Negation in cross-linguistic perspective: Grammar Matrix library & compositional semantics

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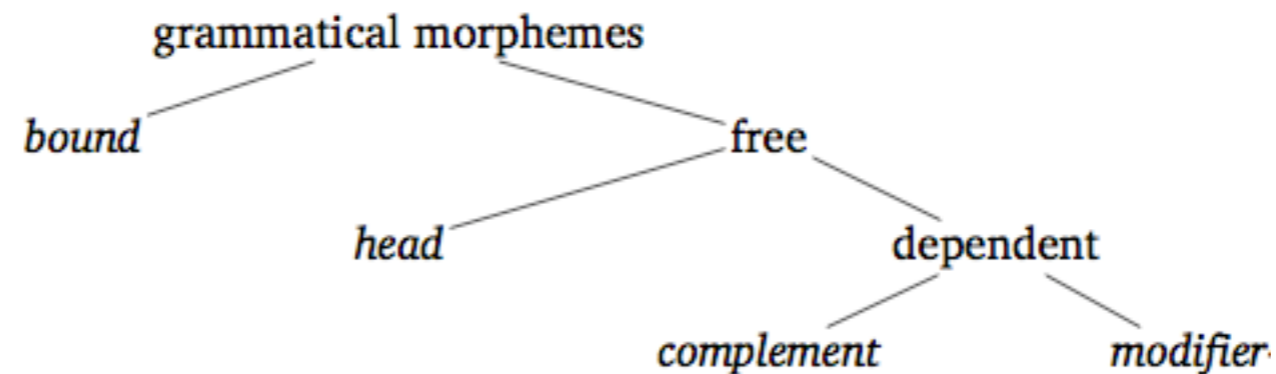
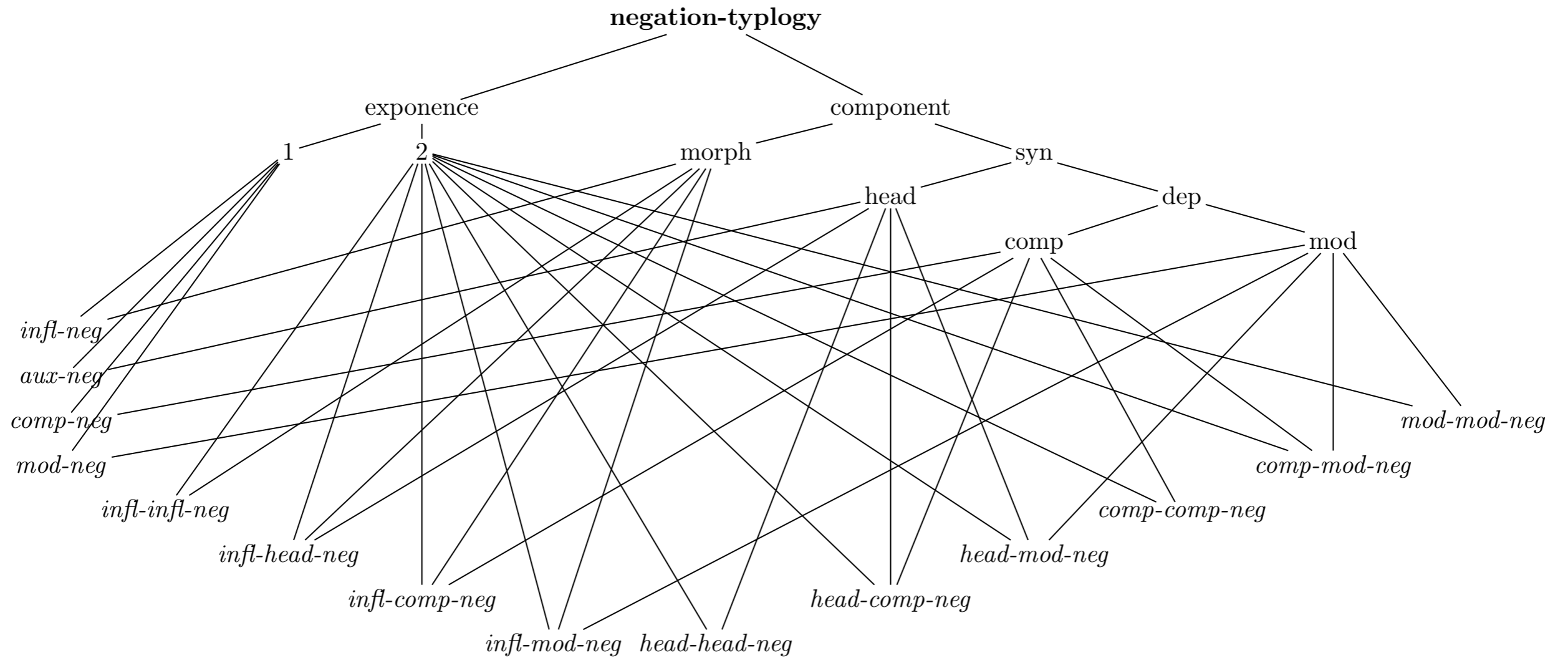Emily M. Bender, Alex Lascarides, Joshua Crowgey

Overview

- Focus on sentential negation

- New improved negation library (Joshua Crowgey's MA thesis work, HPSG 2012 paper)

- Negation, modifiers and semantic composition cross-linguistically (Bender/Lascarides)

Negation library

- Cross-factoring exponence with morphological category of markers

- Inspired by previous typological work (Dryer 2005, Dahl 1979), HPSG analyses of negation (Kim 2000, Kim & Sag 2002), and the HPSG conception of lexical integrity

- Single/double exponence

- Morpheme type :

```
              grammatical morphemes
        bound                        free
                        head                    dependent
                                        complement        modifier
```

New negation typology
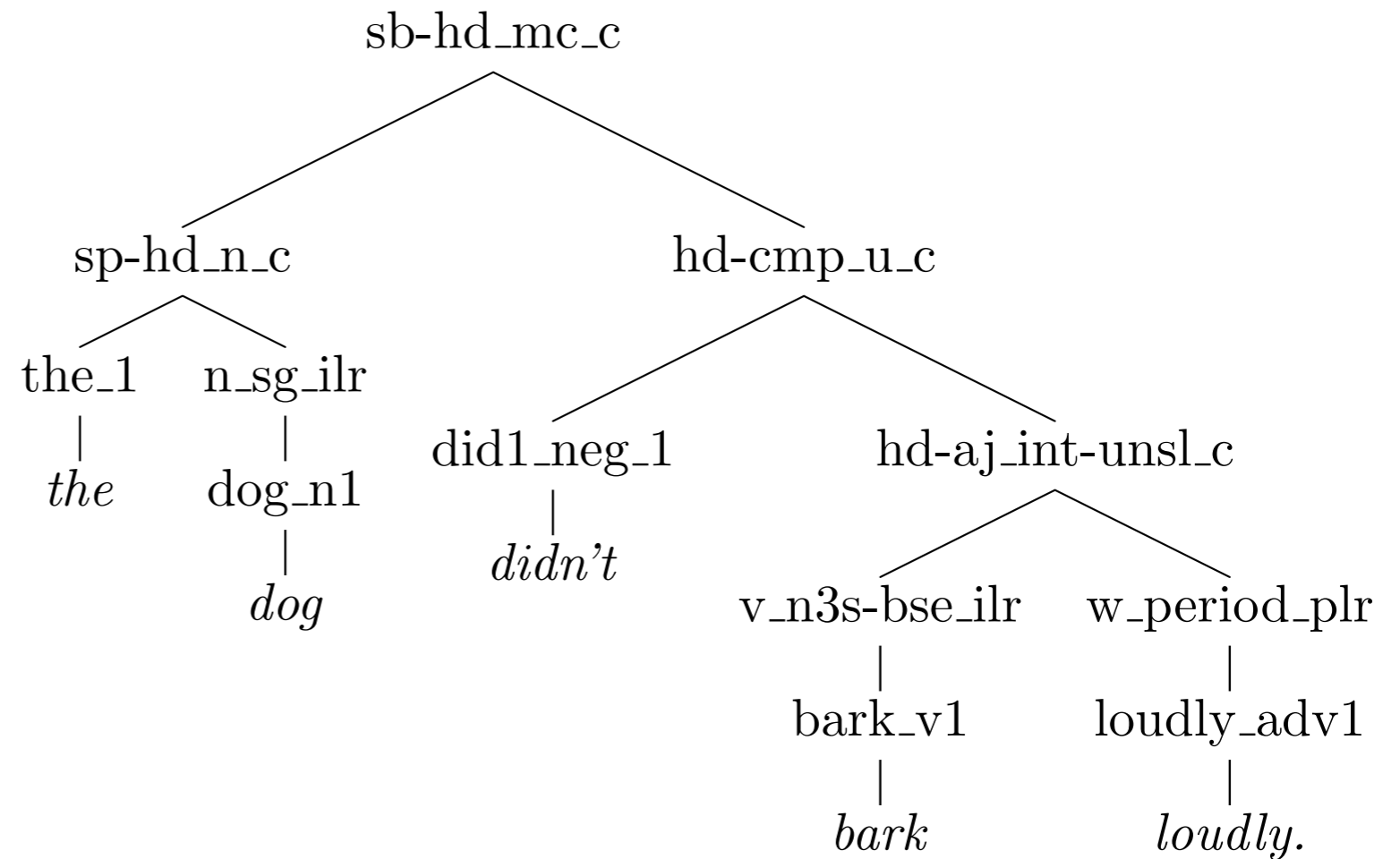
Negation analyses

- Analyses provided for 13/14 of these predicted types

- One type (head-head-neg) discarded as improbable: that would describe two auxiliaries

- We have examples from languages suggesting that 11 of the types would be interesting to experiment with for at least some languages.

- **All map to the same semantic representation**

Semantics of negation in English

- ERG: an EP with a single scopal argument, fixed in its scope by its position in the sentence

  - *Kim didn't read every book.* ... l1:neg(h2), l3:_read_v(e,x,y) ... h2 qeq l3

- Possible challenges:

  - 'neg-raising': *Kim doesn't believe Sandy is happy.* → Presupposition based account (Gajewski 2005)

  - focus sensitivity: *The dog didn't bark loudly.* → Pragmatic account of focus sensitivity (Beaver & Clark 2008)

- Good enough for English; will it work for other languages?

- More to the point: Can we get there from the morphosyntax of negation in other languages?

Negation and intersective modification

- English:

```
                                    sb-hd_mc_c
                          _____/        _____
                    sp-hd_n_c                          hd-cmp_u_c
                   ___/    \___                      ___/        \___
               the_1      n_sg_ilr             did1_neg_1       hd-aj_int-unsl_c
                 |           |                      |           ___/        \___
                the        dog_n1                 didn't   v_n3s-bse_ilr   w_period_plr
                            |                                   |               |
                           dog                               bark_v1      loudly_adv1
                                                                |               |
                                                              bark          loudly.
```

- Turkish:

Kopek   yuksek ses-le   havla-ma-di-ϕ.
dog.NOM loud   voice.with bark-NEG-PST-3SG

'The dog didn't bark loudly' [tur]

Something's gotta give

- Most straightforward analysis of inflectional negation is via a meaning-contributing lexical rule

- Current analysis of intersective modifier attachment has the modifier sharing the label of the constituent it modifies

- Lexical Integrity Hypothesis

- Which one should change?

  - Disassociate the morphological marking of negation from the semantic contribution?

  - Change the way intersective modifiers attach to the scope tree

Dissociation of morphology and semantics

- Lexical rule adds affix, diacritic feature

- Unary phrase structure rule triggered by diacritic feature adds semantics

- Won't work:

  - Negation is not among the affixes eligible for "suspended affixation" in Turkish (cf. Fokkens et al 2009, Kabak 2007)

  - Causatives are also formed morphologically in Turkish; would have to go with a constructional account of causative, too (not appealing)

    Ebeveyn-ler   çocuk-lar-ina meyve yedir-t-me-d-ler
    Parent-PL.NOM child-PL-DAT fruit   eat-CAUSE-NEG-PST-3PL

    1. 'The parents did not make (or force) the kids to eat the fruit.'

    2. 'The parents made the kids not eat the fruit.' [tur]

Modifier attachment: use leq

- Modifiers add an leq stating that their label is leq the label of the constituent they attach to (h/t Dan; cf Schlangen 2003, Alahverdzhieva & Lascarides 2011, Egg et al 2001)

- Is the eq reading actually available? (May be ruled out pragmatically, also useful for ERG's "extra" parse of *The dog didn't bark loudly.*)

- How do we keep the modifier from attaching too low as in *Kim doesn't firmly believe that the dog barked.*? (New condition on fully scoped MRSs: modifiers may not take a position in the scope tree lower than that of the label associated with the value of their ARG1.)

- It appears that scopal modifiers can't attach low with respect to inflectional negation (though we're still investigating).

Conclusion

- Sentential negation appears to be a feature of every language

- So far, it seems feasible to target the same semantic representation (of negation) across languages

- Different morphosyntactic scaffolding requires differences in underspecified MRS descriptions (leq v. handle equality for intersective modifiers)

- ... but the fully resolved MRSs should be isomorphic

- Future work: What about other kinds of scopal rels introduced by affixes?