Title: Domain of Aspectual Interpretation

Author: Jonathan E. MacDonald

Abstract: Thompson (2006) argues for a syntactic account of telicity in which DPs and PPs check a bounded feature at an AspP projection above vP to create a telic predicate. I provide compelling evidence for an AspP projection between vP and VP and argue that AspP and everything AspP dominates defines a domain of aspectual interpretation, a syntactic space within which elements must be located in order to affect the telicity of a predicate. I provide data that shows that elements above AspP cannot affect aspectual interpretation. These data pose a serious problem for Thompson's account.

Keywords: telicity, inner aspect, location PPs, goal PPs, bare plurals, mass nouns, external arguments, internal arguments

In this paper, I remark on Thompson's (2006) syntactic account of telicity. She defines telicity in the following way: "events that have a distinct, definite and inherent end point are telic, and those that are ongoing in time are atelic." (212). Based on Borer (2005), Thompson claims that the direct object of a telic event moves to an aspectual projection AspP, while the direct object of an atelic event does not. Moreover, she assumes that "AspP is located directly above vP."[1] (215). Thompson claims that there is "a common feature for all DPs, Vs, PPs, and Aspect, which all contribute to telic interpretation." (215); the feature is [bounded], where "an entity is bounded if it is conceptualized as having a clear boundary in time/and or space." (213). "[T]elic readings are the result of feature checking of the [bounded] feature between the verb and Asp heads with either a direct object or a PP, [and that] the syntactic constituents that contribute to a telic reading must be in a local relation with each other at LF; they are all in the checking domain of AspP." (216). Finally, she

proposes that time span adverbials adjoin to AspP, while durative phrases adjoin lower in the verb phrase to vP or VP.

I assume that Thompson is essentially correct in defining telicity with respect to the presence or absence of an end of an event;[2] telic predicates describe events interpreted as having an end, and atelic predicates describe events interpreted as not having an end.[3] However, I provide a range of data that naturally leads to a different syntactic account of inner aspect; the result is that Thompson's system is difficult to maintain. The paper is organized in the following way: In section 1, I discuss what the durative phrase and time span adverbial actually tell us aspectually. In section 2, I argue for the existence of an aspectual projection (AspP) between vP and VP (see also Travis 1991) based on the distinct aspectual distributions and interpretations of bare plurals (BPs) and mass nouns (MNs). In section 3, I argue for a syntactic domain of aspectual interpretation defined as the projection AspP (between vP and VP) and everything AspP dominates. For an element to contribute to aspectual interpretation it must be within the domain of aspectual interpretation. In section 4, I discuss specific details of Thompson's proposal, in particular, the bounded feature checking account of DPs and PPs, and her syntactic arguments for the adjunction site of the time span adverbial vs. the durative phrase.

1 The Aspectual Role of the Durative Phrase and Time Span Adverbial

Thompson proposes that the time span adverbial (e.g. *in an hour*) is adjoined to an AspP phrase above vP and that the durative (e.g. *for an hour*) adjoins lower in the verb phrase to VP. In this section, after reviewing standard assumptions regarding the aspectual role of these modifiers, I discuss sentences in which both the time span adverbial and durative phrase are present. They pose a problem for Thompson's account because the time span

adverbial is always interpreted within the scope of the durative phrase. Since Thompson proposes that the time span adverbial is structurally higher than the durative, it is not clear how she can handle these interpretive facts.

The standard assumption regarding the durative phrase is that it is incompatible with telic predicates and compatible with atelic predicates (Dowty 1979, Tenny 1987, Vendler 1967 etc). This is illustrated in (1).

(1) a. John drank a beer #for an hour.

b. John drank beer for an hour.

The sentence in (1a) contains a telic predicate and the durative is incompatible. The sentence in (1b) contains an atelic predicate, and the durative is compatible. Although supported by the sentences in (1), the conclusion that the durative is incompatible with telic predicates and compatible with atelic predicates is a simplification of the facts; for, observe that the durative is in fact compatible with a telic predicate under an iterative interpretation (Alsina 1999, Jackendoff 1996, Schmitt 1996, Smith 1991, Verkuyl 1972, and Vanden Wyngaerd 2001 observe this as well):

(2) a. John spotted a plane for an hour.

b. John carried a goat into the barn for an hour.

The interpretation of (2a) is that John spotted a plane over and over for an hour. The interpretation of (2b) is that John carried a goat into the barn over and over for an hour. Additionally, observe that the object undergoing the action of the verb is required to be the same object in each of the iterated events. That is, in (2a), the same plane must be spotted, and in (2b) the same goat must be carried into the barn over and over again. I refer to this type of telic iterative interpretation in which the same object undergoes the action expressed

by the verb in each of the iterated subevents as a *Sequence of Identical Events (SIE)* interpretation.[4] Considering that an SIE interpretation is elicited by the durative in these sentences, we can explain straightforwardly why the durative in (1a) is incompatible; once a beer is drunk, under normal pragmatic circumstances, it cannot be drunk again (see also Jackendoff 1996). For the same pragmatic reasons, the durative is incompatible with the sentences in (3) below; the object undergoing the action expressed by the verb cannot undergo the action more than once.

(3) a. John ate a cake #for ten minutes.

b. John built a house # for a month.

The durative is only incompatible when an SIE interpretation is pragmatically odd, therefore, I conclude that syntactically the durative is compatible with all aspectual predicate types. Moreover, I assume that the durative adjoins to vP (or at an EP above vP (Borer 2005, Travis 2000)), and modifies the macro-event described by the predicate (similar assumptions are made in Alsina 1999, Larson 2003). Observe in (4) that the durative is grammatical in the *do so* construction, which I take as evidence that it is adjoined higher up in the verb phrase.

(4) a. John drank beer for an hour and Frank did so for two.

b. Frank played soccer for ten minutes and John did so for twelve.

The interpretation elicited by the durative depends on the telicity of the predicate. An event described by a telic predicate is interpreted as having an end. The durative forces an interpretation in which the event must continue for the time that the durative specifies. Thus, a telic event with a durative is interpreted as reaching an end over and over for a specified amount of time; the durative forces the event to iterate. The result is an indefinite

number of telic subevents that repeat for the amount of time specified by the durative.[5] Observe that the time span adverbial can target the end of each of these iterated subevents:

(5) a. John carried a goat into the barn in 30 seconds (for an hour straight).

b. John dragged a log into the shed in 10 seconds (for an hour straight).

In a situation in which a goat keeps running out of the barn, the sentence in (5a) is grammatical under the interpretation that each time the goat ran out it took John 30 seconds to carry it back into the barn and this occurred for an hour straight. A similar interpretation is available in (5b). The time span adverbial is interpreted within the scope of the durative. This is problematic for Thompson's account in which the time span adverbial is structurally higher than the durative phrase, which predicts that the durative phrase should be interpreted within the scope of the time span adverbial.

Atelic predicates describe events that are interpreted as not having an end. Observe that the time span adverbial is incompatible with atelic predicates (Borer 2005):[6]

(6) a. John drank beer #in ten minutes.

b. John carried the goat #in ten minutes.

In the presence of the durative an atelic event is interpreted as continuing essentially uninterrupted (i.e. without reaching an end) for the amount of time specified by the durative. Observe this in the activities in (7).[7]

(7) a. John drank beer for an hour.

b. John carried the goat for an hour.

I conclude that the durative phrase is syntactically compatible with all aspectual predicate types and depending on the telicity of the predicate it elicits different interpretations. With atelic predicates, an uninterrupted interpretation results, and with telic

predicates an SIE interpretation results, in which an indefinite number of iterated subevents continue for the amount of time specified by the durative.[8] Additionally, as is standardly assumed, the time span adverbial targets the end of the event. As such, it is only compatible with telic predicates (See footnote 6). Recall furthermore, that the time span adverbial is interpreted within the scope of the durative, and it was argued that the durative was adjoined to vP or an EP above vP. To account for this interpretation, the time span must be structurally lower than the durative (See footnote 18). Thompson's account, which claims the opposite, cannot easily handle these facts.

2 Locating AspP: Evidence from Bare Plurals and Mass Nouns

In this section, I discuss the distinct aspectual interpretations and distributions of bare plurals and mass nouns. Although we see that bare plurals and mass nouns have distinct aspectual interpretations and distributions, we also see that they both show an asymmetry between the ability of internal and external objects to affect the telicity of the predicate. Internal arguments can while external arguments cannot (see also Tenny 1987). Given Thompson's proposal that there is an AspP projection above vP, it is not clear why external arguments cannot affect the telicity of the predicate. I argue that the presence of an aspectual projection (AspP) between vP and VP (see also Travis 1991) with which BPs and MNs establish distinct relations straightforwardly accounts for this asymmetry; they cannot establish their respective relations with AspP if they are structurally higher than AspP.

The aspectual effect of BPs and MNs on a predicate is standardly taken to be the same; they turn a telic predicate into an atelic predicate (Borer 2005, Dowty 1979, Thompson 2006, Verkuyl 1972 etc.). Consider data that seem to support this BP-MN assumption (8-9).

(8) a. John ate a pizza #for an hour.

b. John drank a soda # for an hour.

(9) a. John ate pizza/pizzas for an hour.

b. John drank soda/sodas for an hour.

The sentences in (8-9) show that a BP or MN internal argument makes the durative phrase compatible where it once was not. However, the presence of a time span adverbial shows that there is a difference in aspectual interpretation elicited by BPs and MNs:

(10) a. John ate pizzas in ten minutes for an hour straight.

b. John drank sodas in three minutes for an hour straight.

(11) a. John ate pizza #in ten minutes for an hour straight.

b. John drank soda #in three minutes for an hour straight.

With a BP internal argument (10a) the time span adverbial is compatible under an interpretation that for each pizza John ate, he ate it in ten minutes, and he did this for an hour straight.[9] This is reminiscent of the SIE interpretation discussed in the previous section, in which the time span adverbial targeted the end of the iterated subevents.[10] Here the time span is playing the same role, thus the predicates in (10) with a BP internal argument are telic. The durative forces the telic event to iterate an indefinite number of times and the BP provides an indefinite number of similar objects (i.e. different pizzas) to undergo the action expressed by the verb in each of the iterated subevents. In the presence of the BP there is a *Sequence of Similar Events (SSE)* interpretation: John ate one pizza, then another pizza and so on (10a). An SSE interpretation is available with the BP *sodas* in (10b) as well. No such interpretation is available in (11) in the presence of the MN. The MN elicits only an atelic interpretation, as is standardly assumed, and as such, the time span adverbial is incompatible. Given these facts, I conclude that BPs and MNs have distinct aspectual

interpretations. MNs elicit an atelic interpretation of the predicate, and BPs elicit an SSE interpretation of the predicate. Let us consider the aspectual distributions of MNs and BPs. Consider the ditransitive structures in (12-13).

(12) a. John carried goats into the barn in ten minutes (for an hour straight).

b. John pushed carts into the store in three minutes (for an hour straight).

(13) a. John carried mud into the barn # in ten minutes (for an hour straight).

b. John pushed ice into the store #in ten minutes (for an hour straight)

In (12a) there is a BP internal argument and as expected an SSE interpretation is available in which one goat after another was carried into the barn in ten minutes for an hour straight. An SSE interpretation is also available in (12b). No such interpretation is available for the MN, and as such the time span adverbial is out in (13). The MN, as expected, elicits only an atelic interpretation of the predicate. Consider BPs and MNs as the complements of a goal preposition (14-15).[11]

(14) a. John carried a goat into barns for an hour.

b. John pushed a cart into stores for an hour.

(15) a. John carried a goat into water for an hour.

b. John pushed a goat onto mud for an hour.

The BP in (14a) elicits an SSE interpretation in which a goat was carried into one barn, then into another barn and so on for an hour. The MN in (15a) does not elicit an atelic interpretation; the only interpretation available is one in which a goat was carried into water, then back out, and back into it again for an hour. This is an SIE interpretation. Observe, as expected, that the time span adverbial together with the durative is compatible with both sets of sentences from (14-15) as illustrated in (16-17).

(16) a. John carried a goat into barns in ten minutes (for an hour straight).

b. John pushed a cart into stores in ten minutes (for an hour straight).

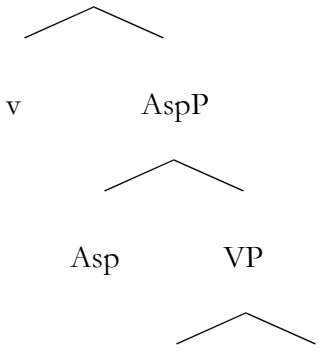
(17) a. John carried a goat into water in ten minutes (for an hour straight).

b. John pushed a cart into mud in ten minutes (for an hour straight).

These sentences are a bit pragmatically odd because the same goat and cart undergo the action expressed by their respective verbs in each of the iterated subevents; however, as long as there is a situation in which the same goat or cart is removed from the barn/water or store/mud respectively (perhaps in a competition in which John is timed to see how fast, or how many times, he can repeat these actions), the sentences are pragmatically fine. Once the contexts are set up, these predicates are perfectly compatible with the time span adverbial in conjunction with the durative phrase. Thus, as a complement of a goal preposition MNs do not elicit an atelic interpretation, while BPs do elicit an SSE interpretation. BPs and MNs have distinct aspectual distributions.

In order to account for the distinct aspectual interpretations and distributions of BPs and MNs, I claim that there is an aspectual head (AspP) between vP and VP with which BPs and MNs establish distinct relations (18).

(18) …vP



V …

I claim that BPs move to Spec, AspP and MNs Agree with Asp°. This straightforwardly accounts for their distributions. The most immediate consequence of this proposal is that neither BP nor MN external arguments can affect the aspectual interpretation of the predicate (see also Tenny 1987), because they are structurally higher than AspP. This expectation is shown to be borne out in (19-20).

(19) a. Wildlife ate a sheep in ten minutes/#for ten minutes.

b. Livestock destroyed the barn in ten minutes/#for ten minutes.

(20) a. Bears ate a sheep in ten minutes (#for an hour straight).

b. Animals destroyed the barn in ten minutes (#for an hour straight).

Observe in (19) that in the presence of a MN external argument the durative phrase is not compatible with these predicates. Recall that in the presence of a MN internal argument with predicates of this type (see 9) the durative becomes compatible; if the MN had an aspectual effect, we would expect the same results. Moreover, observe that the time span adverbial is compatible, and in (19a) it expresses that ten minutes passed before wildlife ate (and finished up) a sheep. Just as a MN external argument does not affect the telicity of the predicate, a BP external argument does not either. The BPs in (20) do not elicit an SSE interpretation of the predicates. Ignoring the time span adverbial for the moment, observe that the durative is simply ungrammatical. Recall from (9) that, like MN internal arguments, in the presence of a BP internal argument the durative phrase becomes compatible. In the presence of the BP external argument in (20) the durative is not compatible. Moreover, note that crucially (20a) does not mean that one bear ate a sheep, then another bear ate a sheep and so on for an hour straight. Finally, note that the time span adverbial targets the end of

the event, but there is only one event end to target; after ten minutes passed the single sheep eating event was over, and there were no more. Thus, MN external arguments do not elicit an atelic interpretation of the predicate, and BP external arguments do not elicit an SSE interpretation of the predicate. Under the hypothesis that MNs Agree with Asp° and BPs move into Spec,AspP to elicit an SSE interpretation, these facts follow straightforwardly.

Moreover, observe that only derived subjects can contribute to aspectual interpretation. The derived subjects of passives and unaccusatives exemplify this in (21-22) respectively.

(21) a. The bottle of beer was drunk # for an hour

b. Bottles of beer were drunk in three minutes for an hour straight.

c. Beer was drunk #in three minutes/for an hour.

(22) a. An animal escaped for an hour.

b. Animals escaped for an hour.

c. Wildlife escaped # in three minutes/for an hour.

In the (a) examples, the predicate is telic, as evidenced by the incompatibility of the durative with the passive (21a) and by the SIE interpretation elicited by the durative with the unaccusative in (22a). In the presence of a BP (b examples), an SSE interpretation is elicited,[12] and in the presence of a MN (c examples) an atelic interpretation results.

The facts are clear: external arguments cannot affect the telicity of the predicate (as noted by Tenny 1987 as well) while internal arguments can. In the system developed here, this falls out naturally. Consider Thompson's (2006) account. She assumes that "the external argument is generated in Spec,VP" (216: fn 8). Recall furthermore that AspP is above vP and that "telic readings are the result of feature checking of the [bounded] feature between the verb and Asp heads with either a direct object or a PP, [and that] the syntactic constituents

that contribute to a telic reading must be in a local relation with each other at LF; they are all in the checking domain of AspP." (216). Since the subject is lower than AspP, there is nothing in Thompson's system that prevents the external argument from moving to AspP to check the [bounded] feature and contribute to aspectual interpretation.[13] However, external arguments cannot contribute to aspectual interpretation.

Let us return to the present account and the movement analysis of BPs in more detail. I assume that on an SSE interpretation BPs behave like existential quantifiers.[14] I claim that they must bind a variable inside a syntactic domain of aspectual interpretation defined as everything dominated by AspP. For now I simply assume the existence of this domain, but in the section 3 I provide motivation for it. Evidence for the movement of BPs comes from what appears to be an island for BP movement in (23).

(23) a. #John destroyed a row of houses for an hour.

b. #John ate a box of cookies for an hour.

The BPs in (23) do not elicit an SSE interpretation. (23a) does not mean that John destroyed one house, then another and so on for an hour. Likewise, (23b) does not mean that John ate one cookie then another and so on for an hour. The lack of an SSE interpretation can be explained if we assume that the complex NPs in (23) do not allow the BP to move out to Spec,AspP to elicit the SSE interpretation. Let us consider the Agree account of MNs in more detail.

I claim that the Agree relation with Asp° is the syntactic instantiation of the object-to-event mapping well-known in studies on inner aspect (Verkuyl 1972, Krifka 1989).[15] The object-to-event mapping occurs when a property of the internal argument affects the telicity of the entire predicate. This is illustrated in (24).

(24) a. John drank a pitcher of beer #for ten minutes/in ten minutes.

b. John drank beer for ten minutes/#in ten minutes.

The noun phrase in (24a) *a pitcher of beer* has a property that elicits a telic interpretation of the predicate. The noun phrase in (24b) *beer* has a property that elicits an atelic interpretation of the predicate. This is the object-to-event mapping. I refer to the property of an internal argument NP that participates in this object-to-event mapping as a [q] feature ([q] for *quantized* (Krifka 1989)/*specific quantity of A* (Verkuyl 1972)). If the NP that Agrees with and values Asp° is [+q] the predicate can be interpreted as telic.[16] If the NP that Agrees with and values Asp° is [-q] (e.g. a MN), the predicate is interpreted as atelic.[17]

BPs and MNs have distinct aspectual interpretations and distributions as supported by the range of data presented above. Under Thompson's system it is not clear how this range of data is handled. For, even if she assumes an existential quantifier analysis of BPs that have to move above AspP (which is above vP in her system) to elicit the SSE interpretation, we still cannot explain why external argument BPs cannot elicit an SSE interpretation.[18] The same problem holds for MNs. Thompson's movement analysis does not explain why internal arguments can affect the telicity of the predicate while external arguments cannot.

3 The Domain of Aspectual Interpretation

The aspectual distribution of BPs and MNs already hint at a syntactic space below AspP in which elements must appear in order to contribute to the aspectual interpretation of the predicate; external arguments cannot contribute to aspectual interpretation, while internal arguments can. In this section, I consider more elements structurally higher and lower than AspP and their effect on the aspectual interpretation of the predicate.

Hay, Kennedy and Levin (1999) observe that the Cause head that introduces the external argument causer in causative-inchoative alternations does not contribute to the telicity of the predicate. As is well-known (Dowty 1979, Hay, Kennedy and Levin 1999, etc.), the predicates in (25) are ambiguous between a telic and an atelic interpretation.[19]

(25) a. The soup cooled for an hour/in an hour.

b. The kingdom expanded for a week/in a week.

Hay, Kennedy and Levin (1999) observe that when the external argument causer is added, the ambiguity is not affected (26). They correctly conclude that the Cause head does not affect aspectual interpretation.

(26) a. Neal cooled the soup for an hour/in an hour.

b. Neal expanded the kingdom for an hour/in an hour.

As we have seen above, transitive activities (27) can be turned into accomplishments by the addition of a goal PP (28); this is a widely observed fact (Borer 2005, Pustejovsky 1991, Verkuyl 1972).

(27) a. John carried the goat #in an hour/for an hour.

b. John pushed the cart #in an hour/for an hour.

(28) a. John carried the goat into the barn in an hour/for an hour.

b. John pushed the cart into the store in an hour/for an hour.

The time span adverbial in (27) is out because the predicate is atelic. In the presence of the durative in (27), there is an uninterrupted event interpretation. In (28), on the other hand the time span adverbial is compatible, and the durative elicits an SIE interpretation of the predicate. In the presence of the goal PP, the predicate is interpreted as telic. Consider the lack of aspectual effect of location PPs when added to the sentences from (27):

(29) a. John carried the goat (in the barn) #in an hour/for an hour.

b. John pushed the cart (in the store) #in an hour/for an hour.

In contrast to goal PPs, location PPs do not affect the telicity of the predicate; they remain atelic. Moreover, observe a structural difference between location PPs and goal PPs indicated by the ungrammaticality of goal PPs and the grammaticality of the location PPs in the *do so* construction:

(30) a. ??John carried the goat into the barn and Frank did so into the church.

b. ??John pushed the stool into the store and Frank did so into the church.

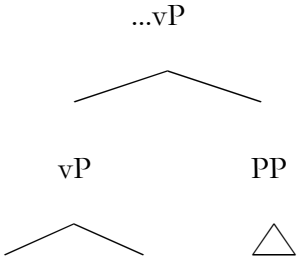
(31) a. John carried the goat in the barn and Frank did so in the church.

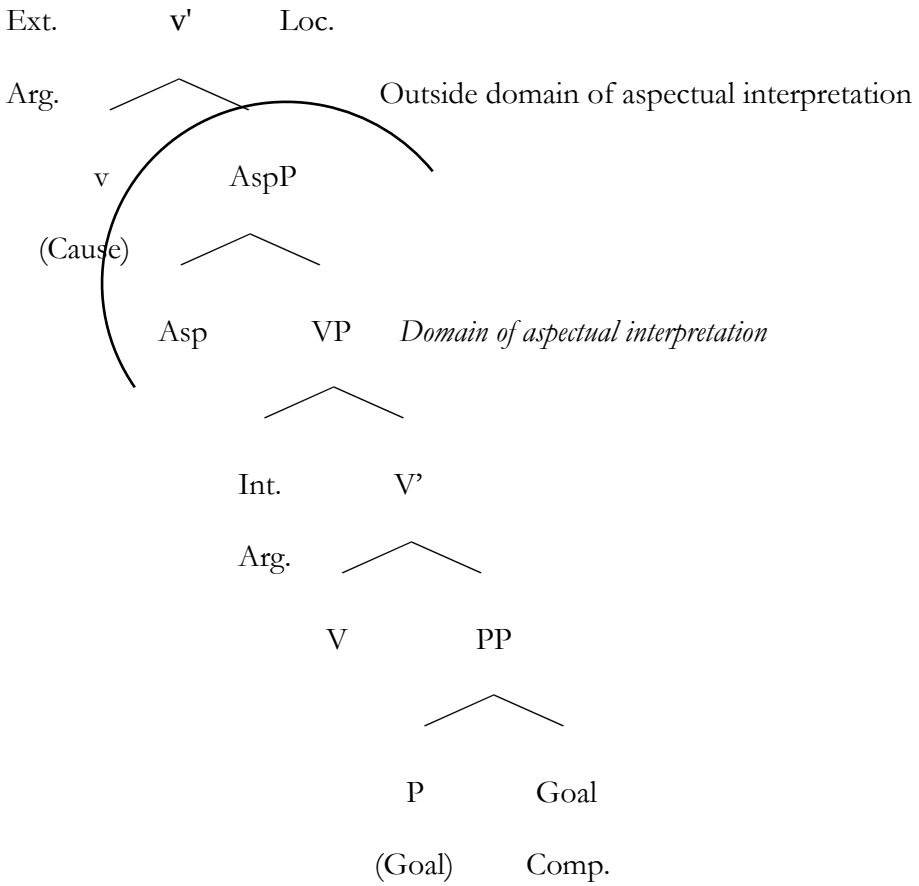
b. John pushed the cart in the store and Frank did so in the church.

That the goal PPs are ungrammatical suggests that they are low in the verb phrase (see also Larson 1988); that location PPs are grammatical suggests that they are adjoined to vP. A difference in ability to affect telicity corresponds to a difference in structural position.[20]

The Cause head that introduces an external argument, location PPs, which are adjoined to vP, and BP and MN external arguments do not contribute to the aspectual interpretation of the predicate. The only elements that contribute to the aspectual interpretation of the predicate are internal arguments (BPs and MNs), complements of goal prepositions (BPs) and goal PPs themselves. These findings are summarized in the tree in (30).

(30)





From the tree in (30), it becomes clear that there is a limited syntactic space within which an element must appear in order to contribute to the aspectual interpretation of the predicate. I refer to this space as the domain of aspectual interpretation. It is defined as the aspectual projection AspP and everything AspP dominates. If this domain exists, we can explain straightforwardly why external arguments, location PPs, and Cause cannot contribute to the aspectual interpretation of the predicate. They are outside of the domain of aspectual interpretation. Consider the implications of this domain for ambiguous goal-location PPs:

(31) a. John drove the car under the bridge in ten minutes/for ten minutes.

b. John pushed the cart outside the store in ten minutes/for ten minutes.

Ambiguous goal-location PPs are two-ways ambiguous: with respect to the atelic-telic interpretation and with respect to the location-goal interpretation. On the location interpretation, they are atelic, and on the goal interpretation, they are telic. As (31) illustrates, a time span adverbial is compatible indicating that the predicate is telic, and, on this telic interpretation, only a goal interpretation of the PP is elicited in which the end of the trajectory of driving or pushing is expressed. The durative phrase is compatible with both a telic and atelic interpretation, and as expected, it elicits both an SIE interpretation and an uninterrupted event interpretation. The SIE interpretation is only available on a goal interpretation of the PP, and the uninterrupted event interpretation is only available on the location interpretation in which the driving took place underneath the bridge/outside of the store during the entire ten minutes. Thus, a location interpretation of a PP and an atelic interpretation of a predicate go together on the one hand, while a goal interpretation of a PP and a telic interpretation of a predicate go together on the other. Observe that the *do so* construction disambiguates between the location and the goal interpretations (32).

(32) a. John drove the car under a bridge and Frank did so under an awning.

b. John pushed the cart outside the store and Frank did so outside the church.

Only the location interpretation of the PP is available in the *do so* construction. This suggests that the location interpretation is syntactically dependent on adjoining outside vP, and by extension, the goal interpretation is structurally dependent on being lower in the verb phrase. If this is a valid structural distinction to make between the location and goal interpretations, we can straightforwardly explain their aspectual ambiguity as well by simply adopting the conclusion from above that there is a domain of aspectual interpretation defined as the aspectual projection AspP between vP and VP and everything AspP

dominates. On the location interpretation, the PP is adjoined outside vP and therefore outside the domain of aspectual interpretation; thus it cannot contribute to aspectual interpretation. On the goal interpretation, the PP is merged lower in the verb phrase and therefore within the domain of aspectual interpretation; thus it can contribute to aspectual interpretation. The two-way ambiguity of location-goal PPs has a structural source. [21]

There is compelling evidence that suggests that there is an aspectual projection between vP and VP, AspP, and that AspP defines a syntactic space within which elements must be located in order to contribute to aspectual interpretation: the domain of aspectual interpretation. Anything outside this domain cannot contribute to aspectual interpretation. Considering Thompson's alternative account of the syntax of inner aspect in which there is an aspectual projection above vP, it is not clear how it can capture this syntactic generalization of inner aspect. Specifically, it is not obvious why external arguments, location PPs, and Cause cannot contribute to the aspectual interpretation of the predicate. Under the present account, they are all outside the domain of aspectual interpretation.[22]

4 Thompson's Proposal in More Detail

In this section, I address two details of Thompson's (2006) proposal: 1.The bounded feature checking account, and 2. The higher adjunction site of the time span adverbial compared to the durative phrase.

Thompson claims that DPs and PPs that elicit a telic interpretation of a predicate do so because they both have a bounded feature, and they do so within the checking domain of AspP. Given this bounded feature checking account, she assumes, following Chomsky (1993), that features are only checked once. She provides the following data as evidence:

(33) a. *John ate the bagel until 3:00.

b. *John walked into the store until 3:00.

Thompson argues that since both the DP *the bagel* and the PP *until 3:00* in (33a) are bounded, only one of them can check their bounded feature, and as such, there is an unchecked feature, resulting in the sentence's ungrammaticality. A similar argument is made for the sentence in (33b). There are two main problems with the conclusions drawn from the data in (33). First, there are many examples in which a sentence is perfectly grammatical with a bounded DP and a bounded PP. Consider three such examples in (34).

(34) a. John crossed the street for an hour.

b. He broke the eggs #for an hour.

c. The pond froze #for an hour.[23]

From the SIE interpretation of (34a), and the incompatibility of the durative in (34b-c), clearly these predicates are telic. Now consider the same predicates with a bounded PP:[24]

(35) a. John crossed the street to the other side for an hour.

b. He broke the eggs into the bowl #for an hour.

c. The pond froze solid #for an hour.

The predicates are grammatical with the addition of the bounded PP and the bounded result phrase in (35c). Moreover, they are still telic as indicated by the interpretation of the durative phrase. It is not clear that the presence of both a bounded DP and a bounded PP results in ungrammaticality.

The second problem with the conclusions drawn from the data in (33) is the assumption that *until* heads a bounded PP and creates a telic predicate out of an atelic predicate. Thompson provides the following data as an illustration that *until* does exactly this:

(36) a. John watched the house until 3:00.

b. John loved Mary until last year.

It is not clear that *until* is bounded like other PPs, for recall from above that when a bounded PP is added to a transitive activity, the time span adverbial becomes compatible. However, the time span adverbial does not become compatible with the predicates with *until*:

(37) a. John watched the house until 3:00 #in an hour.

b. John loved Mary until last year #in three months.

Additionally, note that *love* (36b & 37b) heads a stative predicate. Thompson claims that a stative can be made telic by the addition of the *until*-PP. In addition to the incompatibility of the time span adverbial, observe that goal PPs (which clearly elicit a telic interpretation of transitive activities) do not elicit a telic interpretation of statives:

(38) a. John loved the game (to the core) for a month/#in a month.

b. Carl owed money (to the bank) for a year/#in a year.

Irrespective of the presence of the goal PP, the durative phrase elicits an uninterrupted interpretation of the predicate, and the time span adverbial is incompatible. Even if *until* headed a bounded PP, it is not clear that it can actually elicit a telic interpretation with a stative.[25] Let us consider the assumption that DP and PP have the same bounded feature.

If both DP and PP have the same bounded feature, we expect that in the absence of a bounded DP, the bounded feature of PP can elicit a telic interpretation of the predicate. This does not seem to be the case, as illustrated in (39); see the data in (13) above as well.

(39) a. John dragged wood into the shed for an hour/#in an hour.

b. John drove equipment into the park for an hour/#in an hour.

MN internal arguments correspond to Thompson's non-bounded DPs. The PPs in (39) are bounded. It is not clear why the predicate is not telic. Furthermore, as an anonymous

reviewer of Thompson (2006) points out, these data show an asymmetry between the aspectual influence of the DP and the aspectual influence of the PP on the predicate: the DP seems to 'win out' over the PP. [26] If they have the same feature, and they enter into the same checking relation with AspP, it is not clear how this asymmetry can be explained.[27] Let us consider Thompson's proposal for the time span adverbial and the durative phrase.

Thompson claims that the time span adverbial adjoins to AspP (located directly above vP), and that the durative phrase adjoins to VP. This account predicts that the time span adverbial is outside the scope of the durative. However, as pointed out throughout the present discussion, the time span adverbial is interpreted within the scope of the durative.

As potential syntactic evidence for the higher adjunction site of the time span adverbial compared to the durative, Thompson assumes, following Horstein and Weinberg (1981) that the possibility of preposition stranding depends on LF incorporation of the preposition into the verb, and that, following Uriagereka (1998) and Borer (1994), "the heads of all phrases within the VP incorporate into the verb..."(222). She takes these assumptions together to explain why the time span adverbial does not allow preposition stranding and why the durative does, as illustrated in (40).

(40) a. How many hours did you push that cart for?

b. *How many hours did you read that book in?

According to Thompson, the time span cannot incorporate because it is adjoined outside the vP, to AspP. The durative phrase, on the other hand, can incorporate because it adjoins within the VP. As further support for this account of the time span adverbial and the durative, Thompson adopts an analysis of *only* employed by Jackendoff (1972) and Rooth (1985) in which *only* is adjoined to VP and its associate can only be within its c-command

domain. This predicts, on her account that preverbal *only* can associate with the object of a durative phrase, but not with the object of a time span adverbial. She provides the following data in support of the prediction:

(41) a. John only pushed the cart for an HOUR.

Meaning: It was only for an hour that John pushed the cart.

b. *John only read the book in an HOUR.

Meaning: It was only in an hour that John read the book.

The problem with these two tests for the high adjunction site of the time span adverbial is that if Thompson is correct, she undermines her proposal that bounded PPs check their feature at AspP, above vP. First, bounded PPs would be predicted not to incorporate, and therefore, not be able to preposition strand. However, as the data in (42) show, goal PPs preposition strand quite readily.[28]

(42) a. Where did you push that cart to? (Possible response: The store.)

b. What did you drive that car into? (Possible response: A lake.)

Furthermore, it is predicted that preverbal *only* cannot associate with the complement of a goal preposition. This does not seem to be correct however:

(43) a. John only pushed the cart to the STORE.

Meaning: It was only the store that John pushed the cart to.

b. John only drove the car into a LAKE.

Meaning: It was only the lake that John drove the car into.

Her own tests suggest that a bounded PP is low in the verb phrase, and not adjoined above vP. Thus, either these tests do not work, in which case the claim that the time span

adverbial is adjoined to AspP, which is above vP, is not correct, or these tests do work, in which case, bounded PPs cannot adjoin to AspP, which is above vP.

5 Conclusion

I have discussed a range of data that make an account of inner aspect that assumes an aspectual projection above vP difficult to maintain. In contrast, I have argued for the existence of an aspectual projection (AspP) between vP and VP which defines a syntactic space in which elements must be located in order to contribute to aspectual interpretation. This is the domain of aspectual interpretation.

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Avenida de Francia 1, Torre 2, 6-D

46023 Valencia, Spain

macdonald.jon@gmail.com

[1] Note that Borer (2005) does not assume that AspP is located directly above vP. Borer's (2005) syntactic approach to telicity is embedded within an elaborate system of argument projection; her AspP is directly above VP. It is not clear whether VP in Borer's system corresponds to vP or VP in a more standard Chomskian approach (Chomsky 1994, 2001 etc.).

[2] In fact, I assume that both the beginning and the end of an event must be present for a predicate to be telic. See MacDonald (2006 and references therein) for tests that target the beginning and the end of events.

[3] I do not assume that the domain of telicity/inner aspect is the structure of real-world events (see Rothstein 2004 and references therein). A predicate is (a)telic as a result of an interpretation of a real-world event as having an end or noy, independently of whether the real-world event actually has an end or not. Thus, the sentence *John drank beer* is atelic. That is, it describes an event with no end, yet it is perfectly compatible with a real-world event in which John drank an entire pitcher of beer, the end of the real-world event here occurring when the last drops of beer are dunk.

[4] Filip (1999) refers to this as the "resettability of the denoted happening" (114).

[5] The SIE interpretation results only when the NPs are singular. With a BP a different type of iterative interpretation results. See section 2 for a discussion.

[6] It has been noted that the time span adverbial can target the beginning of the event (Dowty 1979, Filip 1999, and Thompson 2006). Thus, properly speaking the time span adverbial is not incompatible with atelic events, but it cannot target the end of the event.

[7] This is also true for stative predicates, which are atelic, as well: *John knew the woman for a while. John owned a car for a day.* Statives exhibit many properties that fall outside the present discussion and as such, I do not deal with statives in this paper. See Borer (2005), MacDonald (2006), and McClure (1993) for different accounts of the syntax of stative predicates.

[8] An anonymous reviewer states that "When *spot a plane* has a repetitive interpretation...We are no longer dealing with a telic predicate... [the predicate] has the semantic properties that are usually associated with atelicity." It is not clear that this is the case. Depraetere (1995) argues for the distinction between (a)telicity and (un)boundedness where "(A)telicity has to do with whether or not a situation is described as having an inherent or intended endpoint; (un)boundedness relates to whether or not a situation is described as having reached a temporal boundary." (Ibid:3). Durative phrases temporally bound a predicate, independently of whether or not the predicate is telic or atelic. In the presence of a durative phrase, an iterative interpretation results only in the case of a telic predicate (see (2-5) above); no iterative interpretation is available if the predicate is atelic (see (7) above). These differences in interpretation are made even more apparent in the presence of the time span adverbial (see (5-6) above); only telic predicates are compatible with both the time span adverbial and the durative phrase. Even if we say that under an iterative interpretation a telic predicate becomes atelic, we still have to account for these differences

in interpretation between (what are "originally") atelic and telic predicates elicited by the durative phrase. By assuming that a telic predicate remains telic we do precisely this. If it is a matter of terminology, Depraetere (1995) provides us with what we need to make the necessary distinctions.

[9] Thanks to John Bailyn for pointing out to me this interpretation of the BP with time span adverbial. Note also that Filip (1999), referencing Fillmore and Kay (1991), observes a similar fact about the following datum: *Pat built houses (*) in six months.* She notes that it is "acceptable if it has a generic (habitual) interpretation...whereby each [building event] is associated with a different house whose construction took six months." (66). (10) above shows us that the time span adverbial is compatible with a BP under an episodic interpretation as well, resulting in one type of iterative interpretation.

[10] These data show again that the time span adverbial is interpreted within the scope of the durative. These are problematic for Thompson in the same way as the data in (5) above are. See also the data in (16-17).

[11] Note that what I refer to as a goal preposition is a preposition that typically expresses that a goal is reached, e.g. *to, into, onto*. These prepositions induce a telic interpretation when surfacing with a transitive activity, although, see footnote (16). I do not consider a preposition such as *toward* or *at* (on the non-location interpretation of *at*) a 'goal' preposition per se, as there is no entailment that a goal is reached. I consider them 'directional' prepositions; they express the direction of the event. This is only a matter of terminology. Nevertheless, note that directional prepositions do not induce telicity when they surface with a transitive activity: *John pushed the car (toward/at the building) for an hour/#in an hour.*

[12] Note that the time span adverbial is grammatical with the passivized accomplishment in (21b), but not with the achievement in (22b). Essentially, achievements pattern with activities with respect to the time span adverbial (Dowty 1979) and as such only the beginning of the event can be modified. See MacDonald (2006) for an syntactic explanation for why achievements pattern with activities in this way.

[13] Thompson does note that there are surface subjects that do "participate in the aspectual composition of the event" (216:fn 8). She provides the following data from page 215 footnote 4: (i) *Johan arrived in two seconds (flat)/*for two seconds (flat).* (ii) *The house was constructed in five months/*for five months.* However, these are derived subjects of an unaccusative (i) and passive (ii). See the data in (21-22) above and their discussion.

[14] There is another reading of BPs available, what Carlson (1977) refers to as a group reading. I claim that on an SSE interpretation BPs are existential quantifiers, and consequently do not have the group reading.

[15] I do not assume a Krifkian homomorphism. The exact nature of this object-to-event mapping is tangential to the main focus of this paper. See Borer (2005), Filip (1999), Hay, Kennedy and Levin (1999), MacDonald (2006), Tenny (1987), and Verkuyl (1972) for different accounts of the object-to-event mapping.

[16] I say *can be interpreted as telic* because of the existence of transitive activity predicates in which the [+/-q] feature of the internal argument does not affect the telicity of the predicate: *John pushed the car/stereo equipment for an hour/#in an hour.* Although note that when a goal phrase is added, these predicates behave exactly like the predicates in (24): *John pushed the car into the garage #for an hour/in an hour. John pushed stereo equipment into the garage for an hour/#in an*

hour. MacDonald (2006) argues that the goal phrase here adds a property that the predicates in (24) already possess: an event feature that expresses that the event has an end. Transitive activities project AspP, but the object-to-event mapping is irrelevant without this extra property. Further discussion of these predicates takes us well beyond the focus of the present paper, thus I direct the reader to MacDonald (2006) for a full syntactic account of these predicates and the relevance of this extra property for deriving a syntactic typology of aspectual predicates types.

[17] Some have put forth sentences such as *John found water in ten minutes/#for ten minutes.* as an example of a predicate that takes a MN (i.e. a [-q]NP) internal argument but yet still surfaces as telic. MacDonald (2006) argues that a sentence like this falls into a class of predicates he terms *psych-achievements* in which the surface subject is non-agentive and derived from a position below AspP although higher than the surface direct object. One prediction is that the argument that Agrees with Asp°, and enters into the object-to-event mapping, is the derived subject. Observe that with a MN subject the durative phrase improves: *Wildlife found the body of water for an hour*. Also a BP subject elicits an SSE interpretation as well: *Animals found the body of water for an hour*.

[18] An anonymous reviewer suggests that the SSE interpretation elicited by BPs might be the result of the BP moving outside the scope of the time span adverbial itself. This would fit well within the present account if we assume that the time span adverbial adjoins to AspP (which is between vP and VP under the present account); straightforwardly only internal argument BPs could move outside the scope of the time span adverbial and elicit an SSE interpretation. Moreover, this would explain why the time span adverbial is interpreted

within the scope of the durative phrase, assuming, as I do, that the durative phrase is adjoined to vP or an EP above vP. Note, moreover, that if this is the correct way to understand the SSE interpretation of BPs, there is still a problem for Thompson's analysis; for, she assumes that the time span is above vP. There is no immediate reason why external argument BPs could not move outside of the scope of the time span.

[19] Dowty (1979) calls these *degree-achievements* and assumes that the ambiguity is between an achievement and an activity interpretation. Hay, Kennedy, and Levin (1999) assume that the ambiguity is between an accomplishment and an activity interpretation. The exact nature of the ambiguity is irrelevant here.

[20] Note that being low in the verb phrase is a necessary but not sufficient condition for a PP to affect the telicity of the predicate. Observe that directional PPs are not grammatical in the *do so* construction, suggesting that they are low in the verb phrase: *??John carried the bag* ***toward the store*** *and Frank did so* ***toward the church.*** Nevertheless, they do not affect the telicity of the predicate, as noted in footnote 11.

[21] Tungseth (2005) notes parallel facts in Norwegian, and makes the same conclusion that the location interpretation results from the PP adjoining higher in the verb phrase while the goal interpretation results from merging lower within the verb phrase. Her account of telicity, nevertheless, differs from the account here.

[22] An anonymous reviewer states: "It is not clear why this head [AspP] should provide the domain within which elements can contribute to aspectual interpretation..." We can begin to understand the role of AspP in the creation of an aspectual domain by appealing to Marantz's (1984) observation concerning a fundamental asymmetry between internal and

external arguments. Internal arguments can affect the core semantics of a predicate, external arguments typically can not. On the present account, AspP is below vP and therefore low in the verb phrase. In order to contribute to the core aspectual interpretation of the predicate elements must be low in the verb phrase. This includes internal arguments and excludes external arguments. There is something about being low in the verb phrase that allows for modifying core semantic/aspectual properties of a predicate. The reviewer continues: "Since the relevant aspectual properties are by definition properties of the scope of *in an hour* and *for an hour* adverbials, those scopes should be the domains within which elements can make a contribution to inner aspect..." The assumption that "the relevant aspectual properties are by definition properties of the scope of *in an hour* and *for an hour* adverbials" is not made in Thompson (2006) and need not be made in the present account. Thompson assumes that "a modifier must be in a local syntactic relation with what it modifies" (222) and thus proposes that the time span adverbial is adjoined to AspP, modifying the [bounded] feature directly, without the need for scope. The durative, on the other hand, is adjoined to vP or VP in her account, modifying the duration, which by her assumption must somehow be encoded in vP or VP. An alternative approach to the time span adverbial is developed in MacDonald (2006) in which he assumes the presence of properties of events in the form of event features (see footnote 16). A telic predicate (minimally) as an event feature expressing that the event has an end which is visible in the syntax and which is modified by the time span adverbial via Agree. With respect to the present account of the durative, if the durative modifies an EP (Event Phrase), as suggested above, which arguably encodes the event properties of the predicate, then we can borrow Thompson's reasonable assumption, made also by

Demirdache & Uribe-Etxebarria (2004) specifically for time-denoting modifiers, that the durative phrase is in a local syntactic relation with what it modifies, in this case EP. It is base generated as a sister, or it adjoins to EP. There is no need to appeal to scope of the time span and the durative to account for "the relevant aspectual properties" under discussion.

[23] There is an interpretation of the durative here that expresses the length of time that the pond was in the state of being frozen. I am ignoring this interpretation as it is not relevant here.

[24] Example (35b) is from Goldberg (1991) and the example in (35c) from Goldberg and Jackendoff (2005). I have added the durative phrases in each case.

[25] Furthermore, by Thompson's own claims *quickly* can receive a whole event interpretation only with a telic predicate, but this does not seem to be the case with the sentence from (34b) *John quickly loved Mary until last year*. Another suggestion that she puts forth in a footnote as a way to test the inability of a *for*-phrase to make direct reference to an event end time (i.e. the inability to create a telic predicate) is that "it is possible to extend the duration of the event." (222,fn.13); her example is *Mary pushed the cart for ten minutes and kept right on pushing the cart*. By this measure, *until* does not make direct reference to an event end either: *John pushed the cart until dawn and kept right on pushing the cart*.

[26] The anonymous reviewer provides the following example, as noted in footnote 11 of Thompson (2006): *John pushed carts to the store*. Thompson claims that the reviewer's example "is plausibly another example of a telic event coerced into an atelic interpretation because of the presence of a (covert or overt) frequency expression." It is not exactly clear what Thompson means here, and it is not clear that it is relevant to the data in (37).

[27] Tacit in the present proposal is that NPs and PPs make distinct aspectual contributions; NPs bear a [q] feature (related to Thompson's [bounded] feature), but PPs introduce an event feature (see footnote 16). Due to space limitations, I cannot go into the exact relation between these distinct features on the aspectual interpretation of a predicate, but see MacDonald (2006) who claims that the [q] feature affects the domain of aspectual interpretation such that an event feature is either interpreted inside or outside of it.

[28] Note that goal prepositions strand while location prepositions do not: **Where did you play soccer at? *Where/*What did you carry that bag in?* This analysis supports the proposal from above that location PPs adjoin to vP while goal PPs lower within it.