Redundant errors in child language

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Introduction

During language acquisition, children produce errors of omission and **commission**:

(1) English past tense
eat > **eat-ed** > **ate-d** > ate (Kuczaj 1977, 1978)

Commission error: Production of overt material not realized in the standard adult language (see e.g. Alexiadou et al. 2021)

- **Distributive** commission error: *eat-ed* (eat-PAST)
- **Redundant** commission error: *ate-d* (eat.PAST-PAST)

See Stemberger (1982) on full vs. partial regularizations

Introduction

Target form	**Commission errors**		Typology of errors from Martin et al. (2021)
	Distributive	**Redundant**	
ate	*eat-ed*	*ate-d*	Kuczaj (1977, 1978),
	EAT PAST	EAT.PAST PAST	Menn and MacWhinney (1984)
donner	*faire avoir*	*faire donner*	Lord (1979),
'to give'	'make have'	'make give'	Bezinska et al. (2008)
mieux	*plus bon*	*plus mieux*	Moline (1971)
better	'more good'	'more better'	Corver (2005)
kein NP	*nicht...ein NP*	*nicht...kein NP*	Nicolae and Yatsushiro (2020),
'no NP'	'not...a NP'	'not...no NP'	Hein et al. (2022)
ohne	*mit nicht/kein*	*mit ohne*	Cohen (1925), Sauerland (2019),
'without'	'with not'	'with without'	Meyer et al. (2021)

Introduction

3 morphological approaches to redundant exponence:

- *ate-d*: [... EAT PAST ...]
- **Allomorphy:** A single feature is shared between two Vocabulary Items as a primary and secondary feature specification
  - *ate* ⇔ [EAT] / __ [PAST], -*ed* ⇔ [PAST]
- **Multiple insertion:** A single feature is realized by different Vocabulary Items
  - *ate* ⇔ [EAT, PAST], -*ed* ⇔ [PAST]
- **Doubling**: A feature is doubled and realized by different Vocabulary Items
  - Doubling rule: [EAT PAST PAST]
  - *ate* ⇔ [EAT, PAST], -*ed* ⇔ [PAST]

Introduction

1. Redundant error case studies from child corpus data
    - French causative
    - English past tense
2. Deriving redundant errors
    - Allomorphy in Distributed Morphology: Insertion of a less specific Vocabulary Item
    - Multiple insertion in Nanosyntax: Overlapping application of phrasal and spanning spellout
3. Non-local redundant error: Negative indefinites
    - Doubling approach

Redundant error case studies

Redundant error case studies

French causative

French causative

- Lexical causative verbs encode a causative meaning component CAUSE, e.g. French *fermer* 'close' or *montrer* 'show'
- Periphrastic causatives can be formed in French using the verb *faire* 'make', which encodes an additional CAUSE component

(2) a. *Montre le camion de pompiers.*
'Show the firetruck.'

b. *J'ai fait montrer le camion au client par un de nos meilleurs vendeurs.*
'I made one of our best salesmen show the truck to the client.'

- French children may produce lexical causatives with a redundant *faire* (Bezinska et al. 2008)

French causative

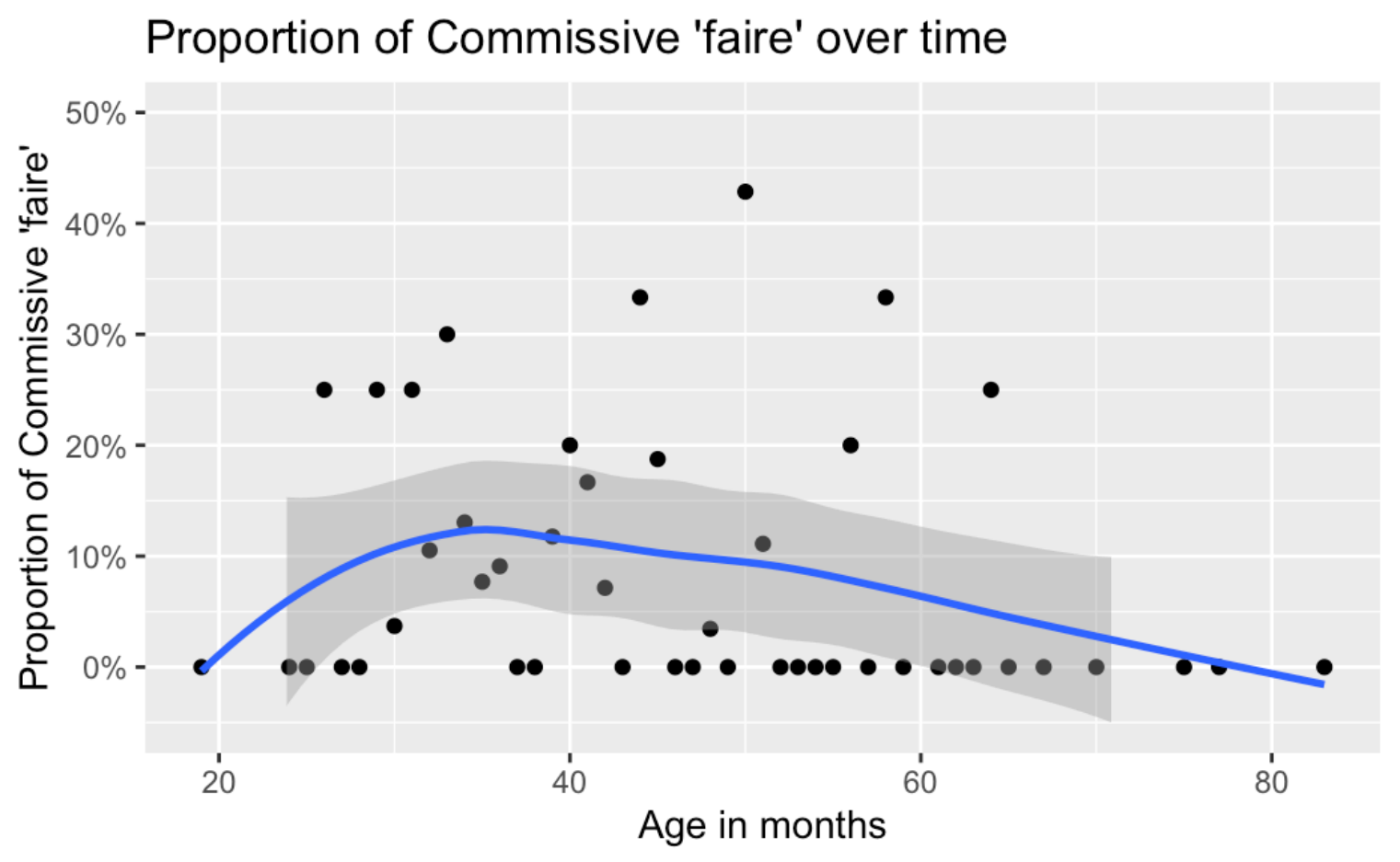
French CHILDES corpus study (Martin et al. 2021)

- We collected all *faire* + infinitive verb occurrences and their conversational contexts in 10 French CHILDES corpora
- *N*=419 occurrences from 83 typically-developing children ages 1;7 to 6;11

Use of *faire*	*N*	%
COMMISSIVE (redundant)	35	8%
NON-COMMISSIVE	335	80%
UNRESOLVED	49	12%

French causative

- Redundant errors: 10% of *faire* causatives up to about 50 months



French causative

- Redundant use of *faire* limited to lexical causatives, suggesting that children are spelling out CAUSE twice

(3) a. *faire fermer les yeux.*
Intended: 'Close the eyes.' (LSN 4;02, Palasis 2009)

b. *va le faire couper.*
Intended: 'Going to cut it.'
(Marilyn 2;09, Demuth and Tremblay 2008)

c. *du bon feu ici pour les faire réchauffer.*
Intended: 'A nice fire here for reheating them.'
(Camille 3,09, Le Normand 1986)

French causative

- Matteo (Palasis 2009) and Madeleine (Morgenstern et al. 2009) use the portmanteau lexical causative form before/alongside the redundant form

(4) a. *Elle a fait tomber ma petite cabane.*
'She made my little shed fall.' (Matteo 2;11)
b. *J'ai montré ça.* 'I showed that.' (Matteo 3;02)
c. *Eh fais montrer le camion de pompiers!*
Intended: 'Hey show the firetruck!' (Matteo 3;03)

(5) *(a)près on va le cacher … on va le cacher … va le faire cacher.*
Lit.: 'Then we'll hide it … we'll hide it … we'll make hide it.'
(Madeleine 2;02)

Causatives

- Redundant exponence of CAUSE is attested in several child languages
  - French (Bezinska et al. 2008, Martin et al. 2021)
  - Turkish (Aksu-Koç and Slobin 1985)
  - Persian (Family and Allen 2015)
  - Japanese (Yamakoshi et al. 2018)
  - English (Lord 1979, Nie et al. in progress)

Redundant error case studies

English past tense

English past tense

- Commission errors involving irregular forms are also known as overregularization (Kuczaj 1977, 1978, Menn and MacWhinney 1984, Marcus et al. 1992)
- Marcus et al. (1992): 2.5% rate of commission errors for past tense irregulars in a subset of English CHILDES corpora (N =11,521 occurrences)
- Stemberger (1982): More distributive errors than redundant errors in adult English (26 distributive vs. 5 redundant errors)

English past tense

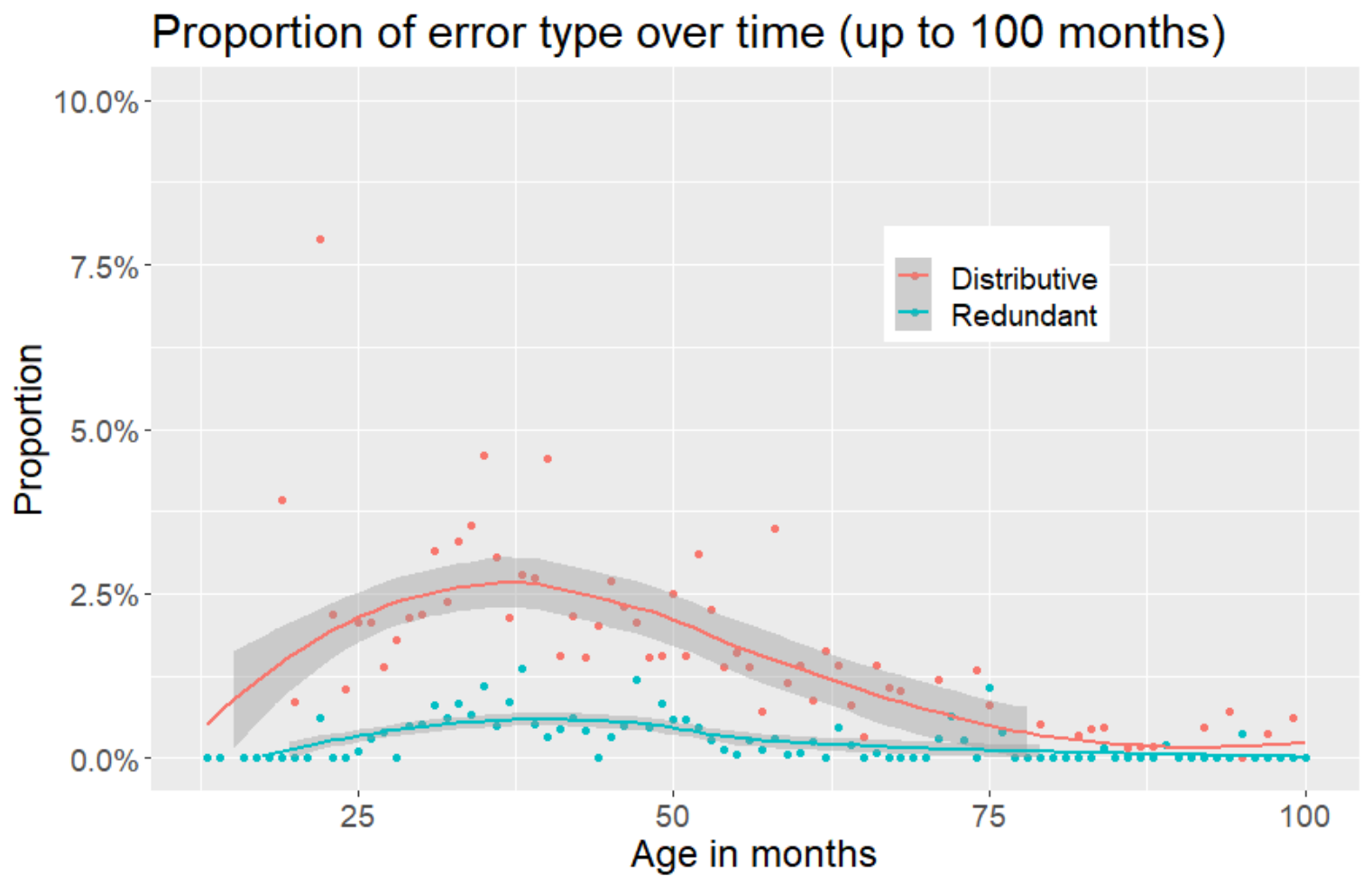
English CHILDES corpus study:

- We collected all past tense occurrences of 38 of the 44 most frequent irregular verbs in 18 UK-English and 40 NA-English corpora
  - Excluded 6 homographs: *cut*, *read*, *let*, *put*, *fit*, *hit*
- $N = 103{,}589$ occurrences from typically-developing children ages 1;5 to 15;11

Error type	*N*	%
DISTRIBUTIVE	1752	1.7%
REDUNDANT	364	0.4%
OTHER	412	0.4%

English past tense

- Distributive errors: 2.5% of past tense irregulars up to 50 months
- Redundant errors: 0.5% of past tense irregulars up to 50 months



English past tense

- Children use the correct irregular past tense before/alongside both the redundant and distributive forms.

(6)
a. Then she **comed** out. (Sarah 4;01, Brown 1973)
b. Then she **came** out again. (Sarah 4;07, Brown 1973)
c. What color **camed** out? (Sarah 4;09, Brown 1973)
d. I **ate** raisins. (Abe 2;11, Kuczaj 1977)
e. I **eated** it with a spoon, Daddy. (Abe 3;05, Kuczaj 1977)
f. She **ated** it, Mom. (Abe 3;11, Kuczaj 1977)

(7) I saw his cousin she had she had she had she had toasted the eggs and they couldn't make none cause cause they **ran** they **ranned** out of eggs. (Lef 4;09, Hall et al. 1984)

Generalizations

- Redundant commission errors are attested in many domains in child language
- The element that is redundantly realized tends to be
  - A higher element in the projection
  - A functional element, rather than the root
- Redundant exponence of lower elements is rare

	Redundant commission error	
Target form	**well attested**	**unattested/rare**
donner	*faire donner*	**donner avoir*
CAUSE HAVE	CAUSE CAUSE.HAVE	CAUSE.HAVE HAVE
ate	*ate-d*	**eat ate*
EAT.PST	EAT.PST-PST	EAT EAT.PST

Deriving redundant errors

Question

- What do children do wrong?
- Which part of their grammar is not adult-like (yet)?
- Distributed Morphology (Halle and Marantz 1993, 1994):
  Answer: They don't fully respect Specificity.
- Nanosyntax (Starke 2009, Caha 2009, et seq.):
  Answer: They don't apply the two modes of lexicalization disjunctively.

Deriving redundant errors

Distributed Morphology

Relevant DM tenets

- Vocabulary items are inserted into terminal nodes following the Subset Principle and Specificity (e.g. Halle 1997).
- Exponents may be specified for two types of features (Carstairs 1987, Noyer 1997)
  - **primary features** must be present on the terminal node targeted for insertion
  - **secondary features** must be present on a terminal node in the local environment of the terminal node targeted for insertion.[1]
- Those secondary (or contextual) features count for calculation of specificity since they further narrow an exponents distribution.

[1] See Stump (2001), Müller (2020) for problems of secondary features.

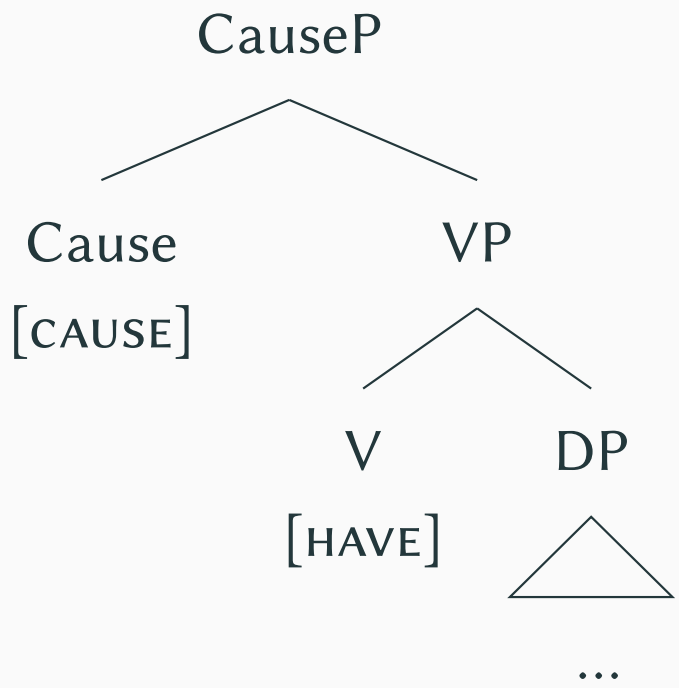
Commission errors in DM

Claim

Children's commission errors result from **disregarding specificity**, in particular when secondary features are involved.

Causatives: Target *donner* ‘give’

(8) a. /avoir/ ⇔ [HAVE]
b. /faire/ ⇔ [CAUSE]
c. /donner/ ⇔ [HAVE] / __ CAUSE
d. /∅/ ⇔ [CAUSE] / __ {HAVE, ...}



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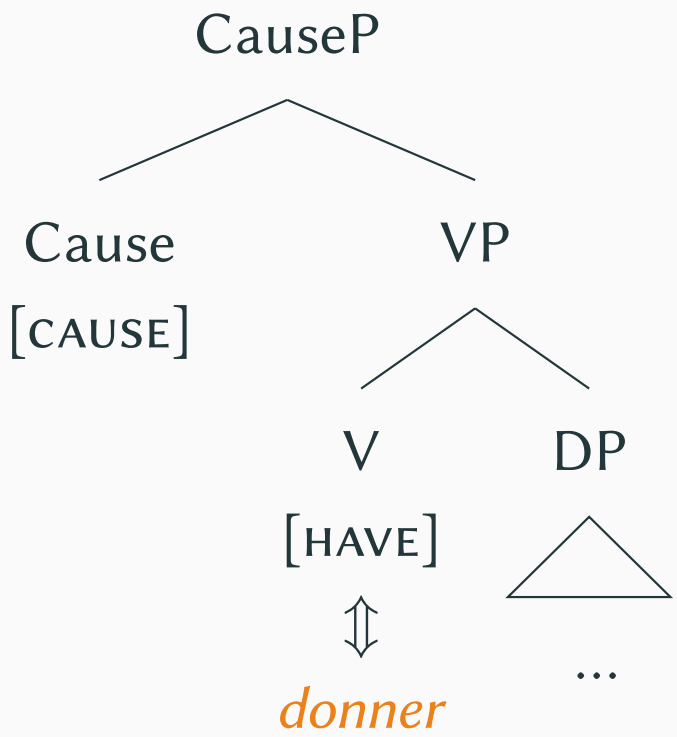

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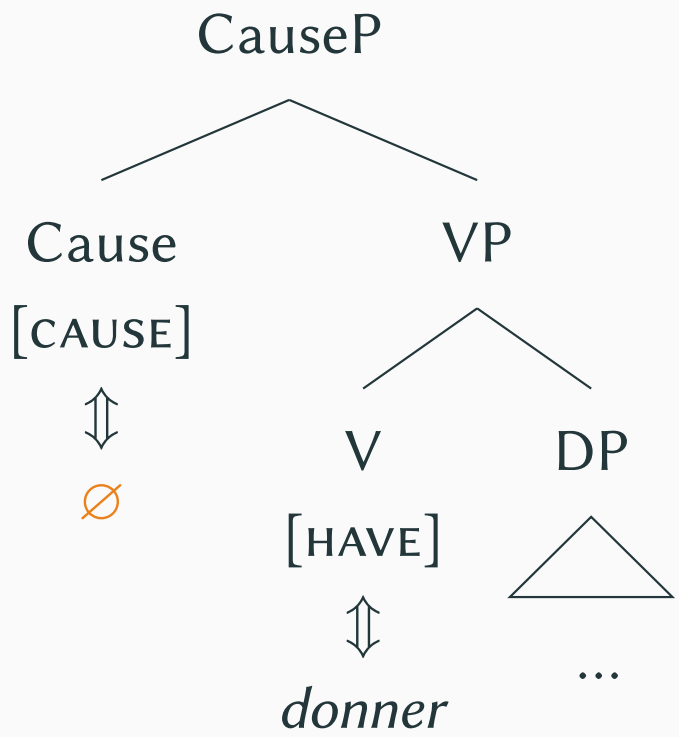

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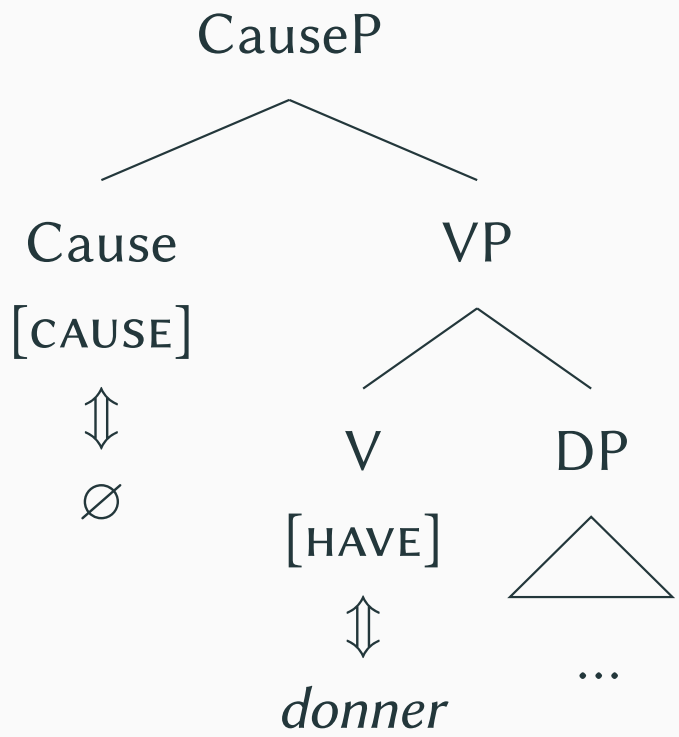
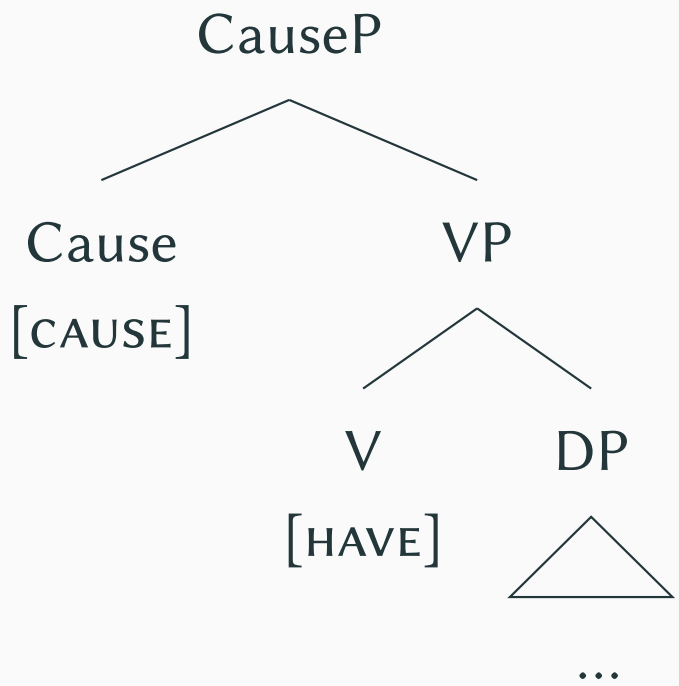


Causatives: Redundant *faire donner* ‘make give’

(9) a. /avoir/ ⇔ [HAVE]
b. /faire/ ⇔ [CAUSE]
c. /donner/ ⇔ [HAVE] / __ CAUSE
d. /∅/ ⇔ [CAUSE] / __ {HAVE, ...}



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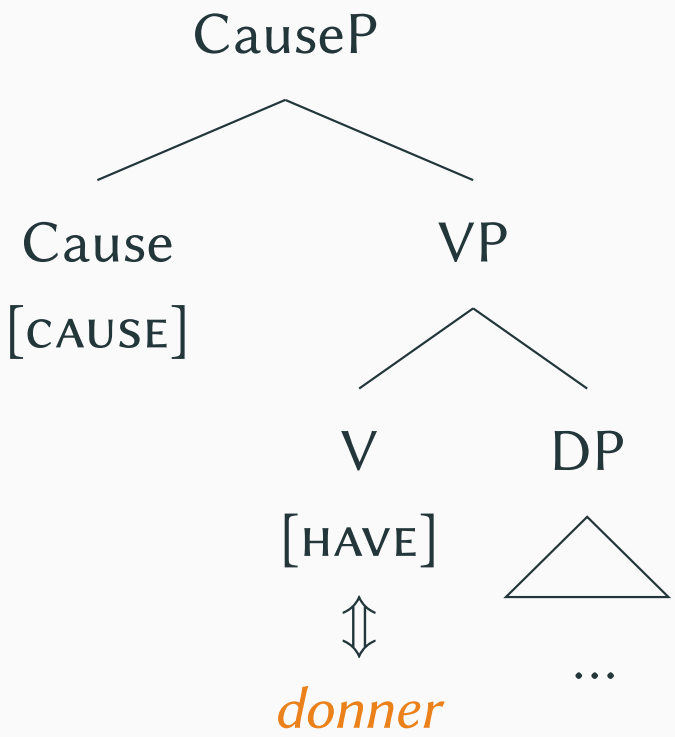

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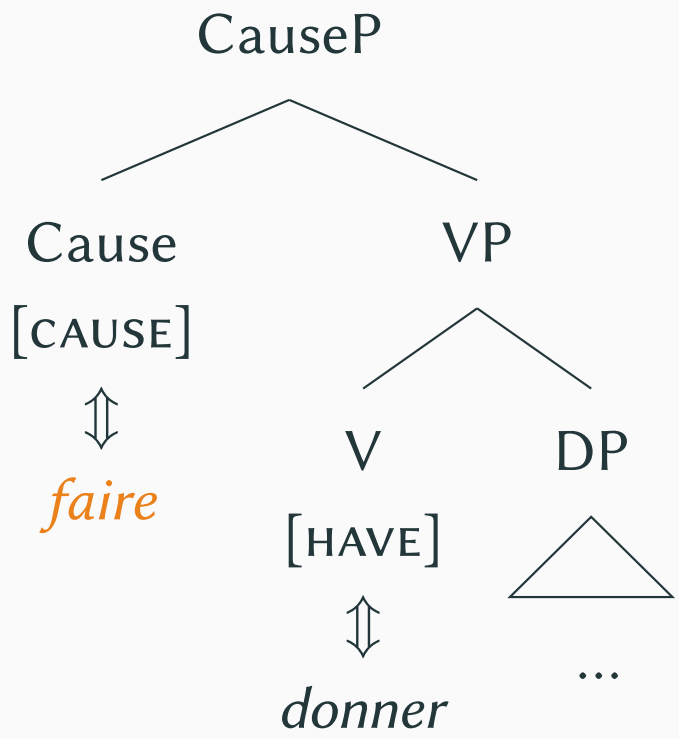

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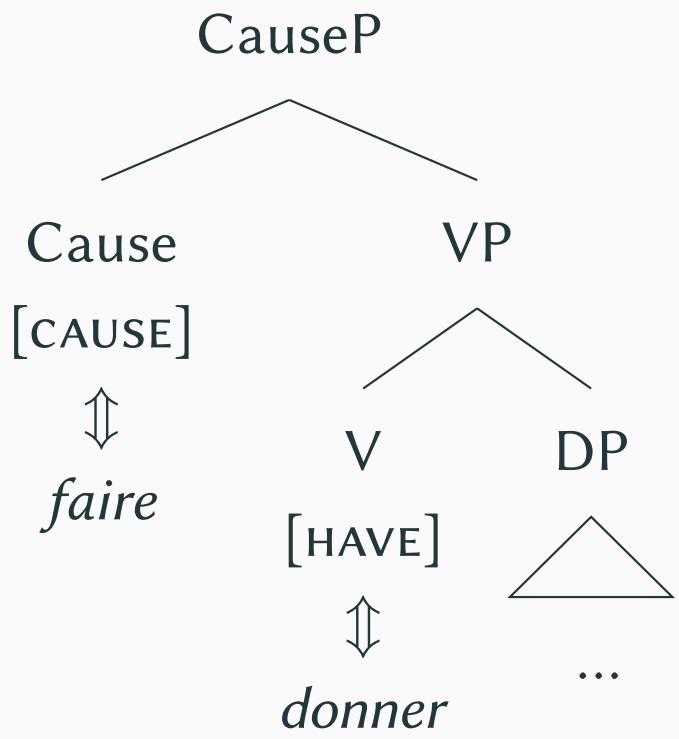

Causatives: Distributive *faire avoir* 'make have'

(10) a. /avoir/ ⇔ [HAVE]
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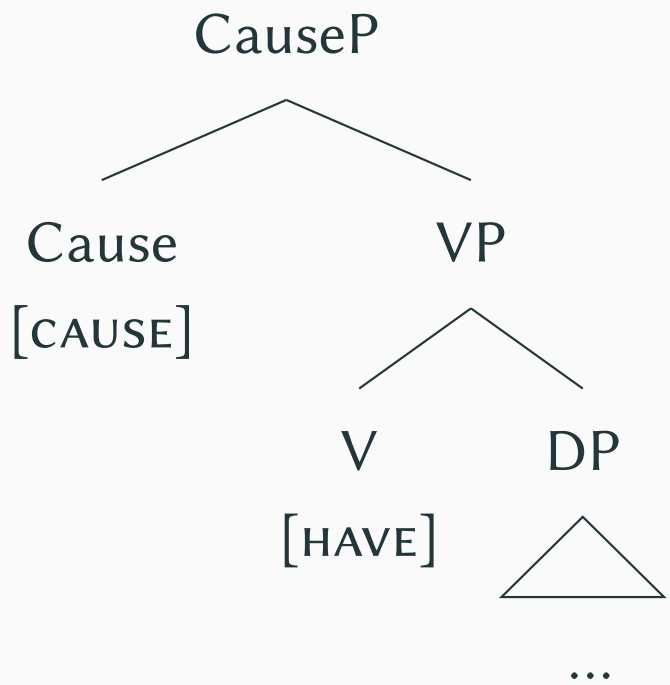

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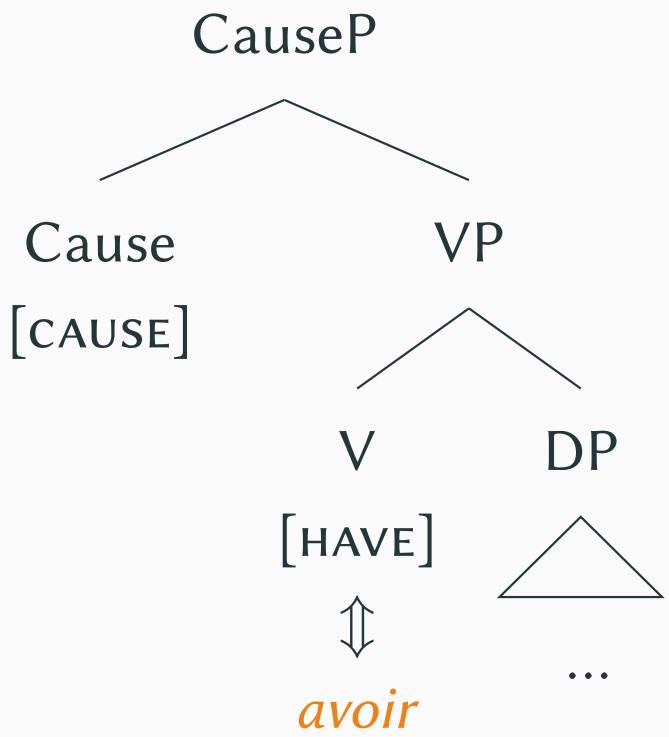

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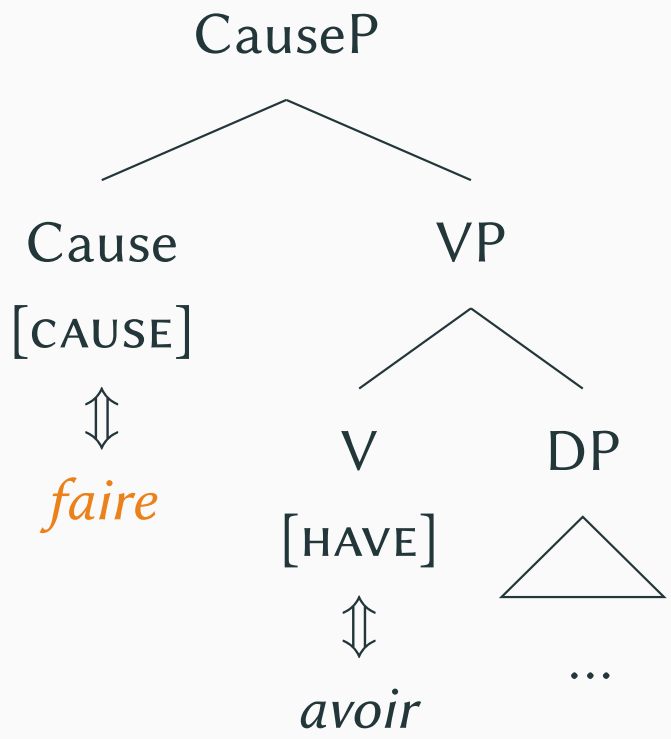

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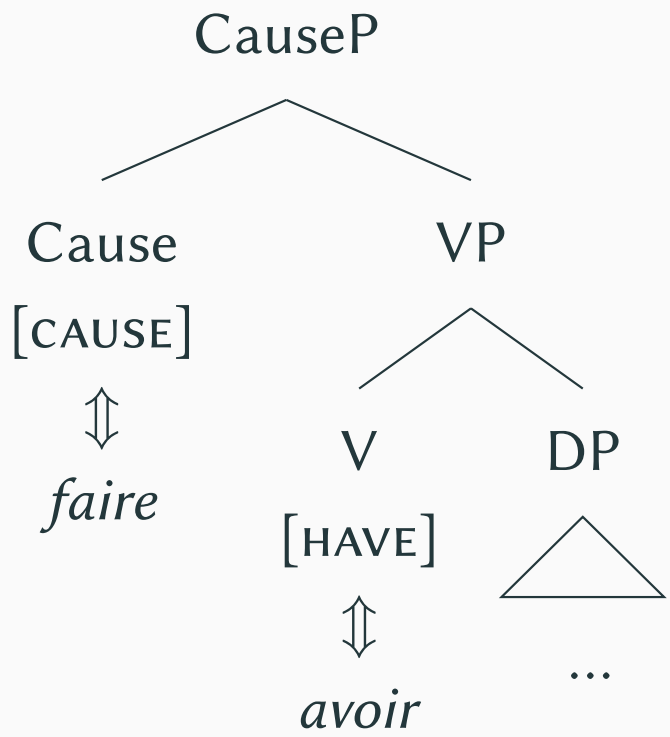

*donne avoir

(11) a. /avoir/ ⇔ [HAVE]
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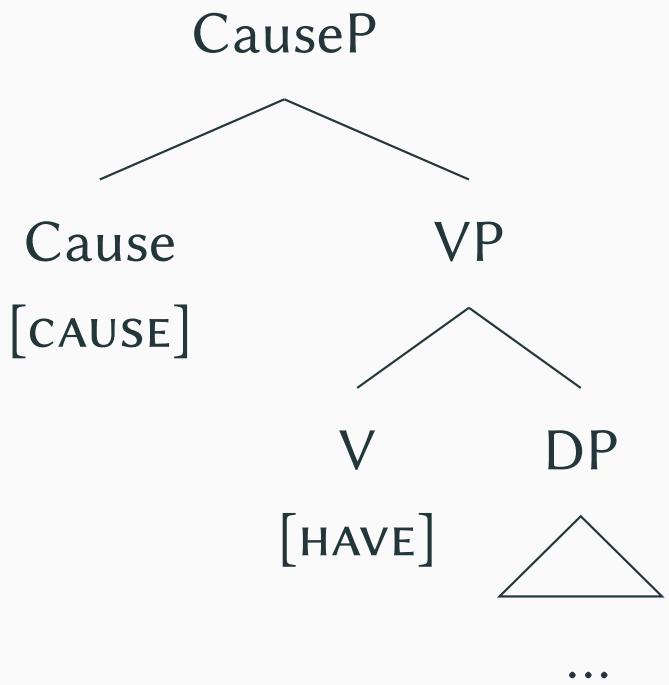

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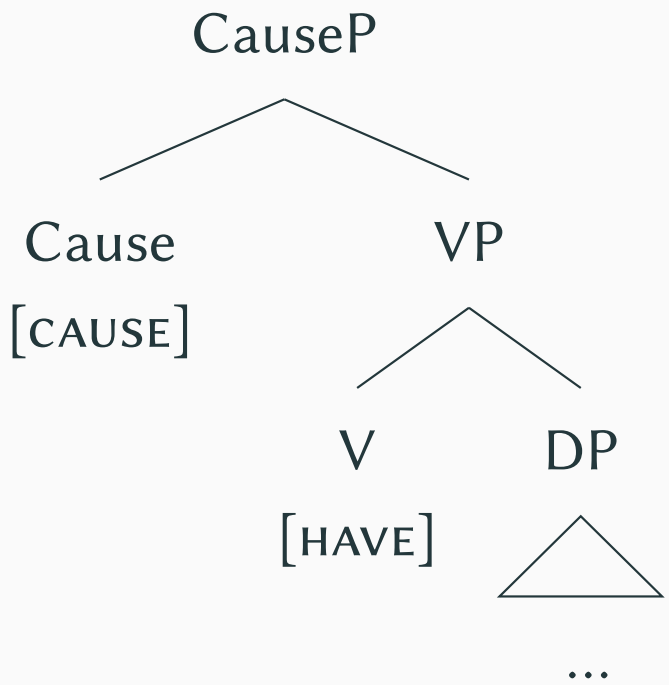


*donne avoir

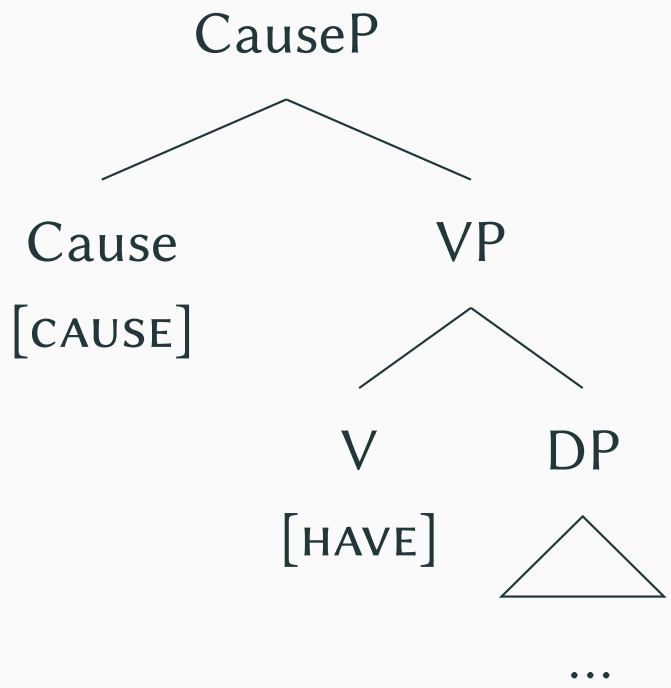
(11) *Implausible VIs*

a. /avoir/ ↔ [HAVE]

b. /faire/ ↔ [CAUSE]

c. /donner/ ↔ [CAUSE] / __ HAVE

d. /∅/ ↔ [{HAVE, ...}] / __ CAUSE



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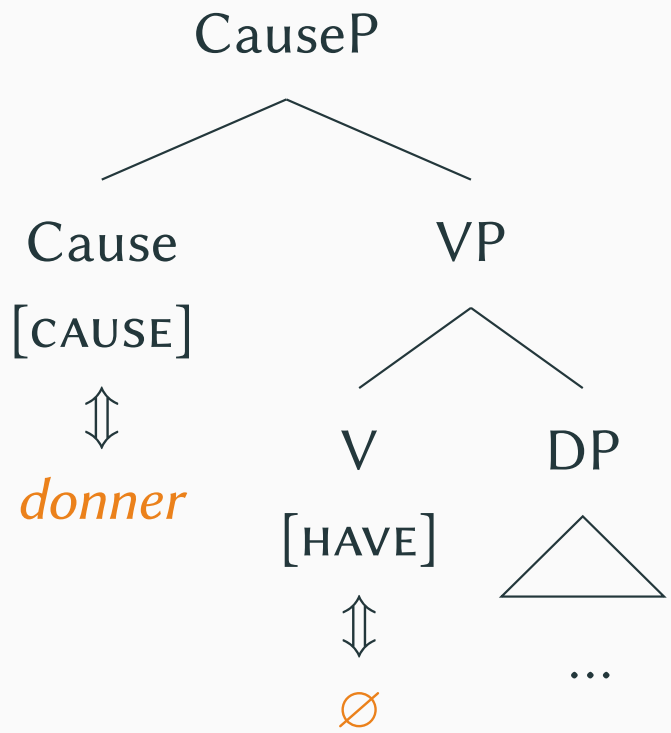

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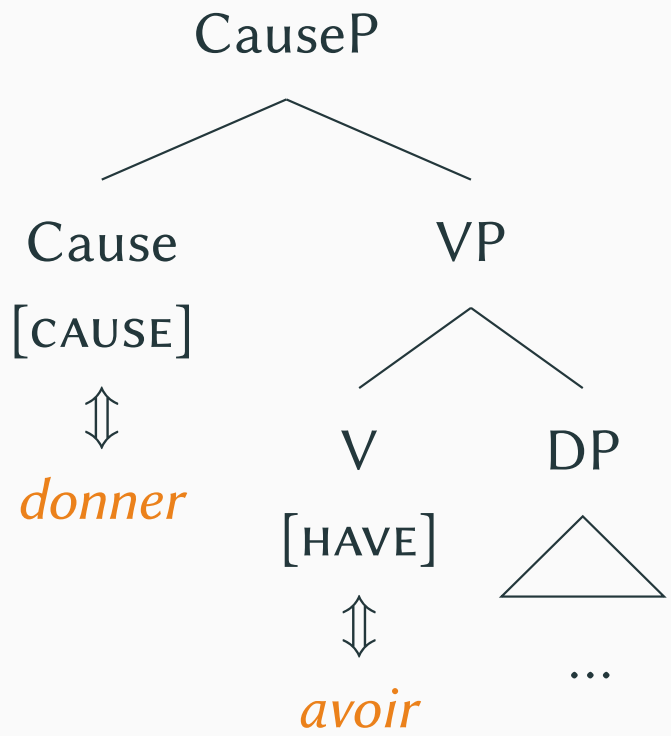


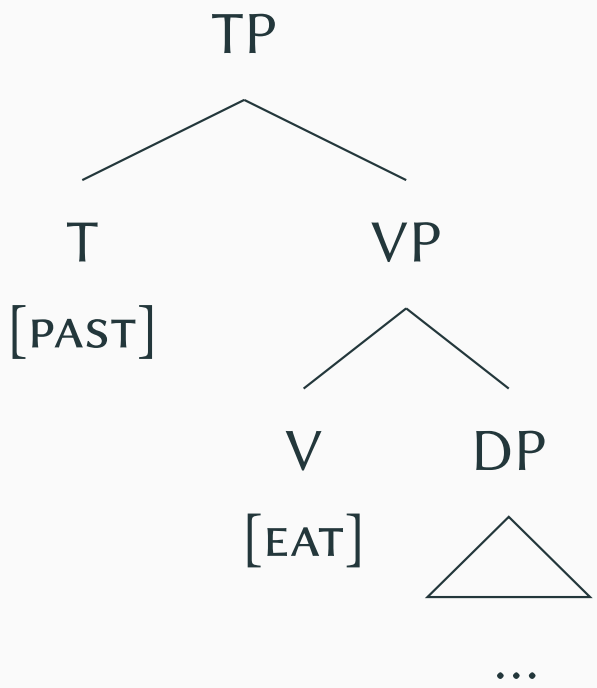
DM: A typology of causative errors

(12) a. /avoir/ ↔ [HAVE]
b. /faire/ ↔ [CAUS]
c. /donner/ ↔ [HAVE] / __ CAUS
d. /∅/ ↔ [CAUS] / __ {HAVE, DRY, ...}

[CAUS]	[$\sqrt{\text{HAVE}}$]	error location	error type
∅	*donner*	none	target
∅	*avoir*	ROOT	omissive
fais	*donner*	CAUSE	redundant
fais	*avoir*	ROOT & CAUSE	distributive

Past tense: Target *ate*

(13) a. /eat/ ⇔ [EAT]
b. /-ed/ ⇔ [PAST]
c. /ate/ ⇔ [EAT] / ___ PAST
d. /∅/ ⇔ [PAST] / ___ {EAT, BREAK, …}



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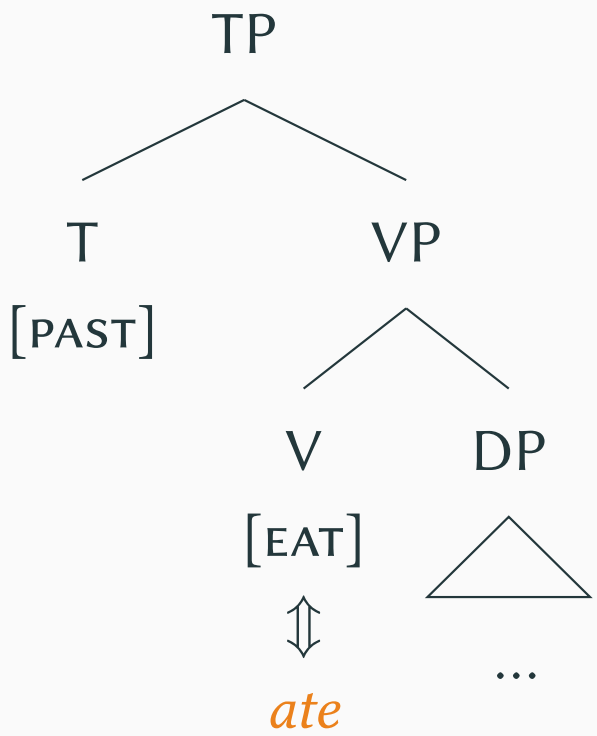

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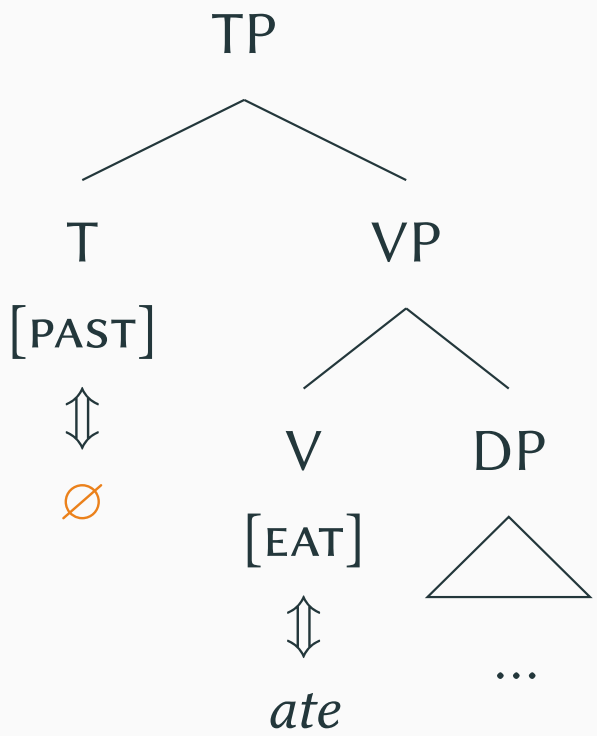

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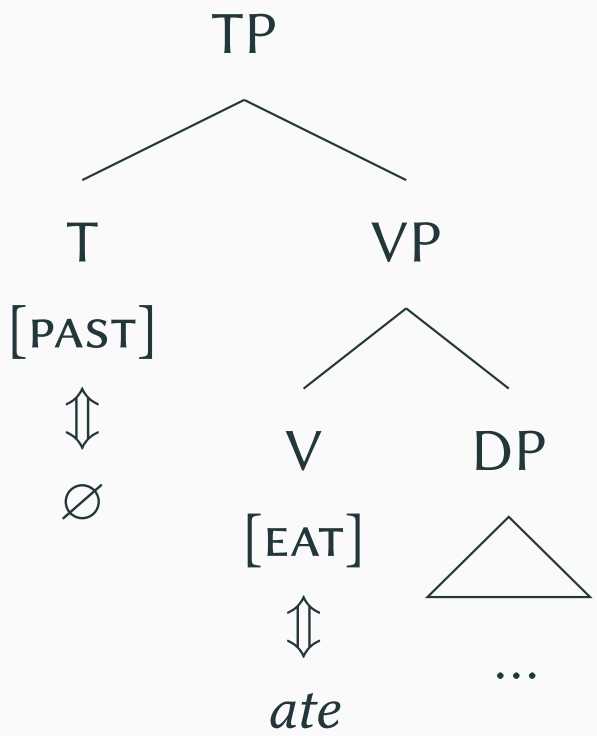

Past tense: Redundant *ate-d*

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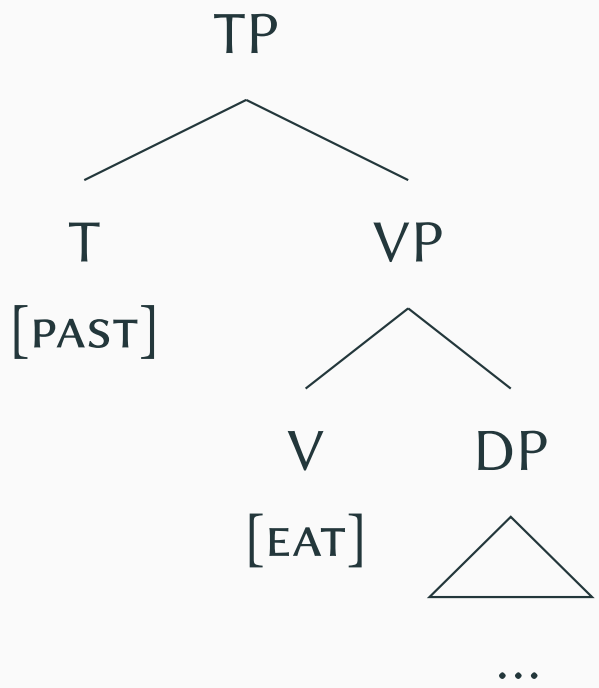

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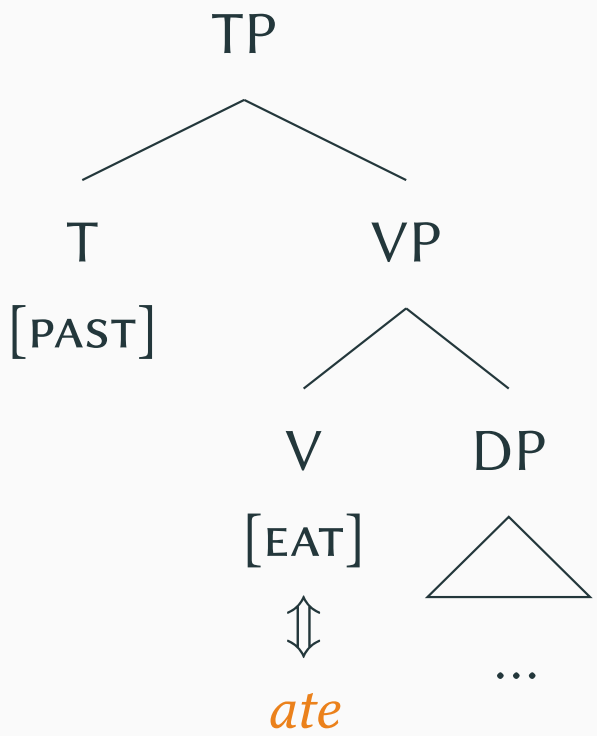

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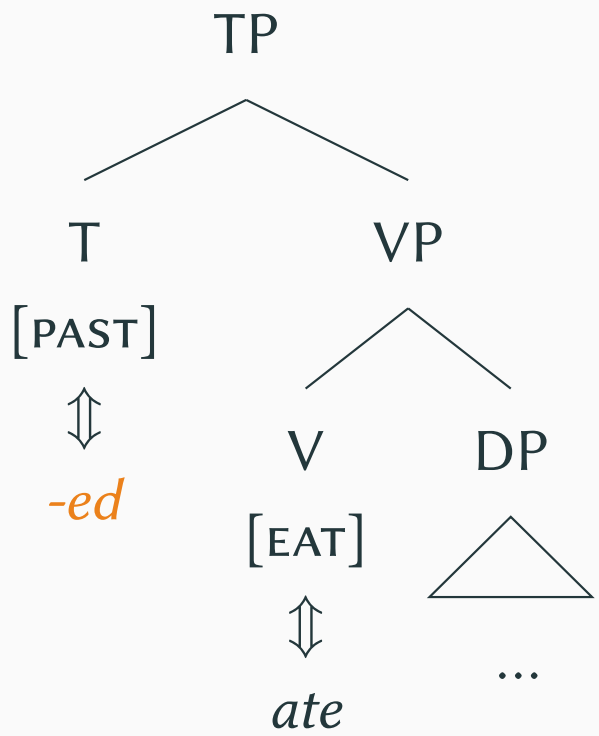
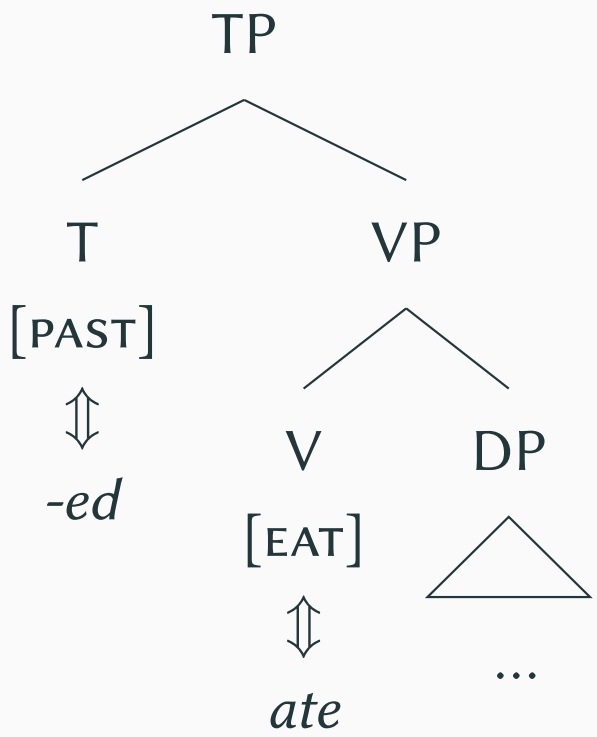
d. /∅/ ⇔ [PAST] / ___ {EAT, BREAK, …}



Past tense: Redundant *ate-d*

(14) a. /eat/ ⇔ [EAT]
b. /-ed/ ⇔ [PAST]
c. /ate/ ⇔ [EAT] / __ PAST
d. /∅/ ⇔ [PAST] / __ {EAT, BREAK, …}



Past tense: Distributive *eat-ed*

(15) a. /eat/ ⇔ [EAT]
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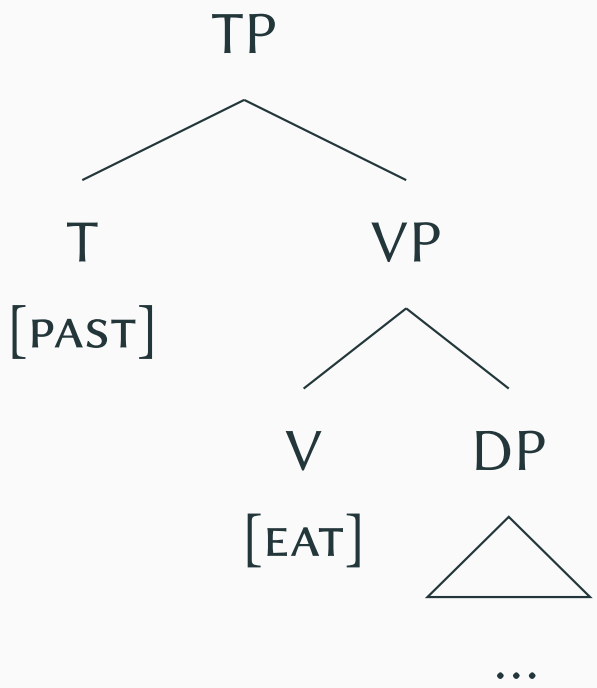
d. /∅/ ⇔ [PAST] / __ {EAT, BREAK, …}



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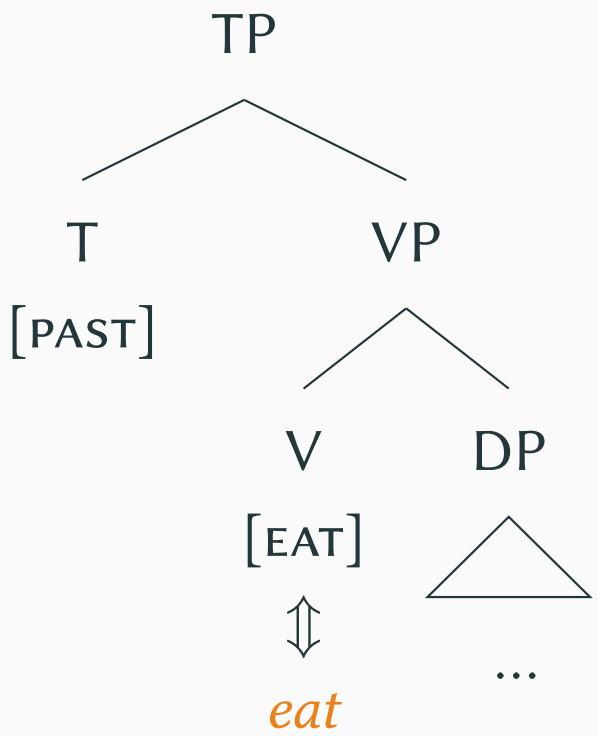

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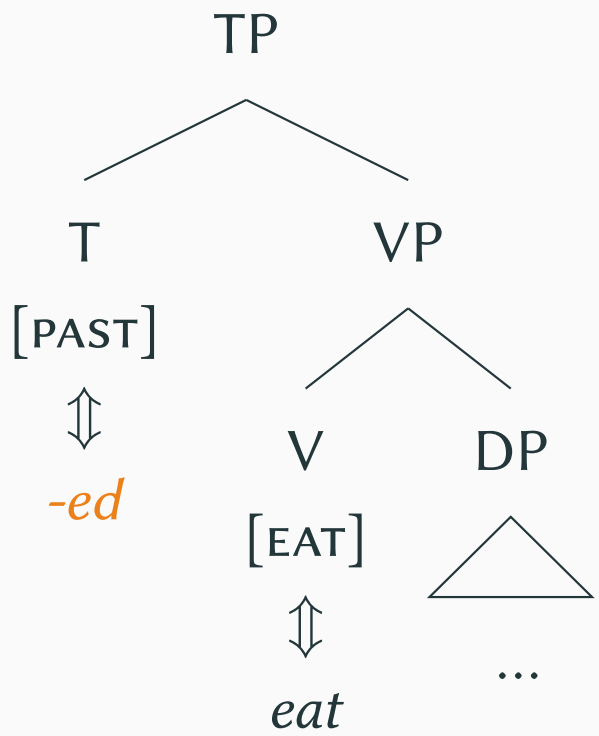

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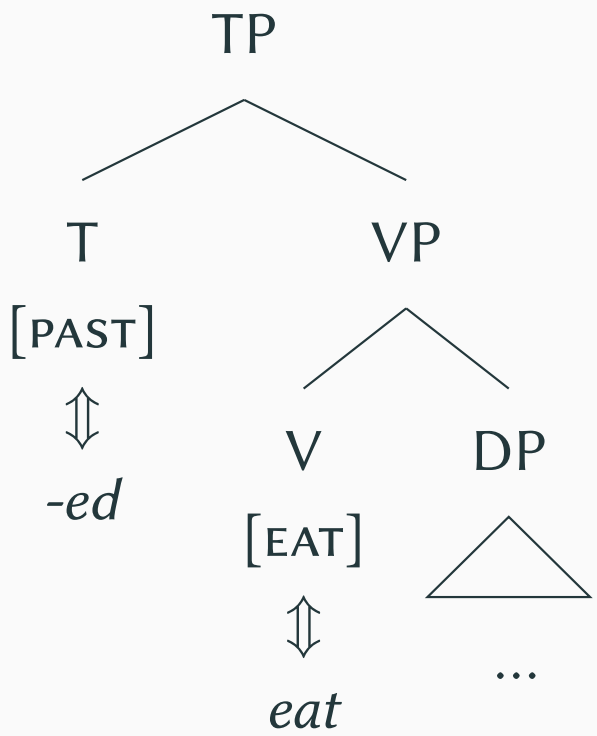


DM: Typology of past tense errors

(16) a. /eat/ ↔ [EAT]
b. /-ed/ ↔ [PAST]
c. /ate/ ↔ [EAT] / ___ PAST
d. /∅/ ↔ [PAST] / ___ {EAT, BREAK, ...}

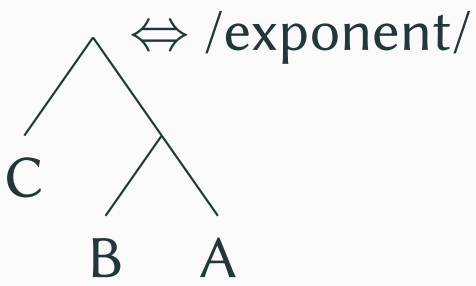
[$\sqrt{\text{EAT}}$]	[PAST]	error location	error type
ate	∅	none	target
eat	∅	ROOT	omissive
eat	*-ed*	ROOT & PAST	distributive
ate	*-ed*	PAST	redundant

Deriving redundant errors

Nanosyntax

Relevant tenets of Nanosyntax: Constituent spellout

- Nanosyntax (Starke 2009, Caha 2009, et seq.) allows non-terminal spellout, i.e. spellout out of several terminal nodes that form a constituent at once.

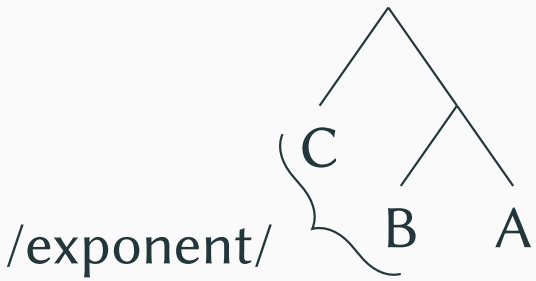
(17) 

- Lexicalization follows the Superset Principle. Previous lexicalizations may be overridden by subsequent lexicalizations.

Relevant tenets of Nanosyntax: Spanning spellout

- Spanning (Williams 2003, Abels and Muriungi 2008, Taraldsen 2010, Svenonius 2012, a.o.) allows lexical items to spell out non-constituents (span = "a contiguous sequence of heads in a head-complement relation", Svenonius 2016: 205).

(18)



Nanosyntax: Commission errors

Claim

Children's commission errors result from **erroneous overlapping application** of spanning lexicalization (S-lexicalization) and constituent lexicalization (C-lexicalization).

Causatives: Target *donner* ‘give’

(19) *Lexical items*

a. avoir ⇔ [HAVE]

b. donner ⇔ [CAUSE [HAVE]]

c. faire ⇔ [CAUSE

(20) *C-lexicalization overrides previous C-lexicalization*

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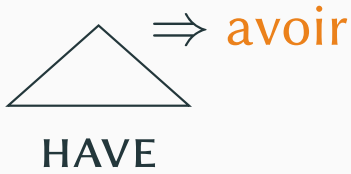

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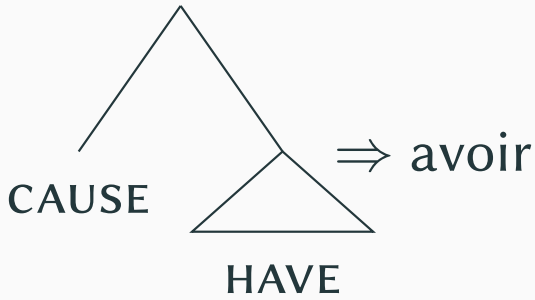

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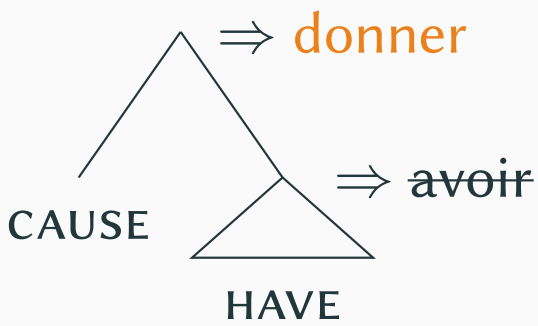

Causatives: Redundant *faire donner* 'make give'

(21) *Lexical items*

a. avoir ⇔ [HAVE]

b. donner ⇔ [CAUSE [HAVE]]

c. faire ⇔ [CAUSE

(22) *Simultaneous C-lexicalization and S-lexicalization*

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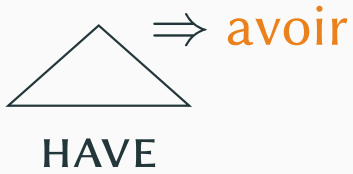

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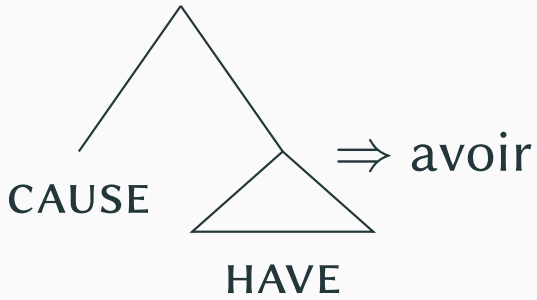

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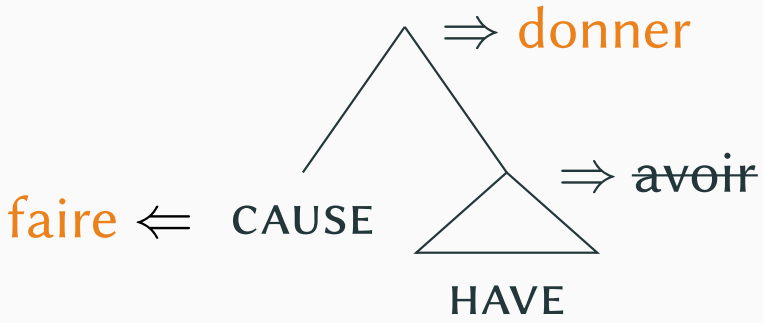

Causatives: Distributive *faire avoir* ‘make have’

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(24) *Neglecting C-lexicalization*

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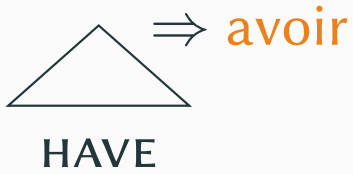

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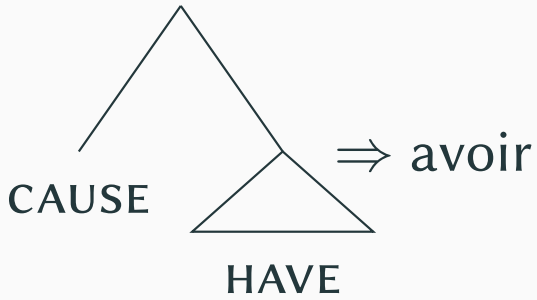

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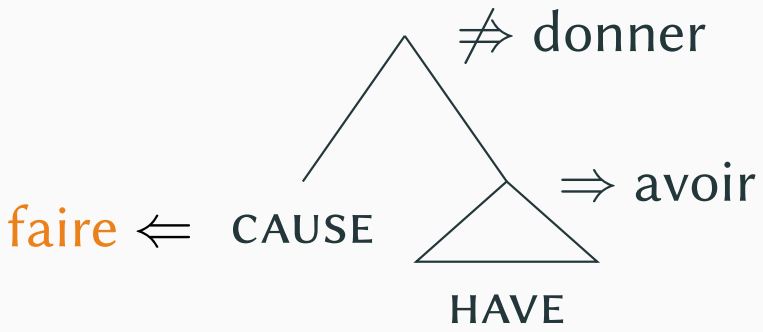

*donne avoir

(25) *Lexical items*

a. avoir ⇔ [HAVE]

b. donner ⇔ [CAUSE [HAVE]]

c. faire ⇔ [CAUSE

(26) *Failure to override?*

*donne avoir

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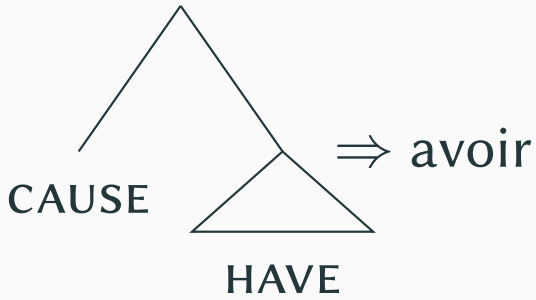

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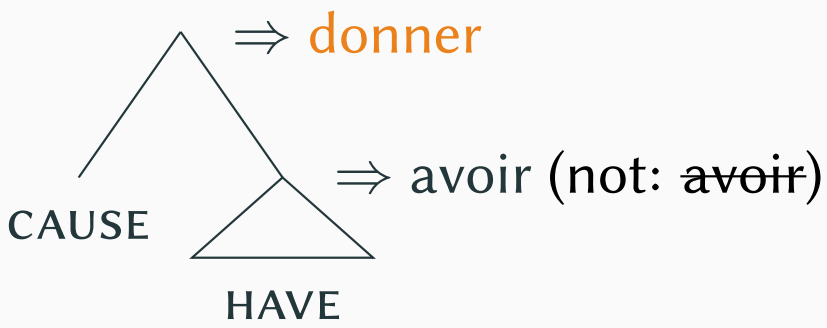

Nanosyntax: Summary causatives

	failure	**location**	**error type**
donner	none	none	target
faire avoir	no C	2nd cycle	distributive
faire donner	simultaneous C & S	2nd cycle	redundant

Past tense: Target *ate*

(27) *Lexical items*

a. eat ⇔ [EAT]

b. ate ⇔ [PAST [EAT]]

c. -ed ⇔ [PAST

(28) *C-lexicalization overrides previous C-lexicalization*

Past tense: Target *ate*

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a. eat ⇔ [EAT]

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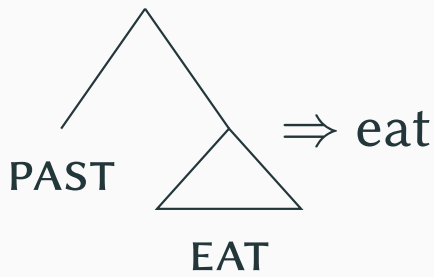

Past tense: Target *ate*

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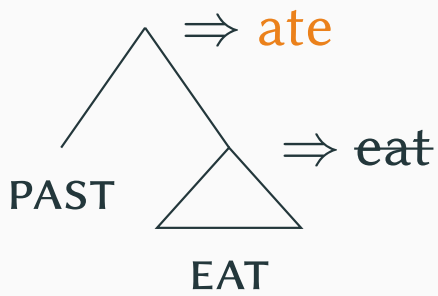

Past tense: Redundant *ate-d*

(29) *Lexical items*

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(30) *Simultaneous C-lexicalization and S-lexicalization*

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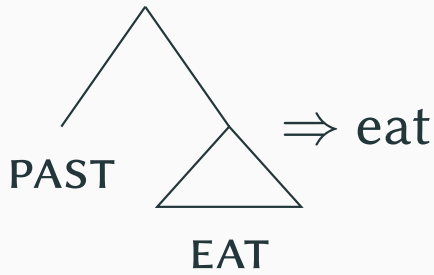

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c. -ed ⇔ [PAST

(30) *Simultaneous C-lexicalization and S-lexicalization*

Past tense: Distributive *eat-ed*

(31) *Lexical items*

a. eat ⇔ [EAT]

b. ate ⇔ [PAST [EAT]]

c. -ed ⇔ [PAST

(32) *Neglecting C-lexicalization*

Past tense: Distributive *eat-ed*

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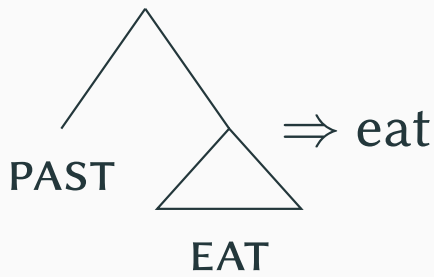

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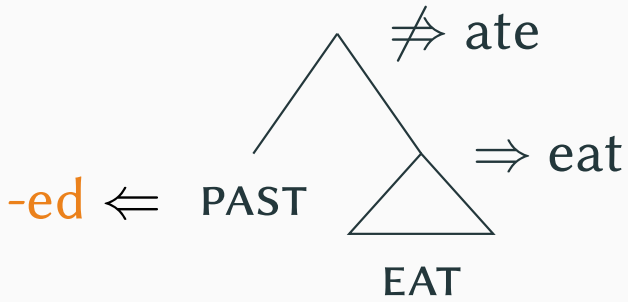


Nanosyntax: Summary past tense

	failure	**location**	**error type**
ate	none	none	target
eat-ed	no C	2nd cycle	distributive
ate-d	simultaneous C & S	2nd cycle	redundant

What do children do wrong?

- They insert a less specific, i.e. more general exponent
  - if the specificity difference is due to secondary features (DM).
  - if both exponents can be inserted via different modes of lexicalization (Nanosyntax).
- In the domains at hand, they choose an exponent whose insertion is conditioned by only a single feature over/simultaneously with one where it is conditioned by a primary and an additional secondary feature.

Negative concord[a]

[a]Joint work with Cory Bill, Aurore Gonzalez, Ivona Ilić, Paloma Jeretič

Negated indefinites across languages

In the majority of languages, negated indefinites are expressed with a positive indefinite and sentence negation (Kahrel 1996, Miestamo 2007, van der Auwera and Alsenoy 2016, 2018).

(33) *Evenki (Miestamo 2007: 564)*

a. ekun-da ō-ra-n.
something-CLT become-NFUT-3SG
'Something happened.'

b. ekun-da **e-** che o-ra.
something-CLT NEG-PST become-PTCP
'Nothing happened.'

Negated indefinites across languages

In NC languages, negated indefinites are expressed via sentence negation and a morphologically marked negative indefinite, a neg-word/NCI.

(34) Milan **ne** vidi **ništa**. *BCS, (Progovac 1994: 40)*
Milan not sees nothing
'Milan cannot see anything.'

Non-NC languages also use neg-words to express negated indefinites, but without the presence of sentence negation. Adding sentence negation would lead to a double negation reading.

(35) Milan sieht **nichts**. *German*
Milan sees nothing
'Milan cannot see anything.'

Negated indefinites

(roughly) three grammars:

type 1 NEG … positive indefinite (e.g., Evenki)

type 2 NEG … negative indefinite (e.g., BCS)

type 3 ∅ … negative indefinite (e.g., German)

Negative concord errors: Some examples

(36) a. We do n't want **no** gas. (Adam 3;11, Brown 1973)

b. **No** tigers do n't bit you? (Mark 2;08, MacWhinney 1991)

c. I do n't care about **nothing**. (Ross 5;04, MacWhinney 1991)

d. He wo n't hurt his head **never**. (Eleanor 2;11, Lieven et al. 2009)

e. **No** one's not drying him, mum. (Fraser 3;00, Lieven et al. 2009)

(37) a. **Kein** Gewitter kommt nicht heute. (Leo 2;03, Behrens 2006)
no thunderstorm comes not today
'There's no thunderstorm coming today.'

b. Wir haben noch **keine** Zudecke nich. (Simone 3;07, Miller 1979)
we have yet no duvet not
'We don't have a duvet yet.'

c. **Kein** Teller kann s net sein. (Sebastian 5;04, Lieven and Stoll 2013)
no plate can it not be
'It can't be a plate.'

Goals

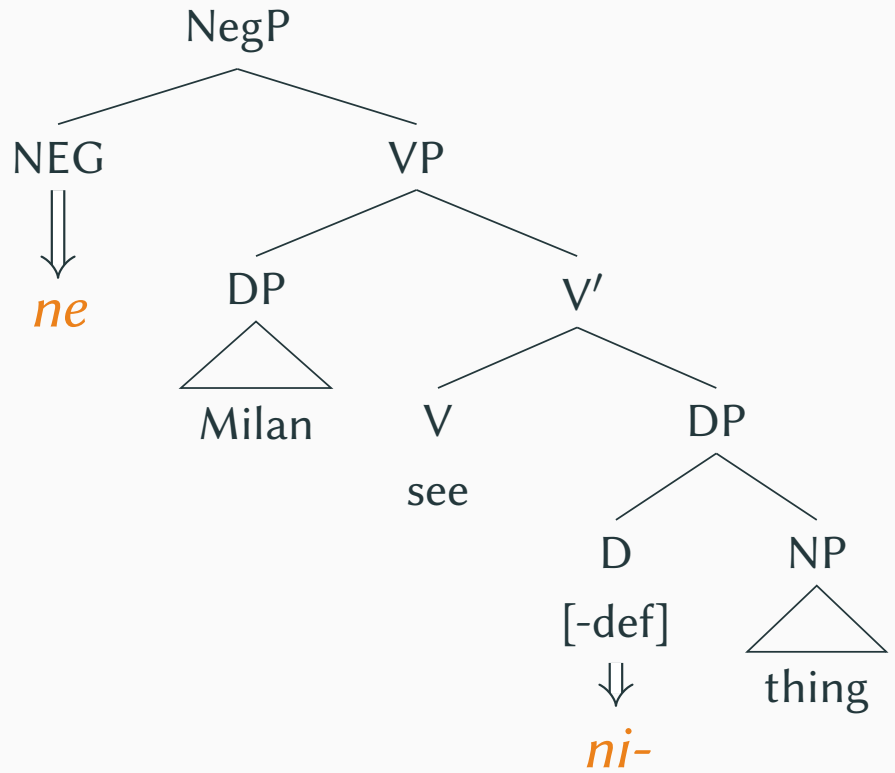
1. Derive adult typology, i.e. three language types.
2. Account for negative concord errors in the acquisition of non-negative concord languages like English and German.
3. Account for errors of the form: NEG ... positive indefinite.
4. Account for omission errors in the acquisition of negative concord languages like BCS, Italian etc.

An allomorphy account of negative concord?

(38) Milan **ne** vidi **ništa**.
Milan not sees nothing
'Milan cannot see anything.'

(39)
a. /∅/ ⇔ [NEG]
b. /nešto/ ⇔ [-def]
c. /ništa/ ⇔ [-def] / NEG ... __
d. /ne/ ⇔ [NEG] / __ ... [-def]

(40)



Locality issue!

Meaning First architecture (Sauerland and Alexiadou 2020)

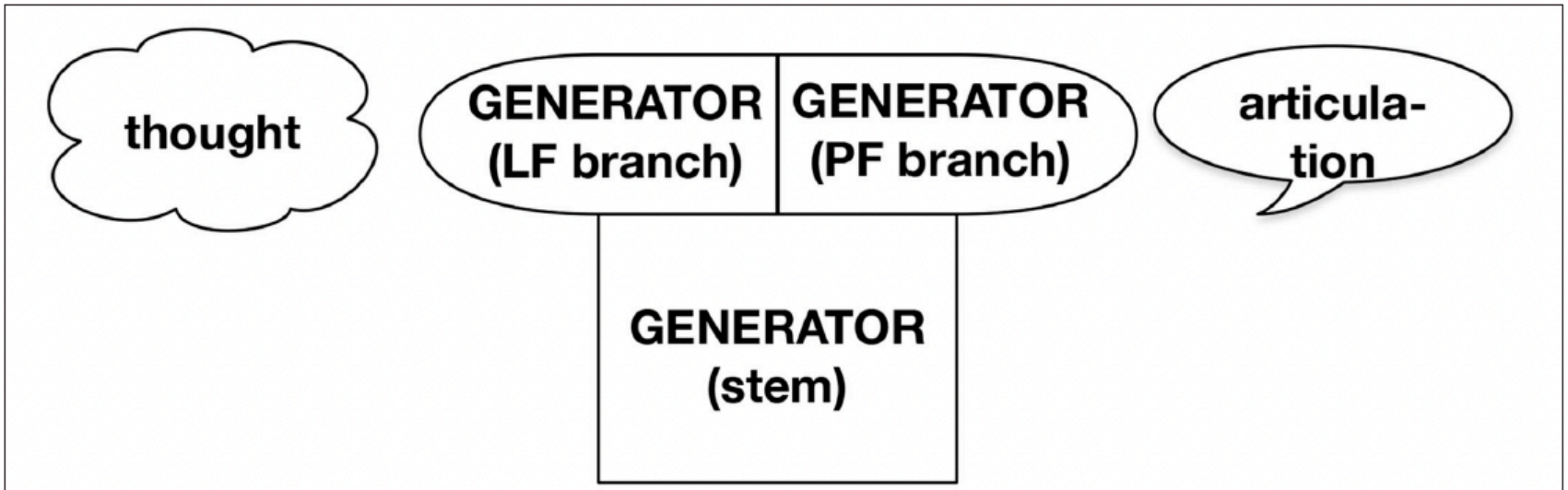


FIGURE 2 | The T-model of language assumes that structural representations are generated within language and produce a thought-articulation pair.

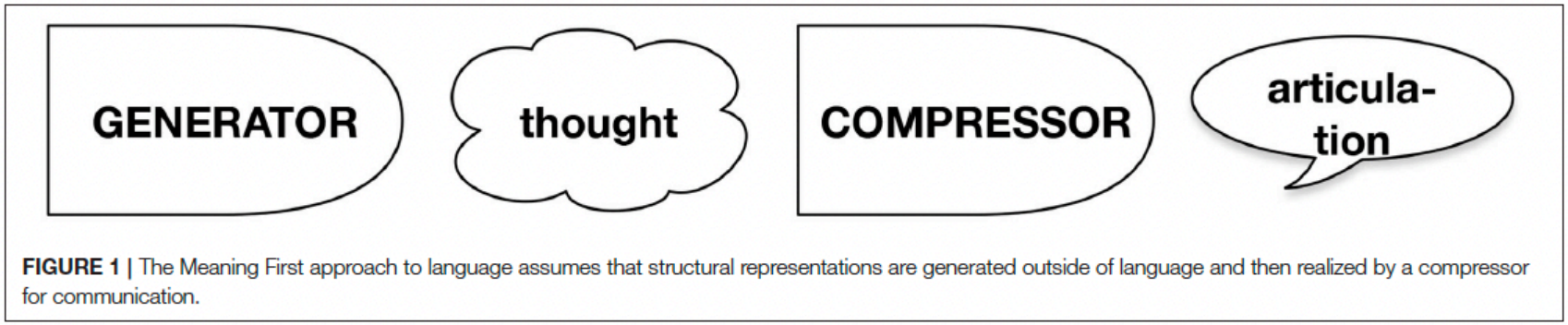


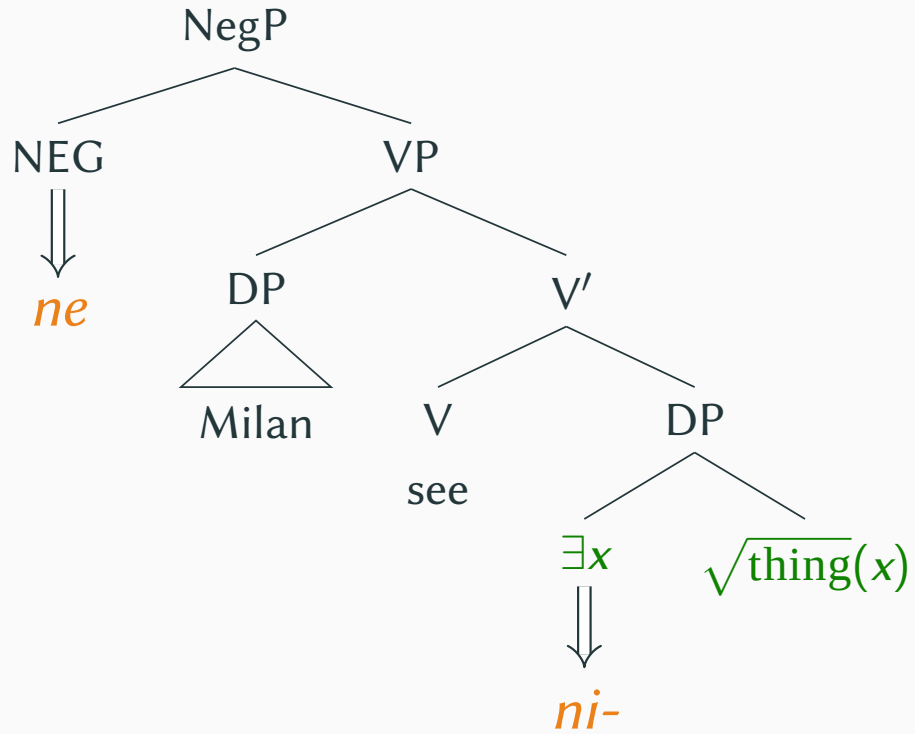
FIGURE 1 | The Meaning First approach to language assumes that structural representations are generated outside of language and then realized by a compressor for communication.

An allomorphy account of negative concord?

(41) Milan **ne** vidi **ništa**.
Milan not sees nothing
'Milan cannot see anything.'

(42)
a. /∅/ ⇔ [NEG]
b. /nešto/ ⇔ [∃]
c. /ništa/ ⇔ [∃] / NEG ... ___
d. /ne/ ⇔ [NEG] / ___ ... ∃

(43)



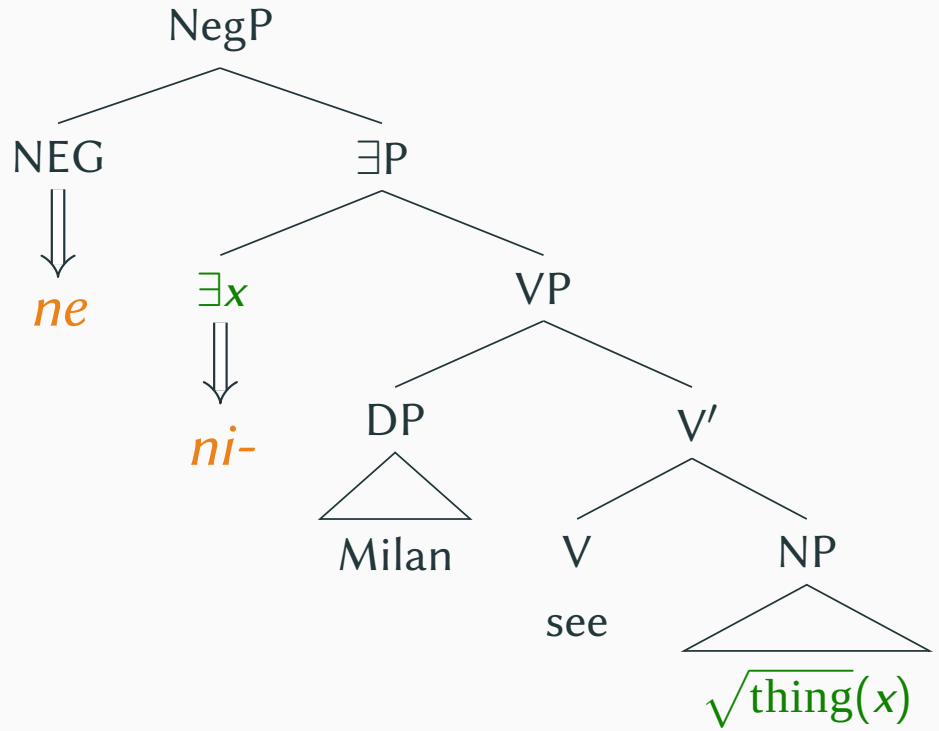
Locality issue!

An allomorphy account of negative concord?

(44) Milan **ne** vidi **ništa**.
Milan not sees nothing
'Milan cannot see anything.'

(45)
a. /∅/ ⇔ [NEG]
b. /nešto/ ⇔ [∃]
c. /ništa/ ⇔ [∃] / NEG [__
d. /ne/ ⇔ [NEG] / __ [∃

(46)



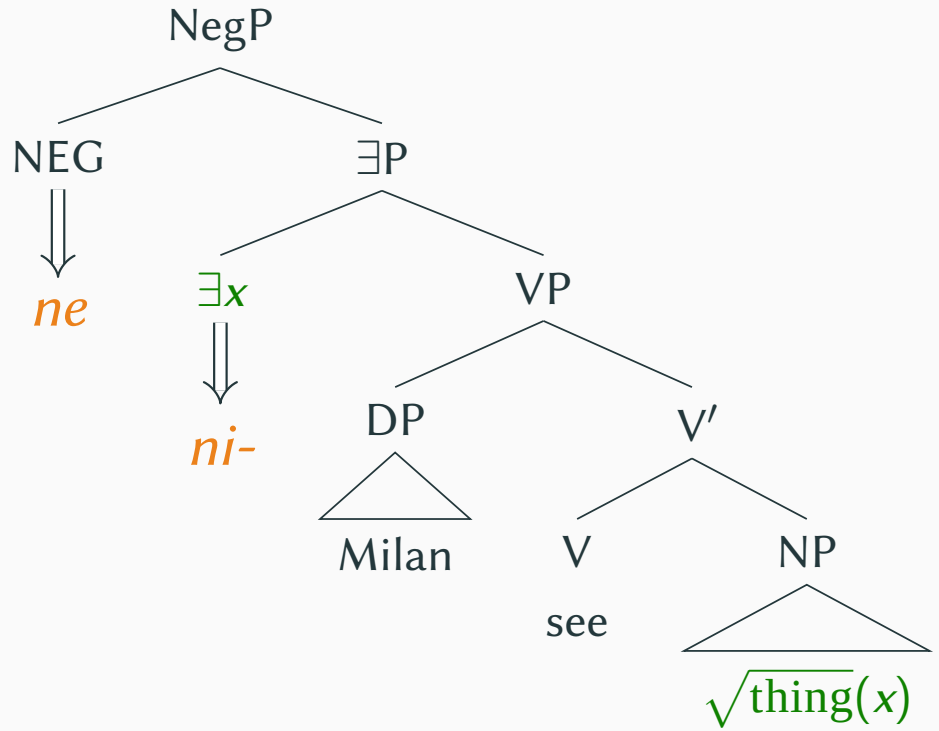
Following Heim (1982), Reinhart (1997), Winter (1997), Kratzer (1998) etc.

An allomorphy account of negative concord?

(47) Milan **ne** vidi **ništa**.
Milan not sees nothing
'Milan cannot see anything.'

(48)
a. /∅/ ⇔ [NEG]
b. /nešto/ ⇔ [∃]
c. /ništa/ ⇔ [∃] / NEG [__
d. /ne/ ⇔ [NEG] / __ [∃

(49)



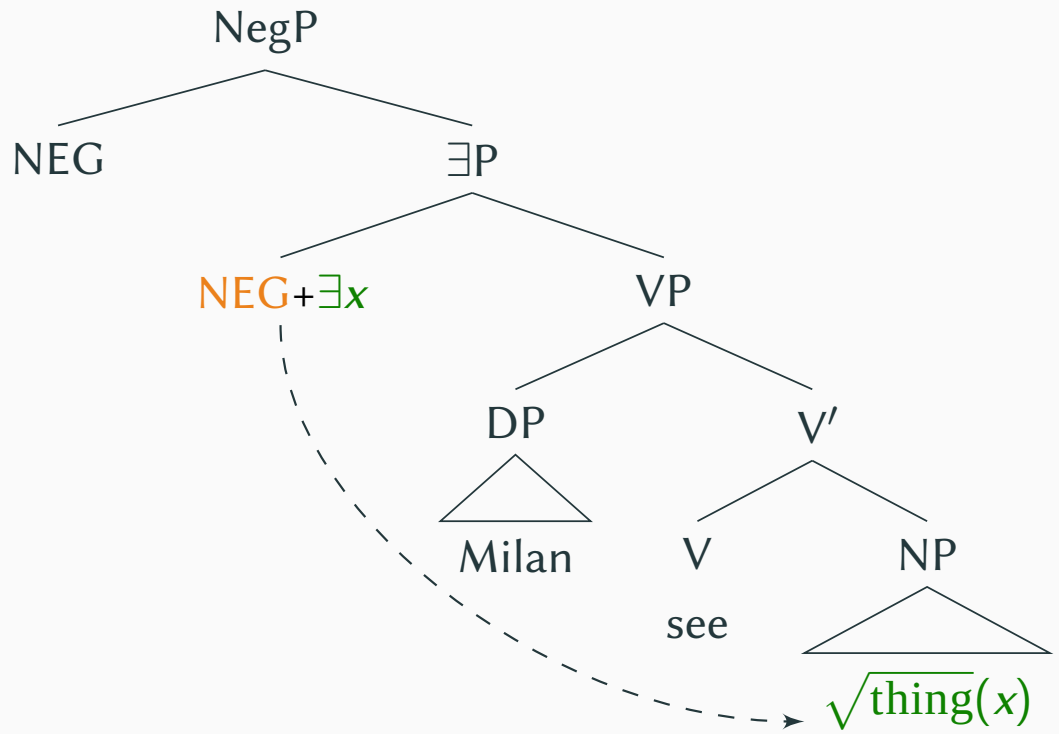
New issue: Linearization!

Alternative: Redundancy via a duplication rule

(50) Milan **ne** vidi **ništa**.
Milan not sees nothing
'Milan cannot see anything.'

(51) Duplication rule:
$\varnothing \rightarrow$ NEG / NEG [__ $\exists$
(cf. Müller 2007)

(52)

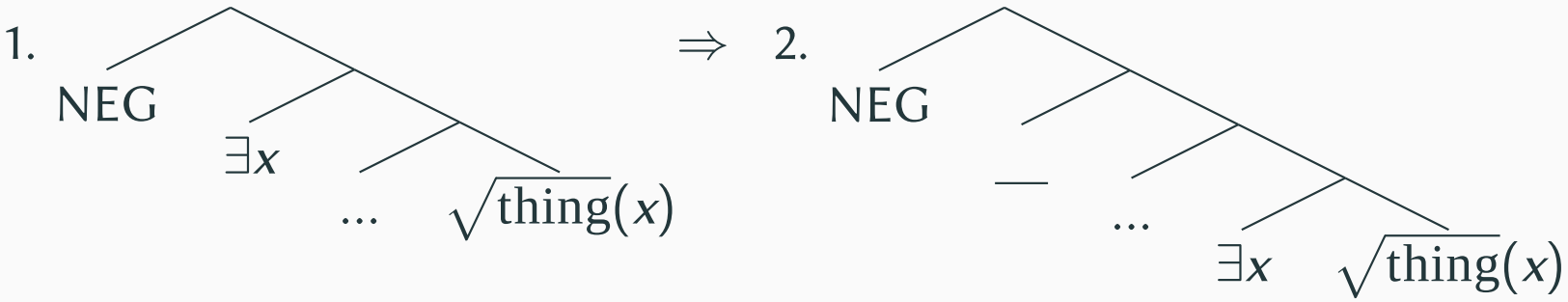


Assumption: Linearization can make reference to semantic dependencies (compatible with Meaning First framework).

Type 1 grammar

(53) a. ekun-da ō-ra-n. *Evenki*
something-CLT become-NFUT-3SG
'Something happened.'

b. ekun-da **e-** che o-ra.
something-CLT NEG-PST become-PTCP
'Nothing happened.'

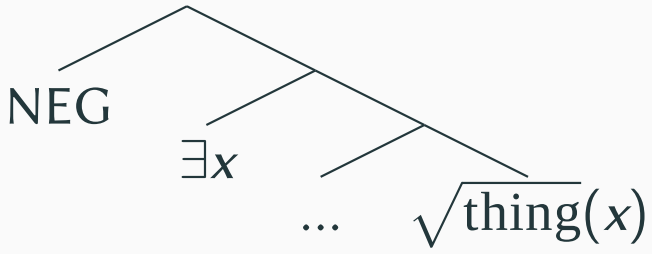


1. Base structure
2. Linearization
3. Vocabulary insertion

Type 2: A negative concord grammar

(54) Milan **ne** vidi **ništa**.
Milan not sees nothing
'Milan cannot see anything.'

(55) Dupl: $\varnothing \rightarrow$ NEG / NEG [__ $\exists$

1.


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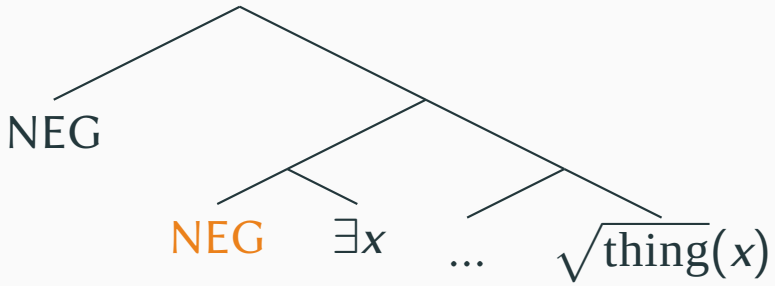

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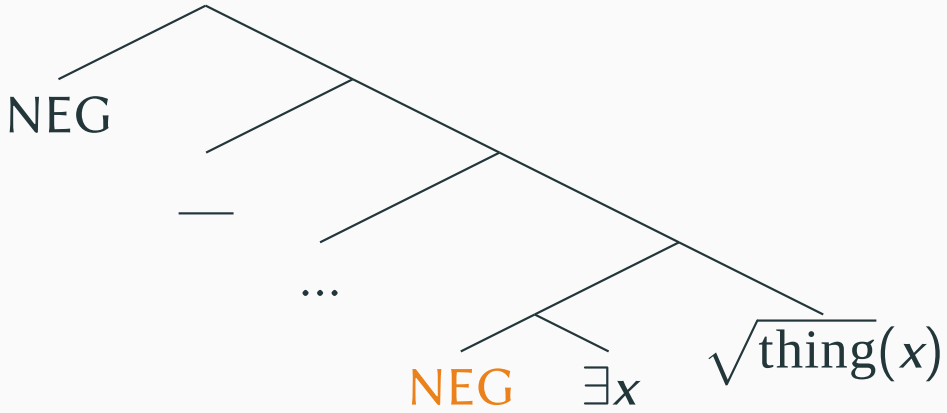


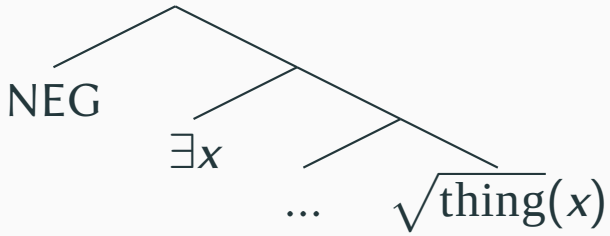
1. Base structure
2. Duplication
3. Linearization
4. Vocabulary insertion

Type 3: A non-negative concord grammar

(56) Milan sieht **nichts**.
Milan sees nothing
'Milan cannot see anything.'

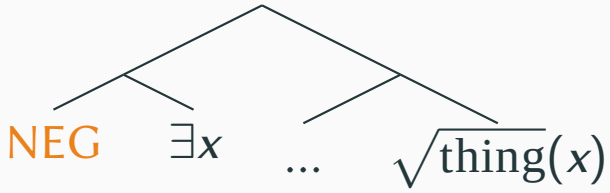
(57) Dupl: $\varnothing \rightarrow$ NEG / NEG [__ $\exists$
Del: NEG $\rightarrow \varnothing$ / __ [NEG $\exists$

1.



2.

3.



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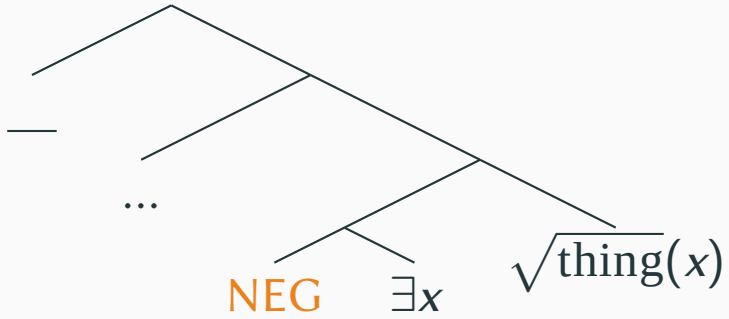

1. Base structure
2. Duplication
3. Deletion
4. Linearization
5. Vocabulary insertion

What do children do wrong?

1. ~~Derive adult typology, i.e. three language types.~~
2. Account for negative concord errors in the acquisition of non-negative concord languages like English and German.
   → **Children have not acquired the deletion rule.**
3. Account for errors of the form: NEG ... positive indefinite.
   → **Neither a duplication nor a deletion rule is acquired yet.**
4. Account for omission errors in the acquisition of negative concord languages like BCS, Italian etc.
   → **Children wrongfully postulate a deletion rule?**

Summary

Duplication: $\varnothing \longrightarrow$ NEG / NEG [__ $\exists$

Deletion: NEG $\longrightarrow \varnothing$ / __ [NEG $\exists$

Grammars:

1. NEG ... positive indefinite
    - Low
2. NEG ... negative indefinite
    - Dupl$\prec$Low
3. $\varnothing$ ... negative indefinite
    - Dupl$\prec$Del$\prec$Low

Errors children make:

1. NEG ... positive indefinite
    - no errors predicted
2. NEG ... negative indefinite
    - type 1: Low
    - type 3: Dupl$\prec$Del$\prec$Low
3. $\varnothing$ ... negative indefinite
    - type 1: Low
    - type 2: Dupl$\prec$Low

Conclusion

- Redundant commission errors are attested in many domains in child language.
- They can be modelled in a variety of ways
    - Allomorphy
    - Multiple insertion
    - Doubling

Acknowledgements

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Appendix

Type 2: Single negation with two indefinites — Dupl≺Low

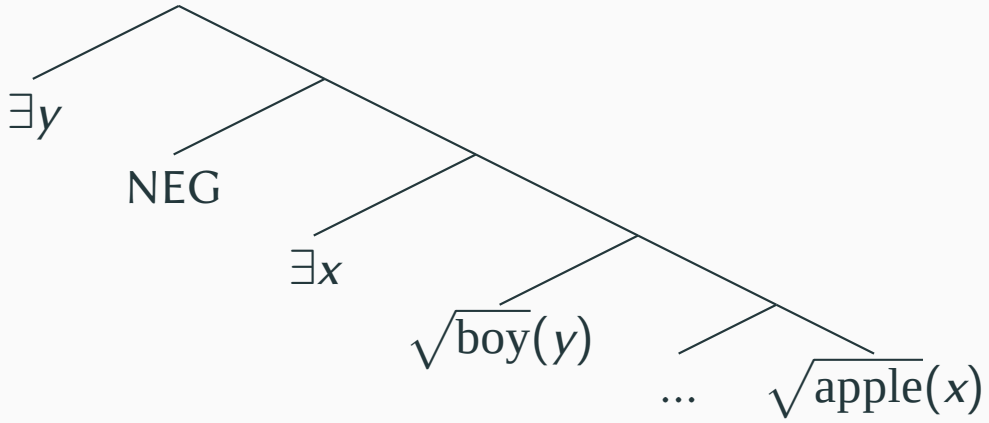
Semantic structure:

$\exists$ NEG $\exists$ … $\sqrt{\text{apple}}$ $\sqrt{\text{boy}}$

(58) Dupl: $\varnothing \rightarrow$ NEG / NEG [__ $\exists$

(59) A boy didn't eat no apple.

1.



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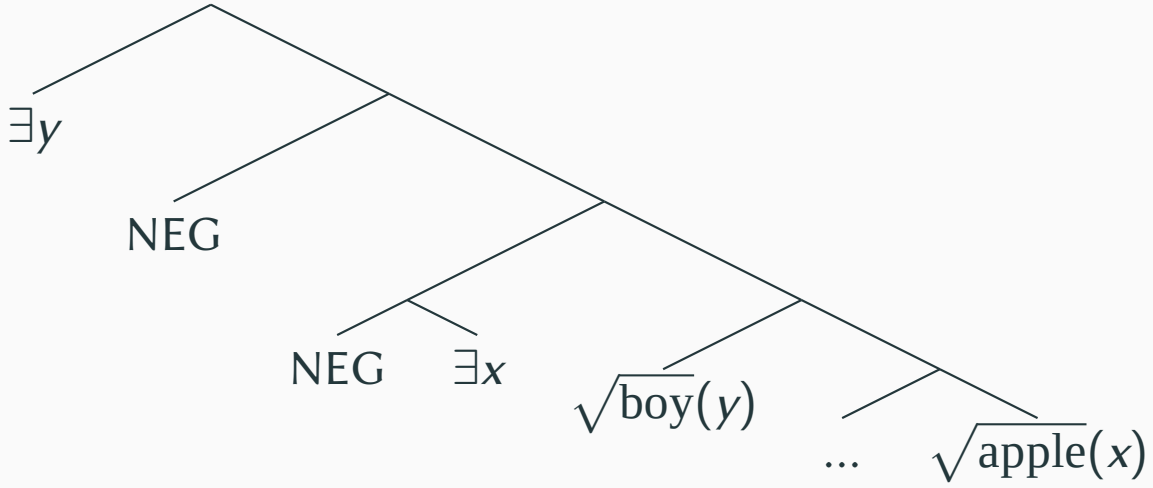
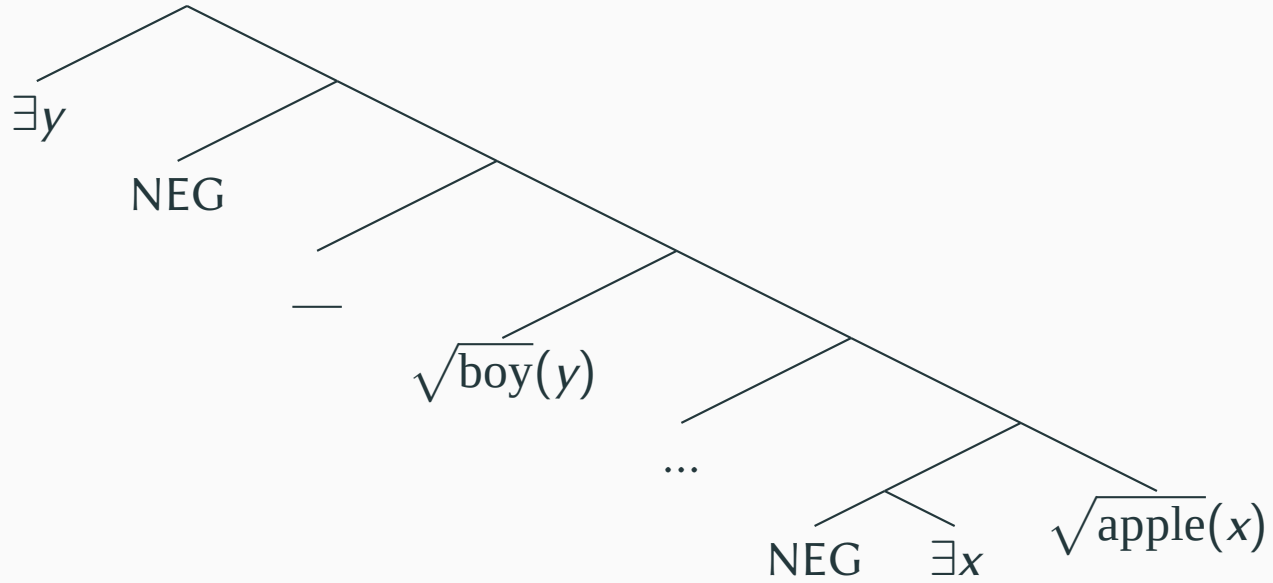


Type 2: Single negation with two indefinites

Semantic structure:
$\exists$ NEG $\exists$ … $\sqrt{\text{apple}}$ $\sqrt{\text{boy}}$

(60) Dupl: $\varnothing \rightarrow$ NEG / NEG [__ $\exists$
(61) A boy didn't eat no apple.

3.



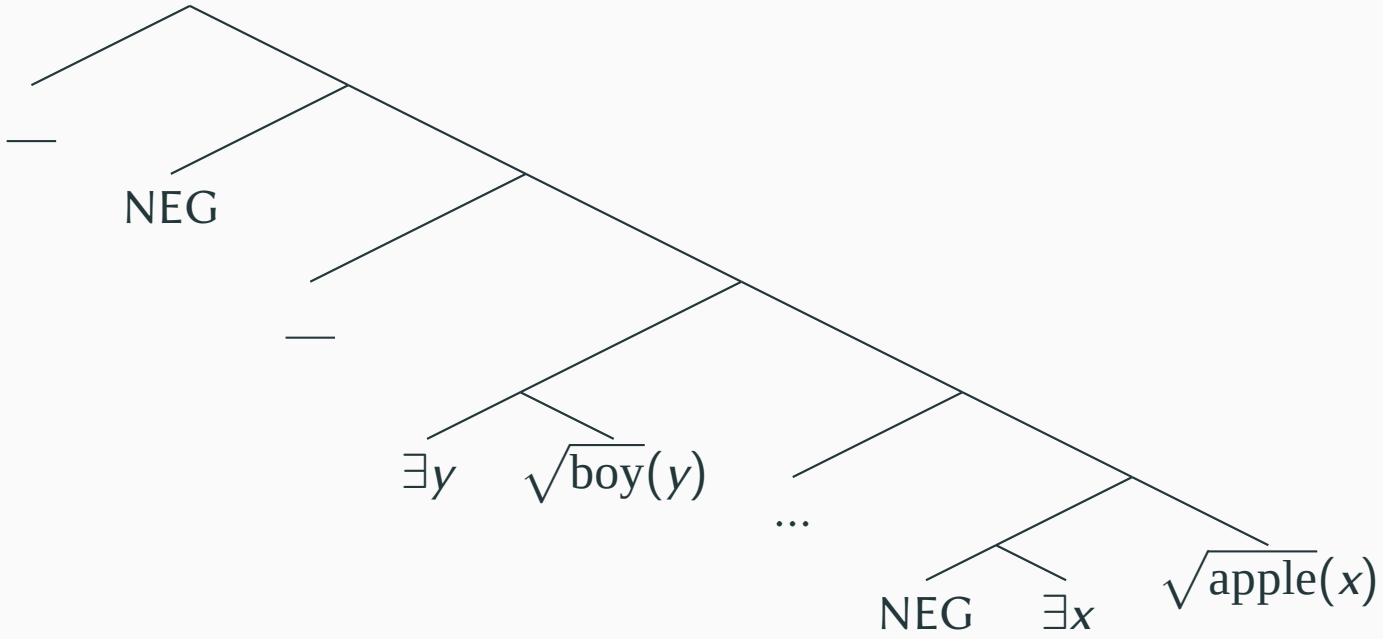
Type 2: Single negation with two indefinites — Dupl≺Low

Semantic structure:
$\exists$ NEG $\exists$ ... $\sqrt{\text{apple}}$ $\sqrt{\text{boy}}$

(62) Dupl: $\varnothing \rightarrow$ NEG / NEG [__ $\exists$
(63) A boy didn't eat no apple.

4. Dupl does not apply

5.

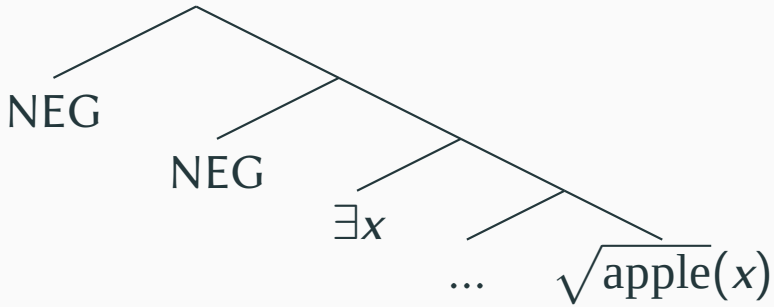


Output:
sentence negation + 1 NCI (single negation reading)

Type 2: Double negation

Semantic structure:
NEG NEG ∃ … $\sqrt{\text{apple}}$

1.



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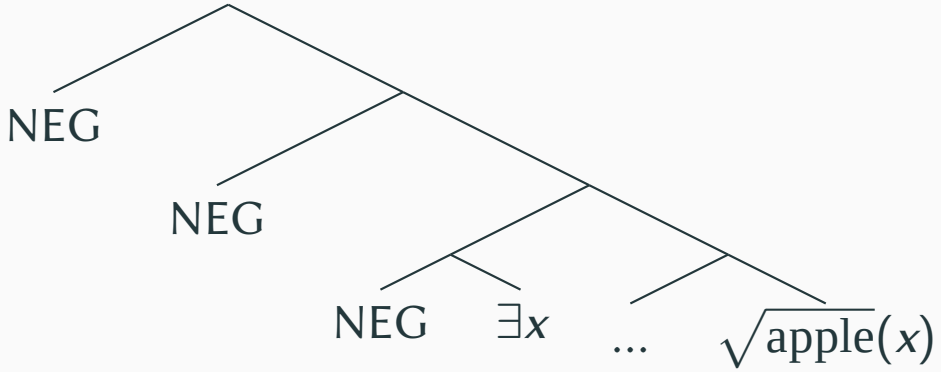


(64) Dupl: ∅ → NEG / NEG [__ ∃

(65) Mary didn't not eat no apple.

Type 2: Double negation

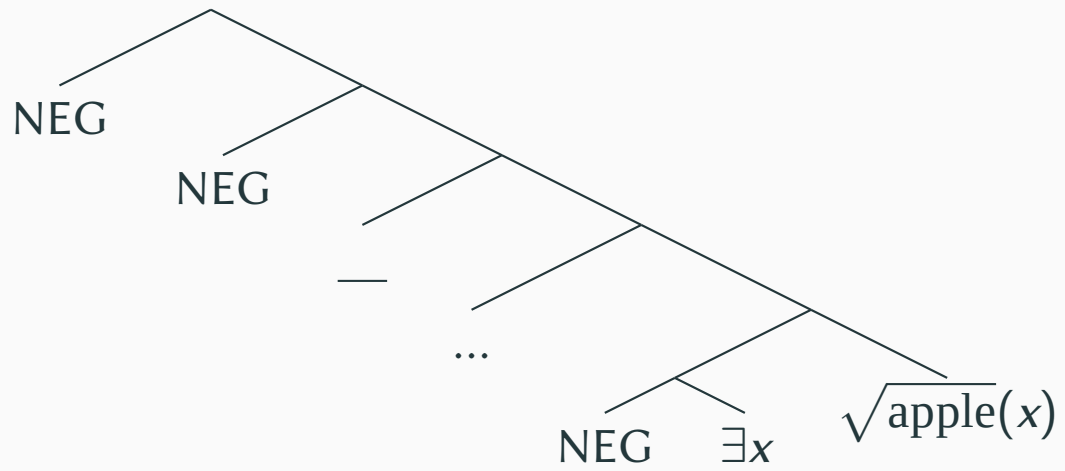
Semantic structure:

NEG NEG ∃ … $\sqrt{\text{apple}}$

(66) Dupl: ∅ → NEG / NEG [__ ∃

(67) Mary didn't not eat no apple.

3.



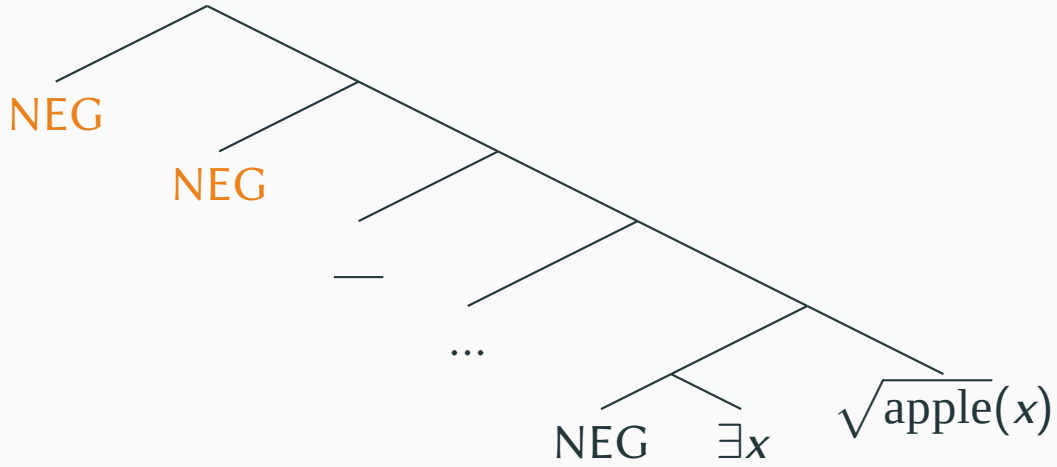
Output:

2 x sentence negation + 1 NCI (double negation reading)

Semantic structure:
NEG NEG ∃ … $\sqrt{\text{apple}}$

(68) Dupl: ∅ → NEG / NEG [__ ∃
(69) Mary didn't not eat no apple.

Output:



Idea:
The output triggers an OCP effect (prohibition of adjacent identical elements).

Ways out of the OCP:
fragments answers (no pronounciation of NEG NEG); ineffability (leads to alternative bi-clausal structures); pitch contour resulting from haplology (very speculative); morphologically distinct exponents of NEG

Type 3: Single negation with two indefinites Dupl≺Del≺Low

Semantic structure:

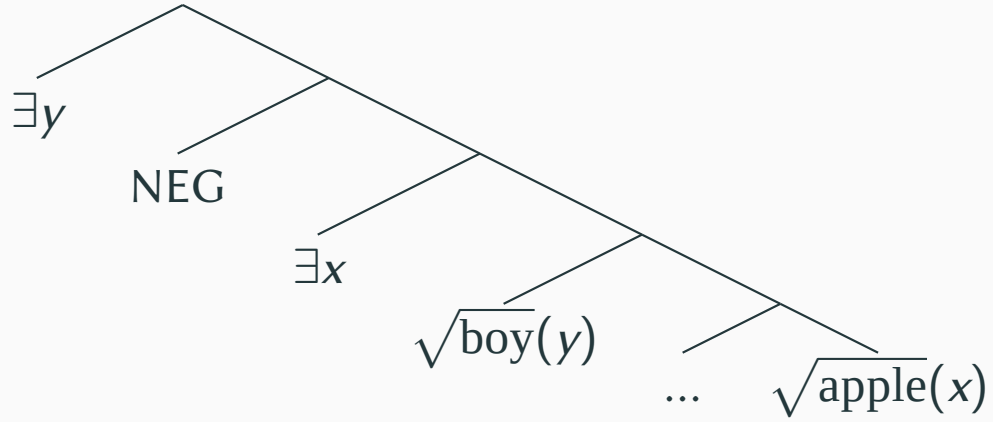
$\exists$ NEG $\exists$ … $\sqrt{\text{apple}}$ $\sqrt{\text{boy}}$

(70) Dupl: $\varnothing \rightarrow$ NEG / NEG [__ $\exists$

(71) Del: NEG $\rightarrow \varnothing$ / __ [NEG $\exists$

(72) A boy ate no apple.

1.



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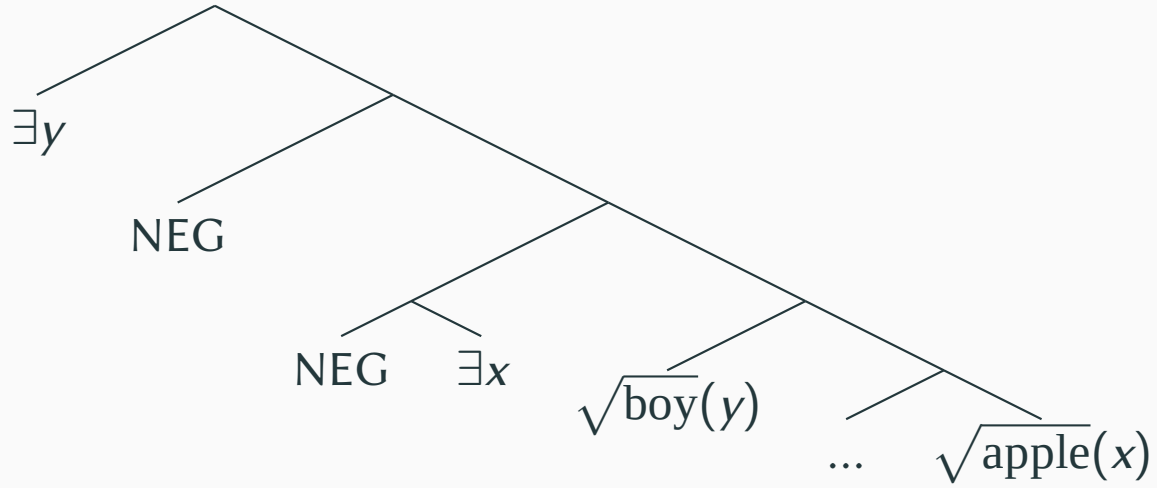
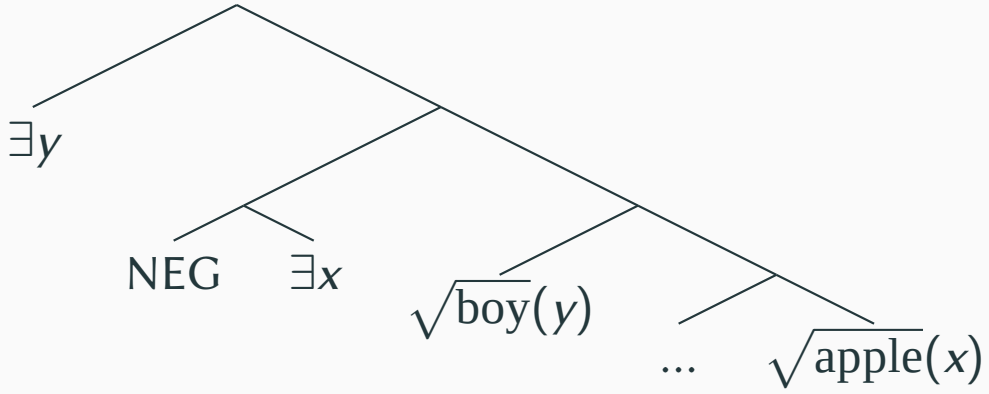


Type 3: Single negation with two indefinites Dupl≺Del≺Low

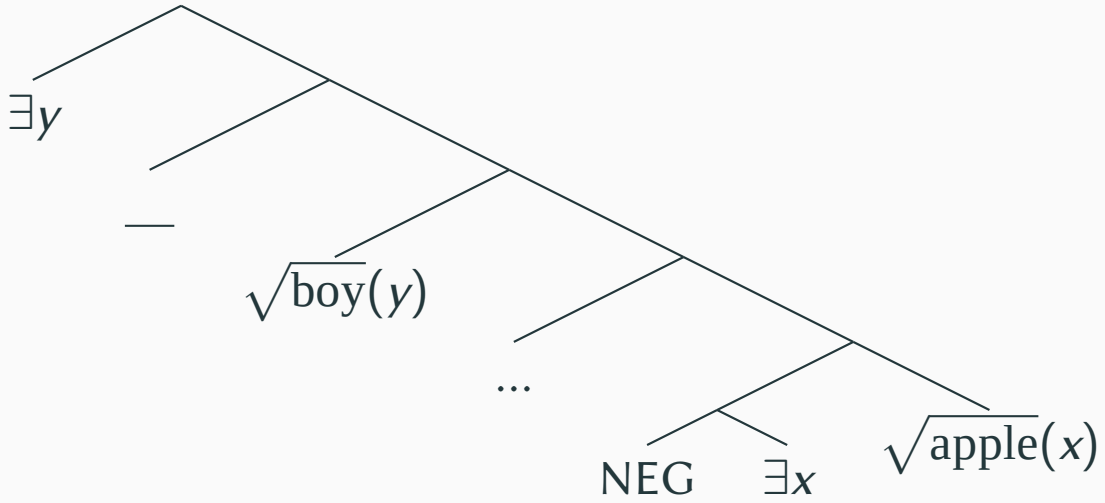
Semantic structure:
∃ NEG ∃ … $\sqrt{\text{apple}}$ $\sqrt{\text{boy}}$

(73) Dupl: ∅ → NEG / NEG [__ ∃
(74) Del: NEG → ∅ / __ [NEG ∃
(75) A boy ate no apple.

3.



4.



Type 3: Single negation with two indefinites Dupl≺Del≺Low

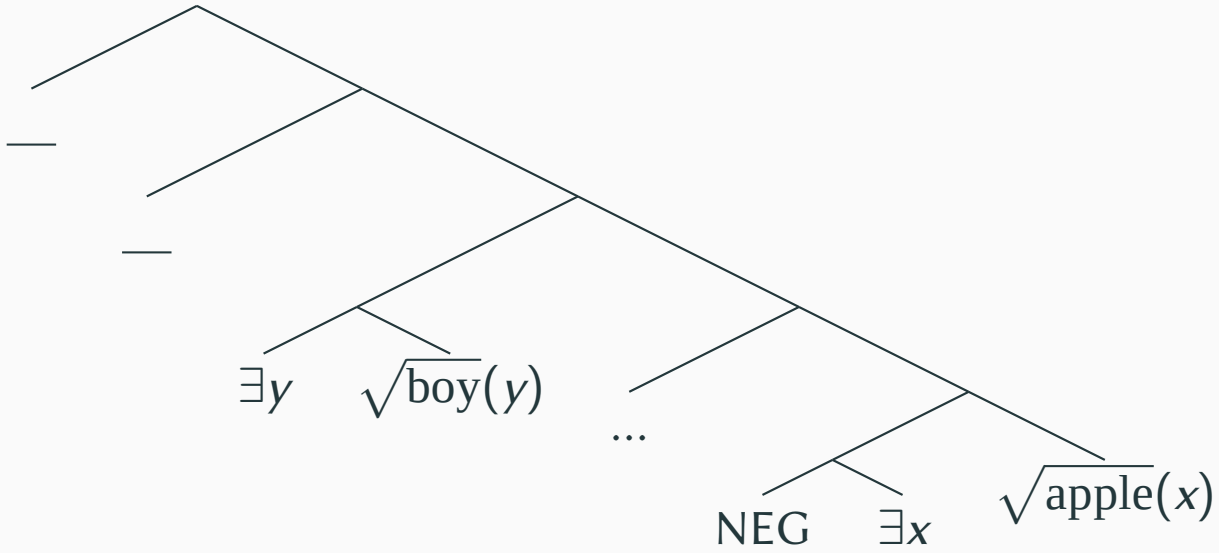
Semantic structure:
$\exists$ NEG $\exists$ ... $\sqrt{\text{apple}}$ $\sqrt{\text{boy}}$

(76) Dupl: $\varnothing \rightarrow$ NEG / NEG [__ $\exists$
(77) Del: NEG $\rightarrow \varnothing$ / __ [NEG $\exists$
(78) A boy ate no apple.

5. Dupl does not apply

6. Del does not apply

7.



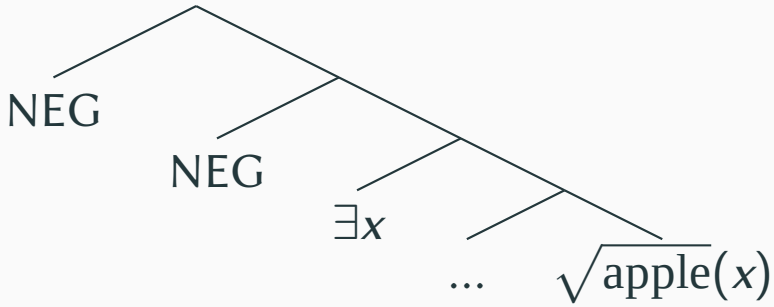
Output:
1 NCI, 1 indefinite (single negation reading)

Type 3: Double negation

Semantic structure:
NEG NEG ∃ ... $\sqrt{\text{apple}}$

(79) Dupl: ∅ → NEG / NEG [__ ∃
(80) Del: NEG → ∅ / __ [NEG ∃
(81) Mary didn't eat no apple.

1.



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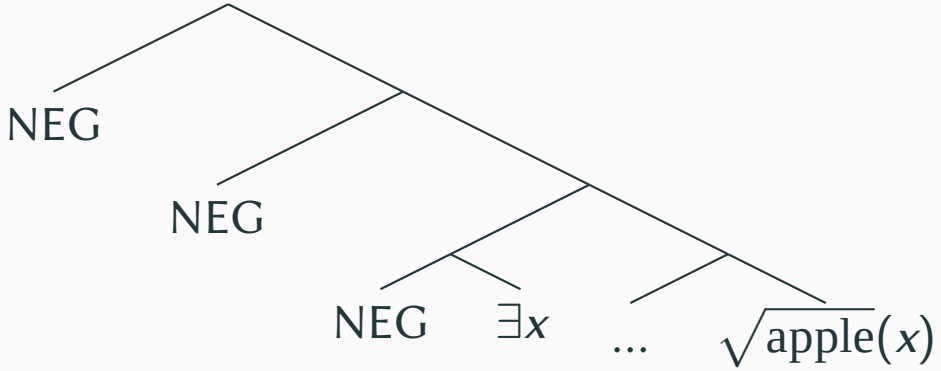


Type 3: Double negation

Dupl≺Del≺Low

Semantic structure:

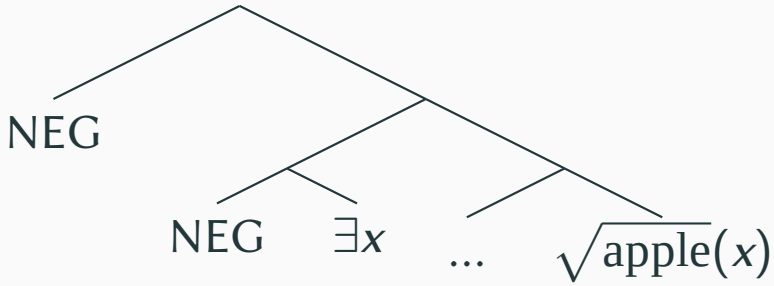
NEG NEG ∃ … $\sqrt{\text{apple}}$

(82) Dupl: ∅ → NEG / NEG [__ ∃

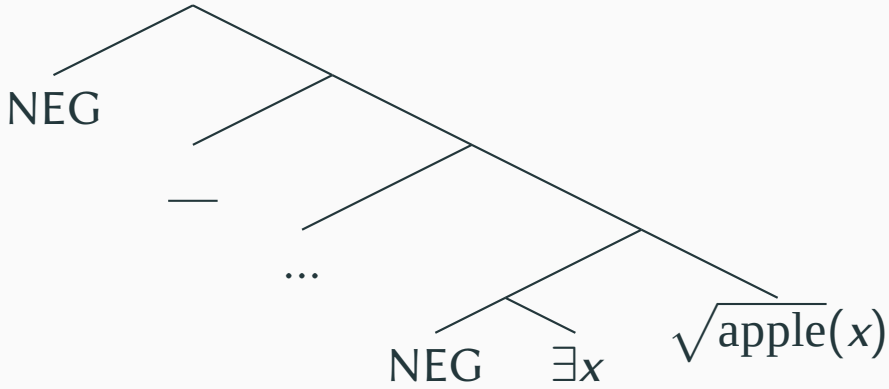
(83) Del: NEG → ∅ / __ [NEG ∃

(84) Mary didn't eat no apple.

3.



4.



Output:

sentence negation + 1 NCI (double negation reading)