snippets

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Contents

1. Jason Kandybowicz and Harold Torrence, *How* why *is different: wh-in-situ in Krachi*.
2. Hideki Kishimoto. *Empty verb support as a morphological adjustment rule*.
3. Timothy Leffel, *English proximal/distal non-deictic demonstratives align with hearer-new/hearer-old information status.*
4. Joan Mascaró. *The realization of features in asymmetric agreement in DPs.*
5. Philippe Schlenker, *Singular pronouns with split antecedents.*
6. Daniel Siddiqi, *The English intensifier* ass.
7. Christos Vlachos. *Sluicing and relatives*.

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Singular pronouns with split antecedents

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We argue that two independently motivated mechanisms can yield an analysis of (1a) (after Stone 1992) in which *it* is a singular pronoun with split antecedents, as is illustrated in (2b) (see also Simons 2000 and Elbourne 2005):

(1) a. Mary will bake a strudel or John will buy a tiramisù. I will devour it.
b. Mary will bake [a strudel]$_i$ or John will buy [a tiramisù]$_k$. I will devour it$_{i+k}$.

The first mechanism is the device of multiple indexing needed to account for plural pronouns with split antecedents, as in (2). Multiple indexing is essential to account for the ambiguity in (3), where *they* can carry any combination of indices which together denote a plural individual.

(2) Mary will bake [a strudel]$_i$ and John will buy [a tiramisù]$_k$. I will devour them$_{i+k}$.
(3) [Each boy]$_i$ told [each girl]$_k$ that [each teacher]$_m$ thought they$_{i+k\ /\ i+m\ /\ k+m\ /\ i+k+m}$ should work together.

The second mechanism is special to recent versions of dynamic semantics in which quantifiers introduce discourse referents together with some maximality conditions (van den Berg 1996a,b, Nouwen 2003, Brasoveanu 2006, 2008). These analyses can be seen as elaborations of the theories of Kamp 1981, Heim 1982 and Groenendijk & Stokhof 1991, which provided various means of giving 'wide scope' existential force to indefinites, but without maximality conditions, as illustrated in (4). The simplest versions of these 'wide scope' analyses fail for the quantifiers in (5) (where *≥2-donkeys* and *<5-donkeys* are predicates that are true of objects that contain at least 2 and fewer than 5 donkeys respectively). (5a) intuitively entails that John beats *all the donkeys that he has*, but this entailment is not captured by (5a'). The same problem arises in (5b-b'), but in addition, (5b') does not even entail that John owns fewer than five donkeys.

(4) a. John owns a donkey. He beats it.
b. ∃x [John owns x & donkey x & John beats x]

(5) a. John owns [at least 2 donkeys]. He beats them.
a'. Wrong analysis: ∃X [John owns X & ≥2-donkeys(X) & John beats X]
b. John owns [fewer than 5 donkeys]. He beats them.
b'. Wrong analysis: ∃X [John owns X & <5-donkeys(X) & John beats X]

To address this problem (solved by other means in Kamp & Reyle 1993), recent dynamic accounts take quantifiers such as *at least two* and *fewer than five* to introduce discourse referents *together with explicit maximality conditions*. For simplicity, we use a variant of the system of Nouwen 2003, one in which (A) discourse referents range over a domain of singular, plural, or null objects (hence a variable *can* denote the null object 0 – which is not a standard assumption); and (B) the maximality condition is presupposed rather than asserted. (5a,b) are then analyzed as in (6), where we write presuppositions inside curly brackets (and where *≥2(X)* means that *X* denotes an object that contains at least two singular objects).

(6) a. John owns [at least 2 donkeys]$_X$. He beats them$_X$.
a'. ≥2(X) {X = Max X': donkey(X') & John owns X'} & John beats X
b. John owns [fewer than 5 donkeys]$_X$. He beats them$_X$.
b'. <5(X) {X = Max X': donkey(X') & John owns X'} & John beats X

Now if we combine our two mechanisms (multiple indices, and discourse referents with presupposed maximality conditions), we obtain an account of (1a). It is reasonable to assume that a singular pronoun comes with a presupposition that it denotes a singular object. For (7), this leads to the prediction that *X+Y* is presupposed to denote a singular object. In other words: either Mary bakes one strudel, or John buys one tiramisù – but not both. In this case, this sounds about right. There are other solutions to the problem of disjunctive antecedents (e.g. Brasoveanu 2008 fn. 94; Wang 2005 section 7.5); but ours is one that our two simple mechanisms taken together yield almost 'for free'.

(7) a. Mary will bake a strudel or John will buy a tiramisù. I will devour it.
b. [≥1(X) {X = Max X': strudel(X') & Mary will-bake X'}
or ≥1(Y) {Y = Max Y': tiramisù(Y') & John will-buy Y'}]
& I will-devour it$_{X+Y}$

(There is some leeway in the implementation. What is essential is that the disjunctive sentence in (7) should give rise to an information state that collects assignment functions that assign to *X* the maximal group of strudels that Mary bakes and to *Y* the maximal group of tiramisù that John bakes; our assumption that the maximality conditions are presupposed is just one way to achieve this result.)

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