

The Structure of English Sentences

K. Hale (1978)

I. Parts of Speech (features):

- (a) V, AUX, N, A, P, ...;
- (b) S = AUX (i.e., the structure headed by AUX is symbolized S).

II. Phrase Structure:

- (a) $X^3 \rightarrow \text{Spec}_{X^2} X^2$
 $X^2 \rightarrow \text{Spec}_{X^1} X^1$
 $X^1 \rightarrow X \text{ Complements}$
- (b) $S^4 \rightarrow X^3 S^3$

III. Specifiers:

- (a) Spec_{S^2} :
 - (i) that, whether, WH (wh-expressions);
 - (ii) delete. (If not, indirect discourse.);
 - (iii) Cor.
- (b) Spec_{S^1} :
 - (i) WH, N^3 (subject);
 - (ii) never, only rarely, ...;
 - (iii) Q (possibly by interpretation).
- (c) Spec_{V^2} : N^3 (subject);
 Spec_{V^1} : not, never, ever, ...

IV. The Auxiliaries (AUX):

- (i) tense (n't);
- (ii) the modal auxiliaries (can, could, may, ...) (n't);
- (iii) to (of the to-infinitive);
- (iv) selects V^3 .

V. The Aspectual Auxiliary Verbs:

(a) have:

(i) selects [+V, +perf, -A]³ (active);

(ii) lacks progressive form, thus the ill-formed

*John is having arrived.

(iii) the progressive must be distinguished from the morphologically identical nominalization in -ing, for the following is well formed,

John's having arrived late

(iv) cannot appear as [+perf]³ complement of have, thus

*John has had arrived.

*John's having had arrived late

(b) be:

(i) selects [+V, +prog]³, [+V, +perf, +A]³ (passive);

(ii) Ross's Double-Ing Filter blocks the following:

*John is being studying Turkish.

*John's being studying Turkish surprised everyone.

Compare:

*John is trying studying Turkish.

*John's trying learning Turkish is a joke.

beside well-formed

John tried learning Turkish.

John's trying to learn Turkish is a joke.

(c) Like true verbs, the aspectual auxiliaries appear in to-infinitives (John is believed to have learned Turkish; John is believed to be learning Turkish) and with modal auxiliaries (John may have learned Turkish; John may be learning Turkish). But they also have characteristics which they share with the auxiliaries:

(i) they combine with tenseⁿ't;

(ii) they may not be preceded by doⁿtense(ⁿ't).

I will assume tentatively that have and be are verbs, rather than members of the AUX category, and that the two bits of AUX-like behavior are to be accounted for by rule (e) below, a rule similar in its effect to the Have-Be Raising rule of Klima (1966), Emonds (1970), and Jackendoff (1972, 1977). (But see VIII below.)

VI. Rules of Form:

- (a) Specifier Fronting-

$$\text{AUX} - \text{Spec}_{V1} \Rightarrow 2 \ 1 \ 0$$

- (b) not-Enclisis-

$$\text{not} - \text{AUX} \Rightarrow 0 \ 2 \ \# \ 1$$

- (c) do-Support-

$$[_{\text{AUX}} \text{tense}] \Rightarrow [_{\text{AUX}} \text{do} + \text{tense}]$$

- (d) Affix Hopping-

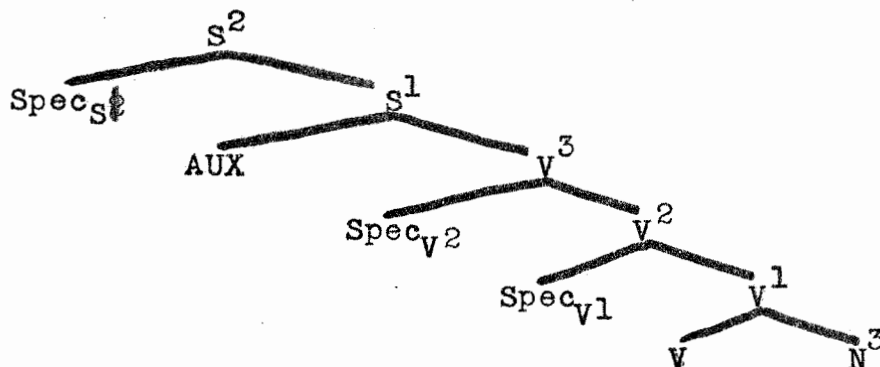
$$\text{tense} - V \Rightarrow 0 \ 2 \ \# \ 1$$

- (e) Aspectual Auxiliary Verb Raising-

$$\text{tense (n't)} - (N^3) - \{\text{have, be}\} \Rightarrow 3 + 1 \ 2 \ 0$$

VII. Exemplification:

- (1)



- (a) John studied Turkish.

(John - past - PRO - \emptyset - study - Turkish)

- (b) John never studied Turkish.

(John - past - PRO - never - study - Turkish)

- (c) John didn't (ever) study Turkish.

(John - past - PRO -(ever)- study - Turkish)

(d) Did John ever study Turkish?

(Q - past - John - ever - study - Turkish)

(e) Never did John study Turkish.

(never - past - John - \emptyset - study - Turkish)

(f) Never did John not finish his work.

(never - past - John - not - finish - his work)

(g) What did John ever study?

(what - past - John - ever - study - t)

(h) What does John never eat?

(what - pres - John - never - eat - t)

(i) What doesn't John ever eat?

(what - pres - John - ever - eat)

(j) Who studies Turkish?

(who - pres - PRO - \emptyset - study - Turkish)

(k) (John tried) to learn Turkish.

((John tried)- PRO - to -PRO - learn - Turkish)

(l) (John tries) not to make mistakes.

((John tries)- PRO - to - PRO - not - make - mistakes)

(m) John can never finish his work.

John never can finish his work.

(John - can - PRO - never - finish - his work)

(2) The progressive: [+V, +prog, +A];

Nominalizations: [+V, +N];

The bare infinitive: [+V, -A, -N] (i.e., V³ as in IV (iv)).

(a) (I heard John) practicing his Turkish.

((I heard John) - PRO - \emptyset - practicing - his Turkish)

(b) (I caught John) not wearing his braces.

((I caught John) - PRO - not - wearing - his braces)

(c) John's never finishing his work (bothers me).

(John - never - finishing - his work - (bothers me))

(d) (I helped John) finish his work.

((I helped John) - PRO - \emptyset - finish - his work)

(e) (I helped John) not make a mistake.

((I helped John) - PRO - not - make - a mistake)

(3) S³ and S⁴:

that-Complements [+AUX, -N]³;

relative clauses [+AUX, +N]⁴;

exclamatory expressions [+AUX, (+N?)]⁴;

topicalizations [+AUX, -N]⁴;

sentences with 'sentential subjects' [+AUX, -N]⁴ (with [+AUX, -N]³ in 'topic' position).

(a) (I believe) that John will never learn Turkish.

((I believe) that - John - will - ^{PRO-}_^ never - learn - Turkish)

(b) the language which John will never learn ...

(the language - which - John - will - PRO - never - learn - t)

(c) (I am amazed at) what big eyes gramma has.

((I am amazed at) what big eyes - \emptyset - gramma - pres - PRO - \emptyset - have)

(d) Turkish John will never learn.

(Turkish - \emptyset - John - will - PRO - never - learn - t)

(e) That John learned Turkish surprised everyone.

(that John learned Turkish - \emptyset - PRO - past - PRO - \emptyset - surprise - everyone)

VIII. Problems:

- (1) *John does never eat fish. (Possible solution, VIA obligatory where Spec is negative and AUX = tense; plus some fixing up of enclisis of not.)

- (2) *the man whom does John know ... (Possible solution, Brame's explanation of the Island phenomena (1978))
- (3) *the man whom hardly ever does John see ... (Possible solution, Brame's (?))
- (4) *Did John try to ever learn Turkish. (Possible solution, opacity, the SSC (Chomsky 1973, etc.) (??))
- (5) Too many sources for n't. (Possible solution, all by enclisis; requires OK John said that Bill he likes t, and other things; loses possible explanation of *That that John learned Turkish surprised every one.)
- (6) The unseemliness of the Aspectual Auxiliary Verb Raising rule. (Possible solution: have and be are pseudo-AUX (i.e., [+V, +AUX]); the tensed forms are in the base, in complementary distribution with the modals. The modals 'select' any [+V], while tense 'selects' only true verbs (i.e., [+V, -AUX]). This solution involves a complication of the base in place of an unlikely rule of form.)