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The Construction

Exemplified by:

(1)   Who do you think Joan said that Tracy believes that Aaron saw?

This construction has received many names in the theoretical literature over the years:

- movement over a variable
- unbounded movement
- *wh* movement
- Ā movement
- Ā binding
- operator movement
- operator binding
- unbounded dependencies
- syntactic binding
- constituent control
- extraction
- long-distance dependencies

The multiplicity of names reflects the theoretical importance of this construction, which has been discussed extensively since the earliest days of generative syntax.

The "Standard" View

In the (surface) structure of the sentence, the DP *who* is clearly in the initial position in the main clause:

(2)   who do you think [Joan said [that Tracy believes [that Aaron saw]]]

But, despite its position, *who* is interpreted as the object of *saw*. That is to say, this sentence is interpreted as if the structure were really:

(3)   you think [Joan said [that Tracy believes [that Aaron saw who]]]

In other words, *who* is in a position other than where it is interpreted; it has been "displaced." Any analysis of this kind of sentence has to express the idea that the sentence (1) behaves as if its structure were (3) rather than (2). Syntactic theory therefore has to provide some way to express the relation between the structures (2) and (3), or, alternatively, to express the "displacement

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property" of language, which is an indisputable property of language, as illustrated by this construction.

The most straightforward way to express the displacement property is through movement. The structure in (3) is taken to be the underlying (deep, D-) structure, the input to movement, and (2) is the superficial (surface, S-) structure, the output of movement. Schematically:

(4)   ___ you think [Joan said [that Tracy believes [that Aaron saw <u>who</u>]]]

This has been the basic analysis of transformational theory since the earliest days. It has the advantage of being a straightforward expression of the displacement property. Other versions can be formulated, ones which replace movement with some other concept that does not require us to model syntax in terms of underlying and superficial structures. For example, we could hypothesize some pronoun-like element ✌ which marks the position in which *who* is interpreted. We can consider *who* and ✌ to be syntactically coindexed, as is generally the case with pronoun-like elements and their antecedents.

(5) who_i do you think [Joan said [that Tracy believes [that Aaron saw $✌_i$]]]

But this is just a notational variant of movement. It is still an expression of displacement—based on the concept that *who* occupies one structural position but is interpreted in another. No syntactic theory can do without displacement in one form or another.

The moral of LDD constructions, according to the standard view, is thus that non-transformational, monostratal, monotonic theories are an illusion. They are just a notational variant of transformational theory. As Chomsky puts it (1995 *The Minimalist Program*, pp. 221–2):

> [A] striking departure from minimalist assumptions in language design [is] the fact that objects appear in the sensory output in positions "displaced" from those in which they are interpreted, under the most principled assumptions about interpretation. This is an irreducible fact about human language, expressed somehow in every contemporary theory of language, however the facts about displacement may be formulated.

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> ## BUT. . . . .
>
> The standard view is wrong!
>
> It is not an indisputable, irreducible fact that language has the "displacement property" because LDD constructions are not, at the core, displacement constructions. The entire concept of displacement is a result of the initial conceptualization, perhaps misconceptualization, of LDD constructions. A different conceptualization of these constructions results in an analysis which is not a notational variant of movement/displacement.

So, let's start all over from the beginning

The initial problem with the standard view is the concept of "interpreted"; it is not clear exactly how to, well, interpret this word. But what appears to be meant is something like what we have been calling "function" in this course. So, if we want to evaluate the standard view, we need to ascertain how *who* functions in sentence (1) (repeated here)?

(1)   Who do you think Joan said that Tracy believes that Aaron saw?

A consideration of this question leads to a different conclusion than the standard view; *who* in this sentence actually has **two** functions:

(6)   a.   The question operator/focus of the main clause.
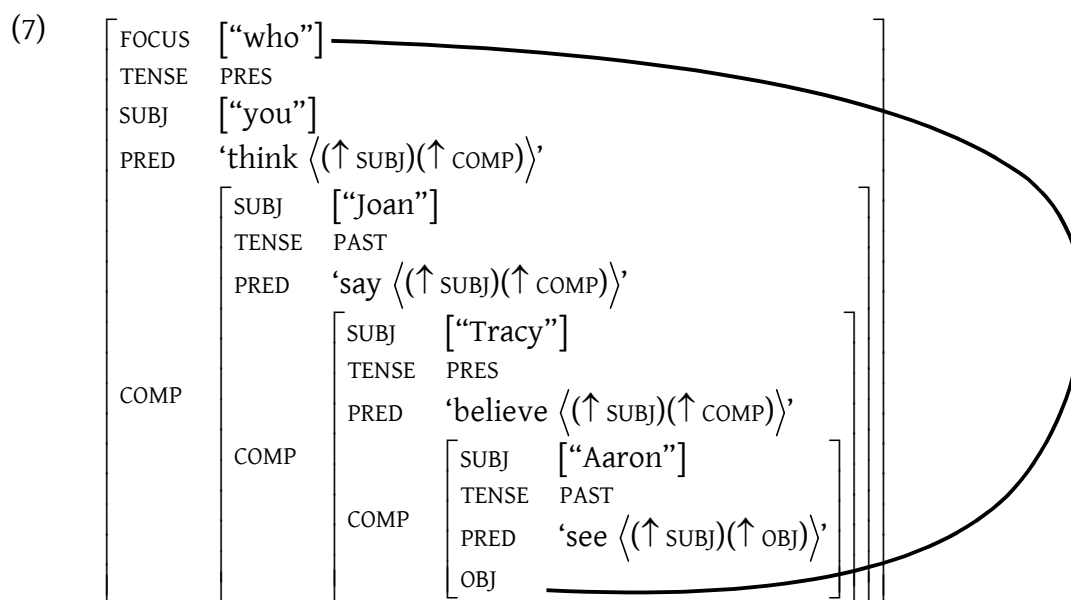   b.   The object of *saw*

When approached from this perspective, it is clear that *who* is not "displaced"—out of place for its interpretation (function): it is in exactly the right place for one of its functions: (6a). Under contemporary views of constituent structure, *who* is in the specifier position of the main CP, a canonical position for something that has discourse prominence in the main clause. (Of course, it is not in the canonical position for the object of *saw*, since it is only in one place ☺.)

In other words ...

(1) is a case of *multifunctionality* !!

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Using the curved-line notation we saw in the Kaplan-Bresnan reading, we can represent (1) as (7) at f-structure.

(7)
$$
\begin{bmatrix}
\text{FOCUS} & [\text{``who''}] \\
\text{TENSE} & \text{PRES} \\
\text{SUBJ} & [\text{``you''}] \\
\text{PRED} & \text{`think} \langle (\uparrow \text{SUBJ})(\uparrow \text{COMP}) \rangle\text{'} \\
\text{COMP} &
\begin{bmatrix}
\text{SUBJ} & [\text{``Joan''}] \\
\text{TENSE} & \text{PAST} \\
\text{PRED} & \text{`say} \langle (\uparrow \text{SUBJ})(\uparrow \text{COMP}) \rangle\text{'} \\
\text{COMP} &
\begin{bmatrix}
\text{SUBJ} & [\text{``Tracy''}] \\
\text{TENSE} & \text{PRES} \\
\text{PRED} & \text{`believe} \langle (\uparrow \text{SUBJ})(\uparrow \text{COMP}) \rangle\text{'} \\
\text{COMP} &
\begin{bmatrix}
\text{SUBJ} & [\text{``Aaron''}] \\
\text{TENSE} & \text{PAST} \\
\text{PRED} & \text{`see} \langle (\uparrow \text{SUBJ})(\uparrow \text{OBJ}) \rangle\text{'} \\
\text{OBJ}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

Again: no displacement! *Who* is right where it belongs for one of its functions (or "interpretations", if you prefer). Of course, the multifunctionality needs to be licensed, as it is in the case of functional control. But this licensing is not a notational variant of displacement; it is simply the licensing of one element having more than one function.

"But wait a minute. I'm confused."

Q: So which conceptualization is right?

A: It's not so much a question of "right", but rather more basic.

Q: Huh?

A: The more basic conceptualization is the one that does not require additional assumptions. And the more basic conceptualization is the multifunctionality view.

Q: Aren't you just saying that because you like LFG better than GB?

A: No. Multifunctionality *is* the basic property of LDD constructions. The multifunctionality of *who* in (1) turns into displacement by adding two unnecessary assumptions:

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(a)   function is directly related to structural position (an assumption we have already rejected, and certainly not necessary in any case)

<div align="center">... and ...</div>

(b)   the function of question operator/focus does not count for "interpretation" (a rather weird assumption).

These two assumptions turn multifunctionality into displacement/movement. Without them, there is no displacement, and therefore no notational variant of movement. While these assumptions are standard in transformational theory, they are certainly not necessary.

Bottom line

Long-distance dependency constructions involve multifunctionality, not displacement.