

Deriving the English verbal system via head movement and the functional hierarchy

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1 The English verbal system (a summary of major features)

The English verbal system distinguishes **tense** [\pm past], **aspect** [\pm perfect] [\pm progressive] and **voice** [\pm passive]:

- | | | |
|-----|------------------------------|-----------------------------------|
| (1) | a. <i>I eat</i> | i. <i>I am eaten</i> |
| | b. <i>I ate</i> | j. <i>I was eaten</i> |
| | c. <i>I have eaten</i> | k. <i>I am being eaten</i> |
| | d. <i>I had eaten</i> | l. <i>I was being eaten</i> |
| | e. <i>I am eating</i> | m. <i>I have been eaten</i> |
| | f. <i>I was eating</i> | n. <i>I had been eaten</i> |
| | g. <i>I have been eating</i> | o. <i>I have been being eaten</i> |
| | h. <i>I had been eating</i> | p. <i>I had been being eaten</i> |

In addition there are a number of '**modal verbs**', principally:

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|-----|---|
| (2) | a. <i>will</i> (denotes future tense), <i>would</i> |
| | b. <i>shall</i> , <i>should</i> |
| | c. <i>can</i> , <i>could</i> |
| | d. <i>may</i> , <i>might</i> |
| | e. <i>must</i> |

Infinitive forms may be preceded by the particle *to*.

I overlook here: agreement, subjunctive forms, nominal/adjectival use of non-finite verbal forms, auxiliary *do*, etc.

2 Cinque's hierarchy

Cinque (1999, p. 106) posits the following universal clausal structure:

- (3) ... [Mod_{Speech Act} [Mod_{Evaluative} [Mod_{Evidential} [Mod_{Epistemic} [T(Past) [T(Future) [Mod_{Irrealis} [Mod_{Necessity} [Mod_{Possibility} [Asp_{Habitual} [Asp_{Repetitive(I)} [Asp_{Frequentative(I)} [Asp_{Celerative(I)} [Mod_{Volitional} [Mod_{Obligation} [Mod_{Ability/Permission} [Asp_{Celerative(II)} [T(Anterior) [Asp_{Terminative} [Asp_{Continuative} [Asp_{Perfect(?)} [Asp_{Retrospective} [Asp_{Proximate} [Asp_{Durative} [Asp_{Generic/progressive} [Asp_{Prospective} [Asp_{SgCompletive(I)} [Asp_{PlCompletive} [Voice [Asp_{Celerative(II)} [Asp_{SgCompletive(II)} [Asp_{Repetitive(II)} [Asp_{Frequentative(II)} [Asp_{SgCompletive(II)} ...

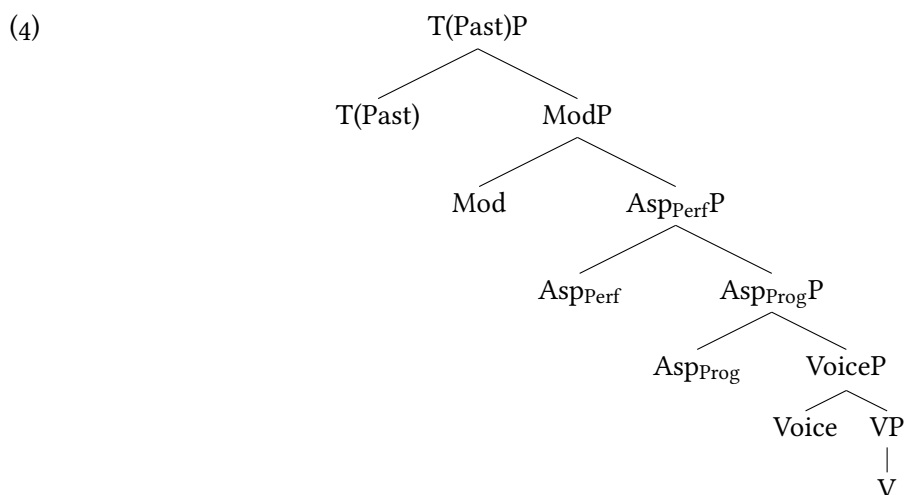
Here: I aim to show that the English verbal system described above can be derived from Cinque's hierarchy by reference to head movement.

I will also (§5) discuss how this proposal relates to one other account of (a part of) the English verbal system.

3 English verbs, head movement and the hierarchy

For our purposes I assume only a simplified version of (3) as in (4):

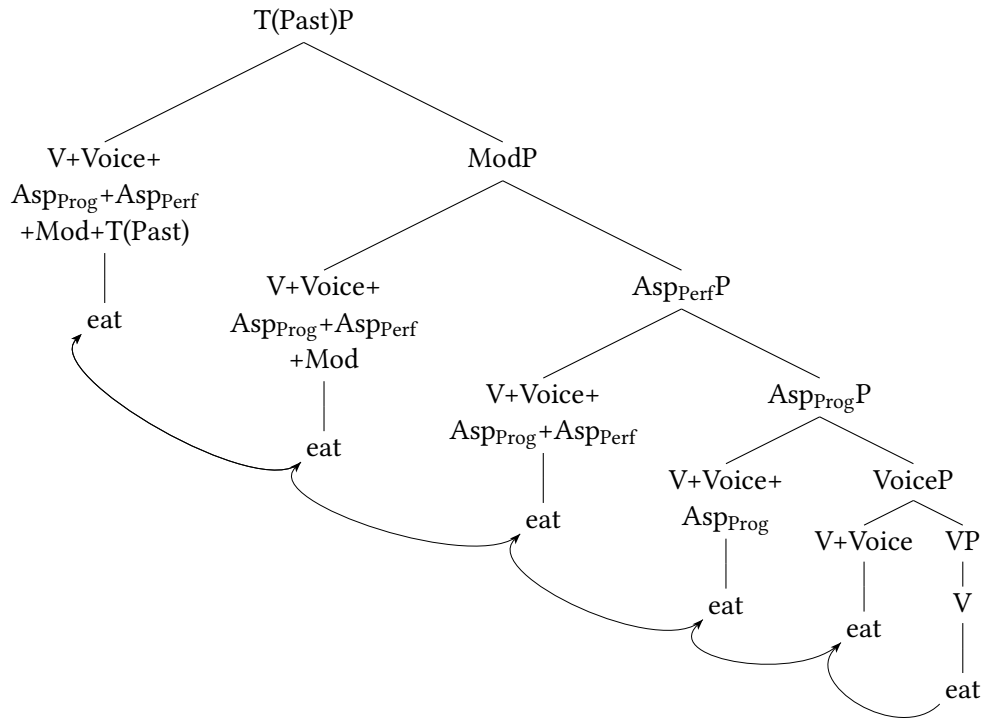
- heads not morphosyntactically distinguished in English are omitted;
- the various modal heads are collapsed into a single Mod°.
- I assume *will* to be related to Mod features, though if it is in fact related to T(Future) it makes little difference.



Each functional head is associated with the following feature specifications, among others: T(Past) with $[\pm\text{past}]$, Asp_{Perf}P $[\pm\text{perf}]$, Asp_{Prog}P $[\pm\text{prog}]$, Voice $[\pm\text{pass}]$; Mod $[\pm\text{necessity}]$, $[\pm\text{possibility}]$ etc.

Basic idea: verbal forms (simple and periphrastic) are formed through successive upward head movement / incorporation of V and the functional heads.

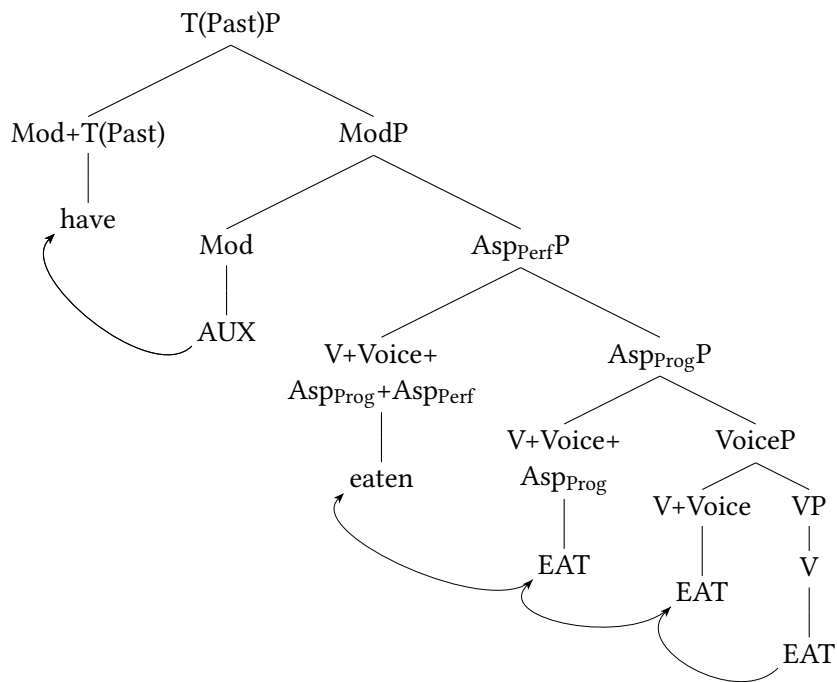
(5) *I eat*



Same for *I ate* but with a different specification of T(Past): [+past] not [-past]

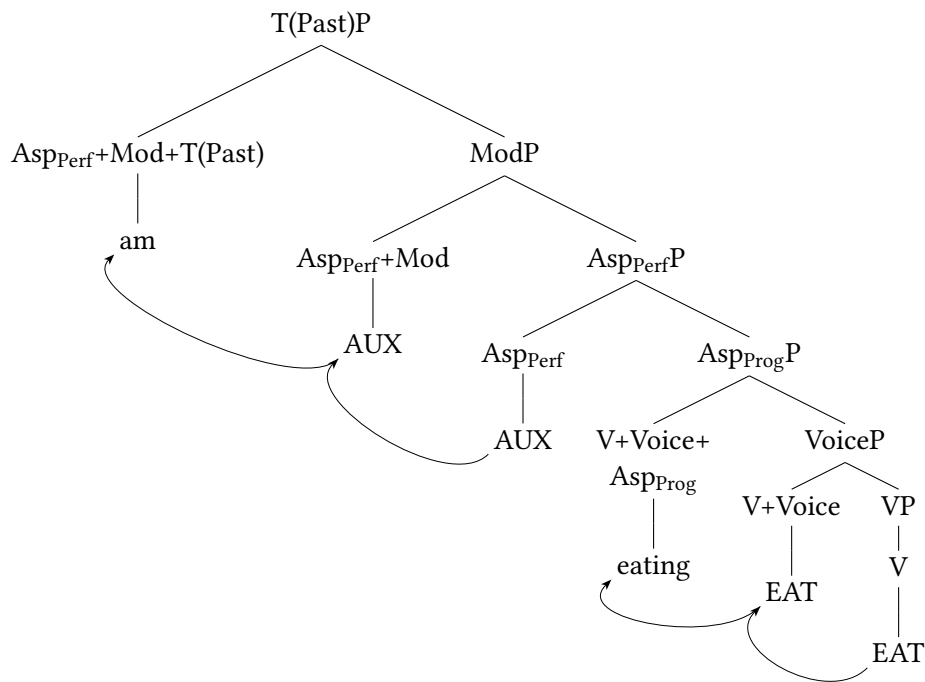
- An issue here: as is well known, main verbs do not actually appear to be spelled out in T in English.

(6) *I have eaten*

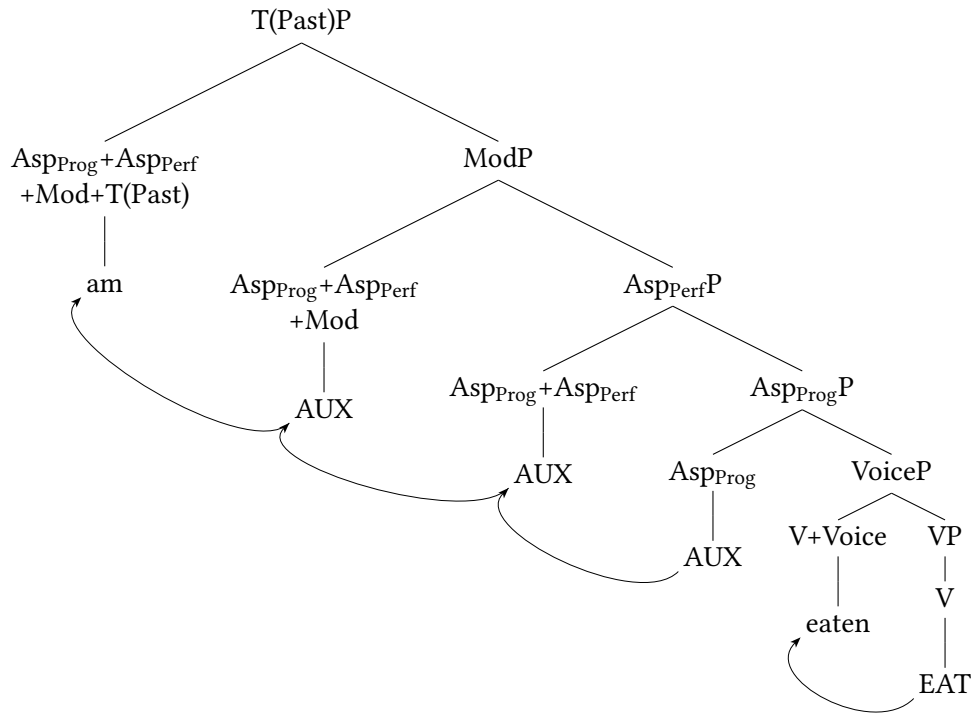


Same for *I had eaten* but with [+past] T(Past)

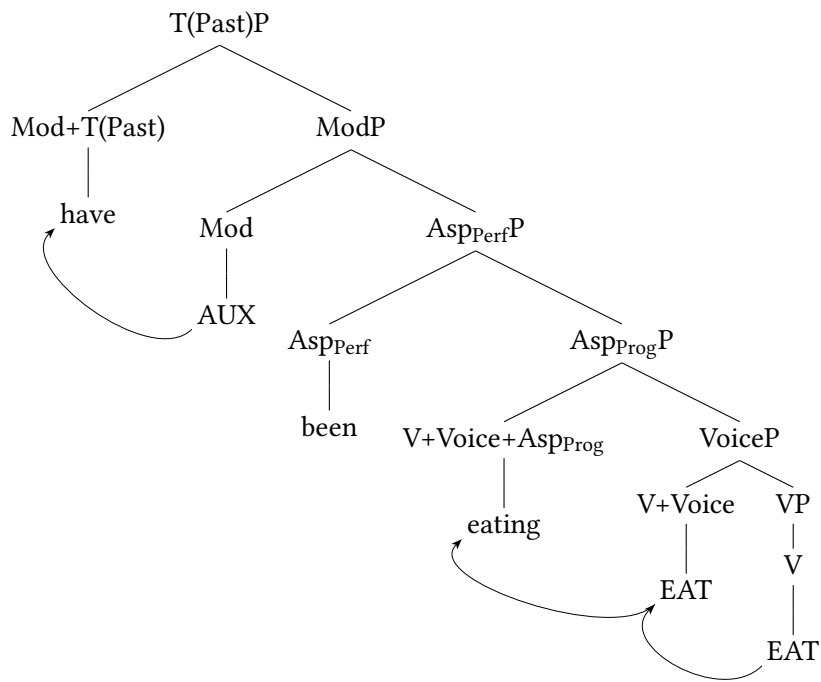
(7) *I am eating*



(8) *I am eaten*



(9) *I have been eating*



- Heads incorporating V are spelled out as a form of the lexical verb:
 - in T(Past): [–past] a simple present form (*eat(s)*); [+past] a simple past form (*ate*);
 - in Mod: as the (bare) infinitive (*eat*);
 - in Voice or Asp_{Perf}: a past participle (*eaten*);
 - in Asp_{Prog}: a present participle (*eating*).
- Other heads/complexes of heads are spelled out as auxiliaries or *to*. A auxiliary head is spelled out as follows:
 - as a modal when it has the right Mod features ([+necessity] *must*, [+possibility] *can/could* etc.) and a T(Past) feature (I leave aside the details of the features of different modals);
 - as *to* when non-finite (with unspecified Tense features—though possibly an additional Finiteness head may be involved);
 - otherwise as a form of HAVE when it has a [+perf] feature and also has Mod features (±);
 - in all others cases as a form of BE.
 - the forms of HAVE and BE (simple present, simple past, stem, past participle, present participle) are governed in the same way as the forms of lexical verbs.
- The spelling out of higher heads as auxiliaries is forced when the lower heads do not incorporate into them (via head movement).
 - The next section will discuss a mechanism by which incorporation may be brought about or prevented.

4 Defective goals

Roberts (2010, see especially ch. 3) relates head movement / incorporation to **defective goals**:

- ‘A goal G is defective iff G’s formal features are a proper subset of those of G’s probe P.’ (Roberts 2010, p. 62)
- A goal incorporates into a probe only if it is defective, i.e. incorporation of a lower head G into a higher head P takes place only when all the features of G are also found on P.
- Lower copies of the defective goal are generally deleted in the phonological output, which gives the impression of movement of G to P.

Present application—the following heads (and all heads higher than them) *lack* the specified features :

- T(Past): a feature F₁ found on a positively valued Mod ([+necessity], [+possibility] etc.);
- Non-finite T(Past): a Mod feature;

- Mod: a feature F2 found on [+perf] Asp_{Perf};
- Asp_{Perf}: a feature F3 found on [+prog] Asp_{Prog};
- Asp_{Prog}: a feature F4 found on [+pass] Voice.

Otherwise all heads have (unvalued) features corresponding to the features of all heads lower than themselves.

Nature of these features remains open to discussion:

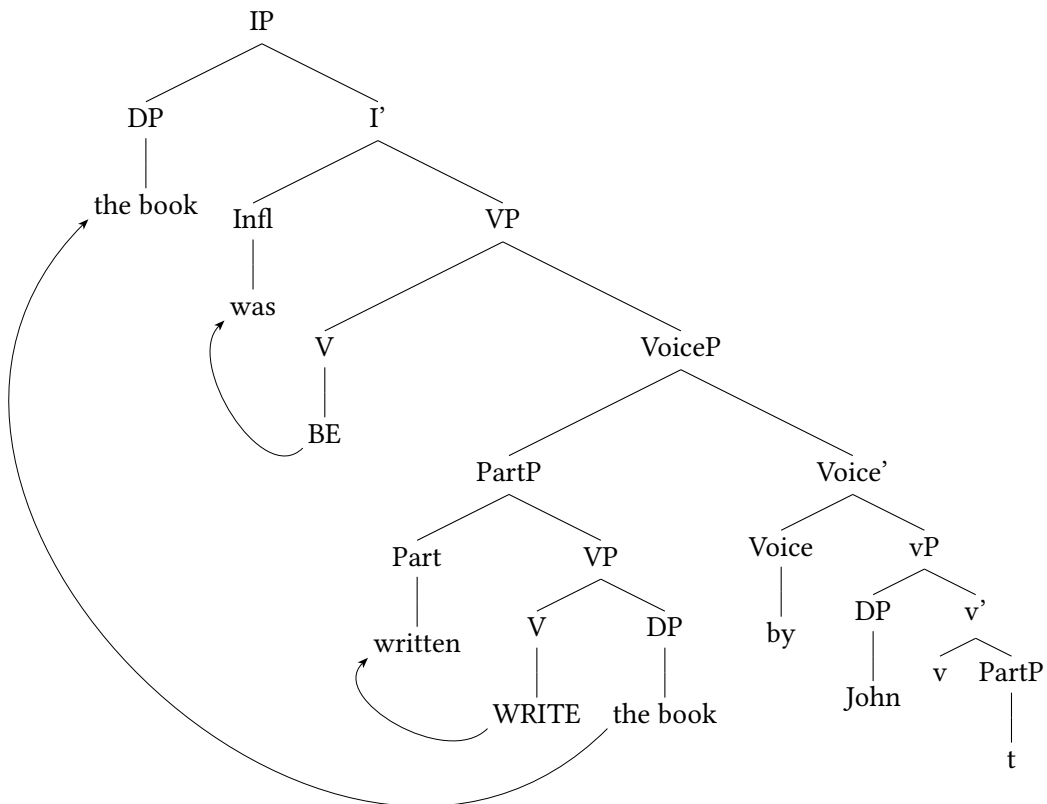
- they could just be abstract features like [+pastpart];
- but participles historically associated with agreement, so features like [gender] also a possibility.

5 Comparison with Collins' analysis

This analysis differs from that of many other authors.

E.g. compare Collins (2005), who argues for the following structure for the English passive:

(12) *the book was written by John*



A key element of this analysis is that *the external argument (EA) is first-merged in Spec,vP, just as in actives*. Thus Baker's (1988, p. 46) Uniformity of Theta-Assignment Hypothesis (UTAH) is not violated.

Note also:

- no difference between past participle and passive participle suffix—in both cases Part incorporates V;
- PartP moves to Spec,VoiceP in the passive;
- *by* is the realisation of Voice in long passives;
- *by* assigns accusative Case;
- in short passives both Voice and the EA have zero phonetic realisation.

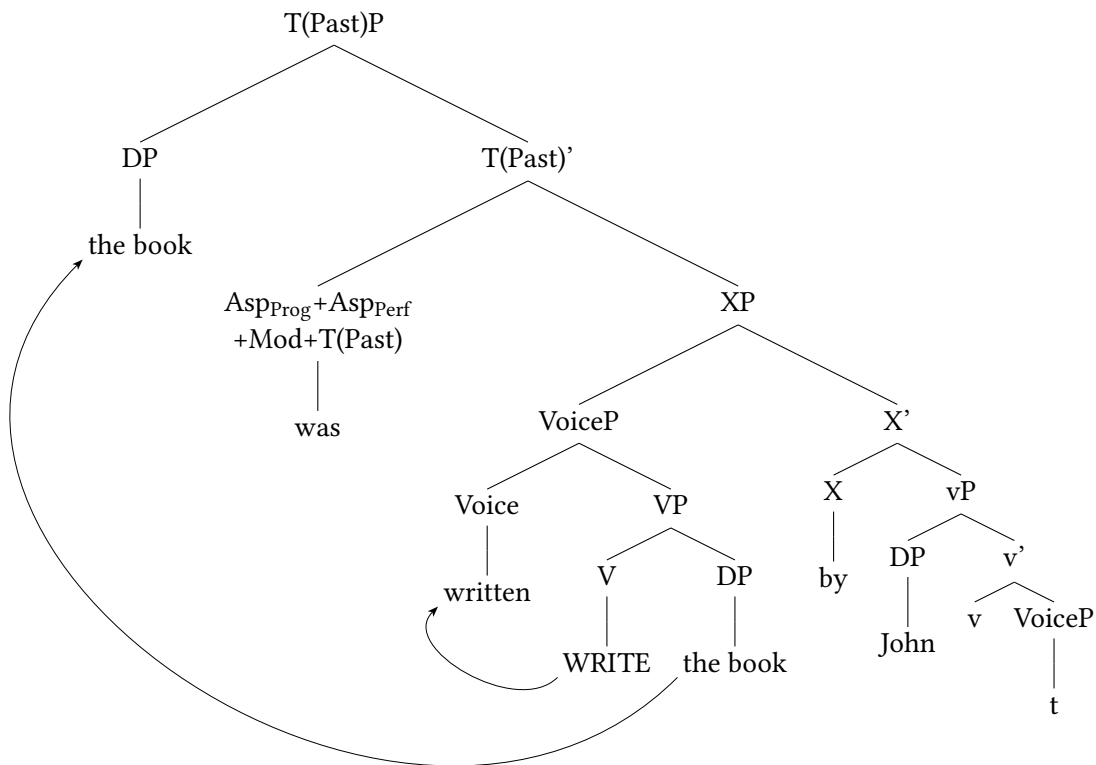
Collins's account successfully explains much of the behaviour of passives (and periphrastic perfects) in English **but appears superficially to conflict with my account above**.

However I argue that the differences are largely a matter of labelling:

- Collins's PartP in passive sentences corresponds to my VoiceP;
- Collins's VoiceP corresponds to some other, higher XP to which VoiceP moves:
 - which XP remains open to debate;
 - Cinque (1999, pp.102–3) claims that passive participles in Italian generally move upward to T(Anterior);
 - but cross-linguistic variation possible.
- (vP, the phrase in whose Spec the EA is first-merged, is not included in the structures given above but can be assumed to exist).

Thus most elements of Collins's analysis can in fact be retained.

(13) *the book was written by John*



However, in my analysis perfect participles and passive participles do belong to separate categories.

- Collins's reasoning for treating the two as the same is however weak (resting primarily on the shared morphology, p. 85).

Collins also claims (pp. 90–91):

- PartP must be licensed by:
 - (a) c-selection by the auxiliary HAVE, or
 - (b) movement to Spec, VoiceP.
- auxiliary HAVE obligatorily c-selects for PartP.
- Voice requires PartP to move to Spec, VoiceP.

However:

- Collins's approach offers no principled explanation for why PartP appears in passive/perfect clauses.
 - Cf. my approach where the participle form arises from the features of functional heads.

- Collins does not specify how licensing/c-selection might be formalised featurally (admittedly this could nevertheless be attempted);
 - My approach gives a clearer idea of the necessary featural make-up of heads.
- There is a redundancy in Collins’s rules:
 - perfect construction is brought about by *both* need to license PartP *and* c-selection properties of HAVE;
 - passive construction is brought about by *both* need to license PartP *and* movement required by Voice.
 - My approach does not involve such redundancies.

Thus: my approach overcomes some issues that are present in Collins’s work but his key insights can be retained.

6 Conclusion

To summarise and conclude:

- Cinque’s clausal hierarchy allows (many facets of) the English verbal system to be derived in a natural way via head movement
 - this furnishes further empirical support for the hierarchy;
- the head movement in question is amenable to an analysis in terms of defective goals (Roberts 2010);
- most differences between this account and Collins’s are reconcilable
 - this may also be true with regard to other differing accounts;
- some issues remain outstanding.

References

- Baker, M. (1988). *Incorporation*. Chicago: Chicago University Press.
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- Cinque, G. (1999). *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford: Oxford University Press.
- Collins, C. (2005). A smuggling approach to the passive in English. *Syntax* 8(2), 81–120.
- Roberts, I. (2010). *Agreement and head movement: clitics, incorporation, and defective goals*. Cambridge, Mass.: MIT Press.