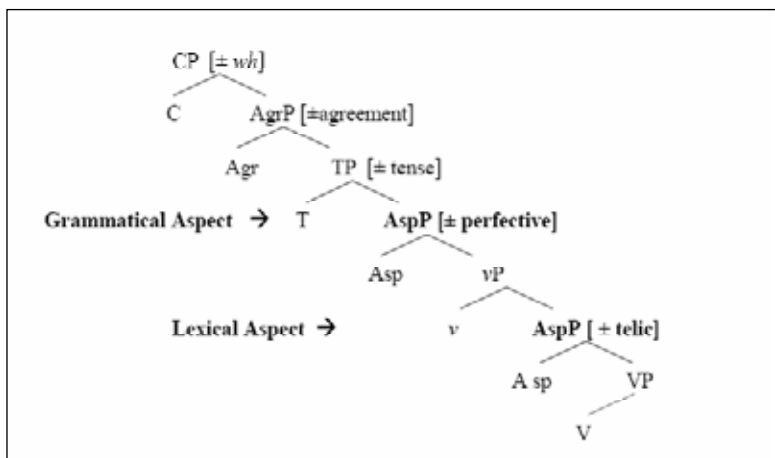


Figure 1

Under current proposals, parametric differences are located within the functional lexicon of particular languages (CHOMSKY, 1995, 2000). In Portuguese, higher AspP is the locus of [ $\pm$  perfective] feature checking via preterit and imperfect morphology. While English projects this functional category, English verbs lexically encode a default [+ perfective] feature. In other words, English lacks the syntactic feature [- perfective]. For this aspectual contrast to obtain in the grammars of English learners of L2 Portuguese they must acquire the [- perfective] feature from Portuguese input. However, the learning of features and their mapping to language-specific morpho-phonological forms may be a

multi-layered process, where acquiring the function (i.e. the feature) can precede the form (mapping to L2 morphology). Crucially, L2 learners must acquire the syntactic feature to have a mental representation that is native-like.

Stemming from the instantiation of [ $\pm$  perfective] aspect, sentences with the preterit and imperfect are subject to related poverty-of-the-stimulus (POS) semantic entailments, which restrict phrasal interpretations. These entailments are accessed via the acquisition of [ $\pm$  perfective] features and thus indirectly provide evidence of feature acquisition (SLABAKOVA; MONTRUL, 2003). In the present study, we examine the [ $\pm$  accidental] restriction on interpretations in preterit and imperfect sentences with adverbial quantification. Additionally, we test a related restriction on subject DP interpretation in adverbially quantified sentences.

Lenci and Bertinetto (2000) have demonstrated for Italian and Menéndez-Benito (2002) for Spanish that the preterit and imperfect contrast is not neutralized in adverbially quantified sentences in Romance languages (as predicted by Bonomi's (1997) theory<sup>2</sup>) since these forms are not interchangeable in context with, for example, expectative phrases such as in (3) and (4).

(3) *Sempre que nós comemos a pasta, nós ficamos doente.*

Always that we eat-1ppl-past-pfv the pasta, we get-1psg-past-pfv ill.

“Whenever we ate the pasta we got sick.”

(4) *Sempre que comíamos a pasta, nós ficávamos doente.*

Always that we eat-1ppl-past-imp the pasta, we get-1psg-past-imp ill.

“Every time we would eat the pasta we would get sick.”

In sentences with adverbial quantification, like (3) and (4), both the perfective and the imperfective are interpreted as generalizations.

<sup>2</sup> Bonomi (1997, p. 508-9) claims that interpretations about these sentences are not clear. However, his theory predicts that explicit adverbial quantifiers of universal force should override the null  $\exists$ -operator, which relates the preterit to existential quantification over eventualities (see BONOMI, 1997). However, this prediction does not obtain, as the preterit/imperfect distinction is not neutralized in these contexts.

However, the perfective necessarily denotes an accidental generalization while the imperfective denotes a non-accidental one. That is to say, sentences like (3) are only felicitous with a context that creates a sense of unintentionality

Related to this [ $\pm$  accidental] alternation is the fact that only perfective sentences with adverbial quantifiers block the kind-denoting reading of definite subject DPs, which is otherwise available as a choice along with a group-denoting reading, as in (5) and (6). Portuguese definite DPs can have either a kind-denoting or a group-denoting reading. For example, ‘*Os homens são ignorantes*’, can be understood as men are ignorant in general (the kind-denoting reading) or a contextually determined group of individual men happen to be ignorant (the set-denoting reading).

(5) *Sempre que os americanos precisavam de mais petróleo, se apoderavam dele.*

Always that the Americans need-3ppl-past-imp more oil, *pro* seize-3ppl-past-imp it.

Whenever (the) Americans would need more gas, they seized it.

(6) *Sempre que os americanos precisaram de mais petróleo, se apoderaram dele.*

Always that the Americans need-3ppl-past-pfv more oil, *pro* seize-3ppl-past-pfv it.

Whenever the Americans needed more oil, they seized it.

Whereas imperfective adverbially quantified sentences, as in (5), retain both types of subject DP reading, only a set-denoting reading is available for similar perfective sentences, as in (6). As a result, sentence (5) can indicate the actions of a contextually determined group of specific Americans or Americans in general whereas sentences like (6) can only refer to a particular group of Americans.

The blocking of the kind-denoting reading in adverbially quantified perfective sentences follows from the accidental nature of these types of sentences. In other words, ‘in all the instances x needed

more, *x* took it' can be expected/predicted of a regular individual or group of individuals, but hardly of an entire kind. Menéndez-Benito (2002) suggests that this [ $\pm$ accidental] distinction might be explained if, like NPs, VPs are able to denote either kinds of or specific sets of events. As such, the same VP could either denote a kind or a set, and in Romance languages this distinction is grammatical, mediated by the alternation of [ $\pm$  perfective] morphology. As a result, knowledge of this semantic entailment need not be learned explicitly, as it is unclear how it could be without specific unequivocal instruction, but rather obtains from the acquisition of [ $\pm$  perfective] features.

### 3 aspect & L2 acquisition studies

Many non-innatist SLA studies have examined the adult acquisition of grammatical aspect (see MONTRUL; SALABERRY, 2003). Although these studies cover lexical-semantic, content-based, narrative structure and other approaches to SLA, the majority examines the Lexical Aspect Hypothesis (LAH) (ANDERSEN, 1991; see BARDOVI-HARLIG, 2000; SALABERRY, 2000, for discussion of literature). The LAH is a hypothesis of so-called aspectual primacy in L2 acquisition—a correlate theory to L1 Aspect-First models—whereby verbal morphology (the preterit and imperfect) is purported to initially mark inherent (lexical) aspect distinction only (e.g., the preterit emerges first with punctual verbs and last with statives). These studies have examined the use of aspectual morphology in different linguistic mediums (written vs. oral production) under the assumption that morphological use is representative of linguistic competence. The whole of these studies has provided discrepant results as to the accuracy of the LAH.

Other significant approaches have examined the possibility that narrative structure (see BARDOVI-HARLIG, 2000) as well as distributional bias effects on aspectual marking that different discursive contexts impose come to bear on L2 acquisition as a matter of perception constraints given frequency patterns (e.g., ANDERSEN; SHIRAI, 1994). Common to all non-innatist approaches to aspect acquisition in SLA, they each make an implicit assumption that morphological production



is a reflection of the grammatical system and therefore represents actual competence. In doing so, the semantic values L2 learners assign to preterit and imperfect morphemes are inferred based on performance patterns of L2 use of these inflectional morphological forms.

This assumption is problematic for two reasons. Firstly, generative research has highlighted and provided explanations for the fact that L2 learners tend to use morpho-phonological forms variably, despite an underlying morphosyntactic and semantic competence that is otherwise demonstrably native-like (LARDIERE, 1998, 2006; PRÉVOST; WHITE, 1999, 2000; WHITE, 2003b; GOAD; WHITE, 2006; SLABAKOVA, 2006). So, if syntax-before-morphology and semantics-before-morphology models are tenable, the validity of studies that steadfastly and exclusively correlate the acquisition of aspect to production of overt morphology is uncertain. This is true because it is less than obvious that examining overt production of L2 morphology accomplishes the objective of gauging actual linguistic competence. Secondly, in claiming that aspectual assignment is determined lexically (at least initially and throughout various stages of L2 development), probabilistic approaches make the prediction that interpretation should be as deficient as production. Accordingly, beginning learners would also not be able to interpret stative predicates in the preterit or punctual verbs in the imperfect based on the fact that they do not produce them. This, however, has not been empirically proven. Moreover, it is not clear how probabilistic approaches could account for the acquisition of semantic entailments at all, much less their acquisition at stages when morphological use is widely observed to be target-deviant.

Conversely, generative studies (e.g. GOODIN-MAYEDA; ROTHMAN, 2007; SLABAKOVA; MONTRUL, 2003; ROTHMAN; IVERSON, 2008) have looked at the L2 acquisition of [ $\pm$ perfective] aspect as it relates to the acquisition of functional features, their syntactic/semantic distributions and the predictions made by competing generative SLA theories. For example, Slabakova and Montrul (2003) have demonstrated L2 poverty-of-the-stimulus semantic knowledge stemming from a related semantic universal, which English L2 learners of Spanish must access via the acquisition of [ $\pm$  perfective] features. This provides

evidence in favor of both adult UG-continuity as well as evidence against a Critical Period for semantics. Although they demonstrate a correlation between recognition of inflectional morphology in comprehension and knowledge of semantic entailments at the intermediate level, these findings do not categorically contradict a semantics-before-morphology position cf. SLABAKOVA, 2006). Slabakova (2006) has discussed how such a correlation could be indicative of the easier nature of a comprehension task as opposed to a production one, in light of the robust support production data lends to the corollary syntax-before-morphology approach. From this, we might expect that morphological recognition via comprehension, but not necessarily accurate production, is minimally needed to acquire associated semantic properties. Moreover, this would indicate that syntax precedes semantics, while both precede morphology in adult SLA.

The present study continues this line of research, demonstrating that intermediate learners of Portuguese have acquired semantic entailments of grammatical aspect at stages where they are widely observed to misuse inflectional morphology in production. In doing so, we interpret the data as evidence in support of both syntax-before-morphology and semantics-before-morphology and against methodologies that assume morphological production is sufficient to gauge competence.

## 4 The study<sup>3</sup>

### 4.1 Participants

All of the intermediate learners (n=14) were American university students (undergraduate and graduate) enrolled in a summer language program in Salvador, Brazil, at the time of data collection. Participants' L2 levels were evaluated at the onset of the program via a compilation of grammar, writing and oral proficiency assessments, all of which

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<sup>3</sup> The data reported here is sub-set of a larger data set, which includes various levels of L2 proficiency and other empirical tests. We note that all the L2 learners, as a matter of inclusion in this intermediate population, demonstrated clear knowledge of the episodic versus characterizing difference between the preterit and imperfect on other tests in sentences without adverbial quantification.

were conducted by native Brazilian Portuguese language instructors. Intermediate participants were chosen based on the following criteria: (1) they had studied Portuguese for at least one academic year prior to this trip to Brazil, (2) they lived in a Brazilian home-stay for the duration of the program, (3) they regularly attended classes, (4) they were not native-speakers or bilingual speakers of another Romance language and (5) they passed a morphological recognition via comprehension task for the preterit and imperfect (with a score of at least 80%). The native Brazilian control group consisted of age-matched native speakers of Brazilian Portuguese from the Brazilian state of Bahia.

#### 4.2 Test 1: Sentence-Conjunction Judgment Test<sup>5</sup>

The first test was a sentence-conjunction judgment test designed to test the [± accidental] interpretations of [± perfective] aspect in sentences with explicit adverbs of quantification, as in (7). The participants used a scale ranging from -2 to 2 in judging whether or not a sentence was semantically felicitous with its preceding context, where -2 represented absolute knowledge that a sentence was semantically odd, -1 represented less absoluteness, 0 represented indeterminate knowledge, 1 represented almost positive knowledge that the sentence was semantically felicitous and 2 was used to indicate absolute knowledge.

(7)

a. Professor Oliveira was the best at the university. All the students wanted to be in his classes. Because of this, it was very difficult to enroll in them. Happily, during my years at the university I was able to take three of his classes.

*Sempre que eu ia a classe do Prof. Oliveira, eu aprendia muito.*

Always that I took-IMP to the class from Prof. Oliveira, I learned-IMP a lot.

-2   -1   0   1   2

<sup>5</sup> For both tasks the context are given here in English for reasons of space limitations, but they were provided to the subjects in Portuguese.

b. I really like to go to the movies with my friends. During the past month I didn't have to work. I wanted to do a lot of things during this free time. More than anything I wanted to see movies with my friends. I suppose I have bad luck, since I didn't see even one movie during that time.

*Meus amigos e eu planejamos muitas vezes ir ao cinema mas sempre que chegou o momento de ir ao cinema os amigos disseram não poder.*

My friends and I planned-PRET many times to go to the movies but every time the moment arrived-PRET, my friends ended up saying-PRET they couldn't go.

-2 -1 0 1 2

c. When I was a child I lived in Salvador, in Bahia. There I had many friends and together we often went to the beach. When I was 13 my family decided to go to Canada, where my father found a good job. Before attending university, I went to Salvador every summer to spend time with my friends. Like always, we spent a lot of time at the beach, since we all liked to swim.

*Durante a adolescência, sempre que fui a Salvador durante o verão, eu e os meus amigos fomos a praia.*

During my adolescence, every time I went-PRET to Salvador during the summer, my friends and I ended up going-PRET to the beach.

-2 -1 0 1 2

Unlike contexts of the (7a) type, which support habitual past actions, contexts like (7b) create an environment of an unforeseen or unexpected repetitive event. As a result, although both are generalities, only (7b) has a [+ accidental] quality. As such, the preterit sentence of (7b) readily supports its preceding context while the imperfect sentence of (7a) supports its context. Conversely, contexts like (7c) are similar to contexts like (7a) in that they both present contexts of non-accidental generalities. However, the accompanying sentence in (7c) is in the preterit, which is semantically anomalous. Therefore, the judgments should favor acceptance of (7a) and (7b), but rejection of

(7c). There were eight examples of each sentence type. In addition to judgments, we ask the participants to correct the sentences they deemed semantically odd so that they would fit the context better.

## Test 2

This sentence-conjunction test employs the same scale from test 1 and examines restrictions on available subject DP readings in adverbially quantified preterit vs. imperfective sentences. Only Preterit sentences are unable to support the kind-denoting reading of the subject DP, retaining only the group-denoting reading (MENÉNDEZ-BENITO, 2002). This test consisted 20 contexts, as in (8) which can be subdivided into four types (n=5 each): contexts presenting a kind-reading with the preterit (8a), contexts presenting a group-denoting reading with the preterit (8b), contexts presenting a kind-reading with the imperfect (8c) and contexts presenting a group-denoting reading with the imperfect (8d).

(8)

a. I never believed that all Brazilian women were crazy. My father always told me about the girlfriends he had when he was young. But I still never believed him. Now I'm 30 and everyone tells me the exact same stories, I know that the Brazilian woman is crazy.

*Por exemplo, sempre que as brasileiras pensaram que os namorados as enganavam, os perseguiram.*

For example, every time Brazilian women thought-PRET that their boyfriend was cheating-IMP on them, they followed-PRET him.

-2 -1 0 1 2

b. Soldiers are people that generally deserve respect. However, some aren't worth anything. For example, when I was a girl, there was a group of five soldiers that lived in my city who were horrible, that is, very bad people. We all avoided them."

*Sempre que os soldados toparam com a gente, nos roubaram.*

Whenever the soldiers ran into-PRET us, they ended up robbing us PRET.

- 2 -1 0 1 2

c. Brazilian men are strong, however, they can be very spoiled by their mothers. The situation is better today, but during my father's time, the Brazilian man only left the house to marry or die. The mothers would continue doing everything for them. Now, thank God, things aren't like that anymore."

*Por exemplo, sempre que os homens brasileiros não casados moravam com as suas mães, elas preparavam todas as comidas para eles.*

For example, whenever unmarried Brazilian men lived-IMP with their mothers, the mothers cooked-IMP all the meals for them.

-2 -1 0 1 2

d. Compared with girls, boys are generally more destructive. But my sister's boys are the worst of children. They ruined everything they touched, it was incredible. There was nothing they hadn't destroyed. Due to this, I didn't want them to come to my house, but it was inevitable because they were my nephews. Therefore, whenever they would come, I would spend hours hiding the fragile things.

*Ainda assim, sempre que os meninos encontravam as coisas escondidas, as quebravam por usá-las sem motivo.*

Even so, every time the kids found-IMP the hidden things, they broke IMP them by using them carelessly.

-2 -1 0 1 2

The only context type for which the sentence presented after it is semantically anomalous is (12a) since a kind-denoting reading is blocked by the preterit in adverbially quantified sentences.

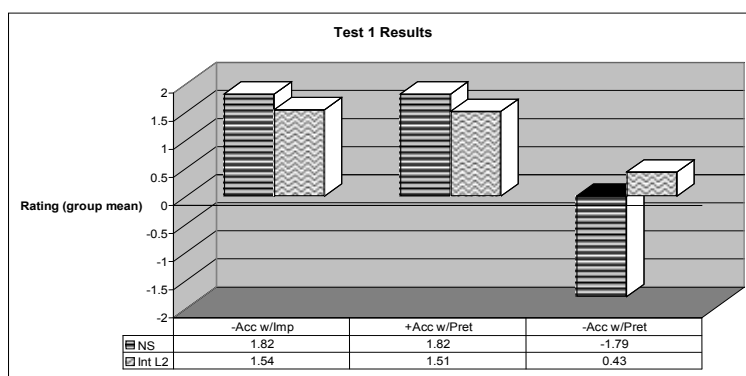
## 5 Results

Results are presented both descriptively and quantitatively for

each task. For the statistical analyses, we compare the L2 learner and the native control groups using two-sample t-tests. In a separate section, we consider the L2 data alone using paired t-tests. While the L2 group performs differently than the native group, they nonetheless demonstrate knowledge of the semantically entailed [ $\pm$  accidental] distinction.

### *Task 1 Sentence-Conjunction Judgment Test for [ $\pm$ Accidental] Interpretations*

We tested for knowledge of the [ $\pm$ accidental] preterit vs. imperfect distinction that obtains in sentences with adverbial quantification. Since the overt adverbial has universal force, the preterit is only felicitous with [+ accidental] contexts. If the L2 learners have knowledge of this semantic entailment, they should judge highly only those Preterit sentences whose contexts create a sense of unintentionality. Figure 2 presents the group-rate acceptability of a preterit or imperfect sentence after a given context type.



**Figure 2.** Results of Sentence Conjunction Judgment Task (Test 1)-Acc w/Imp = [-accidental] context with imperfect sentence; +Acc w/Pret = [+accidental] context with preterit sentence; -Acc w/Pret = [-accidental] context with preterit sentence

The most important comparison is the difference in acceptability for Preterit sentences depending on the type of contexts (i.e. accidental vs. non-accidental).

As seen from Figure 2, both groups judge highly adverbially quantified imperfect sentences whose contexts are [-accidental] as well as preterit sentences whose contexts support a [+accidental] reading. The native and the L2 learner groups rate these sentences well above 1 on the positive side of the scale. It is important to note that although the native and L2 group average ratings for these sentences are less than 2, they are significantly above 1, indicating clear knowledge of the acceptability of the imperfect and preterit respectively in these first two context types. Turning to context type 3, preterit adverbially quantified sentences corresponding to [-accidental] contexts, only the NS group consistently rejected these preterit sentences, rating them between -1 and -2. The intermediate L2 group rated these same sentences between 0 and 1, which indicates that, as a group, they have somewhat less determinate knowledge of their ungrammaticality or are more cautious about labeling something as semantically odd.

*Statistical Analysis:* The t-tests showed that there were significant differences between the natives and the L2 learners in all three environments. The statistical results are given in table 1 below.

**Table 1** - Statistical Results from Test 1

	-Acc w/Imp			+Acc w/Pret			-Acc w/Pret		
	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>df</i>
NS v. Int	3.72	.002	14	2.36	.033	14	3.40	.005	12

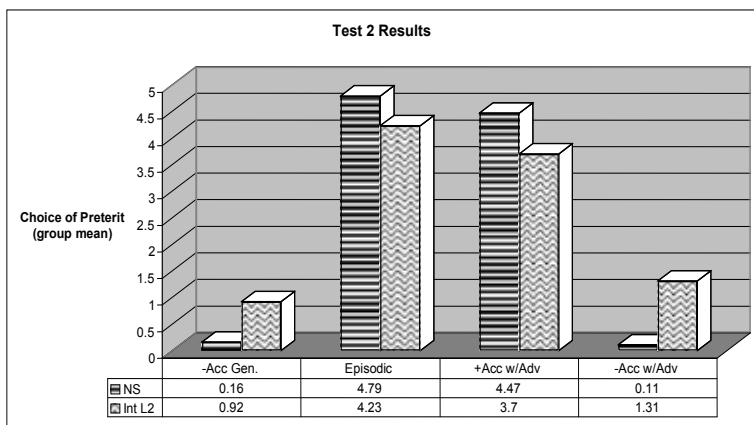
#### *Task 2 Sentence-Conjunction Judgment Test for Subject DP Interpretations*

*Descriptive Analysis:* This task tested for restrictions on kind- vs. group-denoting readings of subject DPs in preterit and imperfect sentences with adverbial quantification. In these sentences, both kind- and group-denoting readings are available with the imperfect while kind-denoting ones are unavailable with the preterit. Using the same scale, -2 to 2, from task 1, the participants judged the acceptability of adverbially quantified preterit and imperfect sentences presented after



contexts that supported only a kind- or a group-denoting reading.

As seen in Figure 3 below, the kind-reading interpretation with the preterit is strongly rejected by the NS group whose average rating was -1.74. The L2 group also rejected the kind-reading interpretation with the preterit; however, somewhat differently, their rejection was more moderate with an average rating of -0.58. Conversely, the group-denoting reading with the preterit and both readings with the imperfect were reliably accepted by all three groups, with average ratings between 1 and 2 on the positive side of the scale.



**Figure 3** - Results of Sentence Conjunction Judgment Task (Test 2)

KR w/Pret = kind-reading with the preterit; GR w/Pret = group-reading with the preterit; KR w/Imp = kind-reading with the imperfect; GR w/Imp = group-reading with the preterit

*Statistical Analysis:* A t-test demonstrated that there were significant differences in all four context/sentence pairs between the native and L2 learner groups. The statistical results from test 3 are given in table 3 below.

**Table 2** - Statistical Results from Test 2

	KR w/Pret			GR w/Pret			KR w/Imp			GR w/Imp		
	t	p	df	t	p	df	t	p	df	t	p	df
NS v. L2	3.91	.002	12	4.26	<.001	21	3.51	.003	15	5.74	<.001	29

*Exploring the L2 Data*

A comparison of the aggregate data sets indicated differences in performance between the native controls and the intermediate L2 learners on all relevant comparisons for both tasks. Although this indicates target-deviant behavior at the level of giving judgments, it does not necessarily mean that the choice between preterit and imperfect is random or that the L2 learners do not have the semantically entailed knowledge we test for. If the learners truly do not have the [ $\pm$  accidental] distinction, one would expect that their intragroup judgments would not be significantly different as a function of relevant context and semantic interpretation types. However, follow-up paired t-tests on L2 intragroup comparisons of preterit vs. imperfect judgments showed statistically significant differences in all relevant cases for both tests.

**Table 3** - Relevant differences within L2 group

	<b>Test 1</b>		<b>Test 2</b>	
	+Acc w/Pret v. -Acc w/Pret	-Acc w/Pret v. -Acc w/Imp	KR w/Pret v. KR w/Imp	KR w/Pret v. GR w/Pret
<b>t</b>	4.53	5.32	5.69	6.48
<b>p</b>	.001	<.001	<.001	<.001

Although differently as compared to the native control, the L2 learners crucially make a significant difference in acceptability for adverbially quantified preterit sentences as a function of the type of supporting context ([+accidental] or [-accidental]) in Test 1. Additionally, they significantly differentiate between the acceptability between the preterit and imperfect with [-accidental] contexts. In Test 2, the L2 learners render a highly significant difference in accepting kind-denoting readings of subject DPs in adverbially quantified sentences depending of whether the sentences are in the preterit or the imperfect. Isolating the preterit sentences, one can see that the L2 learners accept much more readily a group-denoting subject reading. The difference in

their acceptance of preterit sentences with group-denoting contexts compared to preterit sentences whose contexts only support a kind-denoting reading is statistically significant. Although these differences may not be as polarized as in the case of the NS group, the [ $\pm$  accidental] distinction clearly exists for the L2 learners as well.

If these L2 learners have the semantically entailed [ $\pm$  accidental] distinction, why do their judgments differ so significantly from the natives? In answering this logical question, we must keep in mind the type of tests we used. Since we tested for semantic knowledge, which even for native speakers invokes a gradient of acceptability, possible responses to test stimuli were not binary. That is, the learners were asked to make judgments on a -2 to 2 scale. It is possible that many learners at the intermediate level lack the confidence in the L2 to assign either extreme (-2 or 2) as a judgment on a given sentence. Such an effect may be even stronger in the case of assigning complete unacceptability to a sentence than accepting it completely. This would effectively reduce the scale to ratings between -1 and 1. This scenario seems to be a reasonable explanation for the L2 behavior in both tests, especially if their interpretation of the scale reads as a gradient of absolute confidence to less absolute confidence on the positive side of the scale as opposed to absolute acceptability to indiscriminate knowledge. One resolution to this potential problem would be to offer more points along the scale as ratings for acceptability, perhaps at intervals of 0.5 (-2, -1.5, . . . 1.5, 2). A scale such as this would allow more precise measurements on judgments.

Notwithstanding some differences, we can claim that both groups differentiate between the preterit and imperfect in the all appropriate contexts (see note 3), critically in the ones that are not explicitly taught to them (i.e. with adverbial quantifiers). Additionally, both demonstrate knowledge that subject DPs of preterit sentences with adverbial quantification lose the otherwise available kind-denoting reading, whereas similar sentences with the imperfect retain both the group-denoting and the kind-denoting reading.

## 6 Discussion and conclusions

We have presented data from two interpretive tests, which test for semantically entailed knowledge of the [ $\pm$  perfective] distinction. Insofar as such knowledge is accessed via the acquisition of syntactic features (in this case the [-perfective] feature lacking in the L1), such L2 knowledge confirms the possibility of new L2 feature acquisition after the so-called critical period. This provides evidence in favor of adult UG-continuity theories (e.g., EPSTEIN *et al.*, 1996; SCHWARTZ; SPROUSE, 1996; DUFFIELD; WHITE, 1999; WHITE 1989, 2003a) and, although not the focus of the present discussion, *in contra* generative theories of local and global impairment (e.g., CLAHSEN; HONG, 1995; HAWKINS; CHAN, 1997; BECK, 1998; HAWKINS, 2005).<sup>5</sup> While the intermediate learners performed differently from the native control on all relevant items of each test, we demonstrated that their differentiation between the preterit and imperfect in all contexts, crucially in the relevant [ $\pm$  accidental] contexts with adverbial quantification, is statistically significant. For reasons discussed above, we take this tendency to be indicative of an underlying L2 grammar whose mental syntactic representation of grammatical aspect is native-like.

Demonstrating that intermediate L2 learners have interpretive knowledge of poverty-of-this-stimulus semantic entailments whose attainment is conditioned upon the acquisition of grammatical aspectual features is especially interesting in light of the fact that the motivation of this study was to test the effectiveness of generative vs. probabilistic approaches to the acquisition of sentential aspect in adult SLA. In terms of production, it is well documented that intermediate L2 learners of languages with morphological grammatical aspect do not use the target aspectual morpho-phonological paradigms consistently well (see BARDOVI-HARLIG, 2000). Despite variable use of morphology, if

<sup>5</sup> Although the focus of the present discussion compares the explanatory adequacies of generative vs. probabilistic approaches to adult SLA, it should be noted that the data has implications for contemporary debates within generative SLA research. For example, if L2 non-convergence is limited to vulnerability where syntax interfaces with other modules (SORACE, 2004, 2005), the syntax-semantics interface is less problematic than others, for example the syntax-pragmatics interface (cf. TSIMPLI; SORACE, 2006). Moreover, the data provide evidence in favor of the semantics-before-morphology position advocated by Slabakova (2006).

target-like interpretations of these morphemes can be established at this level, especially in terms of semantic nuances that are not explicitly taught or acquirable from the input (i.e., as semantic entailments frequency cannot account for such knowledge) than this would support the notion that the underlying grammatical representation is target-like, even at a stage where L2 learners typically make surface errors in aspectual morpho-phonological production. What are the implications of the present findings? The data establish the fact that English intermediate L2 learners of Portuguese understand the difference between the preterit and the imperfect, inclusive of associated semantic entailments. If we assume that this population is comparable to the intermediate learner populations of the probabilistic studies we have discussed, which demonstrate that at this level L2 learners do not use preterit and imperfect morphology like native-speakers, then how do we make sense of these juxtaposing observations?

This is where generative approaches are more explanatory than probabilistic approaches in that only the former have recourse to theoretical proposals on the nature of natural language to explain such disparities. Schwartz and Sprouse (1996) argued that features are an abstract representation of grammar that are mapped onto morphological forms, but are distinct from them. An immediate consequence for L2 acquisition is that features can be acquired without being properly mapped to overt morphological forms, either at particular stages of development or indefinitely. This is the position that the Missing Surface Inflection Hypothesis (PRÉVOST; WHITE, 2000) advocates, proposing that many morphological errors in L2 performance are surface errors of production as opposed to indications of deficits at the mental representation level. Lardiere, (1998, 2006) among others, has provided convincing evidence that underlying morphosyntactic knowledge can be quite native-like despite a very impoverished use of inflectional morphology on the surface. It is possible that the widely reported misuse of aspectual morphology at the intermediate L2 level is just another one of these cases, whereby morphological production underdetermines linguistic competence. In the present case, we consider the following explanations for the L1/L2 discrepancy in morphological

use: (a) there is an L2 mapping problem such that the aspectual features, although represented syntactically in the L2 grammar, are not properly mapped to their overt morph-phonological forms; (b) there is (are) a distributional and/or pedagogical bias(es) affecting the performance use of preterit and imperfect morphology with certain verbs, verb classes and after certain adverbial cues and that this declines as proficiency rises (see ROTHMAN, 2008, for details along these lines); or (c) a combination of (a) and (b). In any case, one must explain both interpretation and use. Insofar as it is justified to assume that target-like interpretation provides better evidence for assessing underlying competence than looking at morphological production alone (in light of, for example, the Missing Surface Inflection Hypothesis (PRÉVOST; WHITE, 2000) and the Prosodic Transfer Hypothesis (GOAD; WHITE, 2006), it is fair to claim that generative approaches are better equipped to diminish the inherent opaqueness of determining linguistic competence. Since morpho-phonological forms are but a mere phonological representation of semantic properties represented syntactically, associated semantic knowledge (or lack thereof) should be the ultimate criterion for claiming that the grammar is (or is not) fundamentally the same in its mental representation. Looked at differently, proponents of theories that assume morphological use is always indicative of underlying mental representation (generative and probabilistic) are obliged to answer how L2 learners can acquire semantic nuances associated with morphology that, on the surface, they observably misuse, if their underlying representation is target-deviant.

There is an important literature on the acquisition of [ $\pm$  perfective] aspect in adult SLA from a range of probabilistic approaches. These studies are significant as they give us insight into the development of morphological production. However, insofar as they take the use of morpho-phonological forms at face value (i.e. necessarily representative of L2 mental representation) they are problematic for similar reasons that generative morphology-before-syntax approaches are. Although for different reasons, both predict that target-deviant use of morphology

corresponds to differences in underlying representation, which should have negative consequences for associated semantics. This study provides further evidence that this prediction is not tenable.

## REFERENCES

- ANDERSEN, R. Developmental Sequences: The emergence of aspect marking in second language acquisition. In: HUEBNER, T. C.; FERGUSON, C. A. (eds.) **Crosscurrents in second language acquisition and linguistic theories**. Amsterdam: John Benjamins, 1991. p. 305-324.
- ANDERSEN, R.; SHARAI, Y. Discourse Motivations for some cognitive acquisition principles. **Studies in Second Language Acquisition**, v. 16, p. 133-56, 1994.
- BARDOVI-HARLIG, K. **Tense and aspect in second language acquisition: Form, meaning, and use**. Malden, MA: Blackwell, 2000.
- BECK, M. L. L2 acquisition and obligatory head movement: English-speaking learners of German and the local impairment hypothesis. **Studies in Second Language Acquisition**, v. 20, p. 311-348, 1998.
- BONOMI, A. Aspect, quantification and when-clauses in Italian. **Linguistics and Philosophy**, v. 20, p. 469-514, 1997.
- CHOMSKY, N. **The Minimalist Program**. Cambridge, MA: MIT Press, 1995.
- \_\_\_\_\_. Minimalist inquiries: the framework. In: MARTIN, R.; MICHAELS, D.; URIAGEREKA, J. (eds.) **Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik**. Cambridge, MA: MIT Press, 2000. p. 89-156.
- CLAHSEN, H. AND U. HONG. Agreement and null-subjects in German L2 development: New evidence from reaction time experiments. **Second Language Research**, v. 11, p. 57-87, 1995.
- DEKYDTSPOTTER, L.; SPROUSE, R. A. Mental design and (second)

language epistemology: Adjectival restrictions on *wh*-quantifiers and tense in English-French interlanguage. **Second Language Research**, v.17, p. 1-35, 2001.

DEKYDTSPOTTER, L.; SPROUSE, R. A.; ANDERSEN, B. The Interpretive Interface in L2 Acquisition: the Process-Result Distinction in English-French Interlanguage Grammars. **Language Acquisition**, v. 6, p. 297-332, 1997.

DUFFIELD, N.; WHITE, L. Assessing L2 knowledge of Spanish clitic placement: converging methodologies. **Second Language Research**, v. 15, n. 2, p. 133-160, 1999.

EPSTEIN, S.; FLYNN, S.; MARTOHARDJONO, G. Second language acquisition: Theoretical and experimental issues in contemporary research. **Brain and Behavioral Sciences**, v. 19, p. 677-714, 1996.

GIORGI, A.; PIANESI, F. **Tense and aspect: From semantics to morphosyntax**. Oxford: Oxford University Press, 1997.

GOAD, H.; WHITE, L. Ultimate attainment in interlanguage grammars: a prosodic approach. **Second Language Research**, v. 22, p. 243-268, 2006.

GOODIN-MAYEDA, C. E.; ROTHMAN, J. The acquisition of aspect in L2 Portuguese and Spanish: Exploring native/non-native performance differences. In: S. BAAUW, F. DIRJKONINGEN; PINTO, M. **Romance languages and linguistic theory**. Amsterdam: John Benjamins, 2007. p. 131-148.

HAWKINS, R. Revisiting Wh-movement: The availability of an uninterpretable [wh] feature in interlanguage grammars. In: DEKYDTSPOTTER, L. et al. Somerville, MA: Cascadilla. **Proceedings of the 7th Generative Approaches to Second Language Acquisition Conference (GASLA 2004)**. 2005. p. 124-137.

HAWKINS, R.; CHAN, C. The partial availability of universal Grammar in second language acquisition: The 'failed functional features hypothesis'. **Second Language Research**, v. 13, n. 3, p. 187-226, 1997.

KEMPCHINSKY, P.; SLABAKOVA, R. **Aspectual Inquiries**.



Dordrecht: Springer. 2005.

LARDIERE, D. Dissociating syntax from morphology in a divergent L2 end-state grammar. **Second Language Research**, v. 14, p. 359-375, 1998.

LARDIERE, D. On morphological competence. In L. Dekydtspotter, R. A. Sprouse, & A. Liljestr and (eds.). **Proceedings of the 7th Generative Approaches to Second Language Acquisition Conference (GASLA 2004)**. Somerville MA: Cascadilla Press, 2005. p. 178–192.

LARDIERE, D. **Ultimate Attainment in Second Language Acquisition: A Case Study**. Mahwah, NJ: Lawrence Erlbaum Associates. 2006.

LENCI, A. ; BERTINETTO, P. M. Aspect, adverbs and events: Habituality and perfectivity. In: HIGGINBOTHAM, J.; PIANESI, F.; VARZI, A. C. (eds.) **Speaking of events**. Oxford/New York: Oxford University Press, 2000. p. 65-287.

MEN ENDEZ-BENITO, P. Aspect and adverbial quantification in Spanish. In: HIROTANI, M.(ed.) **Proceedings of the 32<sup>nd</sup> North Eastern Linguistics Society**, GLSA. The University of Massachusetts, Amherst, MA. 2002. p. 365-382.

MONTRUL, S.; SALABERRY, R. The Acquisition of Spanish Tense and Aspect. In: LAFFORD, B.; SALABERRY, R. (eds.) **The Acquisition of Spanish: The State of the Science**. Washington DC: Georgetown University Press, 2003. p. 47-73.

PR EVOST, P.; WHITE, L. Finiteness and variability in SLA: More evidence for missing surface inflection. **Proceedings of the Annual Boston University Conference on Language Development**, v. 23, p. 575-586, 1999.

\_\_\_\_\_. Missing surface inflection or impairment in second language acquisition?. **Second Language Research**, v. 16, p. 103-133, 2000.

ROTHMAN, J. Sometimes They Use It, Sometimes They Don't: An Epistemological Discussion of L2 Morphological Production and Its Use as a Competence Measurement. **Applied Linguistics**, v. 28, n. 4, p. 609-615, 2007.

\_\_\_\_\_. Aspectual Morphology Use in Adult L2 Spanish & The

Competing Systems Hypothesis: When Pedagogical and Linguistic Rules Conflict. **Languages in Contrast**, v. 8, n.1, p. 74-106, 2008.

ROTHMAN, J.; IVERSON, M. Poverty-of-the-stimulus and L2 Epistemology: Considering L2 Knowledge of Aspectual Phrasal Semantics. **Language Acquisition: A Journal of Developmental Linguistics**, v. 15, p. 4 270-313, 2008.

SALABERRY, R. **Spanish past tense aspect: L2 development in a tutored setting**. Amsterdam: John Benjamins, 2000.

SCHWARTZ, B.; SPROUSE, R. L2 cognitive states and the Full Transfer/Full Access Model. **Second Language Research**, v. 12, p. 40-72, 1996.

SLABAKOVA, R. Is there a Critical Period for Semantics? **Second Language Research**, v. 22, p. 302-338, 2006.

SLABAKOVA, R.; MONTRUL, S. Genericity and Aspect in L2 Acquisition. **Language Acquisition**, v. 11, p. 165-196, 2003.

SORACE, A. Native language attrition and developmental instability at the syntax-discourse interface: Data, interpretations and methods. **Bilingualism: Language and Cognition**, v. 7, p. 143-145, 2004.

\_\_\_\_\_. Syntactic optionality at interfaces. CORNIPS, L.; CORRIGAN, K. (eds.) **Syntax and variation: Reconciling the biological and the social**. Amsterdam: John Benjamins. 2005, p. 46-111.

TSIMPLI, I.-M.; SORACE, A. Differentiating interfaces: L2 performance in syntax-semantics and syntax-discourse phenomena. In: BAMMAN, D; MAGNITSKAIA, T.; ZALLER, C. (eds.) **Proceedings of the 30th annual Boston University Conference on Language Development**. Somerville, MA. : Cascadilla Press, 2006, p. 653-664.

WHITE, L. **Universal grammar and second language acquisition**. Philadelphia: John Benjamins. 1989.

\_\_\_\_\_. **Second language acquisition and Universal Grammar**. Cambridge, MA: Cambridge University Press, 2003a.

\_\_\_\_\_. Fossilization in steady state L2 grammars: Persistent problems with inflectional morphology. **Bilingualism: Language and Cognition**,

v. 6, n. 2, p. 129-141, 2003b.

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