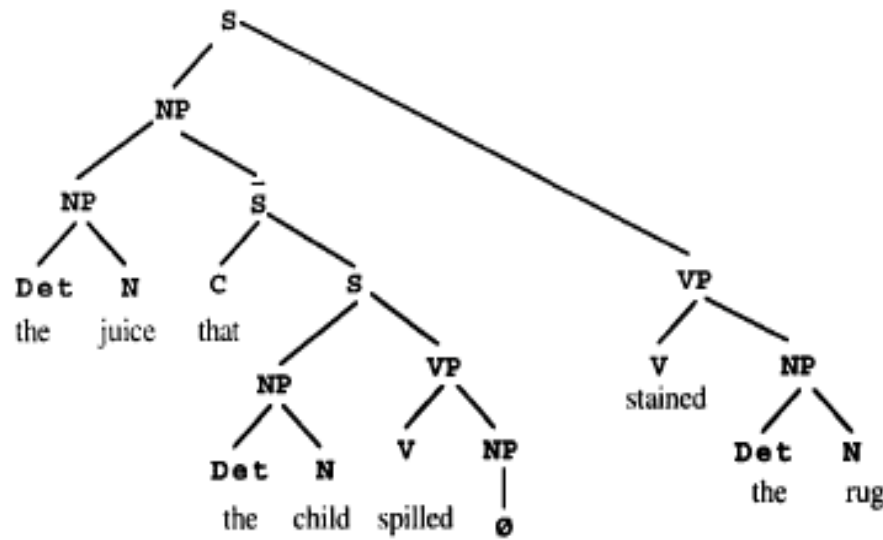


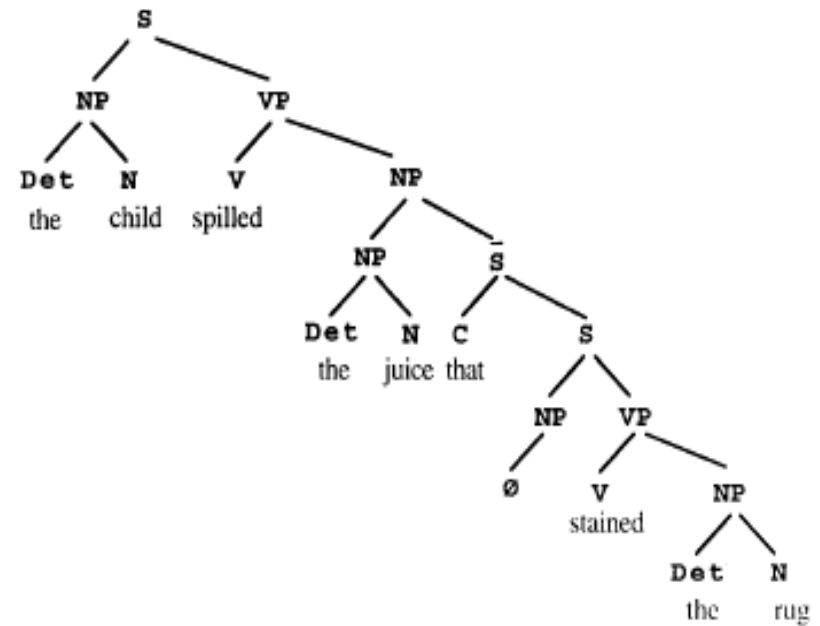
Hard vs. easy syntax (Stromswold et al., 1996)

Center-embedded:



Center-embedded construction: The juice that the child spilled __ stained the rug

Right branching



Right branching construction: The child spilled the juice that __ stained the rug

Broca's area lights up for difficult syntax

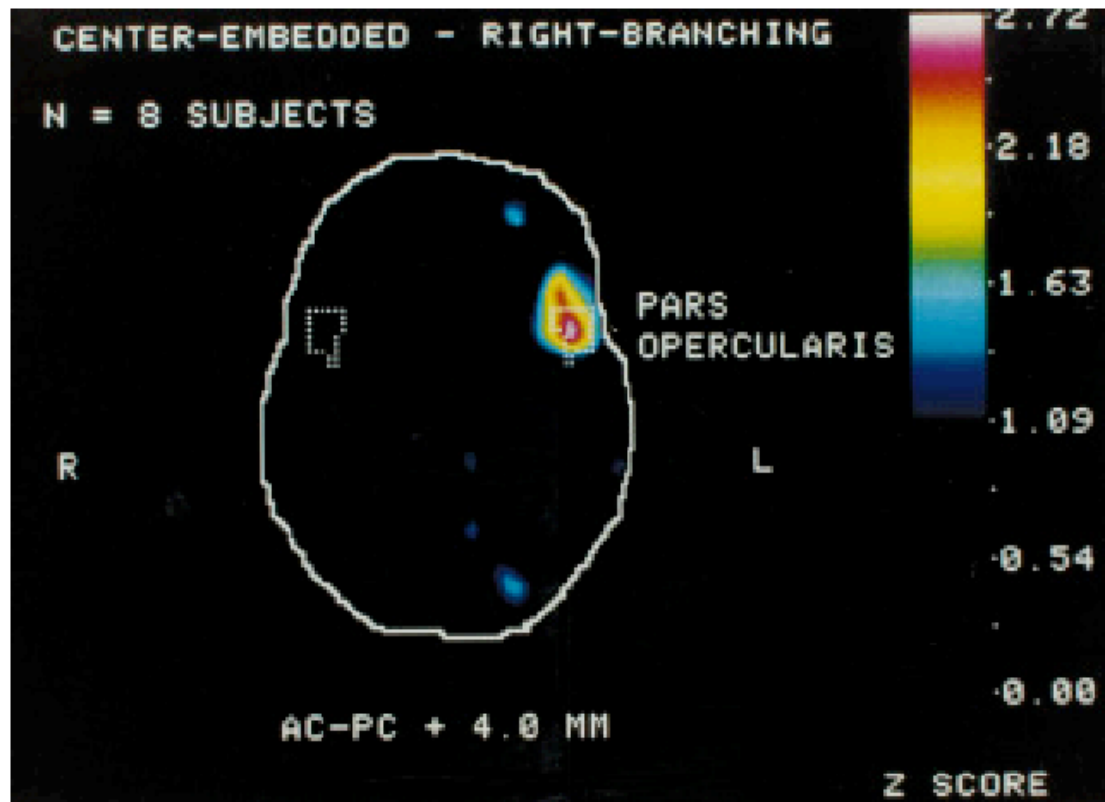


FIG. 2. Statistical parameter map (omnibus subtraction image) showing increased rCBF in the pars opercularis of the left hemisphere during judgments of semantic plausibility of sentences with center-embedded compared to right-branching relative clauses (condition 1 – condition 2).



Why are center-embedded structures hard?

The juice that the child spilled stained the rug.

The child spilled the juice that stained the rug.

- Gibson: storage + integration.
- Lewis, Gordon, Bever: similarity interference between two syntactically similar arguments.



Why are center-embedded structures hard?

- Gordon, Hendricks & Johnson, 2001:

Subject-extraction:

It was the barber/John that saw the lawyer/Bill in the parking lot.

Object: extraction:

It was the barber/John that the lawyer/Bill saw in the parking lot.

- Results:
 - **object extractions harder by error rate and reading time measures.**
 - **performance was worse when the two NPs were matched in type.**
 - **the subject-object difference was greater with matched than with unmatched NPs.**