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Seems Like a Double Object
In most discussions of raising verbs, there is no mention of the fact that it can appear with an experiencer, as well as an embedded clause. In this paper, I use the Tree Adjoining Grammar formalism to account for both the presence of this experiencer, and its variable position.

My proposal will be that this alternation is similar to Dative Shift for ditransitives.

a. John seems to like coffee to me.

b. John seems to like coffee to me.

(1) a. John seems to me to like coffee.

The Issue
Outline of this Talk

- An introduction to Tree Adjoining Grammar (TAG)
- The TAG account of raising
- Introducing the other argument of seem
- Some structural tests
- Proposals
- Leftover puzzles

Outline of this Talk
Tree Adjoining Grammar is a computationally well-defined generative model which can be applied to natural language (Joshi, Levy and Takahashi 1975). The minimal objects of this system are tree structures known as elementary trees. The functional nodes of the tree are defined by the Condition on Elementary Tree Minimality (CETM), which states that the syntactic heads of an elementary tree must form an extended projection of a single lexical head. The thematic dependencies of that lexical item are anchored by a lexical item and will comprise all the thematic dependencies of that lexical item.

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Tree Adjoining Grammar
Trees are combined in TAG using two operations: Substitution and Adjunction.

In Substitution, the root node of an initial tree is merged into a non-terminal leaf node, marked for substitution in another tree, producing a new tree.
Substitution is permitted only where the node labels match.
Derivation in TAG - Adjunction
The derivation of John often eats pizza will begin with four elementary trees:

A Sample Derivation
The Traditional View on Raising:

Seems is the textbook example of a raising predicate. It projects no agent role, and the subject of the embedded clause becomes the matrix subject:

\[ (2) \]

\[ \text{John} \]

\[ \text{seems} \]

\[ \text{to} \]

\[ \text{like} \]

\[ \text{coffee} \]

\[ \text{DP} \]

\[ \text{TP} \]

\[ \text{V} \]

\[ \text{TP} \]

\[ \text{V} \]

\[ \text{DP} \]

\[ \text{TP} \]
The TAG Raising Story

There is nothing to motivate the projection up to TP. The CETM dictates that this tree will only project to T. Lacking an agent, seems will enter as an adjunction, via an auxiliary tree that is recursive on T.

The two arguments will be substituted into the infinitival tree headed by like. The sentence John seems to like coffee will also be the product of four elementary trees.
The TAG Result
Seem, it must be a part of the seem-headed tree.

According to the definition of elementary trees, it this is an argument of seem, it must be a part of the seem-headed tree.

The questions are: where in the tree structure does the PP appear, and is there a derivational relation between (3a) and (3b)?

(3)

a. John seems to like coffee to me.
b. John seems to me to like coffee.

As we saw earlier, seem can also have what looks like an experiencer:

Seems to Me We Have an Experiencer
The Existing Account

Frank (2002) contains one example wherein the object of the PP is described as an experiencer. He provides the auxiliary tree (4), which adjoined into the tree yields (5):

John to like coffee tree yields (5):

The Existing Account
Motivation for Modification

Aside from our ingrained distrust of ternary branching, there is solid proof that a different structure is needed. Their relative ordering within that constituent can change.

The PP and the lower clause material form a constituent without seems.

Coordination testing shows:

b. John seems [to Larry to like coffee] and [to hate it to Harry].

a. John seems [to Karen to like coffee] and [to Tina to like tea].

Motivation for Modification
Choosing a Structure

We will use standard tests to determine the structure which will replace Frank's ternary-branching tree before moving on to the sentence-final experiencer.

The experiencer appears able to c-command the embedded clause material despite being within a PP. Similar cases can be found in (Jackendoff 1990).

| a. John seems to everybody to like him. (Bound Variable) |
| b. What does John seem to whom to like? |
| c. John seems to every boy to like him? (Superiority) |

The experiencer appears able to c-command the embedded clause material.

Frank's ternary-branching tree before moving on to the sentence-final experiencer.

We will use standard tests to determine the structure which will replace
Thus far, the argumentation leads to a conclusion similar to that reached by Larson (1988) for ditransitives.

I propose the tree in (8) which will result in the final structure (9) after adjunction:

A Larsonian Solution
Extraposition?

Inturning to the sentence-final experiencer, we must first explore the possibility that this is extraposition.

If the PP has been postposed here, it will be adjoined to VP₁:

Extraposition?
If the extraposition analysis is correct, then the PP should still c-command the embedded clause material from the sentence-final position.

From these examples, it is clear that the PP does not c-command the embedded clause material from the sentence-final position.

1. a. *John seems to like him to everybody.
   c. John seems to like him to every boy.
   (Bound Variable)

2. a. *John seems to like him to anybody.
   b. What does John seem to like to whom?
   (Superiority)
   (NPI Licensing)

A Few More Tests
The issue with the superiority test here is further evidence that this experimenter PP functions as a single unit.

- The same tests can be used to determine whether the PP is at the very bottom of the tree, c-commanded by the embedded clause object.

> a. John seems to like every boy to him.*? (Bound Variable)
> b. ?Whom does John seem to like what? (Superiority)
> c. ?Whom does John seem to like what to t.? (Superiority)
> d. John seems to like every boy to him. (Superiority)

<table>
<thead>
<tr>
<th>a. John seems to like nothing to anybody to the very bottom of the tree, c-commanded by the embedded clause object.</th>
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(13a) John seems to like Bill to himself.

(13b) Likewise makes the same prediction in that it avoids a Condition B violation.

(13c) (13a) demonstrates that Bill does not c-command himself within its GC.

And Finally, Some Binding Theory

The potential Condition C violation does not emerge in (13c).
So, Where Are We?

In the sentence-final position, the PP does not c-command the embedded object.

Further, it is not so far down the tree that it is c-commanded by the clause material.

The solution is not extrapolation, but transposition.

Seems in which the arguments are transposed.

In the spirit of Harley (2002), we can posit a different elementary tree for

• Observed.

This will yield the correct string order, and meet all the c-command facts.
My proposed tree for seem with a sentence-final experiencer is shown in (15).

(14) The result of adjoined is shown in (15).

A New Tree
Tree (15) yields the correct word-order and c-command requirements.

Thus, we have ended up with something that looks very similar to ditransitive verbs.

It seems able to transpose its two arguments, the embedded clause material and the optional experiencer, much as some ditransitives can reverse their theme and goal arguments.
While this conclusion appears sound, there are still two puzzles to solve:

(17) John likes coffee to me.

Or is it just an adjunct?

(16) a. John seems happy to me.

b. *John seems to me happy.

While this conclusion appears sound, there are still two puzzles to solve:

The Outlook
References


References