snippets

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Contents

1. Luka Crnic. *Projection of supplements in alternatives.*
2. Michael Erlewine. *Structurally distant haplology*.
3. Natalia Fitzgibbons. *Pied-pipe your preposition and strand it too.*
4. Michael Frazier and Masaya Yoshida. *Remarks on gapping in ASL.*
5. Sumiyo Nishiguchi. *Shifty operators in Dhaasanac*.
6. Jacopo Romoli. *Strong NPIs and Neg-raising desire predicates.*
7. Philippe Schlenker. *Informativity-based maximality conditions*.

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Informativity-based maximality conditions

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The usual lexical entry for *the* in (1) makes reference to a notion of mereological maximality, as in (2) (Link 1983; see also Sharvy 1980). Von Fintel, Fox and Iatridou 2005/2012 (henceforth FFI) argue that information-based maximality should be preferred, as in (2'):

(1) $[\![\text{the}]\!](\varphi_{<e,st>})$ is defined only if there is a unique x such that x is a maximal φ-object ($M_x\, \varphi$ for short). When defined, $[\![\text{the}]\!](\varphi)$ refers to the maximal φ-object.

(2) **Link's proposal:** $M_x\, \varphi$ iff (i) x satisfies φ, (ii) no object x' is such that
(a) x' satisfies φ, and (b) x < x', where < is strict mereological inclusion.

(2') **FFI's proposal:** $M_x\, \varphi$ iff (i) x satisfies φ, (ii) no object x' is such that
(a) x' satisfies φ, and (b) the proposition φ(x') asymmetrically entails φ(x).

We argue that a similar correction should be made to the maximality conditions introduced by generalized quantifiers in recent dynamic treatments of 'donkey' anaphora (e.g. Brasoveanu 2008).

FFI note that when ordering by informativity and ordering by size are inversely correlated, (2') but not (2) correctly predicts that *the* φ should denote the *smallest* φ-object:

(3) I have <u>the amount of flour sufficient to bake a cake</u>. (FFI)

In this case (henceforth 'reversal'), 'propositions of the form *d-much flour is sufficient to bake a cake* become more informative the *smaller* d is' (FFI) – hence the *smallest* such amount is denoted. This argument can be replicated with donkey anaphora:

(4) A certain amount of plutonium is sufficient to trigger a nuclear explosion. I will obtain <u>it</u>.

Here *it* refers to the minimal rather than to the maximal amount of plutonium sufficient to trigger a nuclear explosion.

For an E-type theorist, this fact is unsurprising given FFI's initial observation, since *it* just stands for: *the amount of plutonium sufficient to trigger a nuclear explosion*. But other cases require a dynamic treatment: they combine 'reversal' with a context in which two pronouns have semantically symmetric ('bishop'-style) antecedents, as in (5) (the sequence *mix it with it* is infelicitous, hence we resort to *mix it with its counterpart* or a French equivalent involving two clitics).

(5) a. In order to trigger a nuclear explosion, it will be enough for me to mix a certain quantity of plutonium with an equivalent quantity of the same compound. I'll be very careful when I mix <u>it</u> with its counterpart.
b. Pour déclencher une explosion nucléaire, il me suffira de mélanger une certaine quantité de plutonium à une quantité identique de plutonium. Je promets que je

serai très prudent lorsque je la lui adjoindrai.
[= first sentence of (a), followed by: *I promise that I will-be very cautious when I it to-it adjoin.*]

Giving the underlined pronouns in (5) an E-type meaning (e.g. 'the smallest quantity of plutonium that I will mix with an identical quantity of plutonium') would give rise to the same problems that motivated dynamic approaches in the first place: uniqueness fails because the two antecedents play semantically symmetric roles. Dynamic theories can eschew this difficulty, as in (6) – but they must adopt (2') over (2) ((6b) uses the notations of van den Berg 1994; importantly, we take the quantification here to be over *parts* of plutonium rather than over measures thereof):

(6) a. [a x: quantity-of-plutonium x][a y: quantity-of-plutonium y $\wedge$ equivalent(x, y)] sufficient mix-with(x,y).

b. $\varepsilon_x \wedge \varepsilon_{x'} \wedge M_{x'}$(quantity-of-plutonium x') $\wedge$ M_x(x $\subseteq$ x' $\wedge$ $\varepsilon_y \wedge \varepsilon_{y'} \wedge M_{y'}$(quantity-of-plutonium x' $\wedge$ equivalent(x, y')) $\wedge$ M_y(y $\subseteq$ y' $\wedge$ sufficient mix-with(x,y))

If mixing amount x of plutonium with the same amount of plutonium is sufficient to trigger an explosion, this plausibly holds of *larger* amounts than x – hence (5) is a reversal environment, and (2') correctly predicts that the witnesses of the two existential quantifiers should involve the *minimal* amounts with the desired property. There is one proviso, however: the minimality effect we predict plausibly arises when we have the contextual entailment in (7):

(7) for all x, x', y, y', (x $\subseteq$ x' and y $\subseteq$ y') $\Rightarrow$ [sufficient mix-with(x,y) $\Rightarrow$ sufficient mix-with(x',y')]

Without this assumption, we won't have a maximality effect, but we also won't have a minimality effect; thus the absence of the maximality effect rather than the presence of a minimality effect is what is crucial for our purposes.

In principle, one could test the informativity-based analysis with simple plural indefinites. Brasoveanu 2008 (fn. 9) argues that plural *some* is maximal, as in: *Every driver who had some dimes put them in the meter* – which differs from *Every driver who had a dime put it in the meter* in yielding a maximal reading only. Since maximality is involved, one could ask whether it is informativity-based or size-based. The examples needed to distinguish the two hypotheses are complex and the judgments are subtle, however, and thus we leave this issue for future research.

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