

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 studie-s the clarinet. (2) a. John studi-ed the clarinet.
 b. I study- \emptyset 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. (5) a. Tu as mangé des pommes.
 Jean eat-FUT.3sg some apples you have.2sg eat-PAST some apples
 b. Je manger-ai des pommes. b. Nous avons mangé des pommes.
 I eat-FUT.1sg some apples we have.1pl eat-PAST some apples

Consider the position of adverbs in tenses which use auxiliaries:

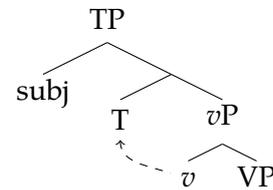
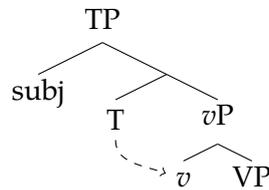
- (6) John will often eat apples.
(7) Jean a souvent mangé des pommes.
 Jean have.3sg often eat-PAST some apples

Let's assume such adverbs are adjoined to vP. If the auxiliary is pronounced at T and the verb in vP, 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:

Option 1: Pronounce tense low, on the verb:

Option 2: 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

► English uses Option 1, whereas French uses Option 2.

- Option 1 is traditionally called affix hopping.
 - In modern terms, we can implement this using Agree.
- Option 2 is called V-to-T movement.¹
 - What kind of movement is this? It's head movement.

In Adger, this is implemented through [Infl:...] features on T:

- English T has a feature like [Infl:PAST] which can Agree and value [uInfl: ___] on *v*.
- French T has a strong feature like [Infl*:PAST] which triggers head-movement.
 - Adger similarly posits [uV*] on *v* to formally motivate head-movement.
 - But again, we won't discuss the featural mechanics of head-movement in this class. See Adger chapter 5 for details.

¹But technically it's head-movement of *v* to T, together with independent V-to-*v* head movement.

2 More auxiliaries in English

- (10) **Some auxiliaries in English:**²
- 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:

- (11) modal + infinitive
- (12) perfect *have* + -en
- (13) progressive *be* + -ing

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

- (14) Lando may have been making a deal.

Adger suggests putting this order in the Hierarchy of Projections:

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

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

- (16) John wants to {*can/be able to} fly.
- (17) I expect Mary to {*might/maybe} come tonight.

We analyze the morpheme *to* itself as a version of T, explaining the *complementary distribution* with modal auxiliaries and (past, present, future) tense.

Nonfinite clauses can, however, include perfects and progressives:

- (18) I expected Susan to *have* called by now.
- (19) I expected Kevin to *be* writing right now.

²Some data here from a handout by Jason Merchant.

3 Negation

The negation *not* in English introduces a puzzle:

- (20) 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*.

Adger's solution:

- (21) **Hierarchy of Projections (modified):** (Adger, p. 195)
 $T > (\text{Neg}) > (\text{Perf}) > (\text{Prog}) > v > V$

Neg is a head. Always make sure one auxiliary moves to T, if T is not a free morpheme.³

4 *Do*-support and 6 contexts

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

- (22) *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.

- (23) **An example of *do*-support:**
John does/did not eat a sandwich.

³In class, I will not worry about how exactly this works. See Adger chapter 5 for details.

Six contexts that require a pronounced T, which can trigger *do*-support:

Baseline: Mary ate her soup.

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

(24) Mary did not eat her soup.

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

(25) John never eats/ate a sandwich.

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

(26) Mary DID eat her soup.

3. ***v*P ellipsis:**

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

4. ***v*P movement**

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

(28) [Eat her soup], Mary did \square .

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

(29) Did Mary \square eat her soup?

6. **Negative inversion:**

(30) [Not a single soup] did Mary \square eat \square .

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

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

(31) **Adger’s Pronouncing Tense Rule (PTR):**

In English, if T and *v* are a “tense chain” — in other words, for Adger, if they Agree in Infl features — pronounce the tense features on *v* only if *v* is the head of T’s sister.