

# ASPECT SHIFT AND DURATIVE ADVERBIALS

고희정

MIT

heejeong@mit.edu

## 요약

이 논문은 영어와 한국어에서 나타나는 완수동사(Accomplishment Verb)와 지속부사구(durative adverbial)의 상호작용에 대해서 논한다. Smith(1991)에 의하면 완수동사가 지속부사구와 결합하면, 동사와 부사구의 의미적 자질의 충돌을 피하기 위해서 완수동사의 상변환(Apsect Shift)이 일어난다. 본 논문은 이 상변환이 영어와 한국어에서 어떻게 실현되는가를 보이고, 이를 형식의미론에서 어떻게 기술할 수 있는가를 논한다.

완수동사가 지속부사구와 결합할 때, 영어와 한국어 모두에서 닫힌 완료 관점(closed perfective viewpoint)에서 열린 관점(open viewpoint)으로 관점 변환(viewpoint shift)이 일어난다. 그러나, 한국어의 상변환과 영어의 상변환이 완전히 일치하는 것은 아니다. 한국어의 관점변환은 완료관점도 아니고 미완료 관점도 아닌, 중립 관점(neutral viewpoint)으로의 변환인 반면, 영어의 관점변환은 단순히 미완료 관점으로의 변환임이 논의된다. 이 주장은 한국어의 관점변환 구문은 이질적인 다수 사건의 연속 해석(heterogeneous sequential reading of multiple events)을 허용하는 반면, 영어의 관점변환 구문은 오직 동질적인 단일 사건의 동시 해석(homogeneous simultaneous reading of a single event)만을 허용한다는 사실에 의해서 지지된다.

본 논문은 완수동사가 지속부사구와 결합할 때 일어나는 상변환에 대한 형식의미론 분석을 Heim & Kratzer (1998)의 틀에서 제시한다. 닫힌 관점에서 열린 관점으로의 상변환은 비가시적 시제 서법 운용자(covert temporal-modal operator)인 IMP를 지속부사구의 논항으로 설정하여 설명한다. IMP는 Dowty (1979)에서 미완료상의 모순(imperfective paradox)을 해결하기 위해서 설정한 PROG를 Heim & Kratzer (1998)의 틀에 맞게 수정한 것이다. IMP는 평가 세계(evaluation world)를 현실 세계(actual world)에서 가상 관성 세계(possible inertia world)로 변화시켜서, 완수동사의 종결점(ending point)을 현실세계에서 가상의 미래 세계로 움직이는 역할을 한다. 결과적으로, IMP는 완수동사의 닫힌 완료 관점을 현실세계에서

는 열린 미완료 관점으로 변환시키되, 가상 관성 세계에서는 그대로 닫힌 관점으로 유지시키는 효과를 가진다.

한국어와 영어의 관점 변환 구문의 차이는 각 언어의 지속부사구의 어휘 목록의 전제(presupposition)의 차이로 설명된다. 본 논문은 영어의 지속부사구는 논항의 하위간격 특성(subinterval property)을 의미의 전제로 삼는 반면, 한국어의 지속부사구는 그러한 전제가 없다고 주장한다. 'John drank three bottles of beer for an hour' 와 같은 영어의 복합 완수 동사 구문은 지속 부사구의 전제를 만족시키기 위해서 동질적인 단일 사건으로 해석된다. 그러나, 한국어의 지속부사구는 그 논항에 영어의 지속 부사구와 같은 전제를 두지 않기 때문에 '맥주 세 병을 한 시간 동안 마셨다' 와 같은 복합 완수 동사구문이 이질적인 연속 사건으로도, 동질적인 단일 사건으로도 해석이 가능하다.

## 1 Background

In section 1, I will demonstrate the notion of the aspect assumed in this paper. Following Smith (1991), I assume that aspect of the sentence consists of the situation type, and the viewpoint type.

### 1.1 Situation types

Situation types of eventuality can be classified as five types: State, Activity, Accomplishment, Semelfactive, and Achievement. According to Smith (1991), these situation types are distinguished by a cluster of three conceptual temporal properties: [ $\pm$ Stative], [ $\pm$ Duration], and [ $\pm$ Telic]. [ $\pm$ Stative] bifurcates situation types into the classes of states and events. [ $\pm$ Duration] categorizes the situation types as either durative, or instantaneous. [ $\pm$ Telic] categorizes events as atelic or telic. Telic events are directed towards an intrinsic final point. When the point is reached, a change of state occurs and the event is complete. In contrast to telic events, atelic event doesn't have intrinsic final point, but an arbitrary termination point. It can stop at any time. (1) sums up the semantic features of the situation types.

#### (1) Features of situation types

| Situations     | Sentences          | Static | Durative | Telic |
|----------------|--------------------|--------|----------|-------|
| States         | [know the answer]  | +      | +        |       |
| Activity       | [walk in the park] | -      | +        | -     |
| Accomplishment | [walk to the park] | -      | +        | +     |
| Semelfactive   | [knock]            | -      | -        | -     |
| Achievement    | [win a race]       | -      | -        | +     |

## 1.2 Viewpoint

Aspectual viewpoint functions like the lens of a camera, making objects visible to the receiver. (Smith 1991: 91) *Perfective* viewpoints include initial and final ending points of a situation. English past tense takes perfective as a default viewpoint. *Imperfective* viewpoints focus on stages that are neither initial nor final, excluding endpoints. English progressive '-ing' is the typical example of imperfective aspect. *Neutral* viewpoints include the initial point and at least one stage of a situation. Neutral viewpoints cannot be either perfective, or imperfective since they allow both the closed interpretation typical of perfectives, and the open interpretation of imperfectives. It will be shown that Korean has this neutral viewpoint introduced by durative adverbials. Some languages explicitly present the viewpoint of the sentence by overt grammatical morphemes. Some languages, however, don't present the viewpoint by morphology, so we need to infer the viewpoint by indirect tests such as conjunction, and question tests.

## 1.3 Feature mismatch

As noticed in many literatures on aspect (Comrie (1993), Dowty (1979), Smith (1991), Zucchi (1999), Zucchi & White (2001) etc.), some situation types cannot combine with durative adverbials without changing its inherent meaning as in (2).

- (2) a. I drank beer for an hour (Activity)  
 b. #I drank a bottle of beer for an hour (Accomplishment)

The grammaticality of (2) can be explained by the feature mismatch between the situation types and durative adverbials. Since durative adverbials such as 'for an hour' require homogenous durative events as its argument, they can combine with propositions consisting of [+durative], and [-telic], namely Statives, or Activity. If we combine durative adverbials with other propositions such as Accomplishment, Achievement, or Semelfactive, feature mismatch occurs as in (2b). In this paper, I will focus on explaining the feature clash between Accomplishment, and durative adverbials. To control the influence of tense on aspect, I will set up the tense of all the examples as 'past'.

## 2 Aspect shift of Accomplishment coerced by durative adverbials

If we combine Accomplishment with durative adverbials, semantic feature mismatch occurs since the durative adverbials cannot be combined with [+telic] event. When

this mismatch happens in English, the viewpoint shifts from a closed perfective into an open imperfective as shown in (3) and (4).

- (3) a. John drank a bottle of beer yesterday.  
 b. \*John drank a bottle of beer yesterday, but he didn't finish it.
- (4) a. John drank a bottle of beer for an hour yesterday.  
 b. John drank a bottle of beer for an hour yesterday, but he didn't finish it.

(3b) shows that [John drank a bottle of beer] has a closed perfective viewpoint, which implies the completion of the beer-drinking event. (4b) shows that the durative adverbial 'for an hour' changes the viewpoint of 'John drank a bottle of beer' from closed perfective into open imperfective, which allows incompleteness of the beer-drinking event. I claim that this viewpoint shift is due to the marked focus on the process stages of Accomplishment. In other words, 'for an hour' in (4a) put a marked focus on the process stages during which John was drinking a bottle of beer, so the intrinsic final point of the telic event is not included in the evaluation of the truth condition in (4b). This point will become clear when we get to the semantic analysis on (4) based on the temporal-modal operator in section 3.

The similar pattern of the viewpoint shift happens in Korean. Without durative adverbials, the sentence with Accomplishment implies the completion of the event. With durative adverbials, the sentence doesn't imply the completion of the event. The viewpoint shift in Korean, however, is not exactly same with English. Let's compare the viewpoint shift of English in (5), and Korean in (6).

- (5) a. John drank three bottles of beer for an hour.  
       'John drank three bottles of beer for an hour simultaneously'  
 b. John drank three bottles of beer for an hour, but he didn't finish them.
- (6) John-i     maykcwu-sey-byeng-ul han sikan tongan masi-ass-ta  
 John-Nom beer-three-bottle-Acc an hour for     drink-Past-Dec.  
       'John drank three bottles of beer sequentially for an hour, one bottle by one  
       bottle'  
       'John drank three bottles of beer for an hour simultaneously'

If we combine [John drink three bottles of beer] with 'for an hour' in English, we get pragmatically funny reading, namely simultaneous reading. For (5a) to make sense, we need to assume that 'John was drinking three bottles of beer simultaneously.' This kind of reading will be possible in some rare contexts such as beer drinking contest or beer tasting event. Suppose John is a specialist for tasting beer. Let's say that John opens

three bottles of beer, and tastes three bottles of beer one sip by one sip with changing the bottles for an hour. Then, (5a) can be considered as true statement for that event. What the funny interpretation of (5a) shows is that the event described in (5a) should be considered as a homogenous event, which keeps the subinterval property.<sup>1</sup> (5b) shows that the viewpoint of the event changes from closed perfective into open imperfective, so 'John drink three bottles of beer' in (5) doesn't have to be complete event as in (4b).

On the other hand, if we combine [John drink three bottles of beer] with 'for an hour' in Korean, we get both the simultaneous and sequential reading. We can drink three bottles of beer by finishing one bottle by one bottle. Actually, this sequential reading is pragmatically more sensible, so many speakers have strong preference for the sequential reading over the simultaneous reading. What the sequential reading in (6) shows is that the event in (6) doesn't have to be a homogenous event, contrary to English. In other words, the proposition that combines with 'for an hour' in Korean doesn't have to have subinterval property. As in the case of English, we don't have to finish the three bottles of beer after one hour of beer-drinking event in (6). The fact that (6) allows sequential reading with open viewpoint shows that Korean has a covert *Neutral* viewpoint proposed in Smith (1991). We can say that (6) has a neutral viewpoint since it allows both the sequential reading typical of perfectives, and open viewpoint typical of imperfective.

In sum, when Accomplishment is combined with durative adverbials, aspect shift happens both in English and Korean. Durative adverbials put a marked focus on the process stages of the Accomplishment, so the final ending point is not evaluated when we consider truth condition of the sentence. As a result, the viewpoint of the sentence changes from closed to open viewpoint. In English, the closed perfective changes into the open imperfective. In Korean, the closed perfective changes into the neutral viewpoint. In the following section, I will present a semantic analysis on Aspect shift of Accomplishment.

### 3 Semantic Analysis on the Aspect Shift of Accomplishment

In section 3, I will provide the lexical entry for the durative adverbial and introduce the functional head IMP, which explains the interaction between durative adverbials and Aspect shift of Accomplishment.

<sup>1</sup> Let S be a subset of  $I_T$ , then S has the subinterval property iff  $\exists i, i', i'' \in I_T, [i = i' \cup i'' \ \& \ i \in S \rightarrow i' \in S \ \& \ i'' \in S]$ . This definition of the subinterval property comes from the insight of Hinrichs (1985).

### 3.1 Lexical Entry of Durative Adverbials

As described in section 1, the sentence is fine when durative adverbials take durative atelic proposition as its argument as in (7).

- (7) I walked around the park for an hour (Activity)

The felicitous matching pattern in (7) can be captured by the presupposition of the lexical entry of 'for an hour' in English shown in (8). I assume Heim & Kratzer (1998) framework for the interval semantics.

- (8)  $[[\text{for an hour } P]]^i = 1$   
 iff the interval of  $i$  is an hour, &  $P(i)=1$  (Assertion)  
 &  $\exists i'$ , and  $i''$ , s.t.  $i = i' \cup i''$ ,  $P(i')=1$  &  $P(i'')=1$  (Presupposition: subinterval property)

According to (8), the truth condition of 'for an hour' asserts that the interval during which the proposition  $P$  holds is an hour. More importantly, (8) presupposes the subinterval property of its argument  $P$ . Since atelic predicates such as Activities have the subinterval property, 'I walk around the park' in (7) can be the argument of 'for an hour' as expected.

However, when it comes to the sentences where the feature mismatch happens as in (4)-(6), (8) makes a wrong prediction about the truth condition of the sentences. Let's consider (4a) first, repeated here as (9).

- (9) John drank a bottle of beer for an hour yesterday. (Accomplishment)

Before calculating the truth condition of (9), let me clarify what I assume in representing the LF of (9). English simple past telic sentence gets a closed perfective as a default viewpoint since the simple past telic sentence cannot be combined with the sentences which deny the completion of the event in the previous sentence as in (10).

- (10) \*John drank a bottle of beer yesterday, but he didn't finish it.

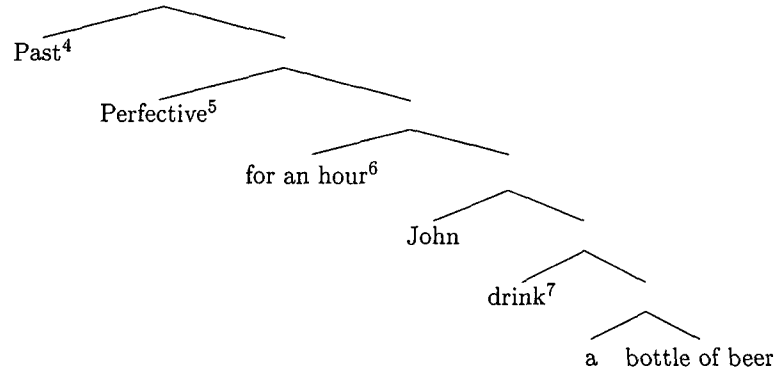
To reflect the fact shown in (10), I will posit 'Perfective' as an argument of Past in the LF of English Past.<sup>2</sup> I will also assume that 'for an hour' in (9) is located below the aspectual head 'Perfective' at LF since 'an hour' interval should be included in the reference time in the past.<sup>3</sup>

<sup>2</sup> As for another independent evidence for positing 'Perfective' in the LF of English Past, please refer to the discussion of Von Stechow (1999).

<sup>3</sup> If I assume that 'for an hour' is located above 'Perfective', I make a wrong prediction about the viewpoint of (9). If we follow the definition of 'perfective' in note 5, the situation should be included in 'an hour' interval, so we cannot get open viewpoint in (9). I refer the reader to calculate the illicit LF, where 'for an hour' is located above 'Perfective'.

Now, let's go back to the LF of (9). (11) is the possible LF of (9), and (12) is the truth condition of (11), based on the lexical entry in (8).<sup>4 5 6 7</sup>

(11)

(12)  $[[[(11)]]]^i=1$  iff

a. Assertion:

$\exists i' \in I_T$  such that  $i' < i$ , and  $\exists i'' \in I_T$  such that  $i'' \subseteq i'$ , and  $i''$  is the an hour interval such that there is a single complete event of John drinking a bottle of beer occupying exactly  $i''$  &

b. Presupposition:

$\exists j$  and  $\exists j'$ , such that  $i'' = j \cup j'$  &  $[[\text{John drink a bottle of beer}]](j)=1$  &  $[[\text{John drink a bottle of beer}]](j')=1$

The truth condition described in (12) is counter-intuitive. According to the assertion of (12), (12) is true when there is a single event 'John drinking a bottle of beer' occupying exactly one hour, which is included in the past reference interval  $i'$ . Thus, in order for (11) to be true, [John drink a bottle of beer] event should hold exactly an hour, and be completed after an hour of beer-drinking in the past. However, this is not the intuitive meaning of (9). (9) can carry the open viewpoint, which allows the denial of the completion of the event as shown in (13).

(13) John drank a bottle of beer for an hour, but he didn't finish it

In addition, when it comes to the presupposition of (12), we encounter more serious problems. To satisfy the subinterval property of (12b), there should be at least two

<sup>4</sup>  $[[\text{Past}]]^i = \lambda P \in D_{\text{st}i}. \exists i' \in I_T [i' < i \ \& \ p(i')=1]$

<sup>5</sup>  $[[\text{Perfective}]]^i = \lambda P \in D_{\text{st}i}. \exists i' \in I_T [i' \subseteq i \ \& \ p(i')=1]$

<sup>6</sup>  $[[\text{for an hour}]]^i = \lambda P \in D_{\text{st}i}. \text{the interval of } i \text{ is an hour, \& } P(i)=1 \text{ (Assertion)}$

$\& \exists i', \text{ and } i'', \text{ s.t. } i = i' \cup i'', P(i')=1 \ \& \ P(i'')=1 \text{ (Presupposition: subinterval property)}$

<sup>7</sup>  $[[\text{drink}]] i = \lambda x \in D_e. \lambda y \in D_e. \text{there is a single (complete) event of } y \text{ drinking } x \text{ which occupies exactly the interval } i$

events of [John drink a bottle of beer] within an hour. This presupposition is problematic in two senses. First of all, this presupposition contradicts the assertion of (12), which requires there be only one single complete event of 'John drink a bottle of beer' during 'an hour'. According to (12), (9) should never be true due to presupposition failure, contrary to the fact. Secondly, the presupposition in (12b) is also counter-intuitive. According to (12b), we should be able to get the iterative reading from 'John drank a bottle of beer for an hour', contrary to the fact.

In sum, the lexical entry (8) cannot give us a satisfactory account when it comes to the feature mismatch between durative adverbials and accomplishment. First, it cannot describe the open viewpoint of the sentence. Second, there is no way to satisfy the presupposition of the durative adverbials without contradicting the assertion of the truth condition. In the following section, we will solve these problems by entertaining the covert temporal-modal operator *IMP*.

### 3.2 Covert imperfective operator *IMP*

(12) showed that (8) cannot describe Aspect shift of the Accomplishment properly. In principle, we can solve this problem in two ways. First option is to plunge every problem into the lexicon. If we assume that accomplishment is always ambiguous between telic accomplishment and atelic activity, then we can get activity reading from accomplishment which durative adverbials can be combined with. The problem of this approach is that we don't know when and why the shift from telic and atelic will happen. If we assume that durative adverbials are compatible only with activity lexical entry, it is just a re-statement of the problem, not a solution. Thus, I will dismiss this option.

The second option is to preserve the lexical entry of Accomplishment as simple as possible, and to find another way to explain the aspect shift. This is the promising option that I will argue for: to introduce a covert operator, which will provide the open viewpoint for the sentence, and pave the way for satisfying the presupposition of 'for an hour'. I propose that durative adverbials take a covert temporal-modal operator of *IMP* as its argument. *IMP* is a revised covert version of *PROG* proposed by Dowty



(1979) to explain 'imperfective paradox'.<sup>8</sup> (14) is the denotation of PROG.

(14)  $[[\text{PROG } P]]$  is true at  $\langle I, w \rangle$  iff for some interval  $I'$  such that  $I \subset I'$  and  $I$  is not a final subinterval for  $I'$ , and for all  $w'$  such that  $w' \in \text{Inr}(\langle I, w \rangle)$ ,  $P$  is true at  $\langle I', w' \rangle$ .

(15)  $\text{Inr}$  is a function which assigns to each index, consisting of a world and an interval of time, a set of worlds 'inertia worlds': worlds which are exactly like the given world up to the time in question and in which the future course of events after this time develops in ways most compatible with the past course of events.

As in the case of the progressives of the creation verbs, accomplishment sentences with durative adverbials can denote an open incomplete telic event. This fact can be captured by positing IMP in (16) between the durative adverbial, and the proposition.

(16)  $[[\text{IMP}]]^{\langle i, w, g \rangle} = 1$  iff for some interval  $i'$  such that  $i \subseteq i'$  and for all  $w'$  such that  $w' \in \text{Inr}(\langle i, w \rangle)$ ,  $P$  is true at  $\langle i', w' \rangle$

Since IMP contains modality as in PROG of (14), the sentence involving IMP can denote an incomplete event, which will be finished in all the possible inertia worlds. Since IMP, contrary to PROG, allows  $i$  and  $i'$  in (16) to coincide each other, it can express the complete event reading, too. Let's consider (9) again, repeated here as (17), with assuming that IMP in (16) is selected by 'for an hour' in (18). (18) is the modified lexical entry of 'for an hour' in (8) in terms of world, and interval index system. (19) is the LF of (17), and (20) is the truth condition of (19).

(17) I drank a bottle of beer for an hour

(18)  $[[\text{for an hour}]]^{\langle i, w, g \rangle} = \lambda P \in D \langle st \rangle$ . the interval of  $i$  is an hour, &  $P(\langle i, w \rangle) = 1$   
(Assertion)  
&  $\exists i'$ , and  $i''$ , s.t.  $i = i' \cup i''$ ,  $P(\langle i', w \rangle) = 1$  &  $P(\langle i'', w \rangle) = 1$  (Presupposition:  
subinterval property)

<sup>8</sup> Dowty (1979) proposed (14) and (15) to explain the imperfective paradox shown in (i).

- (i) a. John was drawing a circle  
b. John drew a circle

Intuitively, (ia) doesn't imply (ib). What (ia) asserts is that the existence of a circle was a possible outcome of John's activity. From this observation, Dowty concluded that the progressive is not simply a temporal operator, but a kind of mixed temporal-modal operator.

(19) [[[Past [Perf [for an hour [IMP [ John drink a bottle of beer]]]]]]]]<sup>9</sup>

(20) [[[19]]]<sup><i,w>,g</sup> = 1 iff

a. Assertion:

$\exists i' \in I_T$  such that  $i' < i$ , and  $\exists i'' \in I_T$  such that  $i'' \subseteq i'$ , and  $i''$  is the an hour interval, and  $\exists i'''$  such that  $i'' \subseteq i'''$  and for all  $w'$  such that  $w' \in \text{Inr}(<i'', w>)$ , there is a single complete event of John drinking a bottle of beer occupying exactly the interval  $i'''$  in  $w'$ , &

b. Presupposition:

$\exists j$  and  $j'$ , such that  $i'' = j \cup j'$  and [ [[ IMP [John drink a bottle of beer] ] ] (<j,w>)=1 & [ [ IMP [John drink a bottle of beer] ] ] (<j',w>)=1

The informal interpretation of (19) will be 'John was drinking a bottle of beer for an hour'. (20) asserts that 'an hour' interval is included in the past of the actual world, and that 'an hour' is also included in the interval such that 'John drinking a bottle of beer' occupies it in all possible inertia worlds. In other words, (20) asserts that the truth condition of (19) will be satisfied when 'an hour' is included in the past, and 'an hour' is also the subset of the interval where 'John drink a bottle of beer' event holds. This correctly captures our intuition of the open viewpoint in (17).

Since 'for an hour' takes [IMP[John drink a bottle of beer]] as its argument, the presupposition of (20) will be satisfied if the subinterval property holds in the proposition including IMP. If the process stages of 'John was drinking a bottle of beer' keep the subinterval property for 'an hour', then the presupposition will be satisfied without contradicting the assertion of (20).

In sum, we can get a satisfactory semantic account on the Aspect shift of Accomplishment by assuming temporal modal operator IMP in (16), and the lexical entry (18).

### 3.3 Distinction between English and Korean in Aspect Shift

As shown in (5) and (6), durative adverbials in Korean allow neutral viewpoint while English doesn't. To be more specific, Korean durative adverbials can be interpreted

<sup>9</sup> Since we have introduced a world index  $w$  coupled with the interval  $i$  into our semantics, other lexical entries should be restated in terms of  $i, w$  as follows:

a. [[Past]]<sup><i,w>,g</sup> =  $\lambda P \in \text{Dist}_i. \exists i' \in I_T [i' \subseteq i \ \& \ p(i', w_i) = 1]$

b. [[Perfective]]<sup><i,w>,g</sup> =  $\lambda P \in \text{Dist}_i. \exists i' \in I_T [i' \subseteq i \ \& \ p(i', w_i) = 1]$

c. [[drink]]<sup><i,w>,g</sup> =  $\lambda P \in \text{Dist}_i. \lambda x \in De. \lambda y \in De. \text{there is a single complete event of } y \text{ drinking } x \text{ which occupies exactly the interval } i \text{ in } w$

with sequential reading of heterogeneous multiple events. On the other hand, English durative adverbials should be interpreted only with simultaneous reading of homogeneous single event.

I claim that this contrast can be captured by the differences in the presupposition of durative adverbials in Korean and English. In other words, the lexical entry of 'for an hour' in Korean is the same with (18) in English, except that there is no presupposition about the subinterval property of its argument.

- (21)  $[[\text{han sikan tongan}]]^{<i,w>,g} = 1$  iff the interval of  $i$  is an hour, &  $P(<i,w>) = 1$  (Assertion), & no presupposition.

Since 'for an hour' of Korean in (20) doesn't presuppose the subinterval property of its argument, it can be combined with heterogeneous sequential reading, or homogeneous reading as shown in (6). I assume that 'han sikan tongan' also takes IMP as its argument in both the readings since they can denote incomplete open viewpoint.<sup>10 11</sup> If the process stages of 'John drink three bottles of beer' have the subinterval property, we will get the homogeneous reading as we did in English. If the process stages of the event don't have the subinterval property, then we will get the heterogeneous reading.

The argument that Korean durative adverbials don't have presupposition is related to the fact that Korean durative adverbials are ambiguous between durative and completive adverbials in English. Consider (21) where Korean durative adverbial is combined with the completive particle 'ta'.<sup>12</sup>

- (22) ?John-i maykcwu-han-byeng-ul han sikan tongan ta masi-ass-ta  
 John-Nom beer-one bottle-Acc an hour-for up drink-Past-Dec  
 'John drank up a bottle of beer in an hour'

- (23) a. \*John drank up one bottle of beer for an hour yesterday  
 b. John drank up one bottle of beer in an hour yesterday

While English completive particle 'up' is compatible only with inclusive adverbial 'in an hour', Korean 'han sikan tongan' is compatible with the completive particle 'ta'. (21)-(22) show that Korean durative adverbials are ambiguous between durative and

<sup>10</sup> I refer the readers to calculate the truth condition of (6) with (20).

<sup>11</sup> Note that 'han sikan tongan' may or may not take IMP as its argument, depending on the interpretation of the sentences. In (21)-(22), I will show that 'han sikan tongan' doesn't introduce IMP when it is interpreted as 'in an hour' of English.

<sup>12</sup> Some speakers accept (21) as a grammatical sentence while others don't. However, the grammaticality of (21) is much better than that of (22).

inclusive adverbial in English. If the difference between durative and inclusive adverbials is explained by the difference in their presupposition,<sup>13</sup> it follows that Korean durative adverbials are compatible with the completive particle. Since 'han sikan tongan' doesn't have presupposition, it can be either durative or inclusive adverbial, so it can be combined with 'ta' as an inclusive adverbial. If 'han sikan tongan' introduces IMP and is combined with homogeneous event, it is interpreted as 'for an hour' in English. If 'han sikan tongan' introduces IMP and is combined with heterogeneous event, it is interpreted with open sequential reading. If 'han sikan tongan' doesn't introduce IMP, it can be combined with the completive particle 'ta'.

In sum, the difference between English and Korean in terms of the compatibility with heterogeneous reading can be explained by accepting (18) and (20) as the lexical entry of 'for an hour' in each language.

#### 4 Summary

In this paper, I showed that the feature mismatch between Accomplishment and the durative adverbials yields an Aspect shift of Accomplishment both in English and Korean. English aspect shift involves the viewpoint shift from a closed perfective into the open imperfective. Korean aspect shift accompanies viewpoint shift from a closed perfective into open neutrals.

This paper explains the feature mismatch between Accomplishment and durative adverbials by incorporating the subinterval property as the presupposition of the lexical entry of the durative adverbials. The viewpoint shift from a closed into open viewpoint was explained by positing a temporal-modal operator IMP as the argument of the durative adverbial. The difference between English and Korean in Aspect shift was accounted by the difference in the presupposition of the durative adverbials in each language.

#### References

- Comrie, B. 1993. Aspect. Cambridge text book in linguistics.  
 Dowty, D. 1979. Word Meaning in Montague Grammar. Dordrecht: Reidel  
 Heim, I. & Kratzer, A. 1998. Semantics in Generative Grammar. Blackwell.  
 Hinrich, E. 1985. A Compositional Semantics for Aktionarten and NP Reference in English. Ph.D dissertation. OSU

<sup>13</sup> Ko (2001) argues that inclusive adverbials such as 'in an hour' have the quantized property as the presupposition of its argument.

- Iatridou, S., Anagnostopoulou, E., and Izvorski, R. 2001. Observations about the Form and Meaning of the Perfect. In M. Kenstowicz ed., *Ken Hale: A Life in Language*. MIT press
- Ko, H. 2001. *Aspect Shift and Adverbials*. ms. MIT
- Lee, S. 1992. *A Study of Tense and Aspect in Korean*. Ph.D dissertation, Michigan State University.
- Mittwoch, A. 1988. Aspect of English Aspect: On the Interaction of Perfect, Progressive and Durational Phrases. *Linguistics and Philosophy* 11.
- Shin, S-O. 1987. Tense anaphora in complex construction. *Harvard Studies in Korean Linguistics* 2.
- Smith, C. 1991. *The Parameter of Aspect*. Dordrecht: Kluwer.
- Klein, W. 1994. *Time in Language*. London: Routledge.
- Vlach, F. 1993. Temporal Adverbials, Tenses and the Perfect. *Linguistics and Philosophy* 16
- Von Stechow, A. 1999. Semantics and syntax of perfekt and future. *The LOT99-Lectures at Potsdam*
- Zucchi. 1998. Aspect Shift. In S. Rothstein ed., *Events and Grammar*. Kluwer.
- Zucchi. 1999. Incomplete Events, Intensionality and Imperfective Aspect. *Natural Language Semantics* 7
- Zucchi, S. & M. White. 2001. Twigs, Sequences and the Temporal Constitution of Predicates. *Linguistics and Philosophy* 24