ASPECTUAL INTERPRETATION AND CALCULATION

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In this paper I discuss several syntactic properties of inner aspect and what these properties tell us about derivations in narrow syntax (Chomsky 2001, 2006). I argue for the presence of an aspectual projection (AspP) between vP and VP (see also Travis 1991) that syntactically instantiates an object-to-event mapping. Furthermore, we see that AspP and everything dominated by AspP defines a syntactic space in which elements must appear in order to contribute to the aspectual interpretation of the predicate. Interestingly, however, the time at which these elements are calculated is not until later in the derivation, at the phase. This study contributes to our understanding of narrow syntactic derivations by providing alternative support from inner aspectual phenomena for a cyclic interpretation of the verbal predicate at the phase.

In section 1, I discuss the aspectual relevance of the durative phrase and the time span adverbial. In section 2, I discuss the distinct aspectual interpretations and distributions of bare plurals and mass nouns; we will see that a proper account of them includes an aspectual projection (AspP) between vP and VP. In section 3, I provide evidence for a domain of aspectual interpretation, a space in which elements must appear in order to contribute to the aspectual interpretation of the predicate. In section 4, we see that the time at which the aspectual character of the predicate is determined can only be at the phase.

1. The aspectual relevance of the durative phrase and time span adverbial

The durative phrase (e.g. *for an hour*) and time span adverbial (e.g. *in an hour*) are widely used in the literature on inner aspect as a test for the telicity of a predicate. For this reason it is important to clarify exactly what they tell us about the telicity of a predicate.

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

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of the facts; for, observe that the durative is in fact compatible with a telic predicate under an iterative interpretation of the predicate (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.[1] Considering that an SIE interpretation is elicited by the durative in these utterances, 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 Jackendoff 1996 for similar approach.). 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 to an EP above vP (Borer 2005, Travis 2000)), and modifies the macro-event described by the predicate (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.[2] Observe that the time span adverbial can target the end of each of these iterated subevents:

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

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

(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).

Atelic predicates describe events that are interpreted as not having an end (Thompson 2006). Observe that the time span adverbial is incompatible with atelic predicates (Borer 2005, Dowty 1979, etc.):[3]

(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) a. John drank beer for an hour.
b. John drove the car 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. Additionally, as is standardly assumed, the time span adverbial targets the end of the event expressing the amount of time that passes before the end takes place. As such, it is only compatible with telic predicates (But see footnote 3).

2. The aspectual distribution and interpretation of BPs and MNs

In this section, I discuss the distinct aspectual interpretations and distributions of bare plurals (BPs) and mass nouns (MNs). To account for BPs and MNs aspectually, I propose that there is an aspectual projection (AspP) between vP and VP with which they establish distinct relations.

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, Pustejovsky 1991, 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.

[3] The time span adverbial is not actually incompatible with atelic predicates, but it can target the beginning of the event. Dowty (1979), Filip (1999), and Thompson (2006) note this. This fact about the time span adverbial is not immediately relevant to the present discussion, thus when I point out the incompatibility of the time span adverbial, I mean that it cannot target the end of the event.

(9) a. John ate pizza/pizzas for an hour.
b. John drank soda/sodas for an hour.

The sentences in (8-9) show that the presence of 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.[4] This is reminiscent of the SIE interpretation discussed in the previous section, in which the time span adverbial targeted the end of iterating subevents. 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

[4] 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 a type of iterative interpretation.

MN, as expected, elicits only an atelic interpretation of the predicate. Consider BPs and MNs as the complements of a goal preposition (14-15).

(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.

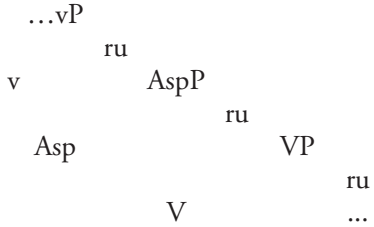
The BP in (14a) elicits an SSE interpretation in which a goat was carried into one barn, then another barn and so on for an hour. The MN in (15a) does not elicit an atelic interpretation; the only interpretation available is one in which a goat was carried into water, then back out, and back into it 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 events; 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)


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. 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. BP and MN external arguments cannot establish the necessary kind of relation with AspP because they are structurally higher than AspP.

I assume that on an SSE interpretation BPs behave like existential quantifiers.[5] I claim that they must bind a variable inside a syntactic domain of aspectual interpretation defined as AspP and 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 (21).

(21) a. #John destroyed a row of houses for a week.
b. #John ate a box of cookies for an hour.

The BPs in (21) do not elicit an SSE interpretation. (21a) does not mean that John destroyed one house, then another and so on for a week. Likewise, (21b) 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 (21) 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.

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[5] There does seem to be another reading of BPs available, most likely what Carlson (1977) refers to as a group reading of the BP in which the BP's denotation is vague. I claim that on an SSE interpretation BPs are existential quantifiers, and consequently they do not have the group reading.

I claim that Agree with Asp° is the syntactic instantiation of the object-to-event mapping well-known in studies on inner aspect (Verkuyl 1972, Krifka 1989).[6] The object-to-event mapping occurs when a property of the internal argument affects the telicity of the entire predicate. This is illustrated in (22).

(22) 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 (22a) *a pitcher of beer* has a property that elicits a telic interpretation of the predicate. The noun phrase in (22b) *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) and for *specific quantity of A* (Verkuyl 1972). If the NP that Agrees with and values Asp° is [+q] the predicate can be interpreted as telic.[7] If the NP that Agrees with and values Asp° is [–q] (e.g. a MN), the predicate will be interpreted as atelic. The Agree relation captures a local relation that an NP has with the verb phrase in which the core aspectual interpretation of the predicate is affected. The core aspectual interpretation of a predicate is the basic telic/atelic distinction. This local relation, and its effect on the core interpretation of the predicate, is on a par with the local relation between a verb and its DP complement. When the complement of the verb varies, the core meaning of the predicate varies as well (Marantz 1984).

3. Defining 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 telicity of the predicate.

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[6] 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 implementations of the object-to-event mapping.

[7] 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 aspectual interpretation 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 (22): *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 (22) already possess: an event feature that expresses that the event has an end. This property has certain parallels with the null telic morpheme of Snyder (1995). 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.

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 (Borer 2005, Dowty 1979, Hay, Kennedy and Levin 1999, etc.), the predicates in (23) are ambiguous between a telic interpretation and an atelic interpretation.[8]

(23) 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 is added, the ambiguity is not affected (24).

(24) a. Neal cooled the soup for an hour/in an hour.
b. Neal expanded the kingdom for an hour/in an hour.

They rightly conclude that the Cause head does not contribute to the aspectual interpretation of the predicate. Now consider prepositional phrases.

As we have seen above, transitive activities (25) can be turned into accomplishments by the addition of a goal PP, as in (26); this is a widely observed fact (Borer 2005, Dowty 1979, Pustejovsky 1991, Verkuyl 1972).

(25) a. John carried the goat #in an hour/for an hour.
b. John pushed the cart #in an hour/for an hour.

(26) 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 (25) is out because the predicate is atelic. In the presence of the durative in (25), there is an uninterrupted event interpretation. In (26), 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. Observe that location PPs have no such effect (27):

(27) 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. Moreover, observe a structural difference between location PPs and goal PPs indicated by the ungrammaticality of goal PPs (28) and the grammaticality of the location PPs (29) in the *do so* construction:

(28) a. ??John carried the goat into the barn and Frank did so into the church.
b. ??John pushed the cart into the store and Frank did so into the church.

(29) 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.

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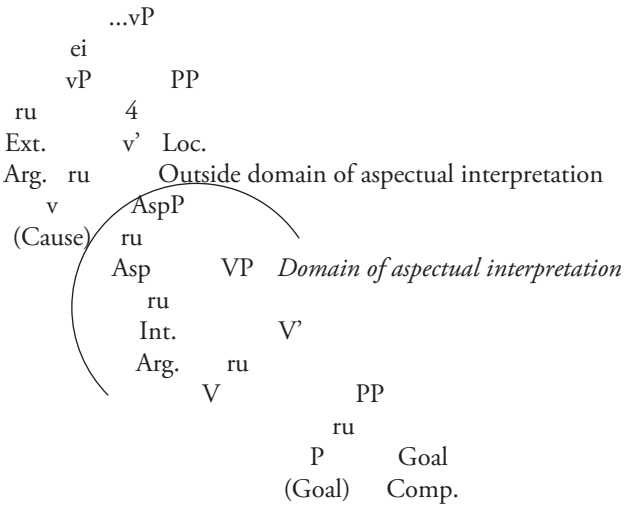
[8] Dowty (1979) calls these *degree-achievements* and assumes that there is an ambiguity between an achievement and an activity interpretation. Hay, Kennedy, and Levin (1999) assume that the ambiguity is between and accomplishment and an activity interpretation. The exact nature of the ambiguity is irrelevant here. What is important is that there is an ambiguity and that the causer does not affect this ambiguity.

That the goal PPs are ungrammatical suggests that goal PPs are lower in the verb phrase (see also Larson 1988), and that location PPs are grammatical suggests that they are adjoined to vP. A difference in ability to contribute to the telicity of the predicate corresponds to a difference in structural position.[9]

The Cause head that introduces an external argument does not contribute to the aspectual interpretation of the predicate. Location PPs, which are adjoined to vP, do not contribute to the aspectual interpretation of the predicate. BP and MN external arguments do not contribute to the aspectual interpretation of the predicate either. 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 is apparent 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.

4. Calculating aspectual interpretation at the phase

From the previous sections it seems clear that there is an aspectual projection between vP and VP and that this aspectual projection creates a domain of aspectual

[9] Note that being low in the verb phrase is a necessary but not sufficient condition for a PP to contribute to aspectual interpretation. 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 contribute to the aspectual interpretation of the predicate: *John carried the bag (toward the church) #in ten minutes/for ten minutes.*

interpretation. Interestingly, although there is a syntactic space within which elements must be located in order to be able to contribute to the aspectual interpretation of the predicate, we will see in this section that the time at which these elements are calculated is higher up in the syntactic structure, at vP. That is, the time at which the elements that contribute to aspectual interpretation are calculated takes place at Transfer to CI (Chomsky 2006).

Consider the data in (31).

(31) a. **John** walked into a barn for ten minutes/in ten minutes.
b. **Wildlife** walked into a barn for ten minutes/#in ten minutes.

Observe that when the external argument is [+q] (31a) there is only an SIE interpretation elicited with the durative and the time span adverbial can target the end of the event. Observe that when the external argument is [-q] (31b) there is no SIE interpretation with the durative and the time span adverbial cannot target the end of the event. (31a) is telic and (31b) is atelic. Contrary to the conclusion from section 3 that external arguments are outside the domain of aspectual interpretation and cannot contribute to the telicity of the predicate, it seems that the external arguments in (31) are able to do so. Nevertheless, if the external arguments were able to contribute directly to the aspectual interpretation of the predicate, we would not expect the data to behave as it does in (32).

(32) a. John walked **a letter/Joe** into a post office for ten minutes/in ten minutes.
b. John walked **wildlife** into a barn for ten minutes/#in ten minutes.

In each of the sentences of (32) the external argument is [+q]. In (32a) the direct object is [+q] and the predicate is telic. In (32b) the direct object is [-q] and the predicate is atelic. The [q] feature of the direct object "overrides" the [q] feature of the external argument. If the external argument could directly contribute to the aspectual interpretation of the predicate we would not expect the direct object to affect the aspectual interpretation of the predicate as it does. Furthermore, Ritter & Rosen (1998) observe that the presence of the direct object in these sentences depends on the presence of the secondary predicate. The data in (33) show that the direct object is not licensed without the prepositional phrase.

(33) a. *John walked the letter.
b. *John walked Joe.[10]

I assume that the secondary predicates in (31) also introduce an argument. I claim that the secondary predicates introduce a big PRO the [q] feature of which is controlled by the external argument. This is shown in (34).[11]

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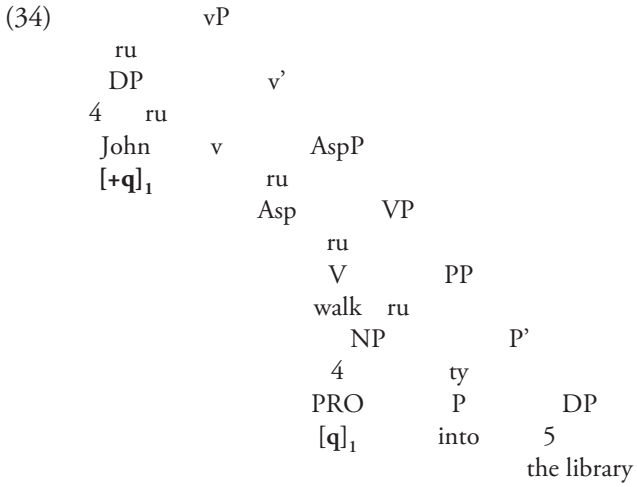
[10] Note that on a causative interpretation, i.e. *John made Joe walk*, sentence (33b) is fine. However, this is not the relevant interpretation, as we find in (32); the letter does no walking at all, and Joe does not have to walk to be walked into a post office.

[11] Note that Beck & Snyder (2000) also assume that the prepositional phrase has a specifier that is filled by big PRO. Note, nevertheless, that PRO could be in the specifier of a small clause the complement of which is the PP itself. These choices do not affect the main conclusions and claims of this section.

(34)



The [q] feature of PRO is controlled by the [q] feature of the external argument. Once the [q] feature on PRO is specified, it can enter into an agree relation with Asp°, contributing to aspectual interpretation. This entails that the telicity of the predicate cannot be calculated minimally until the external argument merges, otherwise PRO would not have a [q] feature to value Asp°. Although AspP defines a domain in which elements must appear to contribute to the aspectual interpretation of the predicate, the aspect of the predicate is not calculated minimally until the external argument merges, until vP. Note furthermore that there is evidence to suggest that the aspect of the predicate is not calculated any higher than vP either. That is, aspect is calculated at the phase (Chomsky 2001, 2006). Recall from above that degree-achievements can appear with both the time span adverbial and the durative phrase as a consequence of their aspectual ambiguity (35).

(35) a. John cooled the soup in ten minutes/for ten minutes.
b. The king expanded the empire in a month/for a month.

Interestingly, nevertheless, this aspectual ambiguity is lost when the same verbs are found in idioms (36).

(36) a. John cooled his jets in ten minutes/#for ten minutes.
b. John cooled his heels #in ten minutes/for ten minutes.

In (36a) the idiom roughly means to relax; only the time span adverbial is compatible. In (36b) the idiom roughly means to wait; only the durative phrase is compatible. Observe a similar set of facts with the verb *read*, which has been noted to be aspectually ambiguous as well (Borer 2005) (37a).

(37) a. John read her the newspaper in ten minutes/for ten minutes.
b. John read her the riot act #in ten minutes/for ten minutes.

Although both the time span adverbial and durative phrase are compatible with the predicate in (37a), when used idiomatically, only the durative phrase is compatible. At the very least the data in (35-37) indicate that the aspectual class of an

idiom is specified (see also McGinnis 2002). Independently, Svenonius (2005) observes a relation between phases and idioms; idioms do not seem to cross phase boundaries. If we take this observation together with the knowledge that the aspectual class of an idiom is specified, we can conclude that aspectual class is determined within the phase. Assuming this to be correct, and taken together with the conclusions from above that the aspect of a predicate cannot be calculated until vP, we can draw a more general conclusion that the aspect of a predicate is calculated at the phase, when a phase is transferred to CI (Chomsky 2006). This conclusion adds general support for a phase-based account of syntactic derivation. Moreover, it shows that the phenomenon of inner aspect is constrained by narrow syntax and by extension inner aspect is important for understanding the nature of narrow syntax.

5. Conclusions

I have argued that there is an aspectual projection (AspP) between vP and VP. One important consequence of the presence of this projection is a domain of aspectual interpretation defined as AspP and everything dominated by AspP. Only elements within the domain of aspectual interpretation can contribute to the aspectual interpretation of the predicate. Interestingly, nevertheless, these elements are not calculated until vP, until the phase. That is, the aspect of a predicate is not determined until Transfer to CI. In this way, inner aspect provides alternative support to a phased-based account of narrow syntactic derivation. It shows that the interpretation of a predicate occurs cyclically.

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