

## THE ACQUISITION OF TENSE AND ASPECT: EVIDENCE FROM PORTUGUESE AND SPANISH

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### *Abstract*

This paper seeks to understand how the categories tense and aspect are represented in the mental grammar of typically-developing children. Past work has found that English- and French-learning children as old as 6 years of age often use tense marking to convey aspect, conflating the two categories. In contrast, young Spanish speakers appear to treat the two categories as distinct by age 3. We confirm that native learners of Spanish dissociate tense and aspect by 3 years of age, and suggest that they may even do so as early as 2;5 or before. We find similar results in Portuguese. We further demonstrate, in line with past work, that the use of aspect marking at this young age might be driven, at least in part, by differences in lexical telicity.

Keywords: Tense. Aspect. Language Acquisition. Portuguese. Spanish.

## A AQUISIÇÃO DE TEMPO E ASPECTO: EVIDÊNCIAS DO PORTUGUÊS E DO ESPANHOL

### *Resumo*

Este artigo busca entender como as categorias tempo e aspecto são representadas na gramática mental de crianças em fase normal de aquisição de linguagem. Trabalhos anteriores evidenciaram que crianças de até 6 anos, falantes de inglês e francês, costumam usar marcação de tempo para transmitir o aspecto, confundindo as duas categorias. Em contraste, crianças mais novas falantes de espanhol parecem tratar as duas categorias como distintas aos 3 anos de idade. Confirmamos que os aprendizes nativos de espanhol dissociam tempo e o aspecto aos 3 anos e sugerimos que eles podem fazer isso até mesmo com 2,5 anos ou antes. Encontramos resultados semelhantes em português. Além disso, demonstramos, em consonância com trabalhos anteriores, que o uso da marcação de aspecto em idade tão tenra pode ser conduzido, pelo menos em parte, por diferenças na telicidade lexical.

Palavras-chave: Tempo. Aspecto. Aquisição de linguagem. Português. Espanhol.

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## 1 Introduction

It is not hard to see that typically-developing children are very good at acquiring language. They go from knowing only a few basic words to commanding complex syntactic rules in a relatively short period of time. But some aspects of language take years to master, like tense and aspect morphology (e.g., Bloom, Lifter, & Hafitz, 1980; Bronckart & Sinclair, 1973; Hodgson, 2004; Vinnitskaya & Wexler, 2001). Tense is a deictic category that relates a particular fact to a point in time: whether something is happening in the *present* (1), happened in the *past* (2), or will happen in the *future* (3). Aspect, on the other hand, characterizes the circumstances being described as either *completed* (2) or *ongoing* (1). Critically, tense and aspect are logically dissociable. Thus, verb phrases can have progressive (ongoing) aspect in the past tense as well (4).

- (1) The girl is studying for the test.
- (2) The girl studied for the test.
- (3) The girl will study for the test.
- (4) The girl was studying for the test.

While some empirical work on the acquisition of tense and aspect suggests that young children conflate the two categories (English: Bloom *et al.*, 1980; French: Bronckart & Sinclair, 1973), other research has found correct dissociation of tense and aspect marking by 3-4 years of age (Spanish: Hodgson, 2004). We build on this research by investigating tense and aspect marking in Portuguese- and Spanish-speaking children between 1;4 and 4;4 years of age.

In the remainder of this introduction, we briefly discuss past research on tense and aspect marking in young children and introduce our specific aims. Sections 2 and 3 report our methodology and results, respectively. In Section 4, we discuss the implications of this work for theories of language acquisition and generative syntax.

### 1.1 Review of past literature on the acquisition of tense and aspect

Several studies have found that young children blur the lines between tense and aspect. For example, Bronckart and Sinclair (1973) studied French-learning children between 2;11 and 8;7 years of age. In their task, an experimenter manipulated a few toys and then asked the children for an account of what they had seen. Thus, all children were expected to construct their sentences in the past tense, as the actions were already completed. Past tense morphology was correctly used to describe short events with clear endpoints. However, children up to 6 years of age instead used the present tense to describe long-duration events that had no clear endpoint. In view of these results, the authors argued that the child's use of verbal inflections is mainly to encode aspect, and not to encode tense.

Bloom *et al.* (1980) found similar results for children learning English aged 1;10 to 2;4: Tense marking was used to encode aspectual differences rather than temporal relations. Moreover,

these early aspectual distinctions appeared to be based on differences in *lexical telicity*. Lexical telicity is an inherent temporal property of verbs (and verb phrases), classified as either *telic*, implying a situation that presents an inherent end (5), or *atelic*, implying an arbitrary termination (6).

(5) I broke the glass.

(6) I walked along the beach.

In the case of atelic verbs (such as *play* and *run*), the children in Bloom *et al.* (1980) used the “-ing” affix, responsible for encoding the progressive aspect, whereas with telic verbs (like *fall* and *leave*), they employed the “-ed” affix, which encodes past tense and completed aspect. These results suggest that children’s early verbal inflections are used to encode aspect rather than tense, and in particular lexical telicity.<sup>1</sup>

In contrast to these two findings, Hodgson (2004) found correct dissociation of tense and aspect marking in young learners of Spanish. Like the “-ed” affix in English, Spanish uses the same verbal morpheme to mark both past tense and completed aspect in the same word form (e.g., *estudió* “studied”). This is called the *perfective* form. However, unlike English, which marks past tense and progressive aspect in separate word forms (i.e., the “-ing” affix exclusively marks imperfective aspect, while auxiliaries exclusively encode tense), Spanish also has a separate past tense morpheme that serves to mark both past tense and progressive aspect in the same word form (e.g., *estudiaba* “was studying”). This is called the *imperfective* form. By mutual exclusivity (see Markman & Wachtel, 1988), if children use both perfective and imperfective verb forms to mark events in the past, it must be because they are drawing a contrast between them. Since both forms encode past tense, the contrast has to be one of aspect.

In Hodgson’s (2004) work, Spanish-speaking children between 3 and 4 years of age correctly used perfective forms to mark completed (telic) events and imperfective forms to mark ongoing (atelic) events. Critically, however, they did not use the present tense to mark imperfective events. Thus, we have evidence that children as young as 3 are in fact capable of dissociating tense and aspect morphology. This contrasts with the findings of Bonckart and Sinclair (1973) and Bloom *et al.* (1980). However, Hodgson (2004) also observed that children’s early use of aspect morphology (perfective and imperfective forms) depended, at least in part, on differences in lexical telicity, consistent with Bloom *et al.* (1980).

## 1.2 Present aims

We have two primary aims: (1) to determine whether children as young as 3 do in fact dissociate tense and aspect, and (2) to ask whether even younger children also show this dissociation. We

<sup>1</sup> Vinnitskaya and Wexler (2001) found an increase in 3- to 6;5-year-old children’s production of progressive aspect marking in the past tense (as well as an increase in present-tense forms) even when the action had already been completed, relative to adults. The authors argue that this result might be due to children’s mistreating new statements as old information and using progressive forms to differentiate old information from new information. However, it is also possible that children’s productions are in part being driven by lexical telicity, as found by Bloom *et al.* (1980). Vinnitskaya and Wexler (2001) do not provide the appropriate analysis to evaluate this possibility, however, and we therefore leave it as an open question.

collected spontaneous speech recordings of young learners of Spanish and Portuguese (which has a similar tense and aspect marking system to Spanish) to look for the concurrent use of both perfective and imperfective verbal forms—an indication of the dissociation between tense and aspect. As a secondary aim, we also sought to explore whether the appearance of perfective and imperfective grammatical marking in young Portuguese and Spanish learners' speech might in part be influenced by lexical telicity.

## 2 Methodology

We analyzed the spontaneous speech of native learners of Brazilian Portuguese and Mexican Spanish. We collected a cross-sectional corpus of 14 audio recordings from 12 Portuguese-learning children and 9 audio recordings from 8 Spanish-learning children, spanning 1;4 to 4;4 years of age. Two of the Portuguese children and one Spanish child were recorded twice. The recordings are of dialogues between a child and an adult or between two children (with an adult present) and were collected at home.

To address our central questions regarding the dissociation of tense and aspect marking, we calculated the first age at which different verbal forms appeared in the corpus (see below). We reasoned that, since Portuguese and Spanish both have two verb forms that encode the past tense—perfective and imperfective—if children use these two forms concurrently, it must be because they are distinguishing them on the basis of aspect (per mutual exclusivity; see Markman & Wachtel, 1988). This would thus provide evidence for a dissociation between tense and aspect.

To this end, the recordings were transcribed and coded as follows. First, we selected all utterances in which a verb was produced by the child, excluding cases in which the child either directly repeated or was mirroring what the adult had just said. This resulted in a total set of 3,688 meaning-carrying utterances across the two languages, where “utterance” includes both single words and sets of words. A second coder (for each language) verified that all the included utterances were spontaneous productions by the child. We then coded each utterance for:

1. Tense or lack thereof: past, present, future, infinitive, imperative
2. The existence of an additional verbal form: +infinitive, +gerund
3. Aspect (for past-tense forms): perfective, imperfective

Past-tense forms coded as imperfective included utterances in which the verbal form was itself imperfective (e.g., *Comi el pastel* “I ate the cake”) and those in which the verbal form was perfective but the full utterance conveyed an imperfective meaning (e.g., *No he comido el pastel cuando mi padre me llamó* “I haven’t eaten the cake when my father called me”). Examples of each verbal form (by language) can be found in Table 1.

Table 1. Example verbal forms in Portuguese and Spanish.

VERBAL FORM	LANGUAGE	
	PORTUGUESE	SPANISH
Past (perfective)	Ele cortou tudo “He cut everything”	Ella estropeó la muñeca “She ruined the doll”
Past (perfective) + infinitive	Não consegui cantar “I couldn’t sing”	No pude bailar “I couldn’t dance”
Past (perfective) + gerund	Pulou corda rodando “Jumped rope rolling”	La princesa fue cantando “The princess was singing”
Past (imperfective)	Ele não estava comendo “He wasn’t eating”	El perrito no ladraba mucho “The puppy wasn’t barking much”
Past (imperfective) + infinitive	Eu queria ter um cavalo, mãe “I wanted to have a horse, mom”	Yo quería gritar bien alto “I wanted to scream very loudly”
Past (imperfective) + gerund	Mamãe brincava jogando água “Mama was playing throwing water”	No estaba peleando “I wasn’t fighting”
Present	Eu não quero gravação “I don’t want recording”	Mi papa está en la cocina “My dad is in the kitchen”
Present + infinitive	Quero brincar “I want to play”	Yo no sé poner “I don’t know how to put (it back)”
Present + gerund	Ela está chorando “She’s crying”	Mi primo está bromeando “My cousin is joking”
Future	Eu vou na festa “I will go to the party”	Voy a bailar “I’m going to dance”
Infinitive	Jogar bola “To play ball”	Beber agua “To drink water”
Imperative	Pega lá “(Go) get it”	Cállate “Shut up”
Imperative + infinitive	Vá limpar “Go clean”	Hazlo parar “Make him stop”

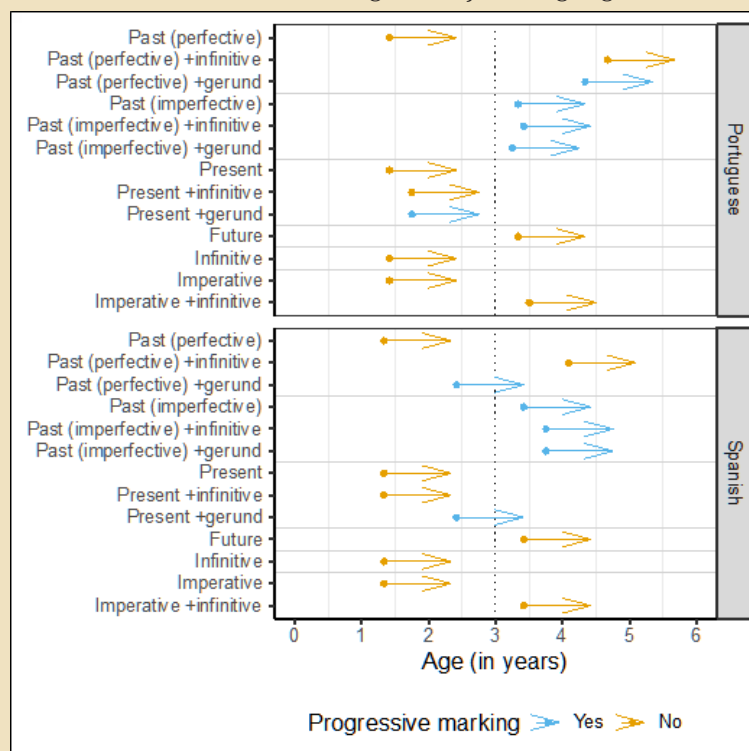
Source: Our research data.

In addition, to address the relationship between lexical telicity and grammatical aspect, we calculated the proportion of perfective and imperfective verbal forms used with telic and atelic verbs. If children's use of grammatical aspect does in fact draw upon lexical telicity, then we should see more perfective forms with telic verbs and more imperfective forms with atelic verbs. Lexical telicity was coded on the basis of the verb phrase, following the distinctions in Comrie (1976): "telic" for situations that have an inherent endpoint (e.g., *breaking*), "atelic" for situations with no obvious endpoint (e.g., *walking*).

### 3 Results

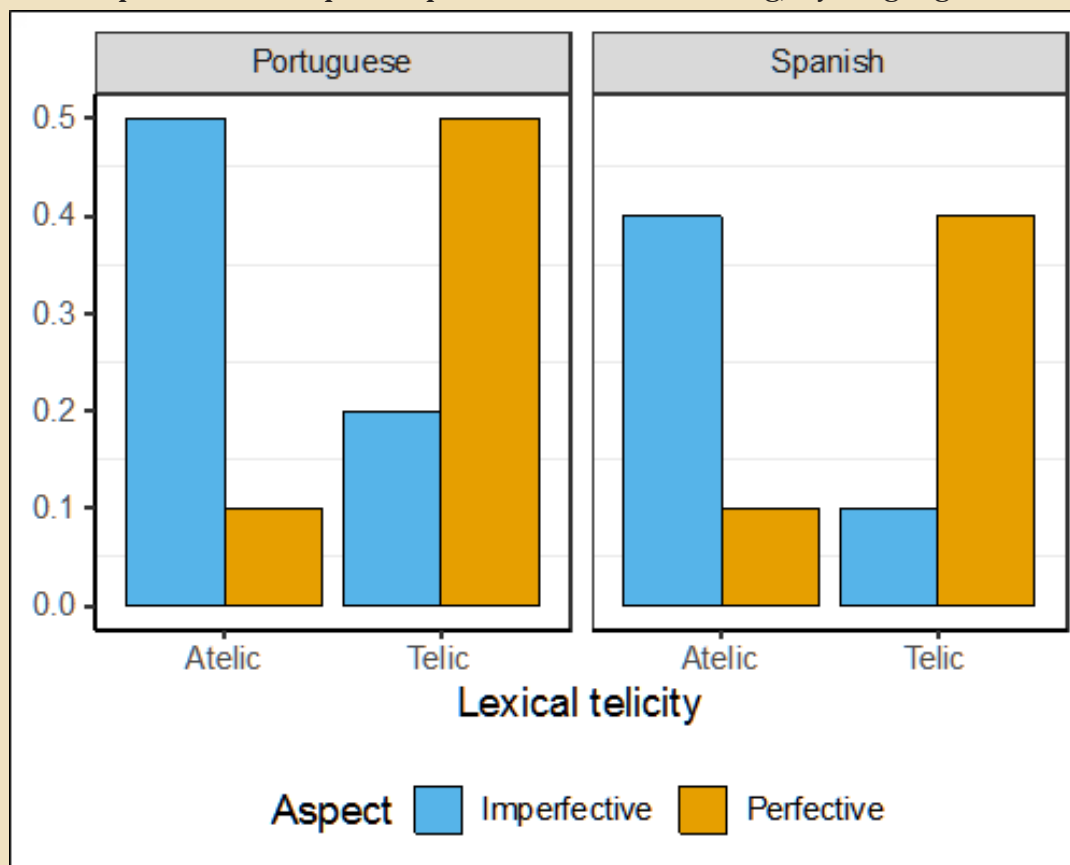
Figure 1 summarizes the primary results. In Portuguese, children in the 1;5-1;8 age range, corresponding to the one-word stage of language development, produced single verbs in the following forms: present, past perfective, infinitive, imperative (see Table 1 for examples). In this age range, we observed perfective forms in only a single verb in each language (*cair* "to fall" in Portuguese, *quedarse* "to stay" in Spanish). At 1;9, at the beginning of the two-word stage, the children began producing more complex forms, which included verbal forms containing both a present-tense auxiliary verb and an infinitive or gerund (see Table 1 for examples). Only from 3;4 onward did children's productions include verbs in the future tense, past perfective tense with infinitives and gerunds, and, critically, past imperfect tense (see Table 1 for examples). The Spanish children showed a very similar pattern of results (see Fig. 1).

**Figure 1. Age (in years) of first appearance of each verbal form in Portuguese and Spanish.** Dots indicate first appearance; arrows indicate continued production. Verbal forms with aspectual marking (i.e., imperfectives and finite verbs with gerunds) are highlighted in blue.



Source: Our research data

Figure 2. Proportion of telic and atelic verbs and verb phrases appearing with past perfective and past imperfective verbal marking, by language.



Source: Our research data.

We also examined the relationship between lexical telicity and grammatical aspect (see Fig. 2). This analysis suggests that, as in prior work (e.g., Bloom *et al.*, 1980; Hodgson, 2004), perfective forms occur primarily with verbs of a telic nature, while imperfective forms occur primarily with verbs of an atelic nature.

## 4 Discussion

This research explored the production of tense and aspect morphology in learners of Portuguese and Spanish. Specifically, we sought to verify previous work (Hodgson, 2004) indicating that young learners of Spanish dissociate tense from aspect in their verbal inflections by the age of 3, and to extend this finding to Portuguese. In addition, we asked whether there would be evidence for this dissociation in even younger children. Finally, we also asked whether children's early productions of perfective and imperfective forms might be driven, at least in part, by lexical telicity, as suggested in previous work (e.g., Bloom *et al.*, 1980; Hodgson, 2004).



First, our results support Hodgson's (2004) analysis. We find that children learning both Portuguese and Spanish produce imperfective verbal forms by at least 3 years of age. Recall that Portuguese and Spanish have two past-tense single-verb forms: one that encodes the completed aspect (perfective) and one that encodes the progressive aspect (imperfective). Critically, both forms encode the past tense. Thus, mutual exclusivity (see Markman & Wachtel, 1988) dictates that children should only use the (later-emerging) imperfective form *if* they are drawing a contrast with the perfective form. We observed both forms in 3-year-olds. This finding suggests that Portuguese- and Spanish-learning children *do* dissociate tense morphology from aspect morphology from this early age.

Unfortunately, we do not have any evidence that children are using the imperfective form any earlier. This, alongside use of the perfective form, would be the strongest evidence that they are dissociating tense from aspect even younger. One limitation of our work is that we weren't able to collect more than a single recording in the third year of life (age 2). It is possible that we would see imperfective uses even earlier than 3 if we had these data. We leave this question open for future research.<sup>2</sup>

Critically, however, there is some suggestive evidence that children *are* in fact dissociating tense and aspect at an earlier age, even before 3. Like English, Spanish and Portuguese also have a separate morphological form for encoding progressive aspect (e.g., the “-ndo” affix), which when combined with a finite verb creates a complex verbal predicate that encodes *both* tense and aspect (e.g., *está comiendo* “is eating”). If children only produce this form in a single tense (e.g., present), we would have no way of knowing whether they treat these components as distinct. It could be, for example, that they encode completed events with the perfective form (e.g., *comió* “ate”) and ongoing events with the present progressive (e.g., *está comiendo* “is eating”), without analyzing the internal components of the latter. However, note that our Spanish children *are* using this complex gerundive form in *both* the present and past tenses by 2;5 years of age, suggesting that they are correctly dissociating aspect from tense at this younger age. More work is needed to verify this possibility.

Finally, we also see a strong relationship between lexical telicity and grammatical aspect, in line with past work (e.g., Bloom *et al.*, 1980; Hodgson, 2004). Thus, as for French and English speakers, children learning Portuguese and Spanish might initially use grammatical aspect (separately from tense) as a proxy for lexical telicity (by at least 3), before they further refine their understanding of these two notions. However, our results are only correlational, so we cannot draw any strong causal conclusions. We leave this question for future research.

We next consider the implications of these results for language acquisition and generative theory.

<sup>2</sup> A further limitation concerns how we coded utterances for “perfectivity” or “imperfectivity.” Perfective utterances always contained perfective forms. However, imperfective utterances sometimes contained perfective verbal forms, so long as the sentence made clear that the action hadn't yet completed (e.g., *Não arrumei tudo quando a minha professor chegou* “I didn't organize everything when my teacher arrived”). Thus, it's possible that all our early imperfective occurrences don't actually contain imperfective forms, which might not show up until even later. Nevertheless, we find the same general pattern even if we remove these (problematic) cases.



#### 4.1 Implications for language acquisition

Our results can be summarized as follows. By 3 years of age, children reliably produce tense and aspect morphology concurrently (e.g., *comía* “was eating”). Earlier than this age, they tend to produce *either* tense (e.g., *come* “eats”) or aspect (e.g., *comiendo* “eating”), and very rarely (but sometimes) both. Why does it take so long for children to reliably encode both tense and aspect concurrently, when they are clearly capable of doing so (at least some of the time) at an even earlier age?

To explain this pattern, we draw inspiration from the work of Wexler and colleagues on the relationship between tense and agreement in the so-called Optional Infinitive (OI) stage of grammatical development (e.g., Schütze & Wexler, 1996; Wexler, 1994, 1998). We first review this work as pertains to tense and agreement, and then apply the same analysis to the relationship between tense and aspect.

The OI stage refers to the period of time, typically up to the age of 3, in which children show variable production of tense and agreement marking in required contexts, sometimes omitting “affixal” morphemes (7 and 8) and “suppletive” forms like copulas (9) and auxiliaries (10).

(7) Baby dino like\_\_ this blankie.

(8) What happen\_\_?

(9) My train \_\_ cold.

(10) I \_\_ skipping a page.

To capture this phenomenon, Schütze and Wexler (1996) proposed the Agreement/Tense Omission Model (ATOM). In short, ATOM suggests that OIs will occur either when tense is missing but agreement is present (e.g., *He like this blankie*), or when agreement is missing but tense is present (e.g., *Him like this blankie*).<sup>3</sup> Following the principles of Distributed Morphology (Halle & Marantz, 1993), Schütze and Wexler (1996) assume that morphemes are required to maximally match the features of the nodes in which they are inserted and not contain any features that are not specified in those nodes. When agreement is present but tense is omitted [+AGR, -TNS], the phonetically empty morpheme /0/ gets inserted. When tense is present and agreement is missing [-AGR, +TNS], /0/ is again inserted because it is vacuously consistent with the target node *and* has no features that are not in that node. The expected /s/ cannot be inserted because it is specified for +3<sup>rd</sup> and +Singular, which are not in the representation.

The predictions of ATOM are supported by empirical observation (see Table 2). For example, Schütze and Wexler (1996) report data from Nina (Suppes Corpus), who produced nearly as many non-finite verbs with an accusative subject as with a nominative subject.

<sup>3</sup> Per ATOM, when agreement is missing, default case gets assigned (accusative case in English).

Table 2. Nina's 3<sup>rd</sup> singular subject pronouns: finiteness vs. case.

SUBJECT	FINITE	NONFINITE
<i>he + she</i>	255 = 95%	139 = 54%
<i>him + her</i>	14 = 5%	120 = 46%

Source: Schütze & Wexler (1996).

But children at this young age clearly *are* capable of producing both tense and agreement concurrently, as demonstrated in the upper left quadrant of Table 2. So why don't they always? To explain this, Wexler (1998) additionally proposes the Unique Checking Constraint (UCC). Following Chomsky (1995), Wexler (1998) assumes that functional heads like TNS (tense) and AGR (agreement) have non-interpretable Determiner-features ([-Interpretable] D-features) that must be eliminated by checking, and only by eliminating these [-Interpretable] D-features can the derivation converge.<sup>4</sup> In adults, the [+Interpretable] D-feature of the subject DP moves from within the verb phrase (VP) to the specifier of TNS (Spec,TNSP), checking the [-Interpretable] D-feature on the TNS head, and then to Spec,AGRP, also checking the [-Interpretable] D-feature on the AGR head. The young child knows that the D-features of TNS and AGR are [-Interpretable] and that a derivation with any [-Interpretable] D-features does not converge. However, Wexler's (1998) UCC restricts the subject DP in children from checking for more than one [-Interpretable] D-feature per sentence. Thus, in order to get a convergent derivation given the constraints of UCC, she must be willing to violate the target grammar. Minimize Violations (MV) stipulates that the child must choose a derivation that violates as few grammatical properties as possible. This leads her to remove the projection whose features haven't been checked (a single violation). Thus, there will be two possible OI representations for the child: one with only an AGRP (with its head and specifier) and the other with only a TNSP (also with its head and its specifier). Sometimes the child chooses to violate UCC instead (also a single violation), checking the D-features of both TNS and AGR and yielding the correct (adult-like) derivation.

We can apply the same type of analysis to the acquisition of tense and aspect. If the UCC prevents young children from simultaneously checking the D-features of both TNS and Asp (aspect), then they will systematically omit one projection (e.g., TNSP, yielding *comiendo* "eating") or the other (e.g., AspP, yielding *come* "eats") in order to save the derivation. This prediction is supported by our findings. Recall that children's earliest productions were dominated by simple forms that encoded either tense or aspect (present, perfective, infinitive, imperative) but not both. Shortly thereafter, in the two-word stage, they began producing more complex forms that encode both tense and aspect (e.g., *fue comiendo* "was eating"). In these cases, children violate UCC instead, and thus produce both projections. (Since either option makes only a single violation, both should be equally available.) Eventually, children arrive at the target grammar (by age 3) and are capable of producing tense and aspect concurrently in all cases. One open question with this analysis is how this checking process interacts with that

<sup>4</sup> Wexler's (1998) analysis assumes that AGR heads a separate projection from TNS, which is questioned in Chomsky (1995). As Wexler (1998) himself notes, if turns out that AGR does *not* head its own projection, the same analysis could be accomplished by assuming a single INFL (inflection) head that has both TNS and AGR features, either of which may be omitted by the OI child.

for tense and agreement, since both processes make use of one of the same elements (TNS). We leave this question for future work.

## 4.2 Implications for Generative Theory

In the Standard Theory (Chomsky, 1965) and Extended Standard Theory (Chomsky, 1972), it was considered that the structure of a simple sentence would consist of an NP and a VP, both linked by a node called S. The formalization would be as follows:  $S \rightarrow NP VP$ . But in order to accommodate data where there was an auxiliary verb (Aux), the proposal for the description of the sentence became as follows:  $S \rightarrow NP Aux VP$ . In Aux, there would be both tense and agreement information.

Emonds (1976) proposed the naming of INFL (inflection) for Aux and suggested a binary labeling for the node, as is done with the lexical categories. Thus, a finite sentence would have INFL [+T, +AGR], and a sentence in the infinitive would have INFL [-T, -AGR]. The syntactic rule became  $S \rightarrow NP INFL VP$  for all types of sentences.

With the advent of Government and Binding (Chomsky, 1981), the proposal was that INFL was the core of the sentence. Thus, we would have  $IP \rightarrow INFL VP$ , in which the general idea would be that both finite auxiliary verbs (such as *should*, *can*, etc.) and *to*, characteristic of non-finite forms in English, could occupy the head of IP. In addition, the subject NP (now DP) would occupy the specifier of INFL (Spec,IP).

Pollock (1989) proposed that there should be an agreement node (AGR) in addition to INFL. But Chomsky (1995) suggested that such a category should not be the head of a (separate) projection. Instead, IP became known as TP, with its head (TNS) containing person, number, and gender features.

One question our results raise is: Where does aspect belong in the syntactic derivation? One possibility is to add aspect as an additional feature of the TNS head, such that it now contains person, number, gender, *and* aspectual features, all of which need to be checked by a [+Interpretable] D-feature on the subject DP. This would be consistent with Chomsky (1995, p. 240), in which TNS expresses both time *and* event structure (among others).

Unlike agreement, however, which manifests itself overtly on the subject DP occupying the specifier of TNS (Spec,TP), aspect, when present, manifests itself on the main verb (e.g., the “-ando” in *estudiando*). Thus, as suggested by Hemont and Morato (2014) and Xavier (2016), we propose that aspect have its own projection (AspP), just below TP. For example, consider the sentence in (11).

(11) O rato comeu o queijo.

“The mouse ate the cheese”

We would have the verb *comer* in the head of VP, which would move to the head of AspP to have its perfective feature checked, and then go up to the head of TP. There, the subject DP would check its tense and agreement features.<sup>5</sup> Next consider the sentence in (12).

(12) El perro está mordiendo el hueso.

“The dog is biting the bone”

Here, we would have the main verb *morder* generated in the head of VP, which would move from there to the head of AspP to have its imperfective feature checked. The auxiliary verb would be base-generated in the TNS head. As before, the subject DP would be responsible for valuing its tense and agreement features.

Critically, in adults, these projections would always be present. However, as we suggested above, children would only be able to retain either TP or AspP, given the UCC. If AspP is removed, *comer* in (11) would still move to T but without first moving through Asp. Since tense and aspect are marked on the same morpheme, *comeu* would still result (coded for tense only, not aspect). In contrast, *morder* in (12) would not move out of VP and instead remain unmarked (infinitive), resulting in *El perro está morder el hueso* “The dog is to bite the bone.” We observed these exact forms in our spontaneous production data.

On the other hand, if the tense feature is removed (from TNS), *comer* in (11) would first move into Asp (to get checked for perfective) before landing in TNS (where it could only get checked for agreement and not tense). Again, since tense and aspect are marked on the same morpheme, *comeu* would still result (this time coded for aspect only, not tense). In (12), *morder* would move out of VP to Asp (to get checked for imperfective). Tense would not get checked on the auxiliary, and it would therefore delete, yielding *El perro mordiendo el hueso* “The dog biting the bone.” This is a common form that OIs take in English (10), and although we didn’t code for it (gerund on its own vs. in combination with a finite verb), we observed many such examples in the corpus (13-16).

(13) Eu queria que cê dormindo comigo.

“I wish that you sleeping with me”

(14) Brincanu de boneca.

“Playing with doll”

(15) Bebiendo jugo.

“Drinking juice”

(16) Soplando vela.

“Blowing candle”

<sup>5</sup> Note that, unlike Wexler (1998), we are working with a derivation in which tense and agreement features occur on the same head (in this case, TNS), following Chomsky (1995).

In sum, our results are consistent with a generative syntactic model, like ATOM, in which young children can only check either tense or aspect, but not both (given the UCC), until roughly 2;5 onward. We have captured this with separate projections for tense and aspect, following Hemont and Morato (2014) and Xavier (2016), although it could in principle also be done with a single projection that contains person, number, gender, *and* aspectual features, following Chomsky (1995). We leave the exact configuration of tense and aspect projections/features to future research.

## 5 Conclusion

The main objective of this work was to understand how the categories tense and aspect are represented in the grammar of typically-developing children learning Portuguese and Spanish. We confirmed prior work (e.g., Hodgson, 2004) showing that children dissociate the two categories by 3 years of age. In addition, our results suggested that even younger children may be making the relevant distinctions at least some of the time. We explained this alternating behavior (sometimes marking tense, sometimes marking aspect, sometimes marking both) in a parallel fashion to the phenomenon of optional infinitives (OIs; e.g., Schütte & Wexler, 1996; Wexler, 1994, 1998). We then discussed two possible architectures for how tense and aspect might be represented in generative theory. Lastly, we verified that telic verbs tend to appear more in the perfective form and atelic verbs tend to appear more in the imperfective form. Therefore, we suggest (in line with past work) that children's early verbal morphology might be driven, at least in part, by lexical telicity, although more work is needed to verify this claim.

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