Auxiliaries and head movement

1 Tense and the main verb

Two types of tense morphology: *bound* and *free*.
English present and past tense morphology are bound, and shows up on the verb. The verb can show ϕ-agreement.

(1) a. John studies the clarinet.
    b. I study the clarinet.

(2) a. John studi-ed the clarinet.
    b. We studi-ed the clarinet.

The English future is a free morpheme, *will*. When *will* is used, the verb no longer shows subject agreement; it must be a *nonfinite* form, like *be*.

(3) John will be/*is a student.

In French, present and future morphology appears on the verb, which shows subject ϕ-agreement, but the past tense uses a free morpheme 'have' which shows agreement and a special PAST form of the verb.

(4) a. Jean manger-a des pommes.
       Jean eat-FUT.3sg some apples
    b. Je manger-ai des pommes.
       I eat-FUT.1sg some apples

(5) a. Tu as mangé des pommes.
       you have.2sg eat-PAST some apples
    b. Nous avons mangé des pommes.
       we have.1pl eat-PAST some apples

Consider the position of adverbs in tenses which use auxiliaries:

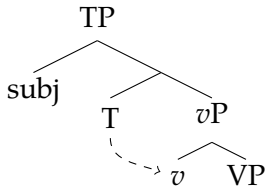
(6) John will often eat apples.

(7) Jean a souvent mangé des pommes.
    Jean have.3sg often eat-PAST some apples

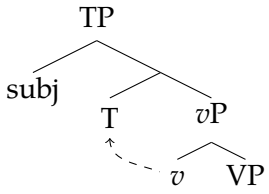
Let's assume such adverbs are adjoined to *v*P. If the auxiliary is pronounced at T and the verb in *v*P, this word order is explained in both languages.

Q: How does the tense and the main verb get pronounced together as one word, for example in the English past or present or French future or present? Two options:

(Somehow) pronounce tense low on v/V:



(Somehow) pronounce the verb high with T:



The answer in English and French seem to be different!

(8) John (often) ate/eats (*often) apples.

(9) Jean (*souvent) manger-a/mange (souvent) des pommes.
Jean often eat-FUT.3sg/eat-PRESENT.3sg often some apples

We say that French has *V-to-T* movement, but English main verbs do not.
In all of these cases, the verb needs information about tense — or more generally, *inflection* — which we encode as [uInfl: ___]. The two options above correspond to different operations:

(10) **Agree**(α, β; F) (read: 'α and β agree in F'; see Adger p. 168)
For any syntactic objects α and β with matching feature F, where α c-commands β:
a. let the value of F on α and the value of F on β be equal;
b. if F is uninterpretable on α or β, check the feature (let uF = ~~uF~~).

(11) **Move$_{\text{head}}$**(X, Y) (read: 'Y head-moves to X')
If Y is a head with feature F, X a head with a matching feature F, and X c-commands Y, and F is a strong inflectional feature on either Y or X, then
a. check the strong features F* on X and/or Y: ~~F*~~;
b. mark Y as as deleted (~~Y~~); and
c. replace X with 

, which should be pronounced together as a word.

We might say that English T has a matching [Infl:...] feature which can value v via Agree, but French T has [Infl*:...] which triggers head-movement. In general, however, we will not worry about explaining exactly where and when head-movement occurs in this class.
We now also have an operation for V-to-v movement in English: Move$_{\text{head}}$ motivated by [uV*] on v.

2 More auxiliaries in English

(12) **Some auxiliaries in English:**[1]

a. Han *might* reconsider.

b. Darth *will* die.

c. Leia *has* written a message.

d. Somebody *is* shooting at us.

e. The Falcon *could have* escaped if the engine *had* worked.

f. Luke *has been* training in the Dagobah system.

Each auxiliary requires a certain kind of verb to follow:

(13) modal + infinitive

(14) perfect *have* + *-en*

(15) progressive *be* + *-ing*

We can put these elements together, but only in a certain order:

(16) Lando may have been making a deal.

Adger suggests putting this order in the Hierarchy of Projections:

(17) **Hierarchy of Projections (modified, to be modified again):**
T > (Perf) > (Prog) > *v* > V

We assume modals are in T, but why not add a separate head for this too? Because modals are systematically absent in *nonfinite clauses*:

(18) John wants to {*can/be able to} fly.

(19) I expect Mary to {*might/maybe} come tonight.

We analyze the morpheme *to* itself as a version of T, explaining the *complementary distribution* with modals and (past, present, future) tense.
Nonfinite clauses can, however, include perfects and progressives:

(20) I expected Susan to *have* called by now.

(21) I expected Kevin to *be* writing right now.

[1] Some data here from a handout by Jason Merchant.

3 Negation

The negation *not* in English introduces a puzzle:

(22) a. Han might *not* reconsider.
b. Leia has *not* written a message.
c. The Falcon is *not* working.
d. Lando may *not* have been making a deal.

Q: What's the generalization for the position of negation?
A: There's always one auxiliary before the negation *not*.

(23) **Hierarchy of Projections (modified):** (Adger, p. 195)
T > (Neg) > (Perf) > (Prog) > v > V

Adger's solution: Neg is a head. Always make sure one auxiliary moves to T, if T is not a free morpheme.[2]

4 *Do*-support and 6 contexts

Notice that right now, if we do not have an auxiliary, we have a problem:

(24) * John not eats/ate a sandwich.

As we saw above (in comparison with French), main verbs in English are not able to move to T, even though auxiliaries are. In certain contexts, where T is required to be pronounced, the auxiliary *do* is inserted. This is called *do-support*.

(25) **An example of *do*-support:**
John does not eats/ate a sandwich.

Six contexts that require a pronounced T, which can trigger *do*-support:
Baseline: Mary ate her soup.

1. **Sentential negation with *not*:**

   (26) Mary did not eat her soup.

   Compare this to English *never* which is simply an adverb and does not interact with auxiliaries and tenses:

[2] In class, I will not worry about how exactly this works. See Adger chapter 5 for details.

(27) John never eats/ate a sandwich.

2. **Emphatic *do* (i.e. "verum focus"):**

   (28) Mary DID eat her soup.

3. **vP ellipsis:**

   (29) Sue ate her soup and Mary did Δ, too.

4. **vP movement**

   For example, in cleft, pseudocleft, topicalization tests of v/VP-looking constituents:

   (30) [Eat her soup], Mary did ___.

5. **Matrix (unembedded) questions:**

   (31) Did Mary ___ eat her soup?

6. **Negative inversion:**

   (32) [Not a single soup] did Mary ___ eat ___.

   In questions and neg inversion, T moves to C. We will discuss this *T-to-C movement* more next week.

All six of these constructions break the local connection between T and v, forcing features to be pronounced on T using a free morpheme:

(33) **Adger's Pronouncing Tense Rule (PTR):**
In a chain (T[tense], v[uInfl:tense], pronounce the tense features on v only if v is the head of T's sister.

Exercise: What's in T in the following examples?

(34) a. I will fly to Hong Kong.
b. I have already packed my bags.
c. People drive on the left in Hong Kong.