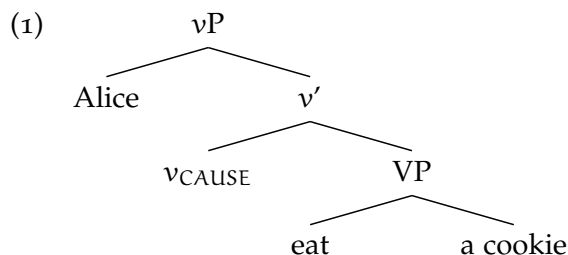


AM2 — Syntax: theories and models

Week 3: thematic hierarchies

1 Our theory so far

For the last two classes, we have been looking at the way verbs select their arguments. The analysis that we have been working on is that verbs are not really lexical items at all, but sets of lexical items put together in syntax and spelled out with one single vocabulary item. Each one of these lexical items is a functional head that is responsible for introducing one single argument. The one we have been focusing on the most is the version of v that we have been calling CAUSE.



In today's class, we don't need to worry about whether this extreme possibility is correct or not, but I will assume it nonetheless. What we are going to talk about is the question of whether all these functional heads appear in a pre-determined sequence or not. The conjecture we will defend is that they do. In the literature, this is called the Uniformity of Theta Assignment Hypothesis (UTAH).

(2) *Uniformity of Theta Assignment Hypothesis*

Thematic roles are always assigned according to the following hierarchy, where \prec means "is higher/more prominent than".

Agent \prec Experiencer \prec Goal/Source/Location \prec Theme.

Today, we are going to look at two different classes of examples that initially seem to suggest that the UTAH is incorrect. We will see, however, that this is not so: when we look closer, the data will reveal that θ rôles are always assigned in the same sequence. Because of the way the argumentation is going to go, today's class is not only a class about thematic hierarchies, but also a class about different kinds of tests that one can use to probe the internal structure of sentences.

2 Case #1: double objects

2.1 Data and possibilities

Many language exhibit an alternation with ditransitive verbs between the double object construction (DOC) and the prepositional dative construction (PDC). Here is a pair of examples from English.

- (3) a. Alice gave Bob a cookie. [double object]
 b. Alice gave a cookie to Bob. [prepositional dative]

Note that the alternation between the DOC and the PDC doesn't always entail a difference in word order. For example, in Spanish, the mark of the alternation is the presence/absence of the pronominal clitic *le* (note that, in the DOC, *a* is not a preposition, but a case marker).

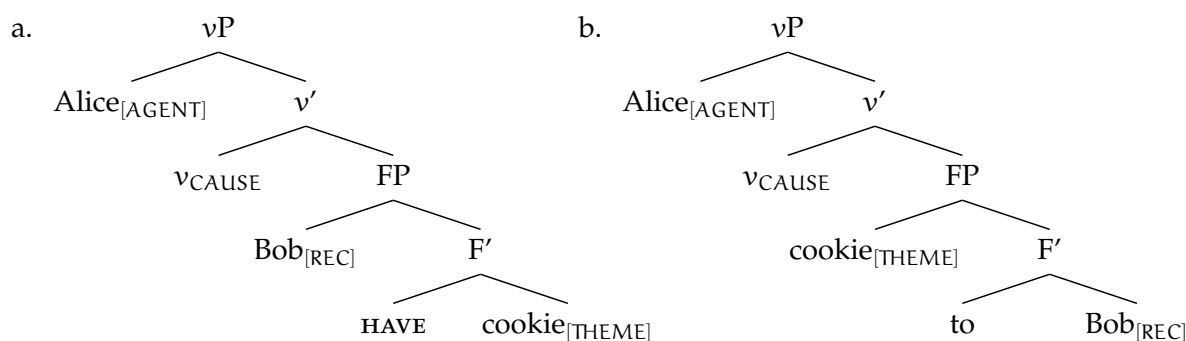
- (4) a. Andrés dió una galleta a Beatriz. [double object]
 Andrés gave a cookie CASE Beatriz
 b. Andrés le dió una galleta a Beatriz. [prepositional dative]
 Andrés CL gave a cookie to Beatriz

However, in the case of English, it looks as though the UTAH is violated. In the DOC, we appear to have a [GOAL < THEME], but in the PDC we have the opposite, [THEME < GOAL]. At this point, we have the following possibilities.

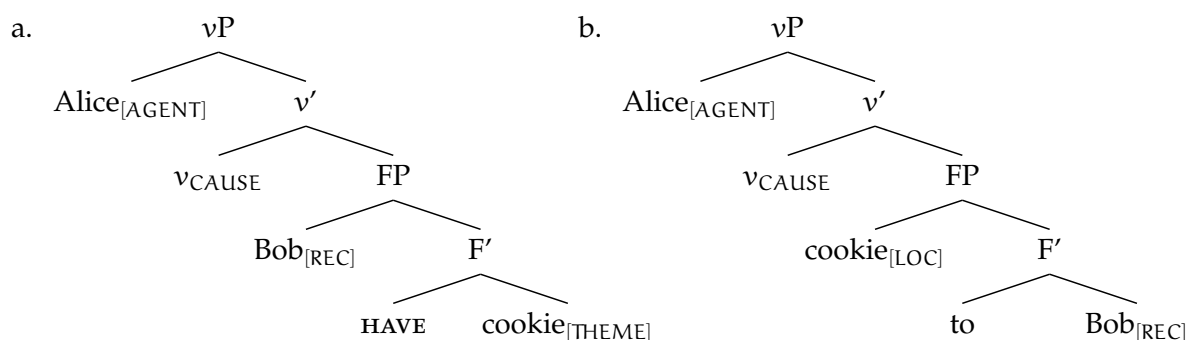
1. The UTAH is incorrect, and θ -rôles are not always assigned in the same sequence. Remember that the *H* in UTAH stands for *hypothesis*, so there is nothing wrong with saying that the UTAH is incorrect, so long as the data support our conclusion.
2. The UTAH is right, because *a cookie* doesn't receive the same θ -rôle in DOCs and PDCs. It is a **THEME** in the former, but a **LOCATUM** in the latter.
3. The UTAH is right, and *a cookie* receives the same θ -rôle in both DOCs and PDCs. The different word orders are derived by movement after thematic assignment.

Just to be clear, here are the trees associated to each possibility, with the relevant θ -rôles subscripted to each argument.

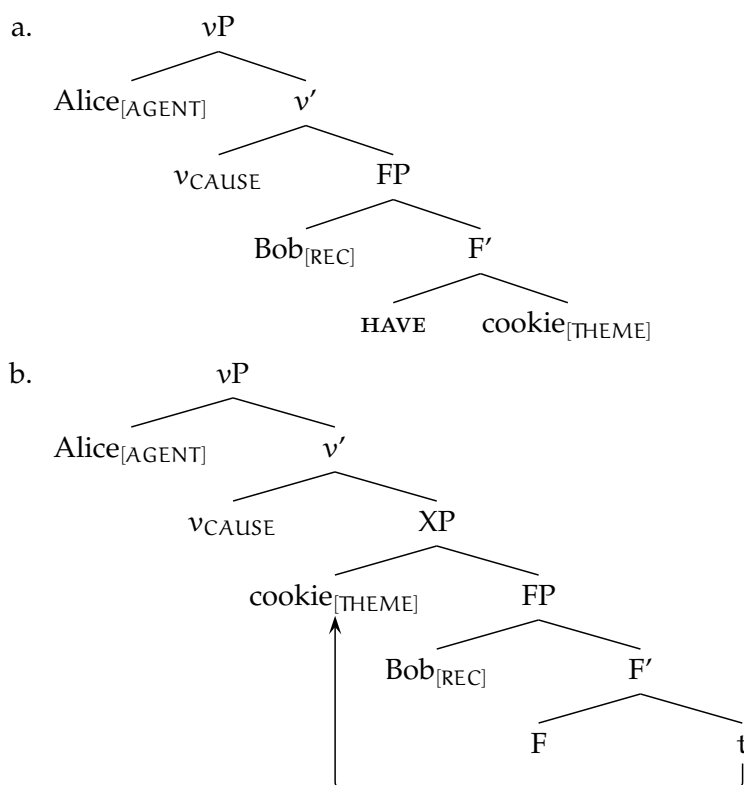
(5) *UTAH is incorrect*



(6) *UTAH is correct, but we have more θ -rôles*



(7) *UTAH* is correct, but we need movement



2.2 Choosing the right analysis

The difference between possibilities #1 and #2 on the one hand, and possibility #3 on the other is obvious: there is a movement step in the latter, but not in the former. Therefore, if possibility #3 is the correct one, we ought to be able to find evidence in favor of this step of movement. Otherwise, we should reject possibility #3 and try instead to adjudicate between possibilities #1 and #2.

As it happens, there is some evidence that movement is involved in the derivation of PDCs. The relevant evidence comes from the effects called *backwards binding* and *inverse scope*. Let's begin with the former. Many people have noted that, in DOCs, an anaphor in the theme can be bound by an antecedent in the goal, but the reverse configuration is illicit.

- (8) a. Alice gave [Bob and Claire]_i [each other]_i's email addresses].
 b. * Alice gave [each other]_i [Bob and Claire]_i's email addresses].

In PDCs, on the other hand, both configurations are licit.

- (9) a. Alice gave [each other]_i's email addresses][to Bob and Claire]_i.
 b. Alice gave [Bob and Claire]_i's email addresses][to each other]_i.

We get the same pattern with binominal *each*, which must be licensed by a plural antecedent. In DOCs, a binominal *each* in the theme can be licensed by a plurality in the goal, but not vice versa.

- (10) a. Alice gave the boys one book each.
 b. * Alice gave one boy each the books.

But, as before, PDC can license a binominal *each* in either position.

- (11) a. Alice gave the books to one boy each.

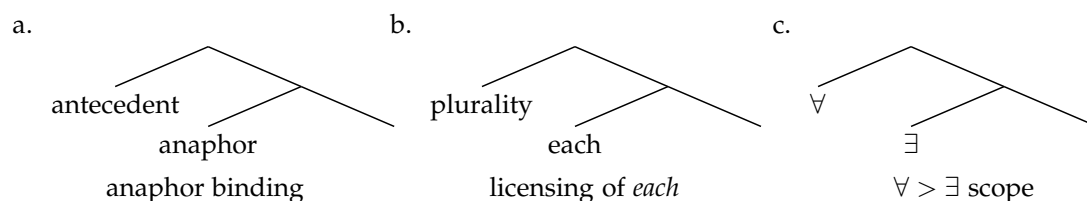
- b. Alice gave one book each to the boys.

Finally, in a configuration where both the theme and the goal are quantificational phrases, DOCs allow only left-to-right (“direct”) scope. In contrast, PDCs allow both left-to-right and right-to-left (“inverse”) scope.

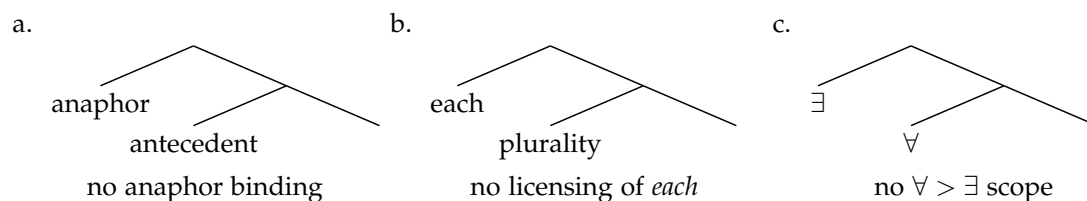
- (12) a. I gave a girl every piece of candy. [$\checkmark \exists > \forall$ / $*\forall > \exists$]
- b. I gave a piece of candy to every girl. [$\checkmark \exists > \forall$ / $\checkmark \forall > \exists$]

How can we explain this difference? We know that anaphor binding, licensing of binominal *each*, and scope readings depend on a very specific syntactic configuration —namely, the licenser has to c-command the licensee. Graphically:

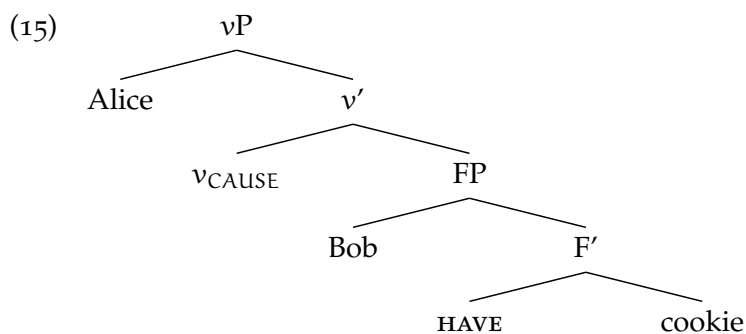
(13) *Licit configurations*



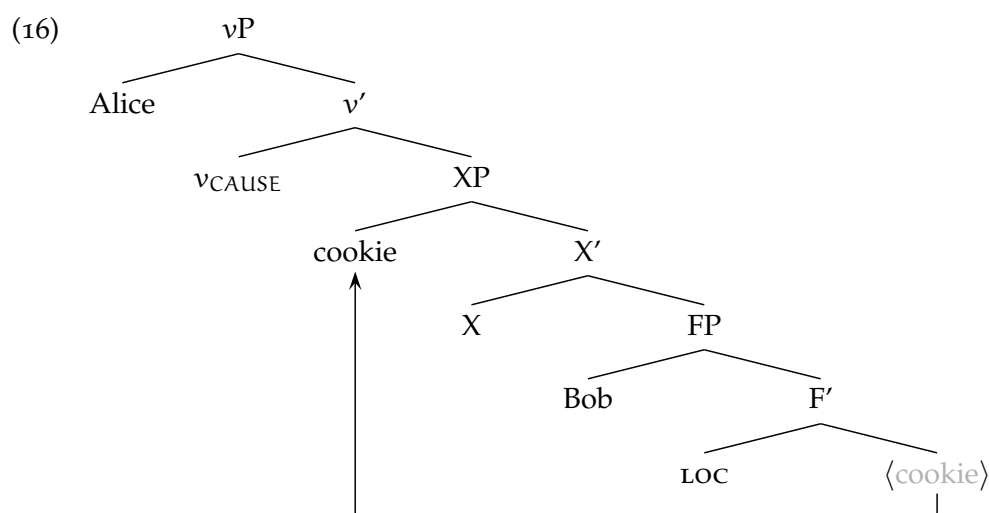
(14) *Illicit configurations*



This much is consistent with what we see with DOCs. Thus, we are going to say that DOCs have the following structure.



For PDCs, we are going to start with a the same structural relation between arguments. The only difference is going to be that the theme is going to move to the left of the goal. Since this is not important to us, I am going to use a non-committal XP to name the projection that the goal moves to.



As a result of movement, *cookie* is now represented twice in the structure, once above the goal and once below. At the PF interface, we may only use the upper copy (this has to do with various properties of the PF interface that we don't have to worry about here). However, at LF, we may use either copy. If we use the upper copy, we get left-to-right scope, anaphor binding, and binominal *each* licensing. If we use the lower copy, on the other hand, we get right-to-left scope, anaphor binding, and binominal *each* licensing.

2.3 Semantics of DOCs and PDCs

You might have noticed a difference between the structures for DOCs and PDCs, apart from movement. In DOCs, the goal and the theme are related by a HAVE head, whereas in PDCs we have a LOC head. This is meant to account for the fact that DOCs involve a transfer of *possession*, whereas PDCs involve a transfer of *location*. You can see this effect when the goal is an inanimate entity, something that can't possess other things. Here, a PDC is grammatical, but a DOC is not.

- (17) a. Alice sent a book to Cottbus.
 b. * Alice sent Cottbus a book.

In fact, the difference between the two heads is smaller than you might think, as HAVE is composed of LOC plus something else. To figure out what this "something else" is, and how it combines with LOC to produce HAVE, you will have to complete Reading Assignment #1.

3 Case #2: psychological verbs

3.1 Data

Psych(ological) verbs are verbs in which one of the arguments is an experiencer, like *to worry* or *to fear*. Here we are going to focus on these two verbs in Italian. Belletti and Rizzi (1988) noticed that *preoccupare* 'to worry' (and a few other verbs) take a theme subject and an experiencer object.

- (18) Questo_{TH} preoccupa Gianni_{EXP}.
 this worries Gianni

In contrast, *temere* 'to fear' (and a few other verbs) illustrate the reverse configuration, with an experiencer subject and a theme object.

- (19) Gianni_{EXP} teme questo_{TH}.
Gianni fears this

Verbs of the *temere* class (subject experiencer verbs) are consistent with the claim above that experiencer arguments are higher than theme arguments. However, *preoccupare* class verbs (object experience verbs) seem to contradict the UTAH. As in the case of ditransitive predicates, we have three potential ways of dealing with this conundrum.

1. the UTAH is incorrect and arguments can be merged in whichever sequence.
2. the UTAH is correct, but *temere* and *preoccupare* assign different θ -rôles.
3. the UTAH is correct, and the θ -rôles are the same in the *temere* and *preoccupare* classes; the different orders are a consequence of movement.

3.2 More data and analysis

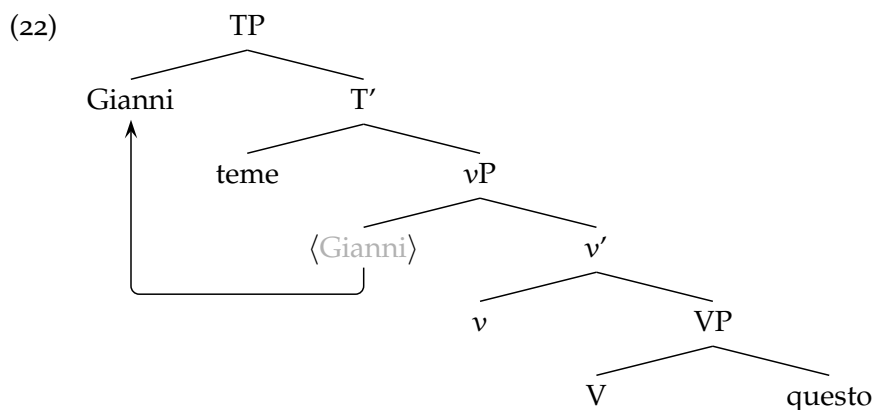
Given what we have said above about DOCs and PDCs, we might suspect that possibility #3 is the correct one. In fact, we have the same effects with the *temere* and *preoccupare* classes as we did with DOCs and PDCs. As happened with DOCs, *temere* only allows left-to-right binding. Here, *i proprio* is an anaphor subject to the same licensing conditions as *himself* or *each other*.

- (20) a. Gianni_i teme i propri_i sostenitori.
Gianni fears his own supporters
b. * I propri_i sostenitori temono Gianni.
his own supporters fear Gianni

In contrast, *preoccupare* class verbs allow binding of *i proprio* in both directions.

- (21) a. Gianni_i preoccupa i propri_i sostenitori.
Gianni worries his own supporters
b. I propri_i sostenitori preoccupano Gianni_i.
his own supporters worry Gianni.

This contrast indicates that both *temere* and *preoccupare* stem from an underlying structure in which the experiencer is higher than the theme. The difference lies on the fact that *preoccupare*-class verbs allow the theme to move to subject position over the experiencer, whereas in the *temere* class it is the experiencer that moves to the subject position. Here, for simplicity, I am not indicating the movement of the verb from V to v and then to T.



(23)

