Word-less compositionality: case studies in quantification

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some parts are only for reference
and will be skipped in the presentation

- **Compositionality**

  The meaning of a complex expression is a function of the meanings of its parts and how they are put together.

- **What are the "parts"**?

  This question can be asked in many ways: Surface constituents? LF constituents? Only audible parts? Also phonetically empty ones? What about type shifters? Etc.

- **Today's question**

  Are **phonological words** necessarily parts, even minimal parts**,** that a compositional grammar should take into account? If not, what parts are to be recognized?

Lessons from Distributed Morphology and some versions of Minimalist Syntax

Distributed Morphology

(Halle & Marantz 1994; Embick 2010; and others)

Hierarchical syntactic structure all the way down to roots; Late Insertion of vocabulary items.

The architecture is compatible with various different theories of locality and linearization.

The typological differences between polysynthetic and isolating languages do not require the postulation of radically different mechanisms in UG.

The phonological word has no special status in semantic interpretation.

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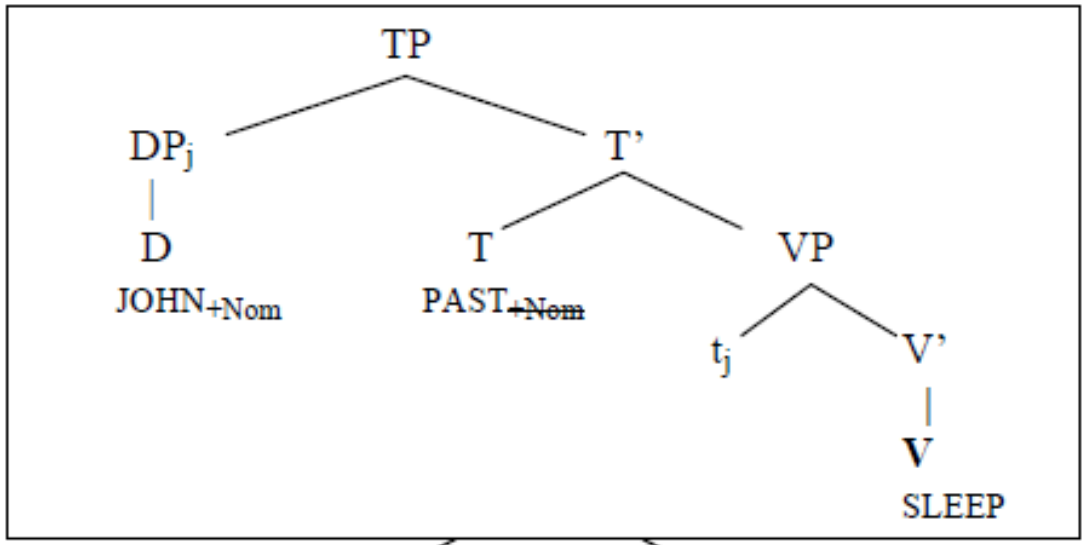
Example: *John slept* (Harley 2011)



Linearization, Morphological Merger, Late Insertion, Phonological constraints

SLEEP ⇔ /slEp/ [[PAST]$_T$ ___]
PAST ⇔ /d/
[[/dZAn/]$_{DP}$ [/slEpd/]$_{VP}$]$_{TP}$]
[>>dZAn >>slEpt]

LF Interpretation

VP: ιi[∃e[SLEEP(e, John) & DURING(e,i)]]
TP: BEFORE(utt-time, ιi[∃e[SLEEP(e, John) & DURING(e,i)]])

Lessons from Distributed Morphology and some versions of Minimalist Syntax

Some versions of Minimalist syntax

(Julien 2002; Kayne 2005a,b, 2010; Koopman 2005; Koopman & Szabolcsi 2000; Sigurðsson 2004; Starke 2009; many others)

Each syntactic head carries one and only one feature. Then, phonological words correspond to potentially large chunks of syntactic structure.

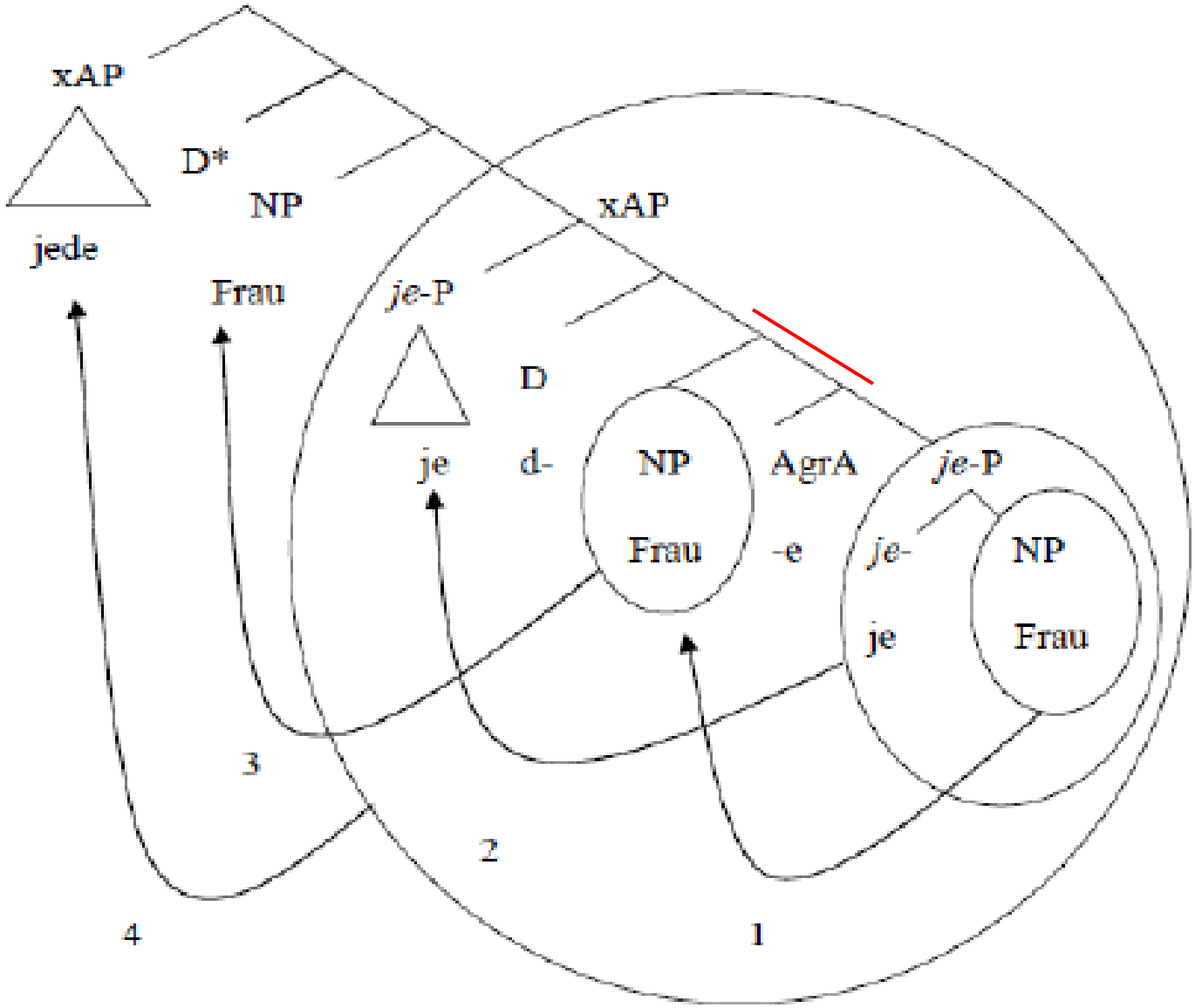
Especially when remnant movement is allowed, many words will not even correspond to complex heads assembled by head movement in syntax, because at least some of the building blocks are phrases.

Many words will not even correspond to complex heads assembled by head movement in syntax

Example: German *jede Frau* `every woman' (Leu 2009)

			and not
jeder	*je* `distributive particle'		*je* `distributive particle'
	d `relative complementizer'		*d* `definite article'
	adjectival agreement		article agreement
je–d–**er**	Mann	gut-**er** Mann `good man'	vs. d-**er** Mann `the man'
je–d–**e**	Frau	gut-**e** Frau	vs. d-**ie** Frau
je–d–**es**	Kind	gut-**es** Kind	vs. d-**as** Kind

Leu 2009: *jede Frau*



Lesson

- Words are not distinguished building blocks in syntax or morphology.
- Then, we do not expect words to be distinguished building blocks for compositional semantics.
- Specifically, word boundaries are neither upper bounds nor lower bounds for compositional semantics.

It is possible to define a grammar without movement, and thus to assign correct interpretations to whatever surface constituents there are, phonological words among them (cf. direct compositionality).

That is an independent consideration; it does not in any way entail that phonological words should be compositional primitives.

Easier said than done…

Case studies in beauty and complications

MOST *(meisten*, *legtöbb)*

SOME *(ka, -oo, …)*

EVERY *(mo, -um, …)*

The determiner *most* (Hackl 2009)

Classical, word-based proportional interpretation:

MOST(MEN)(SNORE) = |MEN ∩ SNORE| > |MEN ∩ NOT SNORE|

Does not reflect the fact that *most* is a superlative.

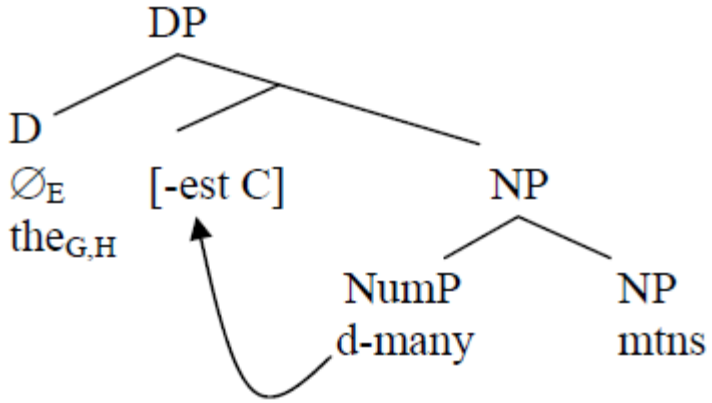
Makes it seem accidental that *Fewest men snore* does not mean, for example, `Fewer men snore than do not snore' and is, in fact, * (although *The fewest men SNORE, Who saw the fewest men?* are ok).

(Hackl 2009)

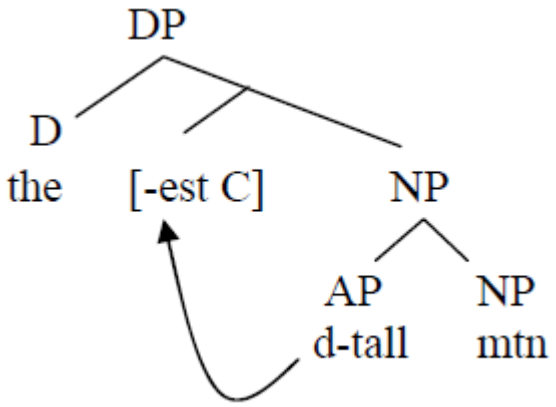
Assemble the proportional reading of *most* from the independently motivated meanings of *[d-]many* (as in *how many*) and superlative *–est,* with Heim's (1985, 1999) semantics.

So-called **absolute superlatives** take DP-scope

English: most (of the) mtns
German: die meisten Berge



the tallest mtn
den höchsten Berg



(Hackl 2009)

- MANY (d)(P) = $\lambda x[P(x) \wedge |x| \geq d]$
  `the set of pluralities *x* with property *P* (e.g. *men*) and with cardinality at least *d*'

- If defined, -EST(C)(D)(x) is true iff
  $\forall y[(y \in C \wedge y \neq x) \rightarrow \max\{d : D(d)(x)\} > \max\{d : D(d)(y)\}]$
  `in the set C of pluralities, *x* has a greater degree of D-ness than any $y \neq x$'

- -EST(C)(D)(x) is defined iff *x* has an alternative in the context set C of things with some degree of D-ness.
  (If D=blue, then members of C are somewhat blue, if D=numerous, then members of C are not empty, ...)

(Hackl 2009)

Most men snore is true if and only if there is a plurality of men whose cardinality is greater than that of any other non-overlapping non-empty plurality of men in C, and the members of this plurality snore.

Equivalent to *More men snore than don't snore*, but now compositionally derived.

**Fewest men snore*: the same grammar, extended to *least*, does not compute a viable absolute reading for it. (Assume that this is correct; not our concern here.)

The **same** MANY and -EST are at work in the **relative** readings of superlatives, with a **different, sentential scoping** of [-est C], cf. *The most/fewest men SNORED.*

absolute *[the] tallest* : relative *[the] tallest* =
proportional *most* : relative *[the] most*

John climbed the tallest mountain.

a. `a mountain$_C$ taller than any other mtn$_C$' — ABSOLUTE

b. `a mountain taller than how tall a mtn anyone$_C$ else climbed' — RELATIVE

John climbed *die meisten Berge*.

a_1. `more mountains$_C$ than how many mtns$_C$ he didn't climb'

a_2. `a mountain-set$_C$ with greater cardinality than the cardinality of any other mtn-set$_C$'

PROPORTIONAL = ABSOLUTE

b. ` a mountain-set with greater cardinality than the mtn-sets anyone$_C$ else climbed' — RELATIVE

Is the best good enough?
The view from suppletion

The Comparative-Superlative Generalizations (Bobaljik, to app)

ABB		good – better – best
ABC		bonus – melior – optimus
AAB	*	*good – gooder – best*
ABA	*	*good – better – goodest*

H. *sok – több – a legtöbb*
many more the most

The Containment Hypothesis:

The representation of the superlative properly contains that of the comparative.

[[[adjective] comparative] superlative] `Adj + more than + all others'

* [[adjective] superlative] `Adj + more than all others'

(Bobaljik, to app)

- Together with Late Insertion (Realization), Underspecification, Elsewhere Ordering, and Locality,

  Containment accounts for the Comparative-Superlative Generalizations (and for the Root Suppletion Generalization).

- Why Containment?

  Not part of UG.

  Due to intrinsic limits on possible morpheme meanings.

  Related to the Complexity Condition (no more than one interpretable feature per head).

- If Containment is correct, Hackl's definition of **-EST** does not decompose enough.

  It accounts for ABB and ABC, but not for *ABA or *AAB.

Not too difficult to build [[[adjective] comparative] superlative] with the Heim/Hackl semantics

here modeled after Barker 2007, Solomon 2009 for *same*

many = $\lambda N\, \lambda d\, \exists a\, [N(a)\ \&\ |a| \geq d]$

(cf. how many, Cresti 1995)

-er = $\lambda G \lambda R \lambda y \lambda x\, [\max(G(\lambda H \lambda z[Rzx \,\&\, Hz])) > \max(G(\lambda H \lambda z[Rzy \,\&\, Hz]))]$

more = **-er** $\circ$ (geach(**many**))

= $\lambda N[\text{-er}(\lambda B \lambda f[\textbf{many}(f(B))](N)]$

= $\lambda N \lambda R \lambda y \lambda x\ [\max(\lambda d \exists a[Rax \,\&\, Na \,\&\, |a| \geq d]) > \max(\lambda d \exists a[Ray \,\&\, Na \,\&\, |a| \geq d])]$

(than Sue [did])(more(burglars)(caught))(Mary)

Relative superlative with more = λN[-er(λBλf[many(f(B))](N)]

MARI fogta el a legtöbb betörőt. (Hungarian)
MARY caught the most burglars

the most = a leg ° több
the … t = a leg = λTλu∀v[v≠u][T(v)(u)]
the most = a legtöbb =
λNλRλu∀v [v≠u][max(λd∃a[Rau & Na & |a|≥d]) >
max(λd∃a[Rav & Na & |a|≥d])]

the_most(burglars)(caught)(Mary) ***=HRel***

See Krasikova 2011 for an alternative:
∃a[burglars(a)(w) & caught(a)(M)(w) &
∀d[d∈[[the C{focus}]](w) → $|a|_w$ ≥ d]]

Absolute superlative obtained from relative one by setting R to = (i.e. Existential Disclosure)

Mari megkóstolta a legtöbb szendvicset. (Hungarian)
Mary tasted most sandwiches

$\lambda N[\text{a legtöbb}(N)(=)]$
$\lambda N \lambda u \forall v\ [v \neq u][\max(\lambda d \exists a[a=u \ \&\ Na \ \&\ |a| \geq d]) >$
$\max(\lambda d \exists a[a=v \ \&\ Na \ \&\ |a| \geq d])] =$
$\lambda N \lambda u \forall v\ [v \neq u][\max(\lambda d[Nu \ \&\ |u| \geq d]) >$
$\max(\lambda d[Nv \ \&\ |v| \geq d])]$

$\exists(most(sandwiches))(Mary\ tasted)$ **=HAbs**

Krasikova 2011 for proportional *most sandwiches*:
$\exists a[sandwiches(a) \ \&\ taste(a)(M) \ \&$
$\exists d[|a| \geq d \ \&\ \forall b[sandwiches(b) \ \&\ disjoint(a,b) \rightarrow |b| < d]]]$

But … just what do these sentences mean?

Mary tasted most sandwiches.	* pieces
Mary tasted most of the sandwiches.	✓pieces
* Mary caught most burglars.	* persons
Mary caught most of the burglars.	✓persons
* Mary drank most whiskey.	* stuff
Mary drank most of the whiskey.	✓stuff

ALTHOUGH

MARY tasted **the most** sandwiches.	✓pieces
MARY caught **the most** burglars.	✓persons
MARY drank **the most** whiskey.	✓stuff

A surprising absolute—relative contrast

Absolute, non-partitive *most NP* does not mean `a majority of the NP-pieces or NP-stuff, ‘

(contrary to German, as in Hackl)

even though **relative *the most NP*** is fine with `… more NP-pieces or NP-stuff than how many NP-pieces or how much NP-stuff (… R’d) ‘

(we’ll see that Hung. *a legtöbb NP* patterns with *(the) most NP*, not with German *die meisten NP*)

... what do these sentences mean?

Mary hates most sandwiches.	✓kinds	* pieces
Mary tasted most sandwiches.	✓kinds	* pieces
Mary tasted most of the sandwiches.		✓pieces
* Mary caught most burglars.		* persons
Mary caught most of the burglars.		✓persons
* Mary drank most whiskey.		* stuff
Mary drank most whiskeys.	✓kinds	
Mary drank most of the whiskey.		✓stuff

ALTHOUGH

MARY tasted **the most** sandwiches.		✓pieces
MARY caught **the most** burglars.		✓persons
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A distributive—collective/cumulative asymmetry in *most NP*—*most of the NP* (Crnic 2009)

Collective [7 out of 10 boys at the party lifted the piano once; there were no other liftings of the piano]

Most of the boys at the party lifted the piano.

Most boys (who were) at the party lifted the piano.

Cumulative [Almost every US voter will vote D or R in the next election; only few will vote for a 3rd party candidate]

Most of the US voters will vote for just two parties.

Most US voters will vote for just two parties.

Most NP is generic, and so distributive

Crnic 2009, with reference to
Matthewson 2001, Nakanishi & Romero 2004, Lønning 1987

Most NP = *most + bare plural/mass term,* a kind-quantifier.

Most NP combines with a kind predicate, or
with a non-kind predicate, if the predicate is shifted
via Chierchia's DKP (Derived Kind Predication) or GEN_C operator.

DKP collapses *all/most/some NP*. Go for GEN_C.

GEN_C distributes the predicate to minimal realizations of a subkind,
and so collective, cumulative, and mass-amount readings are out.

Most of the NP picks out a more-than-half part of a **plurality**. It
combines with plain non-kind predicates, and so collective,
cumulative, and mass-amount readings are not a problem.
(Not to be discussed further.)

DKP collapses *all/most/some NP*. Go for GEN_C

$[[DKP]] = \lambda P_{<i,st>}.\lambda x_i.\lambda s_s \ \exists y[y \leq x(s) \ \& \ P(y,s)]$

Most students kissed Mary (mis)interpreted via DKP:

\# $\lambda x.\lambda P.\lambda s \ \exists y \leq x \ [\mu_s(y) > 1/2\mu_s(x) \ \& \ P(y,s)]]$ (STUDENTS) ([[DKP [*kissed Mary]]]) = 1 iff

$\exists s.\exists y_k \leq$ STUDENTS. $[\mu_s(y_k) > 1/2\mu_s$(STUDENTS) $\& \exists z[z \leq y_k(s) \ \&$ [[*kissed Mary]](z,s)]]

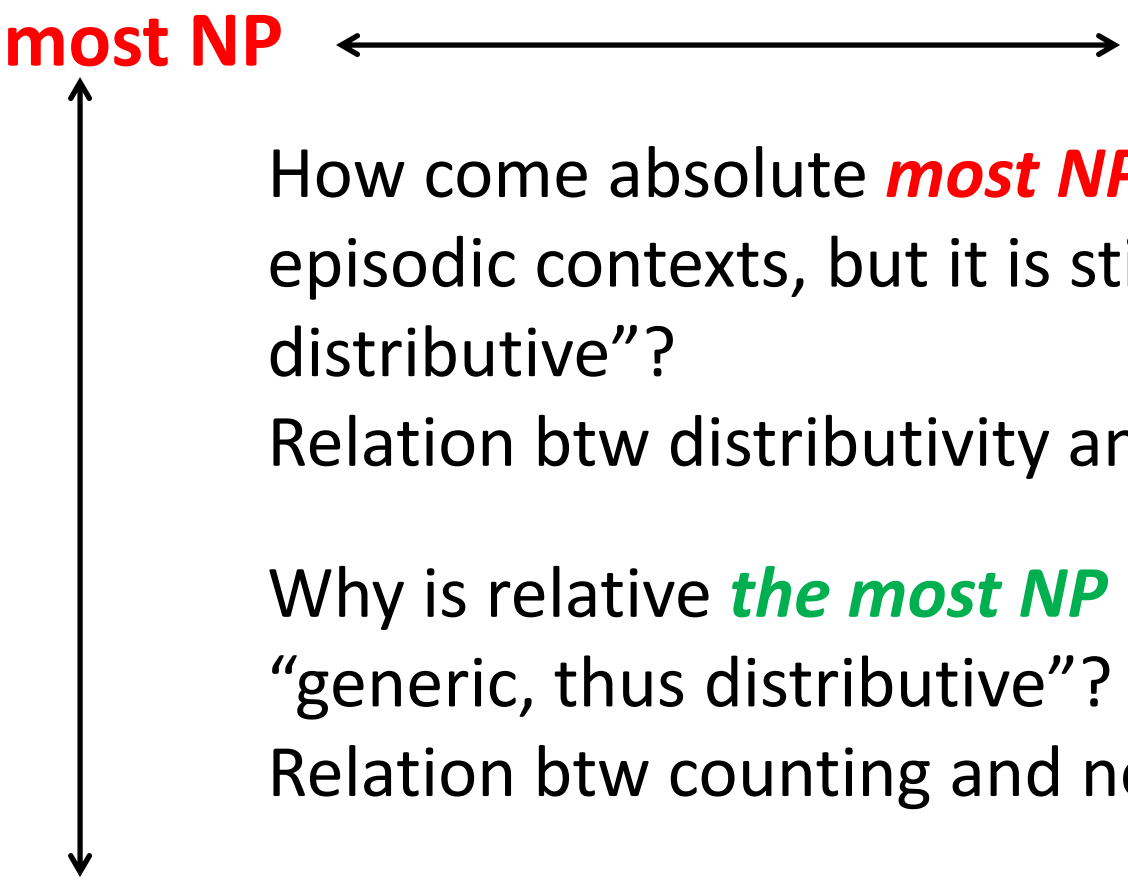
$=$ $\exists s. \exists x$ [$x \leq$STUDENTS & [[*kiss Mary]](x,s)]

(Measuring KINDS: μ_s(STUDENTS)=7 iff there are 7 students in s.)

Use, instead,

$[[GEN_C]] = \lambda P_{<i,st>}.\lambda x_i.\lambda s_s \ \forall y \forall s'[y \leq x(s') \ \& \ C(s') \rightarrow P(y,s')]$

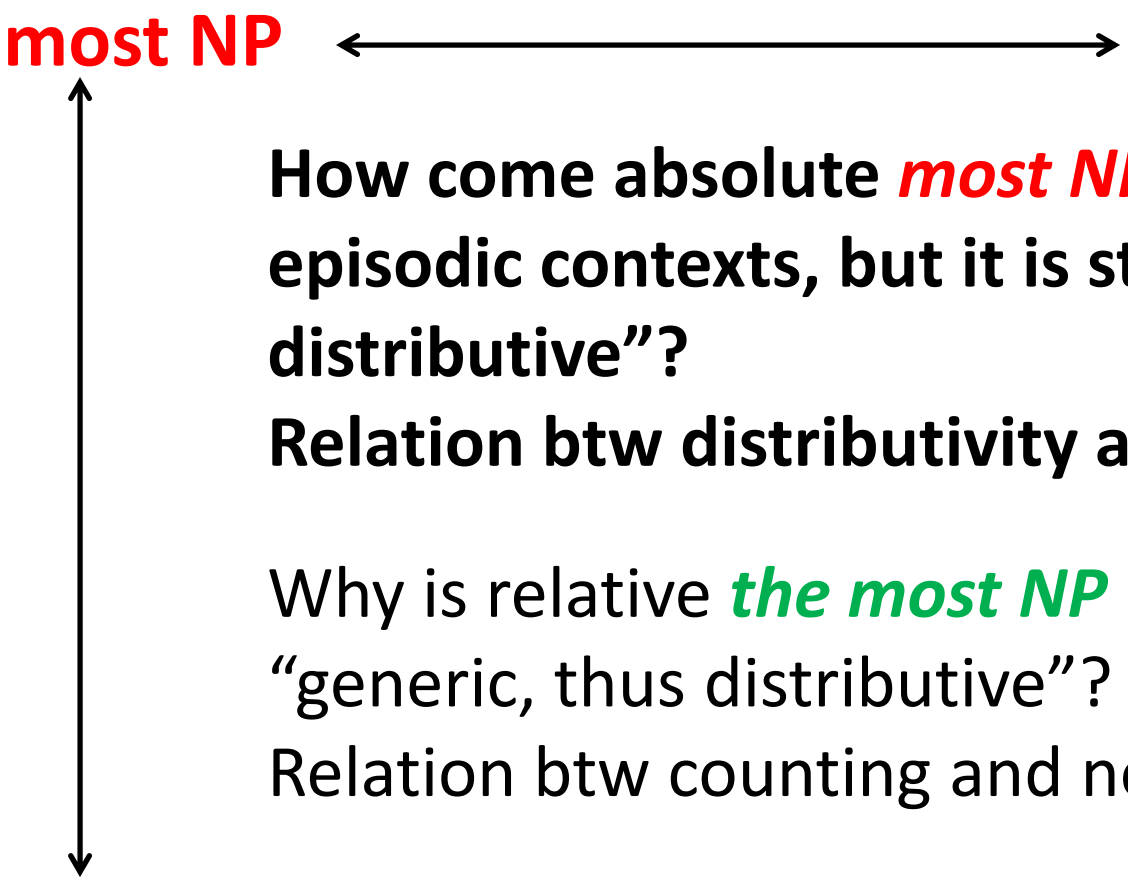
Two lines to pursue



How come absolute ***most NP*** also occurs in episodic contexts, but it is still "generic, thus distributive"?
Relation btw distributivity and genericity?

Why is relative ***the most NP*** not necessarily "generic, thus distributive"?
Relation btw counting and non-counting Qs?

Two lines to pursue



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Why is relative ***the most NP*** not necessarily "generic, thus distributive"?
Relation btw counting and non-counting Qs?

(Crnic 2009)

a. Most boys at the party lifted the piano.

b. $[_{\langle i,st\rangle,st\rangle}$ most $[_i$ boys]] $[_{\langle i,st\rangle}$ GEN_C lifted the piano]

c. $\lambda x.\lambda P.\lambda s\ \exists y \leq x\ [\mu_s(y) > 1/2\mu_s(x)\ \&\ P(y,s)](\text{BOYS})]$ ([[GEN_C lift the piano]]) = 1 iff $\exists s.\exists y \leq \text{BOYS}.\ [\mu_s(y) > 1/2\mu_s(\text{BOYS})\ \&\ \forall z \forall s'[z<y(s') \ \&\ C(s') \rightarrow [[\text{lift the piano}]](z,s')]\ ]$

Domain variable C enables the episodic context (=subtrigging), but quantification is still over (sub)kinds, and therefore distributive.

a. Most of the boys lifted the piano.

b. $[_{\langle i,st\rangle,st\rangle}$ most (of) $[_i$ the boys]] $[_{\langle i,st\rangle}$ lifted the piano]

c. $\lambda x.\lambda P.\lambda s\ \exists y \leq x\ [\mu_s(y) > 1/2\mu_s(x)\ \&\ P(y,s)](B)]$ ([[lift the piano]]) = 1 iff $\exists s.\exists y \leq B.\ [\mu_s(y) > 1/2\mu_s(B)\ \&\ [[\text{lift the piano}]](z,s)]$

Distributive or collective.

Episodic contexts: *most* vs. *any* (AS, not LC)

Mary hates most sandwiches. [ham, cheese, …]
* Mary hates any sandwich(es).

Mary tasted most sandwiches. [ham, cheese, …]
Mary tasted any sandwiches *(that I gave her).

*Mary caught most burglars.
*Mary caught any burglars.

?? Mary caught most burglars who broke into her house.
? Mary caught any burglars who broke into her house.

Mary has caught most burglars who have broken into her house.
Mary has caught any burglars who have broken into her house.

Mary has drunk any/*most milk that I have bought.
Mary drank any/*most milk that was sitting on the counter.

A legtöbb NP on its absolute reading is *most NP*, not *most of the NP,* and not ambiguous, unlike ***die meisten NP***

Mari utálja / megkóstolta a legtöbb szendvicset.
Mary hates / tasted most (kinds of) sandwiches.

* Mari elfogta a legtöbb betörőt / ?már elfogta …
* Mary caught most burglars ?has already caught

* Mari megitta a a legtöbb tejet (ami ...) / ??már megitta …
* Mary drank most milk (that …) * has already drunk

Mari elfogta a betörők (leg)nagyobb részét.
Mary caught the larger/-est part of the burglars [=most of the]

Mari megitta a tej (leg)nagyobb részét.
Mary drank the larger/-est part of the milk [=most of the]

Absolute, non-partitive *most NP* is stubbornly kind-related

Matthewson, Nakanishi & Romero, and Crnic discuss absolute (but not relative) amount superlatives.

As they say, *most NP* quantifies over kinds.

Modification helps with defining one-member subkinds (cf. burglars) and, we add, present perfect helps with genericity.

But *most NP* cannot be persuaded to quantify over amounts of stuff, probably because it never quantifies over non-(sub)kinds.

In contrast, *any NP* quantifies over kinds or amounts.

Distributivity and genericity

Crnic's Matthewsonian account derives the mandatory distributivity of *most NP* from genericity.

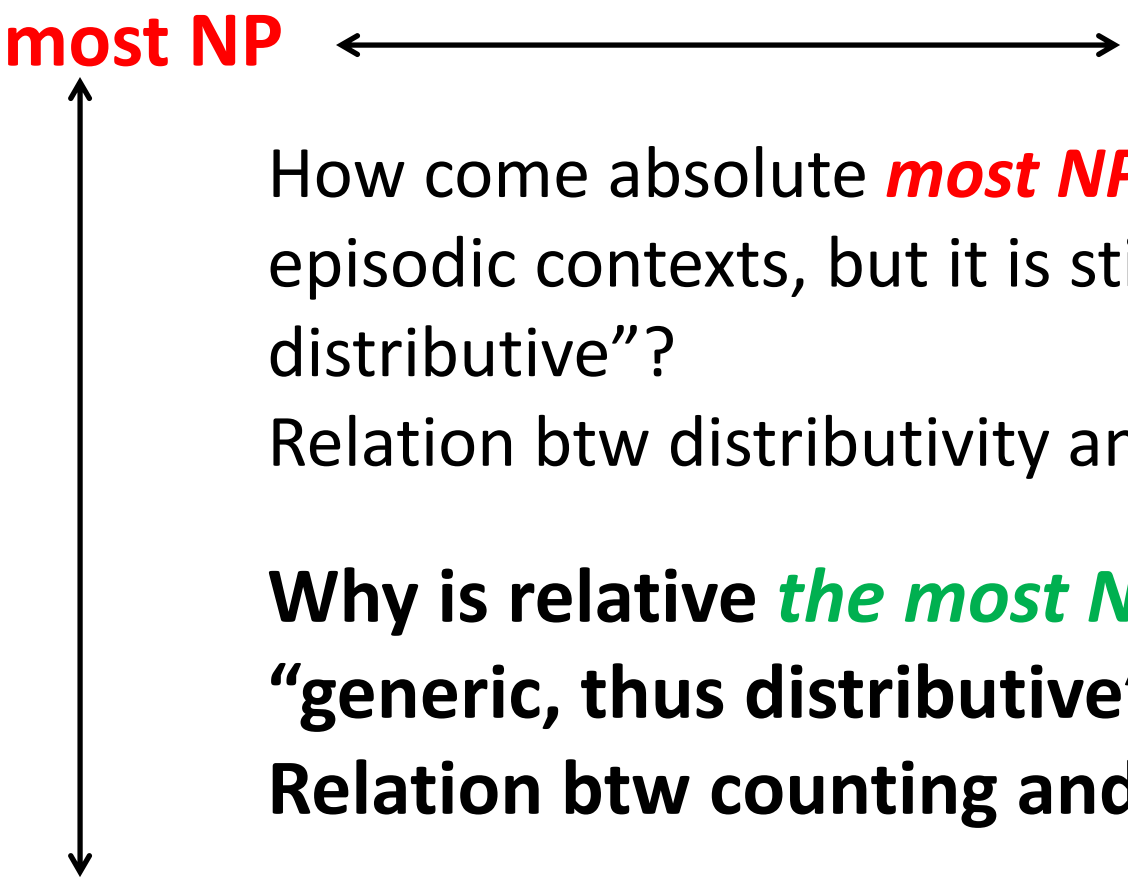
This seems quite right for Hungarian,

(i) in view of what the good sentences with absolute *a legtöbb NP* mean, and

(ii) In view of the fact that Hungarian determiners rarely select for count vs. mass nouns
sok `many, much,' *kevés* `few, little,' *minden* `every, all/any,' *mennyi* `d-many/much,' *hány* `d-many'

Possibly, what we call Dist (Beghelli &Stowell) is Gen.

Two lines to pursue



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Relation btw distributivity and genericity?

Why is relative *the most NP* not necessarily "generic, thus distributive"?
Relation btw counting and non-counting Qs?

Two puzzles re: most vs. the most

(A) Why are **relative** superlatives cross-linguistically immune to these problems?

G MARIA hat den meisten Kaffee getrunken.
H MARI itta meg a legtöbb kávét.
E MARY drank the most coffee.

(B) Why do German superlatives, superficially just like Hungarian ones, allow **absolute** readings corresponding to ***most of the***?

G Maria hat den meisten Kaffee getrunken.
Maria has the most coffee drunk
`Mary drank most of the coffee'

Two possibilities re: Puzzle (A)

(1) Sentential-scope comparison in relative superlatives produces a **subtrigging** effect that washes away all traces of kind-quantification.

Not very likely. Vanilla subtrigging doesn't improve the absolute readings of *a legtöbb tej / most milk* in the way the relative readings of *a legtöbb tej / the most milk* are perfect.

(2) The **resolution of the type clash** in the derivation of relative amount superlatives is innocuous. We are not forced to invoke GEN.

This would be ideal. It would also correctly predict that comparative *több* patterns with the relative superlative, cf. Bobaljik.

HAbs with kinds and DKP

$\exists u[\forall v\ [v \neq u][\max(\lambda d[\text{sandwiches}(u) \ \&\ |u| \geq d]) > \max(\lambda d[\text{sandwiches}(v) \ \&\ |v| \geq d])] \ \&\ \text{tasted}(u)(\text{Mary})]$

Rewritten à la Chierchia/Crnic:

$\exists s \underline{\exists u} \forall v[v \neq u][\max(\lambda d[u \leq_{\text{SANDWICHES}} \ \&\ \mu_S(u) \geq d]) > \max(\lambda d[v \leq_{\text{SANDWICHES}} \ \&\ \mu_S(v) \geq d]) \ \&\ \underline{\exists z[z < u(s) \ \&\ \text{tasted}(\text{Mary}, z, s)]}\ ]$

`there's a majority subkind of sandwiches which has realizations that Mary tasted'

≠ `Mary tasted the majority of the sandwiches'

Demands GEN, as in Crnic.

HRel with kinds and DKP – not there yet

$\forall v[v \neq Mary][\max(\lambda d \exists a[caught(a)(Mary) \,\&\, burglar(a) \,\&\, |a| \geq d]) > \max(\lambda d \exists a[caught(a)(v) \,\&\, burglar(a) \,\&\, |a| \geq d])]$

Rewritten à la Chierchia/Crnic:

$\forall v[v \neq Mary][\max(\lambda d \exists a[\exists z[z \leq a(s) \,\&\, caught(Mary,z,s)] \,\&\, a \leq_{BURGLAR} \,\&\, \mu_s(a) \geq d]) > \max(\lambda d \exists a[\exists z[z \leq a(s) \,\&\, caught(v,z,s)] \,\&\, a \leq_{BURGLAR} \,\&\, \mu_s(a) \geq d])\,]$

What we would need, instead:

$\forall v[v \neq Mary][\max(\lambda d \exists a[\exists z[z \leq a(s) \,\&\, caught(Mary,z,s) \,\&\, a \leq_{BURGLAR} \,\&\, \mu_s(z) \geq d]]) > \max(\lambda d \exists a[\exists z[z \leq a(s) \,\&\, caught(v,z,s) \,\&\, a \leq_{BURGLAR} \,\&\, \mu_s(z) \geq d]])\,]$

Summary for the time being

Solution (2) for Puzzle (A) may be available with more clever combinatorics, or with a non-DKP way of resolving the kind-related type clash.

Krifka (2004) ∃-shifts the kind term, not the predicate.

Should be applicable in comparatives and in relative superlatives, which are indefinite counting-expressions, cf.

- ✓When were **there** the most people in the room?
- ✓Who gave the kids the most books **each**?

Likely not applicable in absolute superlatives, which are specific.

Solving the German Puzzle (B) is an important precondition.

It may turn out that absolute and relative MOST are not necessarily superlatives of the same thing, e.g.

mennyi `d-much/many' > rel. *(a leg)több*

hány `d-many' (though not generic) > abs. *a legtöbb*

Word-internal compositionality does not demand that all versions of *most* be assembled from the same components, only that they be assembled from justifiable ones.

Abandoning the assumption that words are minimal building blocks raises the bar for compositional analyses.

E.g. the generic/non-generic difference between *most* and *the most* cannot be simply stipulated in the lexicon.

The role of *the* remains high on the To-Do list…

Three types of quantifiers

Group denoting	Distributive	Counting
Spec, RefP	Spec, DistP	[AgrP/ CQP]
the burglar(s)	*every burglar*	*few burglars*
most of the burglars	*most burglars*	*the most burglars*

Move on to more gain, and more pain

***Ka**, **mo**,* and their brothers

Etymological freak accidents,
multifunctional particles,
or a unified semantics?

Japanese **ka** and **mo**
(Nishigauchi 1990; Yatsushiro 2002; Shimoyama 2006; et al.)

a. Tetsuya-**ka** Akira-**ka**	'Tetsuya or Akira'
b. dare-**ka**	'someone'
c. dono NP-**ka**	'some NP'
d. Dare-ga odorimasu **ka**	'Who dances?'
e. Akira-ga odorimasu **ka**	'Does Akira dance?'

a. Tetsuya-**mo** Akira-**mo**	'both Tetsuya and Akira'
b. dare-**mo**	'everyone/anyone' (dep. on stress)
c. dono NP-**mo**	'every/any NP(dep. on stress)
d. Tetsuya-**mo**	'also/even Tetsuya' (dep. on stress)

See

Hunyadi (1989) for Hungarian;

Ramchand (1997) for Bengali;

Jayaseelan (2001, 2011) for Malayalam;

Amritavalli (2003) for Kannada;

Borzdyko (2004) for Belorussian;

Paul (2005) for Malagasy;

Zimmermann (2009) for Korean and Hausa;

Haspelmath (1997) and Gil (2008) for typological perspectives,

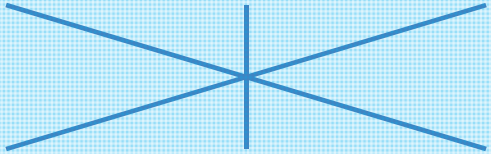
Szabolcsi (2010: Ch 12) for discussion.

Jayaseelan 2011 re: Malayalam and (Middle) English

oor-oo kuTTi-(y)um `every child'
one-DISJ child- CONJ

oo(one child) : {{child1}, {child2}, {child3}}
um(**oo**(one child)) :
{P: P(IOT{child1})} ∩ {P: (IOT{child2})} ∩ {P: P(IOT{child3})}
= the set of properties every child has

euer ilk a NP (OED for *every*, 14th-15th c.)



oor oo NP-um

If it is plausible that
each element has an invariant core,

is *ka* (& bros.) a least upper bound operator
(union, disjunction, join), and
mo (& bros.) a greatest lower bound operator
(intersection, conjunction, meet) ?

Or, do they both operate on alternatives/issues, with
ka merely introducing them, and
mo adding genericity/free choice ?

(Cf. Inquisitive Semantics, Dayal, Aloni, …)

Being able to generalize over the members of the *ka*-family and those of the *mo*-family (in Japanese, and cross-linguistically) would be a great gain.

Painful questions will have to be answered re: what can or must be attributed to "lexicalization," how to use cross-linguistic evidence in semantics, and so on.

No pain, …

References re: *most*

Bobaljik, to app. Universals in Comparative Morphology, MIT Press.

Chierchia 1998, Reference to kinds across languages, NLS 6.

Crnic 2009, http://www.univie.ac.at/sub14/proc/crnic.pdf

Hackl 2009, On the grammar and processing of …, NLS 17.

Heim 1985, 1999, http://semanticsarchive.net/

Krasikova 2011, http://www.illc.uva.nl/AC/AC2011/Proceedings/

Krifka 2004, http://amor.cms.hu-berlin.de/~h2816i3x/Publications/BarePluralsSalt13.pdf

Lidz et al. 2011, Interface transparency and … *most*, NLS 19.

Lønning 1987, Mass terms and quantification, L&P 10.

Nakanishi & Romero 2004, Two constructions with *most*…, NELS 34.

Matthewson 2001, Quantification and … variation, NLS 9.

All other references

Aloni 2007, http://staff.science.uva.nl/~maloni/sub11-aloni.pdf
Amritavalli 2003, Question and NPI in disjunction phrases, Syntax 6.
Barker 2007, Parasitic scope, L&P 30.
Bordzyko 2004, La disjonction, … , PhD, Univ. Western Ontario, CA.
Cresti 1995, Extraction and reconstruction, NLS 3.
Embick 2010, Localism Vs Globalism in Morphology and Phonology.
Dayal 2004, http://www.periodicos.ufsc.br/index.php/desterro/article/view/7349
Inquisitive Semantics, http://sites.google.com/site/inquisitivesemantics/
Jayaseelan 2011, Comparative morphology of…, Lingua 121.
Julien 2002, Syntactic Heads and Word Formation. OUP.
Gil 2008, http://wals.info.feature/description/56.
Halle & Marantz 1994, … Distributed Morphology, MITWPL 21.
Harley 2011, Semantics in DM. Int. Handbook of Meaning, Vol. 2.

Haspelmath 1997, Indefinite Pronouns, OUP.

Hunyadi 1989, On the procedural nature of quantification in Hungarian, Ms., LSA Inst.

Kayne 2005, 2010, OUP.

Koopman 2005, Korean (and Japanese) morphology…, LI 36.

Koopman & Szabolcsi 2000, Verbal Complexes, MIT Press.

Leu 2009, Internal syntax of *jeder* `every,' LIVY 2009.

Nishigauchi 1990, Quantification in the Theory of Grammar, Kluwer.

Paul 2005, *Or*, *wh-* and *not*: … Malagasy, UCLA WPL 12.

Ramchand 1997, Questions, polarity, alternative semantics, NELS 27.

Shimoyama 2007, Indeterminate NP…, NLS 14.

Sigurðsson 2004, Syntax of person, tense, and speech, Rivista di L 16.

Solomon 2009, http://www.univie.ac.at/sub14/programme.html

Starke 2009, Nanosyntax, http://ling.auf.net/lingBuzz/001230

Szabolcsi 2010, Quantification, CUP.

Yatsushiro 2002, On… *mo* and *ka*…, FAJL 3 in MITWPL 41.

Zimmermann 2009, Variation … universal quantification and free choice, LIVY 2008.