

Background A central component in the process of implicature computation is the generation of the set ALT of alternatives. In the Neo-Gricean tradition, the make-up of $ALT(\phi)$ is a matter of lexical semantics: Certain items like *some* are lexically specified to have *scale-mates* like $\{most, all\}$. But attempts have been made to derive ALT from a general syntactic mechanism s.t. $\psi \in ALT(\phi)$ iff $\psi \lesssim \phi$, i.e., ψ is at most as complex as ϕ . Formally [Katziro7]:

- (1) $\psi \lesssim \phi$ iff ψ can be derived from ϕ by successive replacements of subconstituents of ϕ with elements of ϕ 's substitution source

The substitution source of ϕ is the union of the lexicon, all subconstituents of ϕ , and contextually given constituents

A simple and general mechanism, it still over-generates: Sentences never exhibit the wealth of implicatures predicted to be possible (not actual!). Thus, $ALT(\text{John saw some of the French movies}) = \{\text{John saw all of the movies, John read most Italian books, John wrote some American series, ...}\}$.¹ Generally speaking, the over-generation of the structural approach can be addressed by a *pruning* mechanism for ALT , s.t. $A \subset ALT$ is the *active* set of alternatives for a given LF. Contextual relevance is one obvious factor in determining A : $A \subseteq ALT \cap C$, with C the set of contextually relevant sentences [F&K11]. But how much pruning of ALT is possible (Q1)? and What are the principles underlying the limits of contextual pruning (Q2)?

State of the Art While little has been said about Q2, [F&K11] address Q1 in relation to the *Symmetry* problem [vF&H99]. They argue that if ALT contains symmetric alternatives, contextual pruning to a set $A \subset ALT$ can not remedy this — there's no contextual symmetry breaking:

- (2) [Context: John solved the math problem.] Mary solved the math or the chemistry problem
 $\not\Rightarrow$ Mary solved math or chemistry $\wedge \neg$ (Mary solved math) (\equiv Mary solved chemistry)

This empirically unattested inference could be derived on the basis of the set alternative set A :

- (3) $ALT(2) = \{\text{math or chemistry, math, } \boxed{\text{chemistry}}, (\text{math and chemistry})^2\}$
 $A \subset ALT(2) = \{\text{math or chemistry, math, (math and chemistry)}\}$

(2) shows that $A \subset ALT$ is not a possible pruning, or else the implicature marked $\not\Rightarrow$ would be possible. In apparent contrast, (4) can only be accounted for if symmetric alternatives *can* be pruned after all [T&H15]:³

- (4) [John went for a run and didn't smoke.] Bill (only) went for a run
 $\checkmark \Rightarrow \neg$ (Bill didn't smoke) (\equiv Bill smoked)
 $ALT = \{\text{run, } \neg\text{smoke, } \boxed{\text{smoke}}, \text{run } \wedge \neg\text{smoke}\}$, $A = \{\text{run, } \neg\text{smoke, run } \wedge \neg\text{smoke}\}$

Here, only pruning of a $\boxed{\text{symmetric alternative}}$ can account for the observed implicature. Importantly, (2) and (4) are covered by [F&K11]'s suggested generalization, i.e., their answer to Q1:

- (5) $A \subset ALT$ is an allowable pruning if the set $ALT - A$ contains no exhaustively relevant member
 p is exhaustively relevant given A if *only* _{A} p is in the Boolean closure of A

We suggest that this stipulative condition on the pruning mechanism can be done away with once we address the more fundamental Q2.

¹ We agree with [F&K11] that F-marking is an important factor in restricting ALT — implicature computation is focus-sensitive. The questions discussed in this talk are however orthogonal to this issue and remain regardless.

² The conjunctive alternative is bracketed because its presence is inessential to the problem at hand.

³ The set of structural alternatives below is already in keeping with T&H's Atomicity constraint, which we assume is correct but which is orthogonal to the issue at hand.

Proposal We argue that the limits of *ALT*-pruning fall out of a general theory of economy. [Me14] argues for the following principle in relation to Hurford's constraint:

(6) An LF ϕ is blocked by an LF ψ iff $\psi < \phi$ and $\llbracket \psi \rrbracket = \llbracket \phi \rrbracket (\psi < \phi \text{ iff } \psi \lesssim \phi \wedge \neg(\phi \lesssim \psi))$

The idea is that strictly simpler competitors, as defined by (1), block a given LF if the meaning is the same. Here is how (6) derives (2), and generally the lack of efficient exhaustification with symmetric alternatives like *ALT* = {some, just some, all} in (8) [Kao7]:

(7) $LF_1 = exh_A [A \text{ or } B]$
 $ALT = \{A \text{ or } B, A, \boxed{B}, A \text{ and } B\}$
 $A = \{A \text{ or } B, A, (A \text{ and } B)\}$
 $\llbracket LF_1 \rrbracket = (A \vee B) \wedge \neg A \wedge \neg(A \wedge B) (\equiv B \wedge \neg A)$
 $C_{block}(LF_1) = \{\boxed{exh B}, exh A, \dots\}$

(8) $LF_1 = exh_A [\text{some}]$ $LF_2 = exh_{A_2} [\text{some}], A_2 = \{\text{some}, \text{all}\}$
 $ALT = \{\text{some}, \text{just some}, \text{all}\}$ $\llbracket LF_2 \rrbracket = \text{just some}$
 $A = \{\text{some}, \text{just some}\}$ $C_{block}(LF_2) = \{\text{some}, \boxed{\text{just some}}, \dots\}$
 $\llbracket LF_1 \rrbracket = \text{all} (!!!)$ $LF_3 = exh_{A_3} [\text{some}], A_3 = ALT = \{\text{some}, \text{just some}, \text{all}\}$
 $C_{block}(LF_1) = \{\text{some}, \text{just some}, \boxed{\text{all}}, \dots\}$ $\llbracket LF_3 \rrbracket = \text{some}$
 $C_{block}(LF_3) = \{\boxed{\text{some}}, \dots\}$

Note that (6) also derives (4), even though pruning targets a symmetric alternative here.⁴

Discussion Theoretical and practical consequences of the proposal will be discussed: • Under certain assumptions about pragmatic strengthening [Ma09], we explain why sequences like *John saw just some of the movies*. *Mary saw some of the movies* are infelicitous [Kao7], but parallel sequences like (2) are not. This allows for an explanatory account of attested vs. unattested cases of symmetry-pruning. • We will discuss how obligatory ignorance inferences associated with disjunction, superlative modifiers [Nou10], and marked indefinites [K&So2] can fall out of structural competition as defined via (6), and how this pertains to the pragmatics/semantics divide. • The account supports [Cho9]'s argument that # *A or B* in contexts in which $\models_C A$ is ruled out by a Manner-, rather than a Quantity-based constraint. We argue that this restricts the validity of experimental designs involving disjunction as critical items [Ch14, Ch&alo8, Nov&alo2]. • We will spell-out and support the two premises of the account: 1. C_{block} cannot be pruned itself, in contrast to *ALT*. C_{block} reflects the contextual standard of complexity, determined by (a) the lexicon and (b) previously uttered constituents (e.g., *exh [A or B]*, *just some*). This standard is *not* subject to (non-monotonic) change: Using *just some* sets the contextual standard of complexity, (i.e. *just some* $\in C_{block}$). This cannot be undone (s. (8)).

BIBLIOGRAPHY CHEMLA (2009) *Similarity*. FOX & KATZIR (2011): *On the Characterization of Alt*. NALS 19. KATZIR (2007): *Structurally-defined Alternatives*. L&P 30. KRATZER & SHIMOYAMA (2002) *Indeterminate Pronouns*. MEYER (2014): *Deriving Hurford's Constraint*. SALT 24. NOUWEN (2010) *Two kinds of modified numerals*. S&P 3. TRINH & HAIDA (2015): *Constraining the Derivation of Alt*. NALS.

⁴ Here is the derivation:

(i) $LF_1 = exh_A / only_A [\text{Bill went for a run}]$ $C_{block}(LF_1) = \{\text{run}, \text{smoke}, \neg\text{smoke}^5, \dots\}$
 $ALT = \{\text{run}, \neg\text{smoke}, \text{smoke}, \text{run} \wedge \neg\text{smoke}\}$
 $A = \{\text{run}, \neg\text{smoke}, \text{run} \wedge \neg\text{smoke}\}$ $\boxed{LF_1 \checkmark}$
 $\llbracket LF_1 \rrbracket = \text{run} \wedge \neg(\text{smoke})$