

Hydras revisited

1. Modified coordinated nominal expressions – once dubbed “hydras” by Link (1984) – as in (1) (where “NE” stands for “nominal expression”, a pretheoretical label), raise several problems:

(i) with respect to compositionality, especially in those languages where the definite article *must* be iterated in such contexts (e.g. French), since, on the one hand, the conjoined NEs yield an *i-sum* (hence a semantic object of type *e*, see Partee (1987)), whilst, on the other hand, the intersective modifying relative clause presupposes a *predicate*, $\langle e, t \rangle$ reading for the conjunct;

(ii) various *mismatches* between an explicitly triggered distributed interpretation of the subject NE in the matrix clause and a collective interpretation provided by the R(estrictive) R(elative)'s predicate (and vice versa) are expected to lead to unacceptability, a prediction falsified by the data.

2. We therefore wish to (r)examine the structure and interpretation of those expressions within the current Split-DP frameworks, which admit of either (i) (at least one) intermediate functional head (and projection) between NP and DP, cf. Ritter's (1991) and Stroik's (1994) Number Phrase, and Déchaine & Wiltschko's (2002) Φ P, or (ii) a syntactically active D' level (Winter 2000). An essential feature of the latter two papers is that these nodes are semantically “flexible”, allowing both an argumental/definite/quantified interpretation, and a predicate reading. We will show that hydras provide independent evidence for such an approach, thereby allowing a truly compositional interpretation — compare Link's (1984) initial step in his translation of (1), noted in (2), in which he crucially ignored the definite articles.

If the definite articles in (1) can sit in Spec, Φ P, it will not be necessary to stipulate that they are “transparent”: first, the conjunct Φ P *the boy and the girl* will translate into an *i-sum* ‘ $b \oplus g$ ’. Next, if the contribution of a RR is (at least in many cases) intersective, and if the adjunction of a RR to a Φ P is to yield any interpretation at all, then that *i-sum* will shift according to Partee's (1987) “Ident” operation into an object of type $\langle e, t \rangle$, see (3a), so as to combine with the RR's translation and provide the restriction of a D° , as in (3b).

3. The paradoxes alluded to above can be illustrated by the French pairs in (4) and (5).

What is at stake here is the syntactic position of distributive (initial) *#Et*: if it is below the node at which the RR is adjoined, (4b) should be out; but is not. On Winter's theory, *#Et* could sit in Spec, DP, the conjoined phrases being two D's, whereas within the Φ P approach, two Φ P's are conjoined — see already Stroik 1994: “RRs are NumP adjuncts”, so that *#Et* could well be (surprisingly) analyzed as occupying the D° position (more on this below).

4. Hydras will also be used to probe into the properties of NEs in Czech, a language that displays interesting typological differences with French, because it has no article, but has three ways of coordinating NEs, as illustrated in (6)-(8): neutral coordination, distributive coordination, and comitative coordination.

(If the comitative strategy always yields group readings — cf. McNally (1993) on similar structures in Russian — then (8a) with ‘together’ and (8b) are ruled out because of redundancy, or perhaps by the ban on vacuous quantification, and (8a) with the reflexive PP because of a semantic clash between its distributive import and the semantics of the subject DP.)

From the foregoing data we get in particular the contrasts in (9), which show that Comitative coordination requires that *both* the matrix and the subordinate predicates be compatible with a group interpretation. Moreover, as can be inferred from examples (6) through (8), *i* only coordinates DPs, *s* both DPs and Φ P's, and *a* DPs, Φ P's and “pure” NPs (as well as clauses and VPs, as could be expected), a descriptive result which requires a feature system which, we hope to show, can be independently justified.

5. From a more theoretical point of view, we shall use independent data to show that the Φ P hypothesis is superior to the D' one, not of course because certain syntactic models a priori exclude X' from the domain of active syntactic nodes, but because D° probably is the locus for both Czech *i* and, as we suggested above, French initial, distributive *#Et* (see Heycock & Zamparelli 2000 for totally independent evidence for a [+Coord] feature in D°), whence it follows that $\Phi(P) = \text{Num}(P)$, an identification which dissociates Number from Distributivity — as could be expected, since it is impossible to distribute over non-plural entities.

Finally, we shall show that a [+distr] D° which takes a conjoined Φ P as complement may also be the locus of a [+Focus] feature that distributes over the two conjuncts (cf. Hendricks 2001), and check the hypothesis that, cross-linguistically, restricting the type-shifting operations described here to the syntactic level Φ P/NumP is the unmarked option, thereby leaving the English coordinated NEs *A boy and girl* and *John and every girl* to a typologically marked type.

- (1) [_{NE} The boy and (the) girl [_{CP} *who met*]]
- (2) *boy and girl* $\Rightarrow \lambda z \exists x \exists y [\text{boy}'(x) \wedge \text{girl}'(y) \wedge z = x \oplus y]$
- (3) a $b \oplus g \Rightarrow \lambda z [z = b \oplus g]$
 b $\lambda z [z = b \oplus g \wedge \text{meet}'(z)]$
- (4) a *Et le garçon et la fille se sont rencontrés.
 'Both the boy and the girl met.'
 b $\sqrt{\text{Et le garçon et la fille qui se sont rencontrés ont les yeux bleus.}}$
 'Both the boy and the girl who met have blue eyes.'
- (5) a $\sqrt{\text{Et le garçon et la fille ont les yeux bleus.}}$
 'Both the boy and the girl who met have blue eyes.'
 b *Et le garçon et la fille *qui* ont les yeux bleus se sont rencontrés.
 'Both the boy and the girl who have blue eyes met.'
- (6) *Neutral coordination – a:* [the small capitals correspond to diacritized letters]
- a Petr **a** Marie se setkali v pEt / mají modré oči / vyhráli každý 10 \$.
 P **a** M REFL met-PL-M at 5 / have3PL blue eyes / won-PL-M each-SG-M 10 \$
 'Peter and Mary met at five o'clock / have blue eyes / earned \$ 10 each.'
- b Muj kolega **a** přítel který přišel v Cera
 my colleague **a** friend who-SG came yesterday
 'My colleague and friend who came yesterday'
- (7) *Distributed coordination – i:*
- a Petr **i** Marie mají modré oči. b *Petr **i** Marie se setkali v pEt.
 P **i** M have-3PL blue eyes P **i** M REFL met-PL-M at 5
 'P. **i** M. have blue eyes.' [cf. (5a)] 'P. **i** M. met at five o'clock.' [cf. (4a)]
- (8) *Comitative coordination* (i.e. with the Prep. *s* 'with' assigning the instrumental case to the second conjunct):
- a Petr **s** Marií hráli tenis (*společně / *po sobě).
 P with M-INSTR played-PL tennis (together / after REFL)
 'Peter **with** Mary played[PLURAL] tennis (together / one after the other).'
- b ??Chlapec **s** dívkou se políbili.
 boy with girl-INSTR REFL kissed
 'The boy **with** the girl kissed.'
- (9) a Chlapec **s** dívkou která hráli tenis půjdou do kina.
 boy with girl-INSTR who-PL-M played-PL tennis go-3PL-FUT to cinema
 'The boy and the girl who played tennis (together) will go to the pictures (together)'
- b ??Chlapec **s** dívkou která mají modré oči budou hrát tenis.
 boy with girl-INSTR who-PL-M have-3PL blue eyes AUX-3PL-FUT play-INF tennis
 'The boy and the girl who have blue eyes will play tennis (together)'
- c ??Chlapec **s** dívkou která budou hrát tenis mají modré oči.
 boy with girl-INSTR who-PL-M AUX-3PL-FUT play tennis have-3PL blue eyes
 'The boy and girl who'll play tennis (together) have blue eyes.'

References

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