

## Perfect and Progressive in English Transformational Grammar

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# Perfect and Progressive in English Transformational Grammar

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The purpose of this paper is to demonstrate, syntactically and semantically, that perfect and progressive can better be interpreted as features on the Auxiliary- and Verb-segments, respectively, though both of them are usually taken to constitute the grammatical category "aspect" in English.

1. CHANGES IN THE TREATMENT OF PERFECT AND PROGRESSIVE BY TRANSFORMATIONALISTS. In the early version of transformational grammar, perfect and progressive are introduced into deep constituent structures through the rewriting rule (1), which expands the auxiliary constituent.<sup>1)</sup>

(1) Aux → Tn (M)(have+en)(be+ing)

It has, however, become more usual to treat these two as features on the Verb-segment and separate them from tense, which is a feature on the Auxiliary-segment.<sup>2)</sup> According to these two interpretations, (3)(a) and (b) are, respectively, deep-structure trees of (2).

(2) John has been reading.

(3)(a) is mapped into the surface structure shown in (2) chiefly through the application of the auxiliary transformation,<sup>3)</sup>

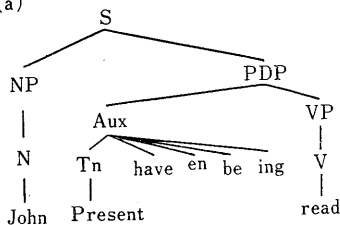
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1) Noam Chomsky, *Syntactic Structures* (The Hague, 1957), p. 111.

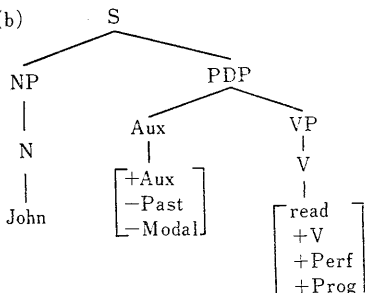
2) John Lyons, "Towards a 'Notional' Theory of 'Parts of Speech,'" *Journal of Linguistics* 2 (1966), pp. 209-236. See also Roderick A. Jacobs and Peter S. Rosenbaum, *English Transformational Grammar* (Waltham, Mass., 1968), pp. 108-119.

(3)

(a)



(b)



while “segment transformations” are applied to change (3)(b) into (2). (4) indicates the ordering of these segment transformations.<sup>4)</sup>

- (4) (i) the PERFECT TRANSFORMATION, which introduces the segment [+Perfect] to the immediate left of the Verb-segment,
- (ii) the PROGRESSIVE TRANSFORMATION, which introduces the segment [+Progressive] to the immediate left of the Verb-segment,
- (iii) the PROGRESSIVE-AFFIX TRANSFORMATION, which introduces the segment [+Affix, +Progressive] to the immediate right of the segment which is next to the Progressive-segment on the right side,
- (iv) the PERFECT-AFFIX TRANSFORMATION, which introduces the segment [+Affix, +Perfect] to the immediate right of the segment which is next to the Perfect-segment on the right side.

2. VERBS HAVING NO PROGRESSIVE FORM. Verbs like *own* and *know* usually cannot take progressive forms. According to the older interpretation, this restriction is due to the strict sub-

3) Chomsky, *Syntactic Structures*, p. 113.

4) Jacobs and Rosenbaum, pp. 116-118.

categorization feature [–progressive aspect–] of these verbs<sup>5)</sup> and the ungrammaticality of (5) is ascribed to the fact that the verb *own* cannot be introduced into the frame “Progressive—.”

(5)\* John is owning a house.

But the restriction that strict subcategorization rules must be strictly local transformations<sup>6)</sup> makes this interpretation inadequate. Thus, another means than subcategorization must be resorted to in order to indicate the inability of those verbs to occur after progressive. Chomsky proposes a solution according to which a class of English verbs including *own* and *know* are susceptible to the obligatory progressive-deletion transformation though all the verbs in English can occur in the frame “Progressive—.”<sup>7)</sup>

These interpretations are of course not compatible with the recently proposed interpretation of the progressive aspect as a feature on the Verb-segment. The feature [ $\alpha$  Progressive] might be introduced into the segment by a segment-structure rule (6).

(6) [+V] → [±Progressive]

But not all verbs, namely, not all constituents dominating a segment on which [+V] is registered, can dominate a segment with [+Progressive]. Some inherent characteristic of verbs is obviously compatible or incompatible with the inherent property of the progressive aspect. Jacobs and Rosenbaum distinguish between actional and nonactional verbs, which are positively and negatively specified for the inherent syntactic feature [Action], respectively.<sup>8)</sup> Only actional verbs can take progressive forms and are susceptible to the imperative trans-

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5) Noam Chomsky, *Aspects of the Theory of Syntax* (Cambridge, Mass., 1965), p. 90.

6) *Ibid.*, pp. 99ff.

7) *Ibid.*, Note 23, p. 216.

8) Jacobs and Rosenbaum, pp. 63-65.

formation. Thus, sentences of (7) are grammatical, while those of (8) are all ungrammatical.

(7)(a)(i) They are building a house.

(ii) He is writing a letter.

(iii) She is being polite.<sup>9)</sup>

(b)(i) Build a house.

(ii) Write a letter.

(iii) Be polite.

(8)(a)(i) \*I am knowing John.

(ii) \*He is resembling his father.

(iii) \*She is being tall.

(b)(i) \*Know me.

(ii) \*Resemble your father.

(iii) \*Be tall.

Now it is easily understood that the feature [ $\alpha$  Action] is introduced into deep structures by a lexical rule and that a syntactic redundancy rule like (9) can be assumed.

$$(9) [+Action] \rightarrow \left\{ \begin{array}{l} [+ [+Progressive]] \\ [+imperative transformation] \end{array} \right\}$$

The feature [+ [+Progressive]] means that verbs with this feature can, but do not necessarily, take progressive forms. Verbs like *build*, *write*, and *polite* can appear in progressive forms, for instance, in sentences (7)(a), (i), (ii), and (iii), respectively, but they also appear in simple forms as in:

(10)(i) They built a house.

(ii) He has written a letter.

(iii) She is polite.

Nonactional verbs, namely verbs with the feature [- [+Progressive]], always appear in simple forms as in:

(11)(i) I know John.

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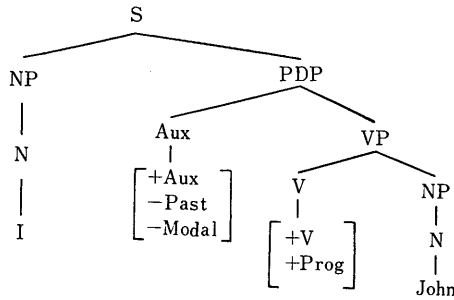
9) According to the Postal-Lakoff doctrine, verbs and adjectives are deep-structurally the same kind of constituent. See Jacobs and Rosenbaum, pp. 63-66.

(ii) He resembles his father.

(iii) She is tall.

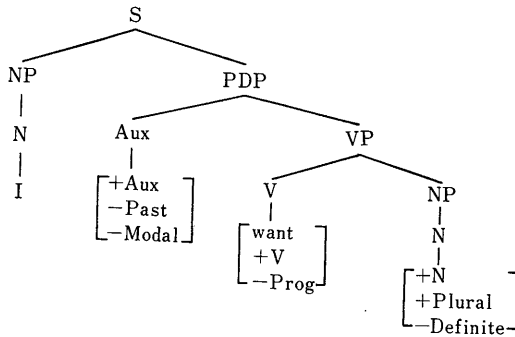
As Jacobs and Rosenbaum say, segment-structure rules are applied before lexical rules.<sup>10)</sup> Now let us suppose that (12) roughly represents a structure obtained after a segment-structure rule has introduced the feature [+Progressive] into the Verb-segment.

(12)



Then, the lexical rule which introduces [-Action] into the same Verb-segment "blocks" and the generation of (8)(a)(i) is prevented. This "filtering function" of a lexical rule is also detected in the case of the Noun-segment. Suppose that (13) is

(13)



10) Jacobs and Rosenbaum, p. 67.

a rough representation of a structure we get immediately before a lexical rule is applied to introduce [-Count] into the Noun-segment. That lexical rule of course blocks because there is a syntactic redundancy rule (14).

(14) [-Count] → [- [+Plural]]

Thus, the generation of sentences like (15) is prevented in the syntactic component.

(15) \*I want milks.

It is obvious from what has been said in this section that [ $\alpha$  Progressive] should be interpreted as a feature on the Verb-segment rather than as a feature on the Auxiliary-segment.

3. A TRANSFORMATIONAL ANALYSIS OF THE SEQUENCE OF TENSES. Traditional transformational analysis interprets (ii) as the deep structure of (i) of each pair of (16).<sup>11)</sup>

(16)(a)(i) Somebody says that John is honest.

(ii) somebody Pres say it [John Pres be honest]s

(b)(i) Somebody says that John was honest.

(ii) somebody Pres say it [John Past be honest]s

(c)(i) Somebody says that John has done it.

(ii) somebody Pres say it [John Pres have+en do it]s

(d)(i) Somebody said that John was honest.

(ii) somebody Past say it [John Past be honest]s

(e)(i) Somebody said that John had done it.

(ii) somebody Past say it [John Pas have+en do it]s

(16)(a)(i) differs from (16)(d)(i) with regard not only to the tense of the main sentence but also to the tense of the embedded sentence, while the difference between (16)(b)(i) and (16)(d)(i) is exclusively the difference of the tenses in the main sentences.

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11) In the deep-structure representations here, I for convenience follow the constituent analysis, rather than the feature analysis, of Tense and Aspect.

A different interpretation is suggested by the traditional distinction between direct and indirect speech. The change from direct to indirect speech hinges on not only the sequence of tenses but also "person agreement." Thus, the indirect-speech sentence (17)(a) is considered to have (17)(b) underlying it.

(17)(a) He said that he would go.

(b) He said, "I will go."

Although transformationalists interpret the deep-structural subject NP of the embedded sentence of (17)(a) as third-personal *he*, there is strong evidence that it is first-personal *I*, as suggested by the traditional narration-change interpretation. Since this paper does not aim to clarify person agreement in English, a topic which itself requires a very lengthy discussion, let it suffice here just to point out that the person agreement transformation exists in English and that this fact justifies our assuming transformations dealing with tense sequence.

Thus, (18) and (19) might, respectively, be presented as deep-structure representations of (16)(d)(i) and (16)(e)(i).

(18) somebody Past say it [John Pres be honest]s

(19)(a) somebody Past say it [John Pres have+en do it]s

(b) somebody Past say it [John Past do it]s

We might call the transformation which changes (18) into (16)(d)(i) and (19)(a) into (16)(e)(i), respectively, "pastization." The transformation which maps (19)(b) into (16)(e)(i) might be referred to as "perfectization."

This interpretation explains the generation of the perfect infinitive better. (20)(a)—(e) are passive paraphrases of (a)(i)—(e)(i) of (16), respectively.

(20)(a) John is said to be honest.

(b) John is said to have been honest.

(c) John is said to have done it.

(d) John was said to be honest.

(e) John was said to have done it.



We could then make a generalization by saying that the sources of the simple infinitive and the perfect infinitive are, respectively, the present and the past or perfect in deep structures.

Perfectization and pastization, which deal with the sequence of tenses and must be applied in this order, are to be formulated as follows.

(21)(i) Perfectization.

$$\begin{array}{c}
 X(\text{Aux } Y) [\text{that } Z \text{ Aux } V \text{ U}s(\text{Aux } W^{12}) \\
 \left[ \begin{array}{c} +\text{Past} \\ -\text{Modal} \end{array} \right] \left[ \begin{array}{c} +\text{Past} \\ -\text{Perf} \end{array} \right] \left[ \begin{array}{c} +\text{Past} \\ -\text{Perf} \end{array} \right] \\
 \hline
 \begin{array}{ccc}
 1 & 2 & 3
 \end{array} \\
 \Rightarrow 1 \left[ \begin{array}{c} 2 \\ +\text{Perf} \end{array} \right] 3
 \end{array}$$

(ii) Pastization.

$$\begin{array}{c}
 X(\text{Aux } Y) [\text{that } Z \text{ Aux } U}s(\text{Aux } W \\
 \left[ \begin{array}{c} +\text{Past} \\ -\text{Past} \end{array} \right] \left[ \begin{array}{c} +\text{Past} \\ -\text{Past} \end{array} \right] \left[ \begin{array}{c} +\text{Past} \\ -\text{Past} \end{array} \right] \\
 \hline
 \begin{array}{ccc}
 1 & 2 & 3
 \end{array} \\
 \Rightarrow 1 \left[ \begin{array}{c} 2 \\ +\text{Past} \end{array} \right] 3
 \end{array}$$

4. AGREEMENT TRANSFORMATIONS AND THE POSITION OF THE FEATURE [PERFECT]. In the preceding section, pastization and perfectization were seen to affect different segments. This is due to the fact that [Past] and [Perfect] are interpreted as features to be generated on the Auxiliary-segment and on the Verb-segment, respectively. [Progressive] was assigned to the Verb-segment on syntactic grounds in §2, but there is no evidence against assigning [Perfect] to the Auxiliary-segment, instead of to the Verb-segment. If we assign [Perfect] to the Auxiliary-segment, pastization and perfectization, both of which deal with the sequence of tenses, will be grouped together as "auxiliary agreement." That is, (21)(i) and (ii) will be com-

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12) Parenthesized are mutually exclusive elements one or the other of which must be chosen.

bined and presented as (22).

(22) Auxiliary agreement.

$$\begin{array}{c}
 X(\text{Aux } Y) \left[ \begin{array}{l} +\text{Past} \end{array} \right] \left[ \text{that } Z \left( \begin{array}{l} \text{a. Aux} \\ \left[ \begin{array}{l} +\text{Past} \\ -\text{Modal} \\ -\text{Perf} \end{array} \right] \\ \text{b. Aux} \\ \left[ -\text{Past} \right] \end{array} \right) U \right] s(\text{Aux } W) \left[ \begin{array}{l} +\text{Past} \end{array} \right] \\
 \hline
 \begin{array}{ccc}
 1 & 2 & 3
 \end{array}
 \end{array}$$

$$\Rightarrow \left\{ \begin{array}{l} \text{a.} \left[ \begin{array}{l} 2 \\ +\text{Perf} \end{array} \right] \\ \text{b.} \left[ \begin{array}{l} 2 \\ +\text{Past} \end{array} \right] \end{array} \right\}^3$$

There are three other agreement transformations than auxiliary agreement. They are "number agreement," "person agreement," and "subject-auxiliary agreement," which are to be formulated as (23), (24), and (25), respectively.

(23) Number agreement.

$$\frac{X \ N \ \text{Aux be} \ N \ Y}{\left[ \begin{array}{l} \alpha \text{Pl} \end{array} \right]} \quad \frac{\quad}{2} \quad \frac{\quad}{3} \Rightarrow \frac{1 \left[ \begin{array}{l} 2 \\ \alpha \text{Pl} \end{array} \right]}{3}$$

Condition:  $\alpha$  means + or -.

(24) Person agreement.

$$\frac{U \left( \begin{array}{l} 1 \\ [+ \alpha] \end{array} \right) W}{1} \left[ \begin{array}{l} X \ N_2 \\ [+ \beta] \end{array} \right] \frac{Y}{2} s \left( \begin{array}{l} Z \ N_1 \\ [+ \alpha] \end{array} \right) T \frac{\quad}{3} \Rightarrow \frac{1 \left[ \begin{array}{l} 2 \\ + \alpha \end{array} \right]}{3}$$

Conditions: 1.  $N_1$  and  $N_2$  are coreferential.

2.  $\alpha$  and  $\beta$  are person-features.

3. W or Z contains V  
[+person agreement].

(25) Subject-auxiliary agreement.

$$\frac{W \left[ \begin{array}{l} X \ N \\ [+ \alpha] \\ [+ \beta] \end{array} \right] \text{Aux } Y}{1} s \frac{Z}{2} \frac{\quad}{3} \Rightarrow \frac{1 \left[ \begin{array}{l} 2 \\ + \alpha \\ + \beta \end{array} \right]}{3}$$

Condition:  $\alpha$  and  $\beta$  are person- and number-features.

In (a) and (b) of (26), the predicate noun *student* is "unspeci-

fied" for the number-feature in the deep structures. Through number agreement, it comes to be negatively specified for [Plural] in (a), and positively specified for the same feature in (b). The embedded sentence of (c) in the deep structure is *I will come*. The feature [+I] (First Person) of the subject noun is replaced by the feature [+III] (Third Person) through person agreement. The operation of subject-auxiliary agreement is seen in all the three sentences. The person-and number-features of the subject noun are "copied" into the Auxiliary-segment, which originally lacks them

- (26)(a) That boy is a student.
- (b) Those boys are students.
- (c) John says that he will come.

It is now obvious that number agreement specifies a feature which was originally existent but unspecified, while person agreement is concerned with replacement of a given specified feature by another. Subject-auxiliary agreement is different from these two in that it is concerned with the "writing in" of new features. The third transformation also differs from the other two, en bloc, since, in it, agreement takes place between different types of segments, namely the Noun- and Verb-segments. Each of these three transformations affects the feature constitution of "a single segment." This fact entitles us to group them together as "agreement."

By transferring [Perfect] to the Auxiliary-segment, we can set up another agreement transformation called auxiliary agreement and achieve a much greater generality. Its function is to replace an originally specified feature by another and agreement takes place between the same type of segments, namely, the Auxiliary-segments, if not necessarily between the same features. Thus, it could be regarded as the same type as person agreement.

What remains for us to do in this section is to show how to arrange relevant segment transformations to derive a surface structure from a deep structure in which [Perfect] and [Progressive] are assigned to the Auxiliary- and the Verb-segments, respectively. (27) indicates what segment transformations are to be applied and in what order.

- (27)(i) the PERFECT TRANSFORMATION, which introduces the segment [+Perfect] to the immediate right of the Auxiliary-segment only when the latter segment is positively specified for [Modal],
- (ii) the PROGRESSIVE TRANSFORMATION, which introduces the segment [+Progressive] to the immediate left of the Verb-segment,
- (iii) the PROGRESSIVE-AFFIX TRANSFORMATION, which introduces the segment [+Affix, +Progressive] to the immediate right of the segment which is next to the Progressive-segment on the right side,
- (iv) the PERFECT-AFFIX TRANSFORMATION, which introduces the segment [+Affix, +Perfect] to the immediate right of the segment which is next to the Perfect-segment on the right side.

It is interesting to note that (4) and (27) have quite the same ordering of quite the same transformations and that they differ solely in the details of the first transformation, namely the perfect transformation, the difference being due to the different treatments of the feature [Perfect]. From (27)(i), it also follows that the auxiliary-incorporation transformation<sup>13)</sup> is to be limited to the copula.

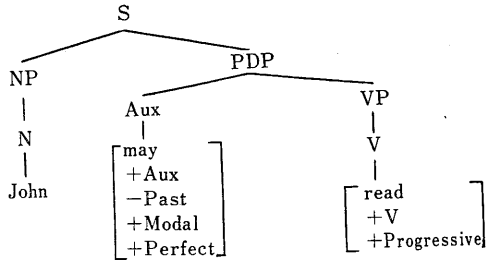
It is now easy to understand how (28)(a) becomes (29) through the intermediate stages shown in (28)(b)–(e).

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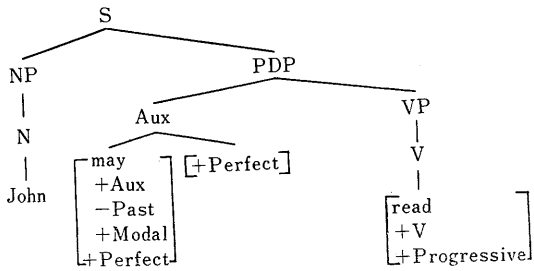
13) For this transformation, see Jacobs and Rosenbaum, p. 124.

(28)

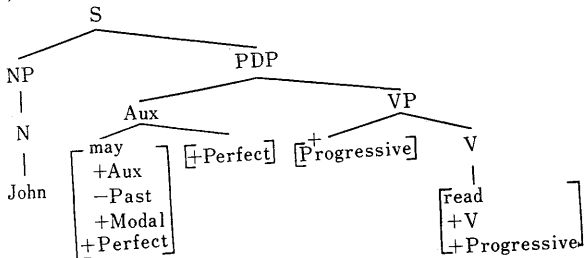
(a)



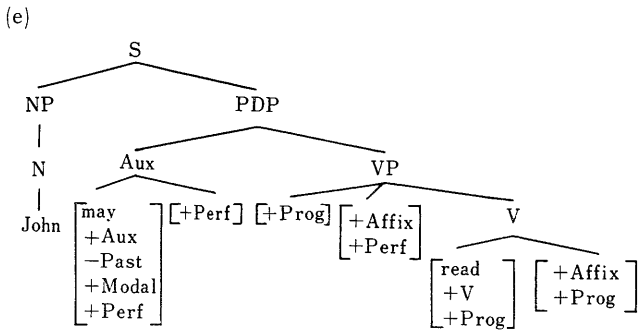
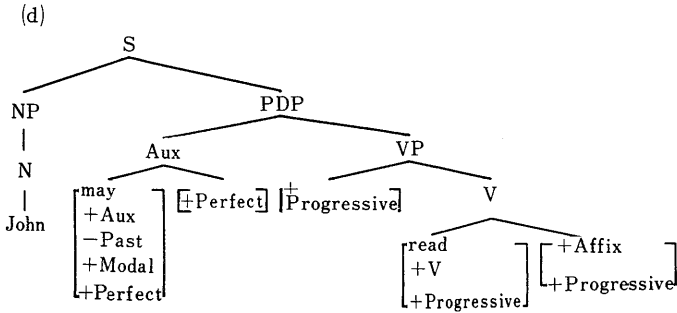
(b)



(c)



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(29) John may have been reading.

5. THE SEMANTIC BASIS OF THE PROPOSED INTERPRETATION. In the preceding sections, we discussed syntactic grounds for assigning the two English aspectual features [Perfect] and [Progressive] to different segments. This treatment of the two features seems to be justified on semantic grounds, too, or rather there seems to be a semantic basis for this syntactic treatment.

According to Twaddell,<sup>14)</sup> the grammatical meaning of the "be+ing modification" is composite and it is versatile precisely because its semantic function overlaps semantic components of lexical verbs in English. He distinguishes five semantic clas-

14) W. F. Twaddell, *The English Verb Auxiliaries*, 2nd edition (Providence, 1963), pp. 9-12.

ses of lexical verbs with respect to their having inherent or potential ingredients of duration, limitation of duration, and repeatability. The *be*+ing modification does not normally occur with his fifth class of verbs and its grammatical signal differs according to which of the other four classes it cooccurs with. This incompatibility of the semantic components of progressive with those of a class of lexical verbs and the dependency of its grammatical meaning on the meaning of the verb it cooccurs with indicate that there is a semantic ground for considering [Progressive] as a feature on the Verb-segment.

The grammatical meaning of perfect or the "*have*+participle modification" is much easier to define than that of progressive. Twaddell adequately specifies its signal as "current relevance."<sup>15</sup> Although it is sometimes maintained that perfect is as versatile as progressive,<sup>16</sup> that versatility is obviously that of lexical verbs rather than of the modification itself. The perfects of (30) and (31) are said to imply duration and completion, respectively, and in (32) repetition is said to be implied by the (progressive) perfect, but these "meanings" are signaled not by the *have*+participle modification but by the lexical verbs and the *be*+ing modification cooccurring with the lexical verbs.

(30) I have known him from childhood.

(31) He has shattered vases.

(32) He has been shattering vases.

The verbs *know* and *shatter* are to be assigned to Twaddell's fifth and third classes, respectively. That is, *know* is semantically "durational, not normally subject to repetition," while *shatter* is "nondurational, with possible repetition."

The meaning of perfect may be further determined by other

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15) *Ibid.*, p. 8.

16) Akira Ota, *Tense and Aspect of Present-Day American English* (Tokyo, 1963), pp. 56-57.

elements than lexical verbs or the *be+ing* modification. (33) and (34) are said to have perfects implying experience and repetition, respectively, but these meanings seem to be signaled by the adverbials *once*, *many a time*, and *often*.

(33) I have read it once.

(34) Many a time, when life went hard with me, I have betaken myself to the Stoics, and not all in vain. Marcus Aurelius has often been one of my bedside books ...—Gissing<sup>17)</sup>

In any case, as Twaddell says, perfect “explicitly links an earlier event or state with the current situation” and is said to mean current relevance in every instance. Perfect is semantically more closely connected with tense than with the verb and serves only to make clearer the semantic ingredients of lexical verbs or of progressive plus lexical verbs. Progressive, on the other hand, affects the meanings of the lexical verbs it cooccurs with or makes explicit their potential semantic ingredients. It is thus much more closely connected with the verb than is perfect. Although, as Ota maintains, both perfect and progressive may be considered as “secondary tenses,” only the latter signals the mode of action and should be called “aspect” in the strict sense of the term.<sup>18)</sup>

It has now been made clear on both syntactic and semantic grounds that perfect and progressive should more adequately be assigned to the Auxiliary- and Verb-segments, respectively.

It remains to say something about the semantic interpretation of perfect and progressive. Just as the meanings or “readings” of constituents are amalgamated through projection to derive the meaning of a higher constituent,<sup>19)</sup> the semantic component of a feature introduced into a segment by a seg-

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17) Quoted from Jespersen in Ota, p. 57.

18) Ota, pp. 118-119.

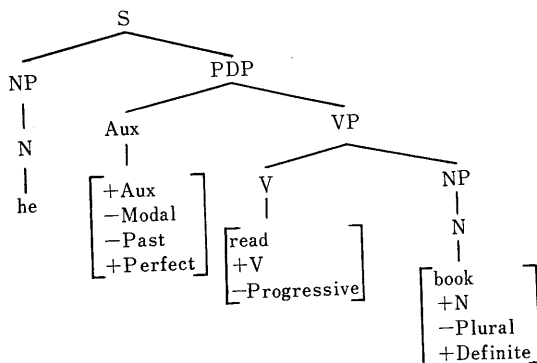


ment-structure rule is amalgamated with that of another or with the inherent semantic components of the lexical item to derive the meaning of that segment. The deep structures of (35) and (36) are roughly represented in (37) and (38), respectively.

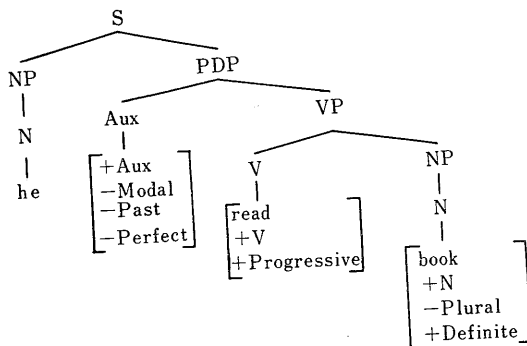
(35) He has read the book.

(36) He is reading the book.

(37)



(38)



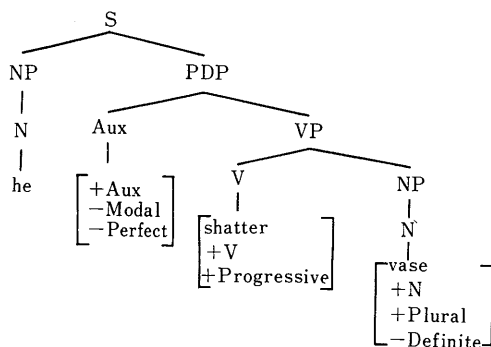
19) Jerrold J. Katz and Jerry A. Fodor, "The Structure of a Semantic Theory," in *The Structure of Language*, ed. by J. A. Fodor and J. J. Katz (New Jersey, 1964), pp. 503-516.

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The meaning of the Auxiliary-segment in (37) is derived almost solely from the meaning of [+Perfect]. The meaning of the Verb-segment in (38) is derived by amalgamating the meaning of the [+Progressive] feature with the semantic components of the lexical verb. The [+Progressive] feature is, as I already said, semantically composite and has different "selectional restrictions" in its different meanings just like semantically versatile words. Thus, the [+Progressive] feature may be said to have different selectional restrictions in (38) and (40), which is a deep structure tree of (39) depending upon the difference of the lexical verbs in them.

(39) He is shattering vases.

(40)



The feature [+Progressive] in (38), it might be maintained, has the meaning "limitation" and the selectional restriction <durational, with possible limitation>, while, to the same feature in (40), the meaning "repetition" and the selectional restriction <nondurational, with possible repetition> could be attributed.