

What's the difference between a nuclear physicist and a heavy drinker?

Resolving the bracketing paradox

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Introduction

- Cinque (2010) argues that adjectival modification comes in two varieties: direct and indirect.
 - Direct modification is non-compositional, requires a particular order of multiple adjectives and requires adjacency with the noun
 - Indirect modification is compositional, allows free ordering and may be separated from the noun (e.g. in predication)
- I argue that both of these statements are false, due to evidence from bracketing paradoxes

The plan

- Two types of bracketing paradox
- Analyses for the two types
- What Dutch can tell us about BPs
- Cinquean modification and the consequences of bracketing paradoxes

Traditional bracketing paradoxes

LF bracketing:

- [[hydroelectric]ity]
- [[ungrammatical]ity]
- [[unhappi]er]

- [[nuclear physic]ist]
- [[transformational grammar]ian]
- [[Gödel number]ing]

PF bracketing:

- [hydro[electricity]]
- [un[grammaticality]]
- [un[happier]]

- [nuclear [physicist]]
- [transformational [grammarian]]
- [Gödel [numbering]]

Traditional bracketing paradoxes

- Mismatch between morphological/phonological and semantic bracketing
- Evidence for both bracketings:
 - Meaning supports LF bracketing
 - Selectional restrictions, SLH, level ordering restrictions support PF bracketing
- Exist in Dutch (more on which later), so analyses proposed for English should also account for Dutch

Verbal bracketing paradoxes

LF bracketing

- [[hard work]er]
- [[beautiful danc]er]
- [[heavy drink]er]
- [[close talk]er]
- [[high sing]er]

PF bracketing

- [hard [worker]]
- [beautiful [dancer]]
- [heavy [drinker]]
- [close [talker]]
- [high [singer]]

Verbal bracketing paradoxes

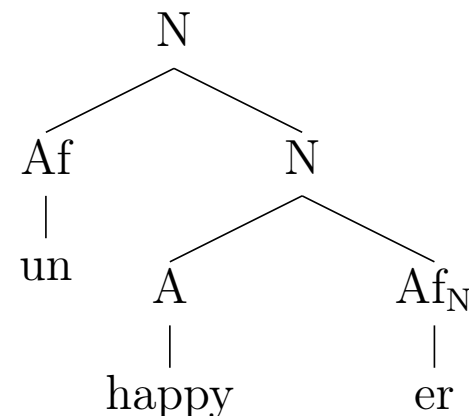
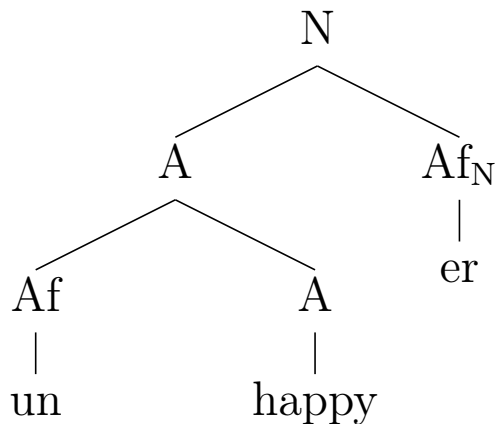
- One phonological form, but two meanings, so mismatch between morphological/phonological form and at least one semantic form
- Evidence for both bracketings, as in traditional cases
- Derived from verbs (similar underived forms are not paradoxes: **beautiful ballerina*, **high chorister*)

Comparing the two

- LF bracketing results in compositional meaning in both (i.e. not simply non-intersective)
- Both disallow interveners (**nuclear experimental physicist, *hard office worker*)
- Different behaviour in Dutch (we're coming to it!)
- Verbal bracketing paradoxes require underlying verb

Rebracketing at PF

- Sproat (1988) argues that bracketing paradoxes are only paradoxes if we assume words and phrases can only have one structure
 - If structures in syntax and PF can differ, the paradox disappears
- He proposes a Mapping Principle to relate structures at the two different levels, relying on sisterhood and precedence to ensure that syntactic sisters end up adjacent at PF
- Only works for traditional bracketing paradoxes



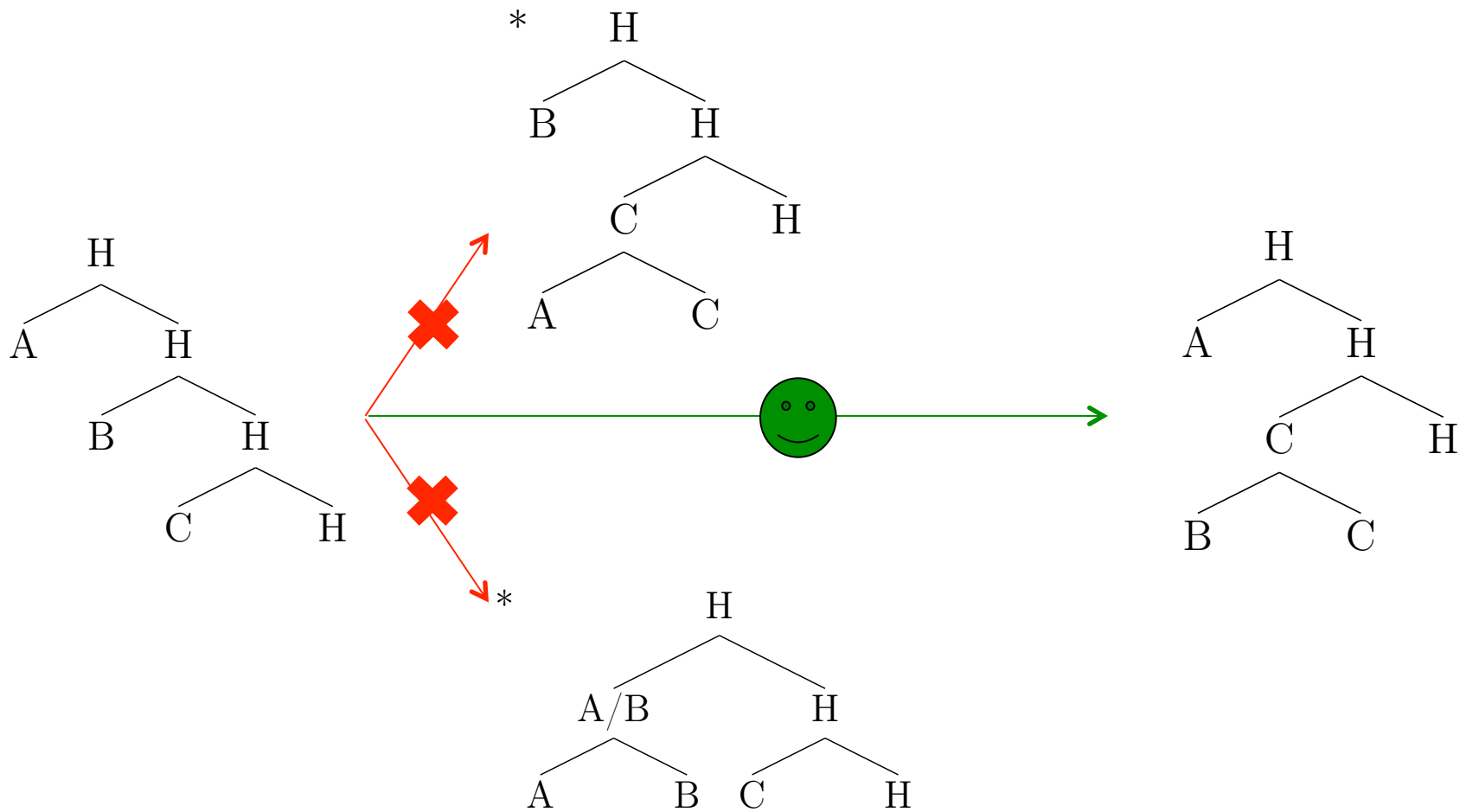
Sproat and verbal bracketing paradoxes

- Sproat's approach won't work for verbal bracketing paradoxes due to the SLH, the tendency of affixes to attach to heads, and word order facts
- It may be possible to to apply a similar idea between syntax and LF
- However, the approach can't be identical, because precedence isn't usually held to be relevant at LF

Rebracketing at LF

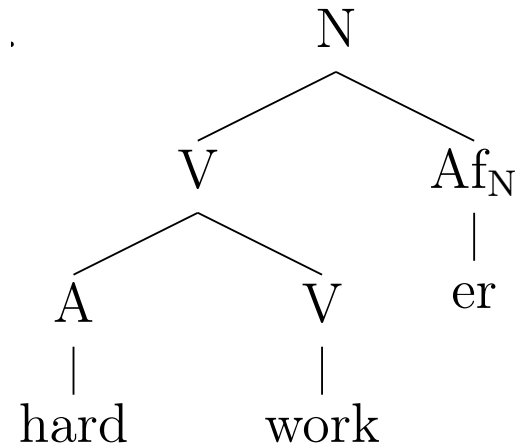
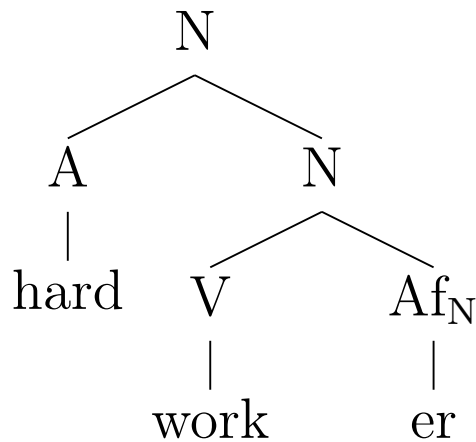
- Information preservation:
 - Preservation of headedness: Do not destroy headedness relations
 - Preservation of hierarchy: Do not destroy c-command relations between non-heads
- Has the following effects:
 - Only structurally adjacent non-heads can become sisters
 - More particularly, only bottom-most two non-heads can become sisters
 - In other words, downward movement can only occur where a non-head moves down precisely one level to form a constituent with the lowest non-head

Rebracketing at LF



Rebracketing at LF

- In these cases, syntax and PF are isomorphic



- In traditional bracketing paradoxes, syntax and LF are isomorphic

Behaviour of bracketing paradoxes in Dutch

- In Dutch, prenominal modifiers appear with a declensional schwa roughly in the following circumstances:
 - Prenominal adjectives *must* be conjugated with a declensional schwa when they are part of a definite DP. In the absence of a determiner, they *must not* be conjugated.

Behaviour of bracketing paradoxes in Dutch

Schwa

- de beroemd*(-e) gitarist
the famous(DECL) guitarist
- de zogenaamd*(-e) winnaar
the so-called(decl) winner

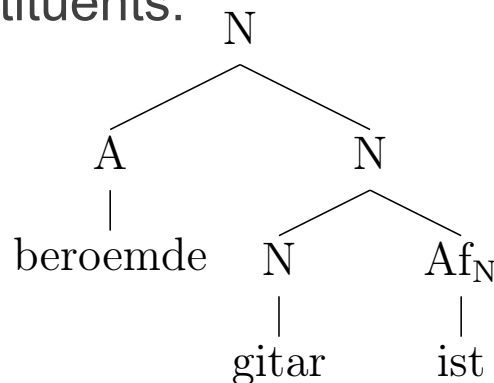
No schwa

- Hij speelt klassiek(*-e) gitaar.
he plays classical(DECL) guitar
– indefinite
- Zijn onderzoek is
His research is
transformationeel(*-e)
transformational(DECL)
generatief georiënteerd
generative oriented
– adverbial modification

Behaviour of bracketing paradoxes in Dutch

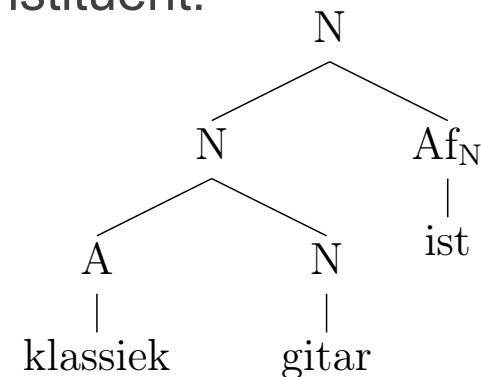
Verbal BPs

- de elegant*(-e) danser
- de hard*(-e) werker
- Syntactically, the modifier requires a schwa, as it is in the same configuration as normal N +A constituents:



Traditional BPs

- de klassiek(*-e) gitarist
- de transformationeel(*-e) generativist
- Syntactically, the modifier does not require a schwa because no determiner is present in the N +A constituent:



Direct modification

- Non-compositional
 - Requires adjacency
 - Strictly ordered
- nuclear physicist
 - hard worker
 - poor typist
 - heavy drinker
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- *The physicist is nuclear
 - *The worker is hard
 - *The typist is poor
 - *The drinker is heavy

Indirect modification

- Compositional
- Does not require adjacency
- Freely ordered
- clever physicist
- happy worker
- fast typist
- overweight drinker
- The physicist is clever
- The worker is happy
- The typist is fast
- The drinker is overweight

Cinque vs. bracketing paradoxes

- According to the above, bracketing paradoxes of both types are compositional, but require adjacency (and therefore strict ordering).
- They have properties of both direct and indirect modification.
- Are there any other similar problems?

Good and evil

- Cinque (2010) uses examples including *poor typist* and *buon attaccante* to demonstrate properties of direct modification
- These do not appear to be bracketing paradoxes:
 - Can be separated from noun (*this typist is poor*)
 - Don't require underlying verb (*high singer*/**high chorister* vs. *good singer*/*good chorister*)
- Instead appear to be subsective
 - “Good for/as a chorister”, not “choristers’ well”
 - Similar to examples from Larson 1995 (e.g. *diligent president*, *old friend*)

Subjective adjectives

- Non-compositional (i.e. not “good and a chorister” but “good for/as a chorister”)
- Does not require adjacency (*This chorister is good*)
- Freely ordered (with accompanying change in scope: *good old friend* vs. *old good friend*)
- Again, properties of both direct and indirect modification

Conclusion

- I have argued that two types of bracketing paradox exist, based on evidence from English and Dutch
- These two types yield to two different but comparable analyses
- The properties of bracketing paradoxes and subsecutive adjectives disprove Cinque's generalizations about direct and indirect modification
 - Bracketing paradoxes are compositional and require adjacency
 - Subsecutive adjectives are non-compositional and do not require adjacency

References

- Cinque, G. (2010). *The Syntax of Adjectives: A comparative study*. Cambridge, MA: MIT Press.
- Larson, R. (1995). *Olga is a beautiful dancer*. Unpublished manuscript.
- Sproat, R. (1988). Bracketing paradoxes, cliticization and other topics: The mapping between syntactic and phonological structure. In M. Everaert, M. Trommelen, and R. Huybregt (Eds.), *Morphology and Modularity*, pp. 339–360. Berlin: De Gruyter Mouton.