WHAT EXACTLY DOES OUTER ASPECT ENCODE?[*]

Larissa Nossalik
McGill University

Recent studies on aspect reveal that natural languages encode temporal boundaries of events syntactically (Slabakova 2001, Ramchand 2008, Travis 2010). There are at least two syntactic projections related to aspect: a *v*P-internal or *inner* aspect projection and a *v*P-external or *outer* aspect projection. In this paper, I argue that the outer aspect projection encodes unboundedness of events. This analysis diverges from the existing analyses of outer aspect in that it views unboundedness, but not boundedness, as a truly syntactic notion.

1.   Two types of aspect

For the past 50 years, research on aspect has resulted in a large body of literature (Vendler 1967, Comrie 1976, Dowty 1979, Dahl 1985, Tenny 1987, 1992, Pustejovsky 1991, Travis 1994, 2005, 2010, Verkuyl 1989, 1993, Depraetere 1995, Smith 1997, Krifka 1989, 1998, Filip 1999, 2000, 2005, Slabakova 2001, Borer 2005, Ramchand 2008, Rothstein 2004 to name a few). Despite many insightful proposals, there is still considerable disagreement over how aspect should be analyzed. Recent studies, however, point to what is steadily becoming a generally-assumed claim, namely, that there are (at least) two types of aspect. On one hand, we have *situation* aspect – aspect that is concerned with inherent boundaries of events or the telic/atelic distinction. On the other hand, we have *viewpoint* aspect – aspect that is concerned with actual boundaries of events or the bounded/unbounded distinction (Verkuyl 1993, Depraetere 1995, Smith 1997, Slabakova 2001).

Following the insights of Hale and Keyser (1993), many researchers postulate a strong correlation between the semantics of event structure and the morpho-syntactic structure of verbal predicates (Travis 1994, 2005, 2010, Slabakova 2001, Borer 2005, Ramchand 2008). All currently existing syntactic analyses of aspect maintain that both types of aspect, situation and viewpoint, are encoded syntactically. While situation aspect is encoded by a *v*P-internal or simply *inner* aspect projection, viewpoint aspect is encoded by a *v*P-external or simply *outer* aspect projection, as demonstrated in (1): [1]
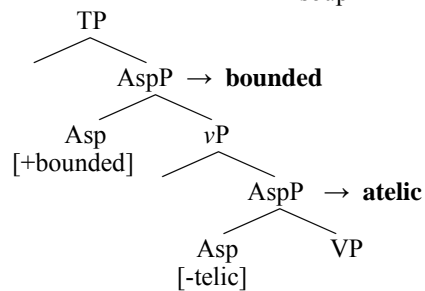
---

[1]   Following Slabakova (2001), Travis (2005) and Borer (2005), I assume that the *inner* AspP is sandwiched in between two VP shells and the *outer* AspP is situated right above *v*P. Note, however, that changing these positions would not undermine the conclusion that we will reach at the end of this paper, as long as one of them remains *v*P-internal and the other *v*P-external.
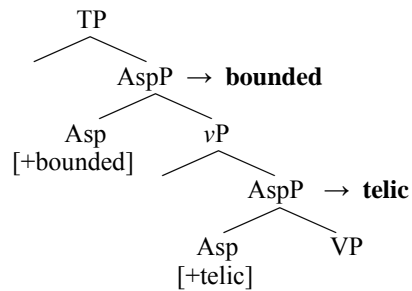
(1)   TP
         AspP → **outer** aspect
       Asp   *v*P
                  AspP → **inner** aspect
                Asp   VP
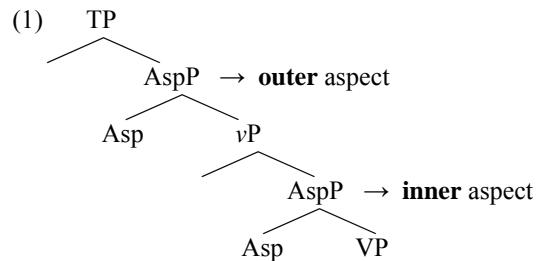
Slabakova (2001) claims that each AspP is associated with a binary feature. Specifically, the inner AspP is linked to the [±telic] feature and the outer AspP to the [±bounded] feature. This system accounts for a four-way division of dynamic verbal predicates into simple activities, simple accomplishments, progressive activities and progressive accomplishments, as shown in (2):
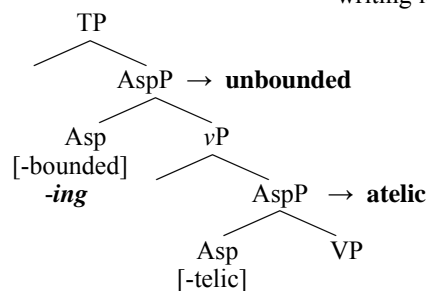
(2) <u>Bounded atelic events</u>: SIMPLE ACTIVITIES, e.g., run, write letters, eat soup

      TP
        AspP → **bounded**
      Asp   *v*P
    [+bounded]
                   AspP → **atelic**
                 Asp   VP
               [-telic]
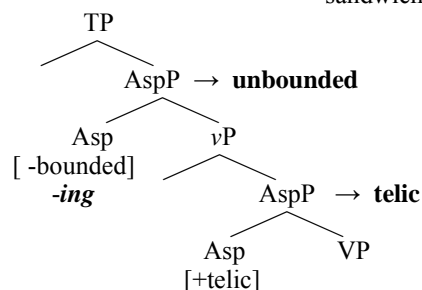
(3) <u>Bounded telic events</u>: SIMPLE ACCOMPLISHMENTS, e.g., run a mile, write the letters, eat the sandwich

      TP
        AspP → **bounded**
      Asp   *v*P
    [+bounded]
                   AspP → **telic**
                 Asp   VP
               [+telic]

(4) <u>Unbounded atelic events</u>: PROGRESSIVE ACTIVITIES, e.g., running, writing letters, eating soup

```
        TP
       /  \
      AspP  →  unbounded
     /  \
   Asp    vP
[-bounded] /  \
   -ing      AspP  →  atelic
            /   \
          Asp     VP
        [-telic]
```

(5) <u>Unbounded telic events</u>: PROGRESSIVE ACCOMPLISHMENTS, e.g., running a mile, writing the letters, eating the sandwich

```
        TP
       /  \
      AspP  →  unbounded
     /  \
   Asp    vP
[ -bounded] /  \
   -ing      AspP  →  telic
            /   \
          Asp     VP
        [+telic]
```

Note that in (2)-(4), verbs that encode telic events contain an inner AspP associated with the [+telic] feature, while verbs that encode atelic events contain an inner AspP associated with the [-telic] feature. Likewise, verbs that encode bounded events contain an outer AspP filled with the [+bounded] feature and verbs that encode unbounded events contain an outer AspP filled with [-bounded] feature.

Borer (2005), however, argues that only telicity, as opposed to atelicity, is encoded syntactically. If so, then simple and progressive activities in (2) and (4) should lack an inner AspP, whereas simple and progressive accomplishments in (3) and (5) should contain an inner AspP associated with the monovalent [telic] feature.

In this paper, I will argue that, just like the inner AspP solely encodes telic events, so does the outer AspP exclusively encode unbounded events. This proposal has two implications, as far as phrase structure of dynamic verbal predicates is concerned. First, both simple activities and simple accomplishments in (2) and (3) should lack an outer AspP. Second, the outer AspP of progressive activities and progressive accomplishments in (4) and (5) should be associated with the monovalent [unbounded] feature.

Having presented the analysis advocated in this paper, let us see why the previous analyses of outer aspect are problematic and in need of correction.

2.   Problems with the previous syntactic analyses of outer aspect

In this section, I will demonstrate that two important assumptions about outer aspect are in fact invalid.

First, let us inspect whether it is true that there is a semantic distinction between the [±telic] and [±bounded] features. This rather standard assumption is false. Thus, both the [+telic] and [+bounded] features encode events **delimited** in time, i.e., events that contain a final boundary in their temporal structure. Likewise, both the [-telic] and [-bounded] features encode events **unlimited** in time, i.e., events that lack a final boundary in their temporal structure. This observation is consistent with Verkuyl's (1989) claim that inner and outer aspect encode the same aspectual information, but at different levels of clause structure.

Second, let us examine whether outer aspect indeed encodes *actual* or real-world boundaries of events, as is often assumed. This assumption is also false. To see why consider sentences in (6):

(6)   a.   Peter ate an apple. $\Rightarrow$ Peter ate the entire apple.   *telic*
       b.   Peter was eat**ing** an apple. $-/\Rightarrow^2$ Peter ate the entire apple.

unbounded

Because the sentence in (6a) encodes a telic event, it entails completion. Thus, if it is true that Peter ate an apple, then it is also true that he ate that entire apple. Although the sentence in (6b) minimally diverges from the sentence in (6a), i.e., only by the morpheme *-ing*, it does not entail completion. This phenomenon whereby an unbounded progressive event does not entail completion even if it is underlyingly telic is known as the Imperfective paradox. This paradox arises, since *-ing* occupying the outer AspP overrides the telic value supplied by the inner AspP (Tenny 1992).

The fact that an unbounded progressive event as in (6b) does not entail completion does not imply that it cannot be used to describe parts of a completed event. Thus, if a speaker wants to emphasise durative nature of the *eating* event, he/she may choose to use (6b), even if in reality Peter ate the entire apple. Recognizing this fact, Parson (1990) maintains that progressive aspect simply encodes "the while story" and is silent about whether the ongoing event it encodes was completed or not in the real world. If so, one cannot claim that progressive and, by extension, outer aspect correlates with real-world boundaries of events. Consequently, the assumption that outer aspect encodes actual boundaries of events must be abandoned.

But if outer aspect does not encode actual boundaries of events than what does it encode? As has been demonstrated above, progressive aspect specifies the fact that the event is unbounded in time, i.e., it does not contain a final boundary in its temporal structure. Since progressive is standardly equated with outer aspect, we can conclude that outer aspect encodes unboundedness of

---

[2] This symbol stands for "does not entail".

events. To put it differently, in English, verbal predicates that contain in their morphosyntactic structure an outer AspP filled by the progressive suffix *-ing* are interpreted as unbounded in time, i.e., as lacking a final boundary in their temporal structure.

The question remains: apart from encoding unboundedness, does outer aspect also encodes boundedness of events, as claimed by Depraetere (1995) and Slabakova (2001)? As we will establish in the next section, the answer to this question is no. Let us examine why.

3. Arguments against syntactically bounded events

Depraetere (1995) and Slabakova (2001) labels events that have a final boundary in the real world as *bounded*. They argue that boundedness is encoded by outer aspect. In what follows, I will argue that boundedness is not a syntactic notion. I will show that no evidence exists that would support the claim that outer aspect encodes boundedness.

3.1. Bounded telic events

Let us begin our investigation of bounded events by considering what Depraetere (1995) and Slabakova (2001) classify as *bounded telic* predicates:[3]

(7)   a.   John opened the parcel.   ***bounded telic***
       b.   I ate three apples.   ***bounded telic***
       c.   The petrol leaked out of the tank.   ***bounded telic***
       d.   The firecrackers exploded.   ***bounded telic***

Note that all events in (7) are telic. Due to their telicity, they contain a final boundary in their temporal structure, as demonstrated in (8):

(8)   The temporal schema of *I ate three apples*:
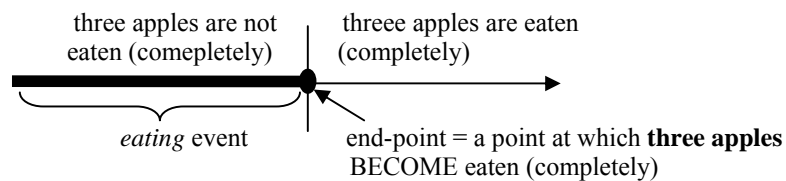
This inherent boundary measures out or delimits the event in (7) in time. We do not need to evoke the [+bounded] feature to explain "boundedness" of events in (7). In fact, there is no evidence that these events contain an outer AspP. Their bounded interpretation results from their telic nature rather than from the presence of an outer AspP in their morphosyntactic structure.
Hence, as far as telic predicates are concerned, the term *bounded* can be used simply to distinguish verbal predicates that entail completion from the verbal

---

[3] All examples in (7) are from Depraetere (1995).

predicates that do not, i.e., to distinguish simple tense accomplishments from progressive accomplishments. Importantly, bounded telic predicates do not contain an outer AspP filled by the [+bounded] feature in their morphosyntactic structure, contra Slabakova (2001). To put it differently, simple accomplishments only contain an inner AspP, but no outer AspP.

3.2. Bounded atelic events

Unlike bounded telic events, bounded atelic events are by far more interesting, given that their boundedness cannot be explained by the existence of an inherent boundary in their temporal structure. This section is dedicated to these events.

3.2.1. Tense as delimiter

According to Slabakova (2001), past activities, as in (9), represent *bounded atelic* events:

(9) a. Susan ate sandwiches.   ***bounded, atelic***
     b. Peter walked.   ***bounded, atelic***

Note that, unlike telic events, atelic events (i.e., states and activities) do not contain a final boundary in their temporal structure. As such, they receive an unlimited in time interpretation. This is well observable in the future.

(10) a. Susan will eat an apple.   ***telic***
     b. Susan will eat sandwiches.   ***atelic***

Thus, from (10a) we know that the *eating* event will end as soon as *an apple* is (completely) eaten. This is because the event in (10a) is telic. In contrast, the atelic event in (10b) does not specify when the *eating* event will end. This event may go on indefinitely, at least hypothetically. In other words, the atelic event in (10b) is not delimited in time. These data clearly show that atelic events, when in the future, are not bounded.

This is not so in the case of past atelic events in (9). These events can be interpreted as bounded or delimited in time. Thus, from hearing the sentence in (9a), we can conclude that the event of Susan's eating sandwiches was terminated by the speech time. Likewise, from (9b) we can assume that Peter no longer walks at the speech time.

But is it really true that the past atelic events are necessarily interpreted as terminated by the speech time, as we would expect if boundedness of these events was encoded syntactically, by an outer AspP? Or can we interpret these events as continuing into the present?

Consider once more the sentences in (9). These sentences are compatible with the real world scenarios whereby the events that they encode continue into the present. Thus, if Susan ate sandwiches 10 minutes ago, it may be true that she is still eating them now. Or if Peter walked 15 minutes ago, it may be true that he is still walking now. Given this alternative unbounded reading of past atelic events, we cannot consider their bounded reading to be encoded by

syntax. But, if outer aspect does not give rise to a bounded reading of past atelic predicates, then what does? The answer to this question is the past tense.

It is standardly assumed that tense locates an event in time (Comrie 1985, Hornstein 1990). From this perspective, the past tense places the event time (ET), i.e., the time during which the event occurred, prior to the speech time (ST) along the time axis, as shown in (11).

(11) The temporal schema of *Susan ate sandwiches*:

eating event   ST
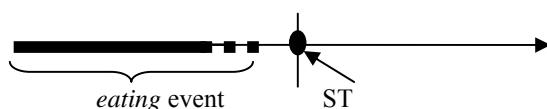
Although the ST does not mark the exact end-point of an atelic event, it can, in principle, delimit this event in time, by serving as a reference-point prior which the event terminated. In this case, we receive a bounded reading of the event. Importantly, the ST does not need to delimit a given atelic event. We can have a scenario whereby the ET overlaps with the ST, in which case we would receive an unbounded reading of the event.

Paying justice to Slabakova (2001), however, note that even though past atelic events allow for an unbounded reading, listeners tend to interpret them as terminated by the speech time. In fact, this is a default reading of past atelic events. This is because, obeying conversational maxims, listeners assume that if a speaker uses a past time form of the verb then he/she wants to convey an event terminated by the speech time, otherwise he/she would use the present tense form of the verb or explicitly specify continuation of the event encoded by the verb. In other words, listeners assume that the entire event is located prior to the speech time.

The claim that in the case of past tense atelic predicates it is the TP associated with [+past] rather than the outer AspP associated with [+bounded] that delimits the event is also supported by the fact that atelic events can acquire a delimited interpretation only in the past, but not in the future. Thus, if the atelic event in (9a) contained an outer AspP associated with the [+bounded] feature, then aspectually equivalent event in (10b) would also be able to receive a bounded interpretation. Yet, this prediction is not borne out.

In short, because the ST can function as a delimiter of atelic events, these events can be interpreted as delimited in time only when they occur prior to the ST. Crucially, boundedness of atelic events is not encoded by an aspectual projection, but rather results form a particular interaction between the event structure and tense, specifically the past tense.

3.2.2. Durative adverbials as delimiters

As we have seen in the previous section, atelic predicates are standardly interpreted as unlimited in time, unless in the past tense. However, they receive a delimited interpretation, when appearing with durative adverbials of *for X-time* type or of *from X-time to Y-time* types, as demonstrated in (12):

(12) a. Susan will eat sandwiches for 15 minutes. ***bounded, atelic***
      b. Peter will walk from 11:00 until 11:30.[4] ***bounded, atelic***

Thus, unlike the atelic event in (10b), its equivalent in (11a) specifies that the eating event will end as soon as the period of 15 minutes is over. Likewise, the event encoded by (11b) cannot continue past 11:30. In short, both sentences in (12) encode bounded atelic events.

Because without durative adverbials the sentences in (12) would encode simply atelic events, we can conclude that durative adverbials can endow atelic events with a bounded reading, by providing them with a final boundary.

Hence, we have established that durative adverbials can modify the aspectual value of events. The question that I would like to address next is whether these adverbials, just like other aspectual markers, occupy an AspP, inner or outer. Let us start with inner aspect. Can it be that durative adverbials occupy an inner AspP? The answer to this question is no, since if they did they would not be able to modify telic predicates, as these predicates already have their inner AspP filled. Yet, as can be seen from (13b), durative adverbials can modify telic predicates, yielding *bounded telic* events:

(13) a. Peter ate the apple. ***telic***
      b. Peter ate the apple for 5 minutes. ***bounded telic***

Interestingly, unlike the telic event in (13a), the bounded telic event in (13b) does not entail completion. Thus, if (13a) is true then it is also true that Peter ate the entire apple. In contrast, even if (13b) is true, it may still be true that Peter did not eat the whole apple. Hence, even though both telic and bounded telic events are delimited in time, only telic events entail completion. Durative adverbials, thus, must occupy a position higher than the inner AspP, as they can "cut off" the final boundary of an underlyingly telic event.

Can it be that they occupy the outer AspP? The answer to this question is also no. This is because durative adverbial can modify unbounded events – events that already have their outer AspP filled by the suffix *-ing*, as demonstrated in (14):

(14) Peter was eating the apple for 5 minutes. ???***bounded/unbounded telic***

Curiously, the data in (14) demonstrate that we should not call the events modified by durative adverbials as bounded, if boundedness is taken to be the opposite of unboundedness. It would be impossible to classify the event in (14) using this notion. Would it be a bounded or unbounded event? Perhaps, it is better to call the resulting event a *delimited unbounded* event.

Putting the issue of terminology aside, what is important to our investigation is that, although durative adverbials delimit events in time, they occupy neither an inner nor outer AspP.

---

[4] Note that in order to obtain a delimited interpretation it is enough to provide only the final boundary of the event as in *Peter will walk in the garden until 11:30.*

To recap, in this section we have investigated events that are often classified as bounded atelic. As we have established, there are two types of elements that can delimit underlyingly atelic events: past tense and durative adverbials. Importantly, neither of these elements occupies a syntactic projection that encodes aspect. This conclusion implies that, even when "bounded", atelic events do not contain an outer AspP. In other words, we have established that under no circumstances do simple activities contain an outer AspP.

4. Conclusion

In this paper, we have examined events that receive a delimited interpretation in the real world. Our investigation has brought us to the conclusion that so-called bounded interpretation of telic and atelic events is not a manifestation of the [+bounded] feature that occupies the outer aspect projection, contra Slabakova (2001). Since no evidence can be found for the existence of a morpho-syntactic [+bounded] feature associated with the outer aspect projection, we should conclude that there is no such a feature, just as there is no [-telic] feature. This means that both simple activities and simple accomplishments lack an outer AspP filled by [+bounded], as shown in (15) and (16) respectively.

(15) <u>Bounded atelic events</u>: SIMPLE ACTIVITIES, e.g., run, write letters, eat soup
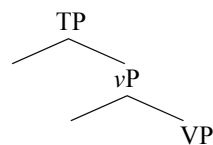
```
        TP
       /  \
         vP
        /  \
           VP
```

(16) <u>Bounded telic events</u>: SIMPLE ACCOMPLISHMENTS, e.g., run a mile, write the letters, eat the sandwich

```
        TP
       /  \
         vP
        /  \
          AspP   →  telic
         /  \
       Asp    VP
      [telic]
```
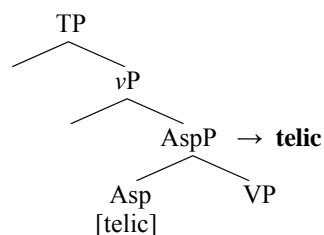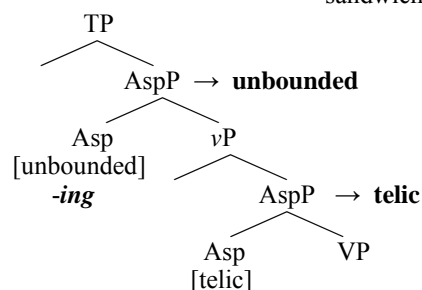
Moreover, since there is no [+bounded] feature, the outer aspect projection of unbounded activities and unbounded accomplishments is filled by the univalent [unbounded] feature, as shown in (17) and (18).

(17) <u>Unbounded atelic events</u>: PROGRESSIVE ACTIVITIES, e.g., running, writing letters, eating soup
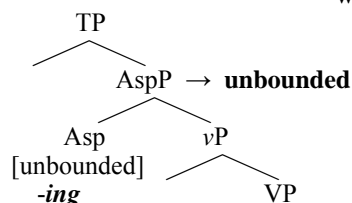
```
        TP
       /  \
        AspP  → unbounded
       /   \
    Asp     vP
[unbounded] /  \
   -ing        VP
```

(18) <u>Unbounded telic events</u>: PROGRESSIVE ACCOMPLISHMENTS, e.g., running a mile, writing the letters, eating the sandwich

```
        TP
       /  \
        AspP  → unbounded
       /   \
    Asp     vP
[unbounded] /  \
   -ing     AspP  → telic
           /   \
        Asp      VP
       [telic]
```

Hence, unboundedness, but not boundedness is a syntactic notion in that all predicates that contain an outer AspP are interpreted as unbounded in time. Still, an unbounded event may be interpreted as delimited in time when it occurs with a durative adverbial or in the past tense. This is not problematic, since outer aspect does not encode actual or real-world boundaries of events. It may well be that what came to be known as *boundedness* correlates with real-world boundaries of events, although this claim requires further investigation.

What is important for the present investigation is that *boundedness* is not a syntactic, but rather a semantic or even pragmatic notion and is not encoded by an outer AspP. For this reason, it would be more accurate to refer to "bounded" events as events *delimited* in time, so not to confuse the syntactic notion of *unboundedness* with a semantic notion of *delimitedness*.

Overall, while the inner AspP encodes "positive" aspectual information about an event, i.e., *telicity* which indicates that the event contains a temporal boundary, the outer AspP encodes "negative" aspectual information about an event, i.e., **unboundedness** which indicates that the event lacks a temporal boundary. Since the outer AspP is hierarchically more prominent, it can override the aspectual value supplied by the inner AspP, giving rise to the Imperfective Paradox. Apart from the inner and outer AspPs, there may be other syntactic, semantic or pragmatic information that can delimit an event in time. The obtained aspectuality, however, is not syntactic in nature, as it is not encoded by an inner or outer AspP.

References

Borer, Hagit. 2005. *Structuring sense*. v. 1. *In name only* -- v. 2. *The normal course of events*. Oxford; New York : Oxford University Press

Comrie, Bernard. 1976. *Aspect.* Cambridge: Cambridge University Press.

Comrie, Bernard. 1985. *Tense.* Cambridge: Cambridge University Press.

Dahl, Östen. 1985. *Tense and aspect systems*. Oxford: Basil Blackwell.

Depraetere, Ilse. 1995. 'On the necessity of distinguishing between (un)boundedness and (a)telicity.' *Linguistics and Philosophy* 18: 1-19.

Dowty, David. 1979. *Word Meaning and Montague Grammar. The Semantics of Verbs and Times. In Generative Semantics and in Montague's PTQ.* Dordrecht: Reidel.

Filip, Hana. 1999. *Aspect, Eventuality Types, and Noun Phrase Semantics.* New York: Garland Publishing. Outstanding dissertations in linguistics.

Filip, Hana. 2000. 'The Quantization Puzzle.' In *Events as Grammatical Objects, from the combined perspectives of lexical semantics, logical semantics and syntax*, J. Pustejovsky and C. Tenny (eds). Stanford: CSLI Press, pp.3-60.

Filip, Hana. 2005. 'The Telicity Parameter Revisited.' *Semantics and Linguistic Theory* (SALT) XIV. Ithaca: CLC Publications, Department of Linguistics, Cornell University.

Hale, Ken and Jay Keyser. 1993. 'On argument structure and the lexical expression of syntactic relations.' In *The View from Building 20*, ed. K. Hale and J. Keyser (eds), Cambridge, MA: MIT Press, pp. 53-109.

Hornstein, Norbert. 1990. *As time goes by: Tense and Universal Grammar*. MIT Press, Cambridge.

Krifka, Manfred. 1989. 'Nominal reference, temporal constitution and quantification in event semantics.' In *Semantics and contextual expression*, Renate Bartsch, Johann van Benthem, and Peter van EmdeBoas (eds.), 75--115. Stanford, CA: CSLI Publications.

Krifka, Manfred. 1998. 'The Origins of telicity.' In *Events and* grammar, S. Rothstein (ed). Dordrecht: Kluwer, pp. 197-235.

Parsons, Terence. 1990. *Events in the semantics of English. A study in subatomic semantics*. Cambridge, MA: The MIT Press.

Pustejovsky, James. 1991. 'The syntax of event structure'. Cognition 41: 47-81.

Ramchand, Gilian. 2008. *Verb meaning and the Lexicon. A first phase syntax.* Cambridge University Press.

Rothstein, Susan. 2004. *Structuring Events: A Study in the Semantics of Lexical Aspect.* Blackwell: Oxford.

Slabakova, Roumyana. 2001. *Telicity in second language*. Amsterdam: John Benjamins.

Smith, Carlota. 1991/1997. *The Parameter of Aspect*. Dordrecht. The Netherlands: Kluwer Academic Publishers.

Tenny, Carol. 1987. Grammaticalizing aspect and affectedness. Doctoral Dissertation, MIT. Cambridge: Mass.

Tenny, Carol. 1992. 'The Aspectual Interface Hypothesis'. In *Lexical Matters.* I.A. Sag and A. Szabolcsi (eds.), CSLI Publications, Stanford, CA, 1-27.

Travis, Lisa. 1994. 'Event Phrase and a Theory of Functional Categories.' In *Proceedings of 1994 Annual Conference of the Canadian Linguistics Association*. Toronto Working Papers in Linguistics.

Travis, Lisa. 2005. 'Articulated vPs and the computation of aktionsart.' In *Aspectual Inquiries*, Kempchinsky P. and R.Slabakova (eds), New York: Springer Publishers, pp. 69-94.

Travis, Lisa. 2010. *Inner aspect: the articulation of VP*. Dordrecht: Springer.

Vendler, Zeno. 1967. 'Verbs and times.' *Linguistics in philosophy*. Cornell University Press.

Verkuyl, Henk. 1989. 'Aspectual classes and aspectual composition.' *Linguistics and Philosophy* 12: 39-94.

Verkuyl, Henk. 1993. *A theory of aspectuality: The interaction between temporal and atemporal structure.* Cambridge: Cambridge University Press.