Reciprocalizing *same*

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The compositional problem of *same*

(1) **External *same*:**
Boy 1 is wearing the same shirt as boy 2.

(2) **Internal *same*:**
The boys are wearing the same shirt.

Cross-linguistic surveys (Dotlačil, 2010; Charnavel, 2011) suggest that $same_{INT}$ and $same_{EXT}$ use (near-)identical forms in many languages.

(3) **External *same*:**
Boy 1 is wearing the same shirt as boy 2.

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A fairly common situation (Winter, 2018)

(5) **External *enemy*:**
Boy 1 is an enemy of boy 2

(6) **Internal *enemy*:**
The boys are enemies.

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(9) **External *same*:**
Boy 1 is wearing the same shirt as boy 2.

(10) **Internal *same*:**
The boys are wearing the same shirt.
↔ Boy 1 is wearing the same shirt as boy 2.
↔ The boys are wearing the same shirt as each other.

Reciprocal theory of *same*: internal *same* is a reciprocalized external *same*

A fly in the ointment for the reciprocal theory

(11) ***every*-internal reading:**
Every boy wore the same shirt.

(Compare with *#every child is a neighbour*)

Informally

The reciprocal paraphrase is ungrammatical. . .

(12) Every boy wore the same shirt as each other.

A related compositional problem

The distributive inference down to atoms does not go through with *same*:

(13) Every boy is wearing a red shirt
→ Boy 1 is wearing a red shirt

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- distributive quantification takes the highest scope within the sentence

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- denotation of *every* contributes universal distributive quantification
- distributive quantification takes the highest scope within the sentence

Problem #1

The reciprocal theory of *same* cannot account for licensing by *every*.

Problem #2

Sentences with *every* and internal *same* do not validate the distributivity inference.

Goal

Provide a motivated solution to Problem #2 that salvages the reciprocal theory.

- Presupposition of *same* suggest that *same* takes scope outside the DP at LF (Barker, 2007; Solomon, 2009; Charnavel, 2015b).
- *every* behaves like a *bona fide* plural-denoting expression outside its scope (Schein, 1993; Kratzer, 2000).
- When it takes scope, reciprocal *same* enters the domain where *every* starts to behave like a plural.

Presuppositions of *same*

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(14) External *same*

a. Boy 1 bought the same giraffe as boy 2.

b. Boy 1 didn't buy the same giraffe as boy 2

c. Did boy 1 buy the same giraffe as boy 2?

$\rightsquigarrow$ boy 1 and boy 2 bought a giraffe.
$\rightsquigarrow$ boy 1 and boy 2 bought just one giraffe.

(15) Internal *same*

a. Boy 1 and boy 2 bought the same giraffe.

b. Boy 1 and boy 2 didn't buy the same giraffe.

c. Did boy 1 and boy 2 buy the same giraffe?

$\rightsquigarrow$ boy 1 and boy 2 bought a giraffe.
$\rightsquigarrow$ boy 1 and boy 2 bought just one giraffe.

(16) Boy 1 bought the same giraffe as boy 2.

pres.:

- boy 1 bought exactly one giraffe
- boy 2 bought exactly one giraffe

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. . . but the presupposition makes reference to the main verb which is outside the DP!

Suggested solution

Boy 1 [same$_{\text{ext.}}$ as boy 2] λP. bought the P giraffe

(*same* is type $e((et)et)et$) In other words, *same as boy 2* is quantifier over properties, scoping at predicative nodes.

Spelling out the reciprocal theory of *same*

Here is a paraphrase that would yield that presupposition (Solomon, 2009):

(17) **Heim's paraphrase**
Boy 1 bought the giraffe that boy 2 bought
and Boy 2 bought the giraffe that boy 1 bought.

This paraphrase is truth-conditionally and presupositionally adequate.

Deriving the meaning of *same* from LF and paraphrase

From this LF, one can design an entry for $same_{ext.}$ that achieves Heim's paraphrase.

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From this LF, one can design an entry for $same_{ext.}$ that achieves Heim's paraphrase.

(18) a. Boy 1 [same as boy 2] λP. bought the P giraffe

b. **Heim's paraphrase**
Boy 1 bought the giraffe that boy 2 bought
and Boy 2 bought the giraffe that boy 1 bought.

c. $[\![\text{same}]\!] = \lambda x.\lambda \mathscr{P}.\lambda y.\ P(\lambda z.P(=z)(x)) \wedge P(\lambda z.P(=z)(y))$

Deriving the meaning of *same* from LF and paraphrase

$[\![\text{same}]\!]$(boy 2)(λP. bought the P giraffe)(boy 1) = (from LF)

Boy 1 bought the giraffe that boy 2 bought
and Boy 2 bought the giraffe that boy 1 bought. (Heim's paraphrase)

Deriving the meaning of *same* from LF and paraphrase

$[\![\text{same}]\!]\,(\text{boy 2})(\lambda P.\ \text{bought the } P \text{ giraffe})(\text{boy 1}) =$

Boy 1 bought the giraffe $\lambda z.$ that boy 2 bought the giraffe $= z$
and Boy 2 bought the giraffe $\lambda z.$ that boy 1 bought the giraffe $= z$.

Deriving the meaning of *same* from LF and paraphrase

$[\![\text{same}]\!]\,(\text{boy 2})(\lambda P.\ \text{bought the } P \text{ giraffe}) = \lambda x.$

x bought the giraffe $\lambda z.$ that boy 2 bought the giraffe $= z$
and Boy 2 bought the giraffe $\lambda z.$ that x bought the giraffe $= z$.

Deriving the meaning of *same* from LF and paraphrase

$$[\![\text{same}]\!]\,(\text{boy 2})(\underbrace{\lambda P.\ \text{bought the } P \text{ giraffe}}_{\mathscr{P}}) = \lambda x.$$

$$\underbrace{x \text{ bought the giraffe } \underbrace{\lambda z.\ \text{that boy 2 bought the giraffe} = z}_{\mathscr{P}}}_{\mathscr{P}}$$

$$\underbrace{\textit{and } \text{Boy 2 bought the giraffe } \underbrace{\lambda z.\ \text{that } x \text{ bought the giraffe} = z}_{\mathscr{P}}.}_{\mathscr{P}}$$

Deriving the meaning of *same* from LF and paraphrase

$[\![\text{same}]\!](\text{boy } 2) = \lambda x.\lambda P$

$\mathscr{P}(\lambda z \mathscr{P}(= z)(\text{boy } 2))(x)$
and $\mathscr{P}(\lambda z \mathscr{P}(= z)(x))(\text{boy } 2)$

Deriving the meaning of *same* from LF and paraphrase

$[\![\text{same}]\!] = \lambda x.\lambda \mathscr{P}.\lambda y.$

$\mathscr{P}(\lambda z \mathscr{P}(= z)(y))(x)$
$\wedge \mathscr{P}(\lambda z \mathscr{P}(= z)(x))(y)$

This account mirrors, with minor differences, that of Solomon (2009) in a non-categorial framework.

What about internal *same*?

What about internal *same*?

I adopt the reciprocal theory of *same*: internal *same* is a reciprocal alternate of internal *same*

Back to internal *same*

I assume that covert reciprocity of relational predicates is realized by an operator Rec.

(19) a. Boy 1 is a neighbour of boy 2.

b. Boy 1 and boy 2 are neighbours.

(20) $[\![\text{Rec}_{(\text{eet})\text{et}}]\!] = \lambda R.\lambda X.\forall x \neq y \prec XR(x)(y)$

Because *same* is quantificational (i.e. takes scope), Rec cannot combine directly with $same_{EXT}$. We use a standard Geach type-shifter[1].

[1] the same that combines quantifier in object position ; movement approaches, with some caveats, are also possible.

Suggested solution

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The boys [same Rec] λP. bought the P giraffe

$\leftrightarrow$ The boys bought the same giraffe as each other

Suggested solution

The boys [same Rec] λP. bought the P giraffe

↔ The boys bought the same giraffe as each other

↔ Boy 1 bought the giraffe that boy 2 bought

and boy 2 bought the giraffe that boy 1 bought (Heim's paraphrase)

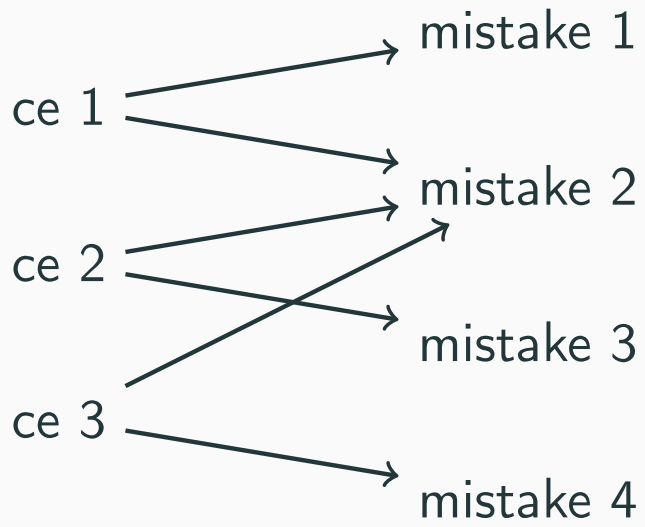
Recap

- Presuppositions of *same* suggest scoping.
- We spelled out the reciprocal theory assuming this form of scoping.
- Because of reciprocity, internal *same* can only combine with pluralities.

Distributive quantifiers and plurals

- Presupposition of *same* suggest that *same* takes scope outside the DP at LF (Barker, 2007; Solomon, 2009; Charnavel, 2015b).
- *every* behaves like a *bona fide* plural-denoting expression outside its scope (Schein, 1993; Kratzer, 2000).
- When it takes scope, reciprocal *same* enters the domain where *every* starts to behave like a plural.

(21)



a. Three copy-editors caught every mistake.

b. # Every copy-editor caught four mistakes.

The cumulative reading, a landmark of pluralities, only obtains in (21a).

Generalization: *every* behaves like a plural outside its scope (as diagnosed by the availability of cumulative readings)

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Several solutions:

- **Kratzer (2000):** *every* creates a plural event
- **Schmitt (2013, 2015); Haslinger and Schmitt (2018):** *every* creates a plural proposition (plurality all the way through)
- **Champollion (2010):** *every* is plural but its trace must denote a singularity (hence obligatory distributive readings)

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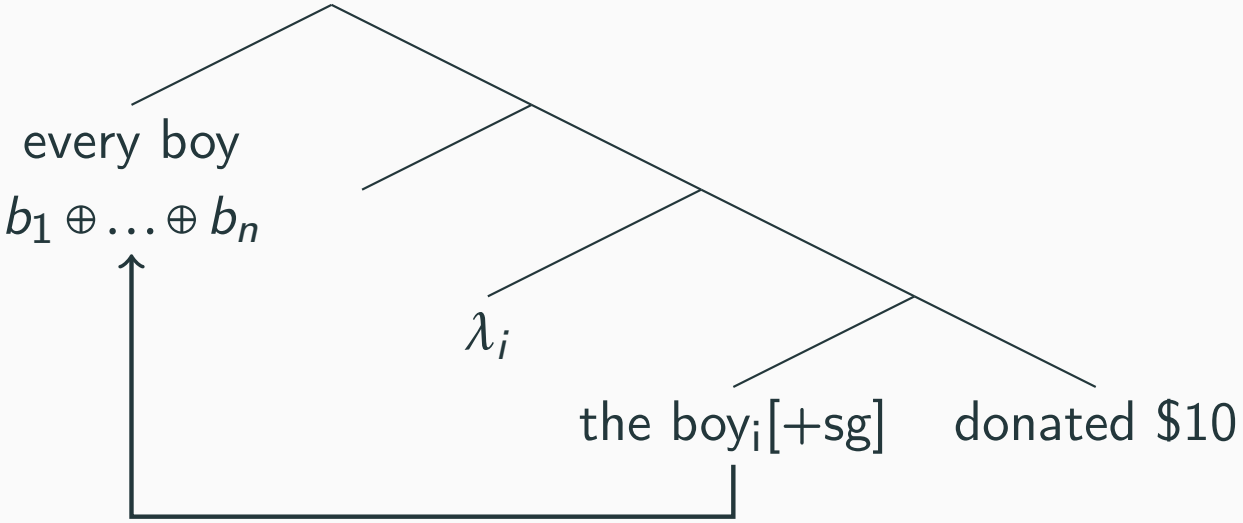
Champollion (2010)

(22) Every boy donated 10$.
(10$ each, *10$ in total)



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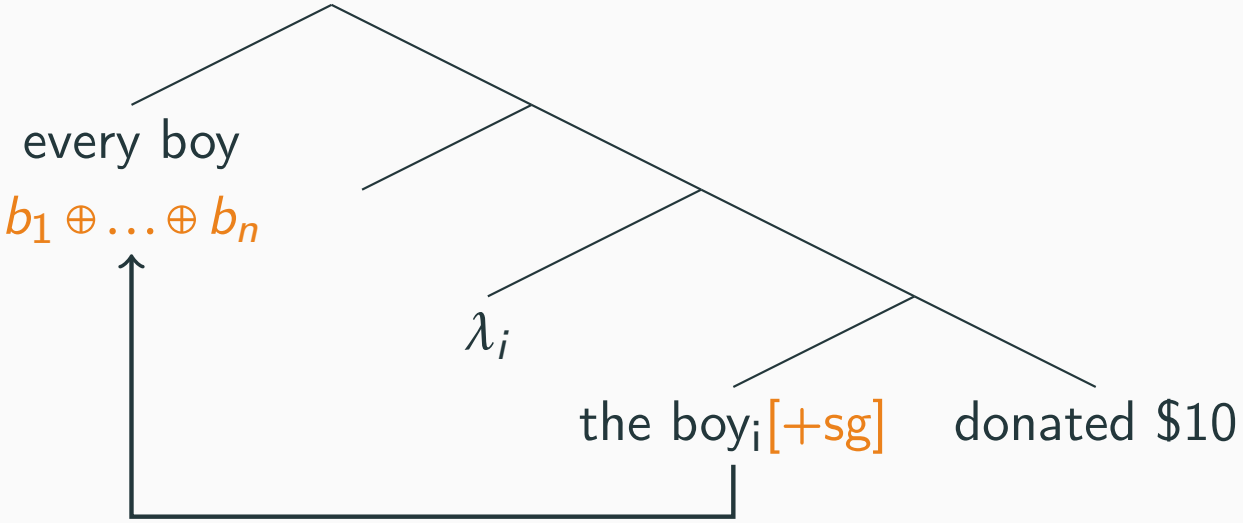

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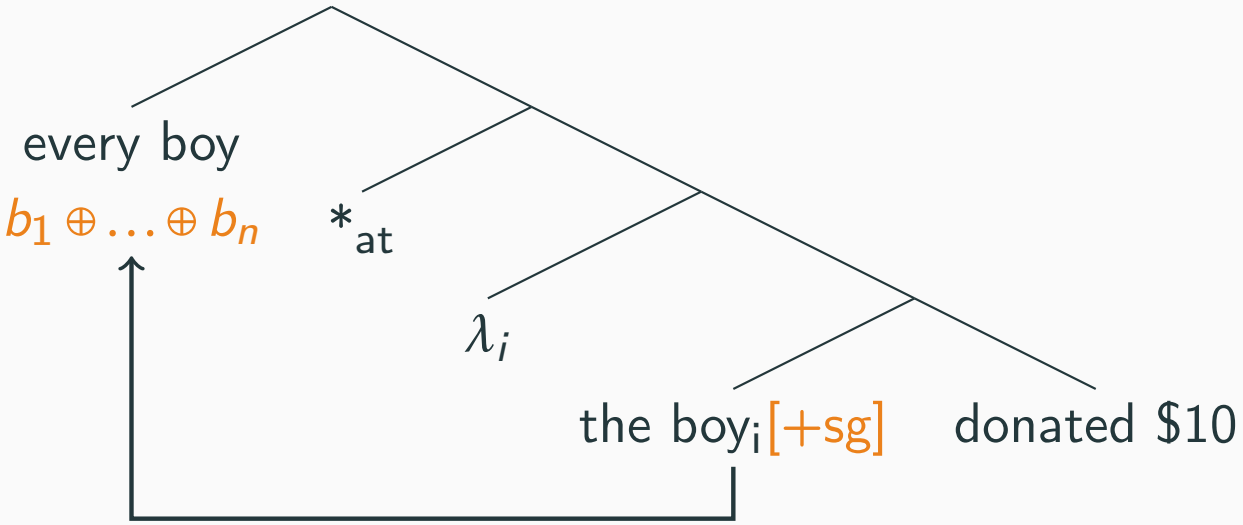

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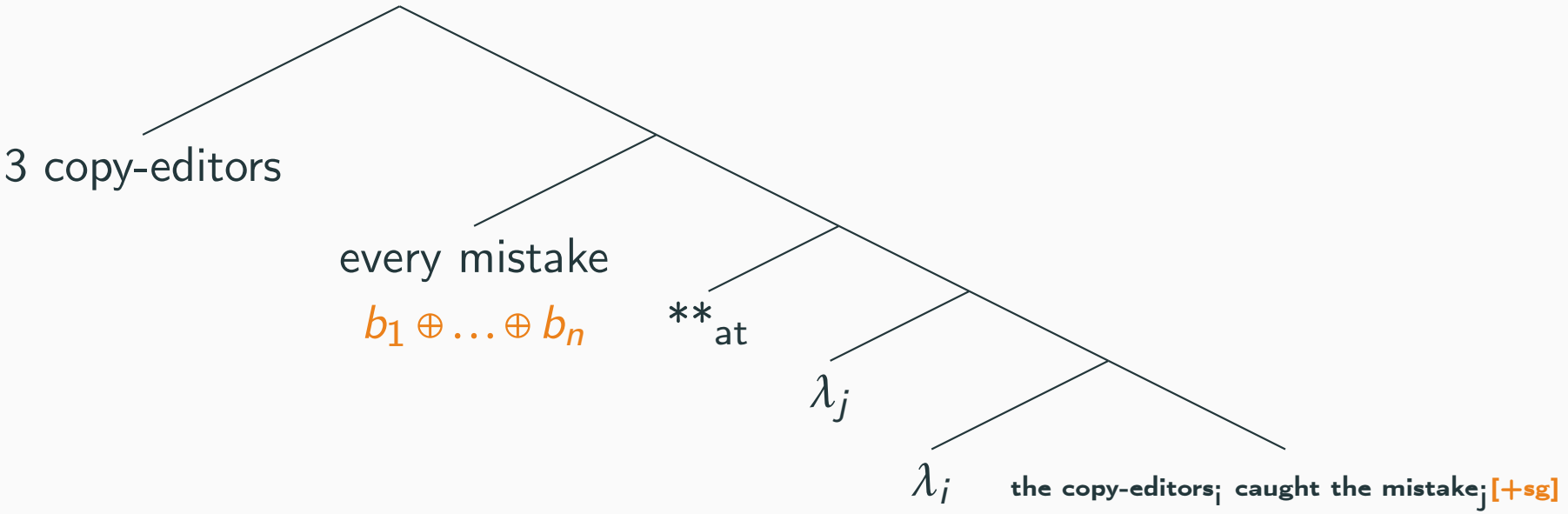
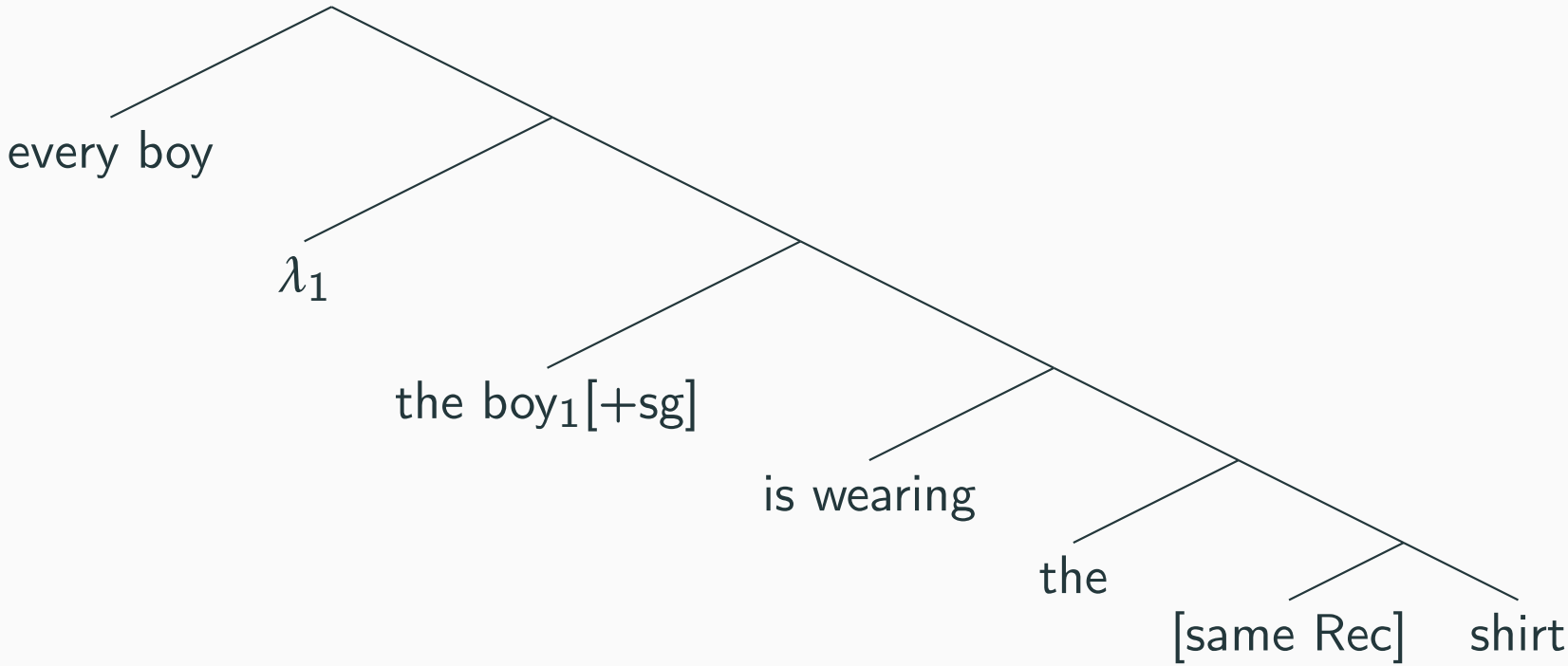
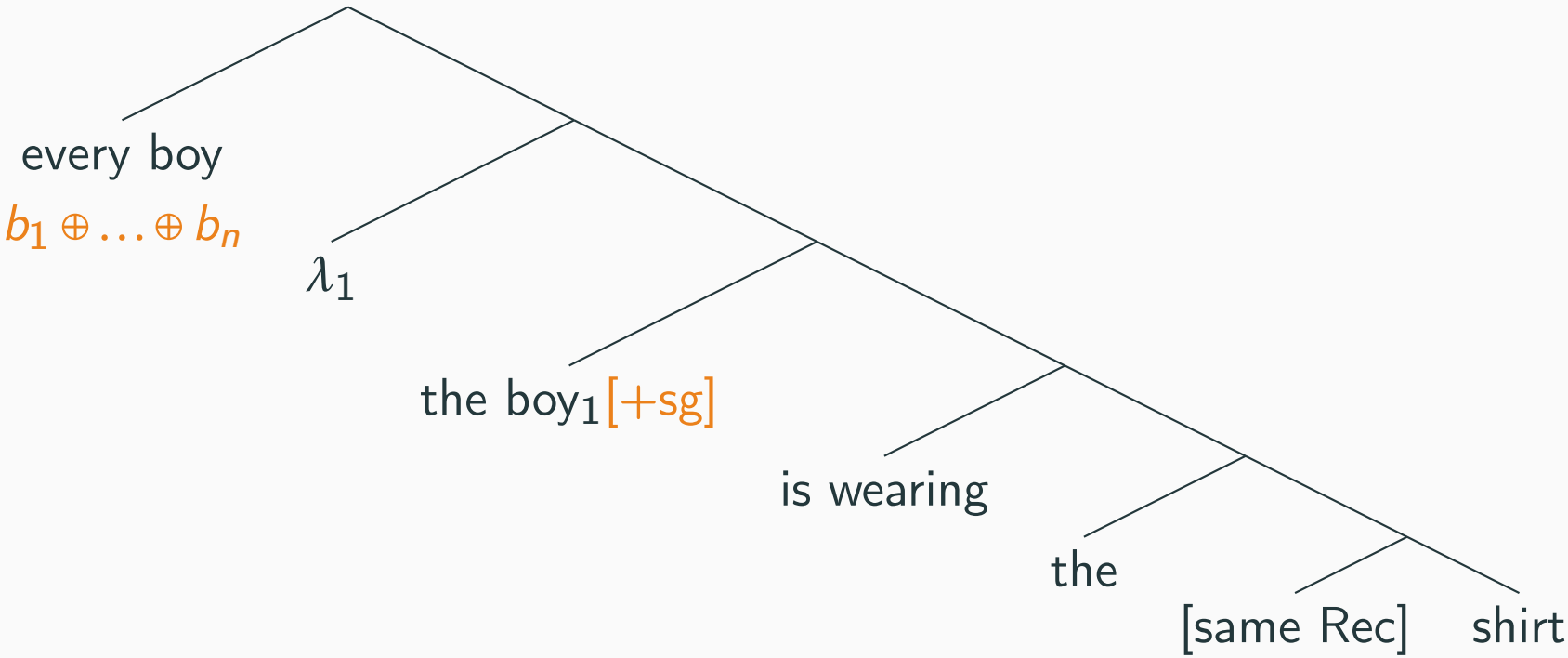


Same & every

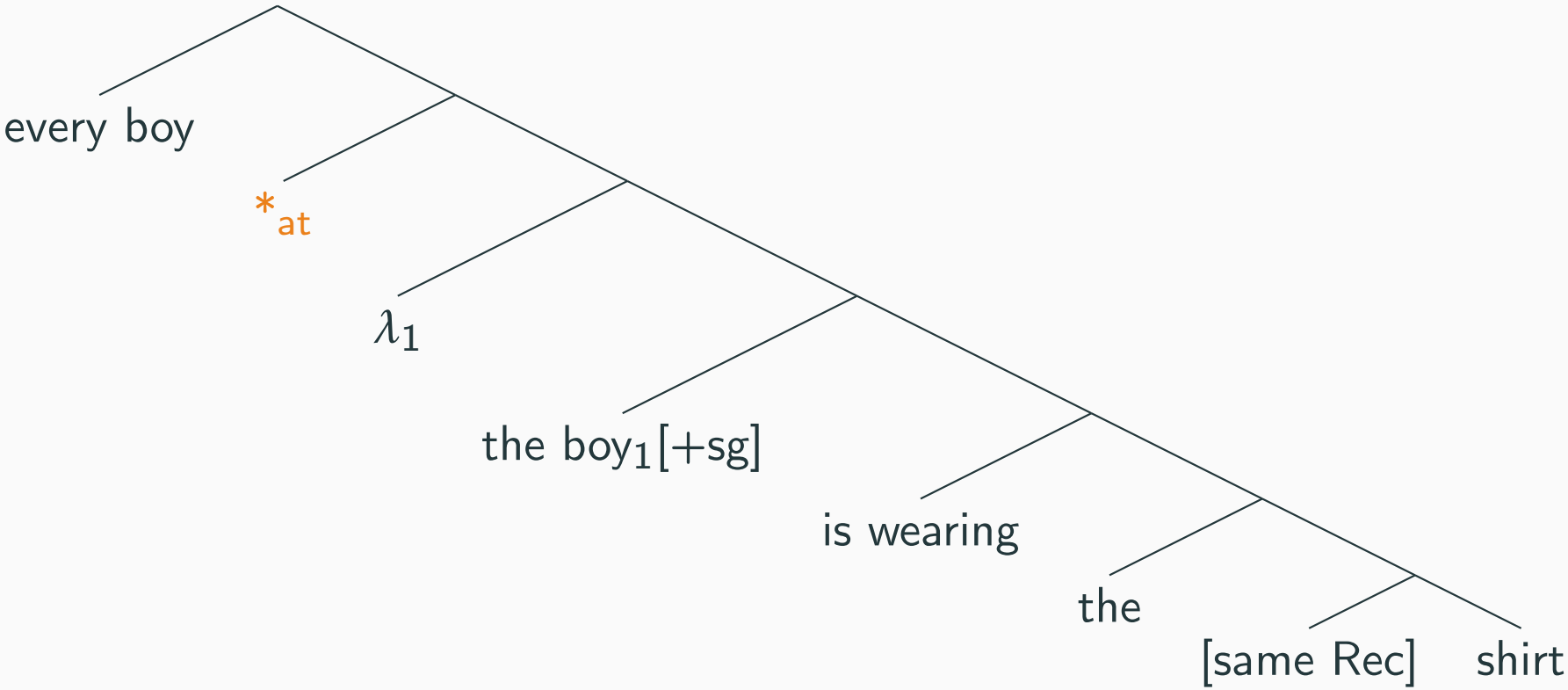
Back to *same*



Back to *same*


every boy
$b_1 \oplus \ldots \oplus b_n$
λ_1
the boy$_1$[+sg]
is wearing
the
[same Rec]
shirt

Back to *same*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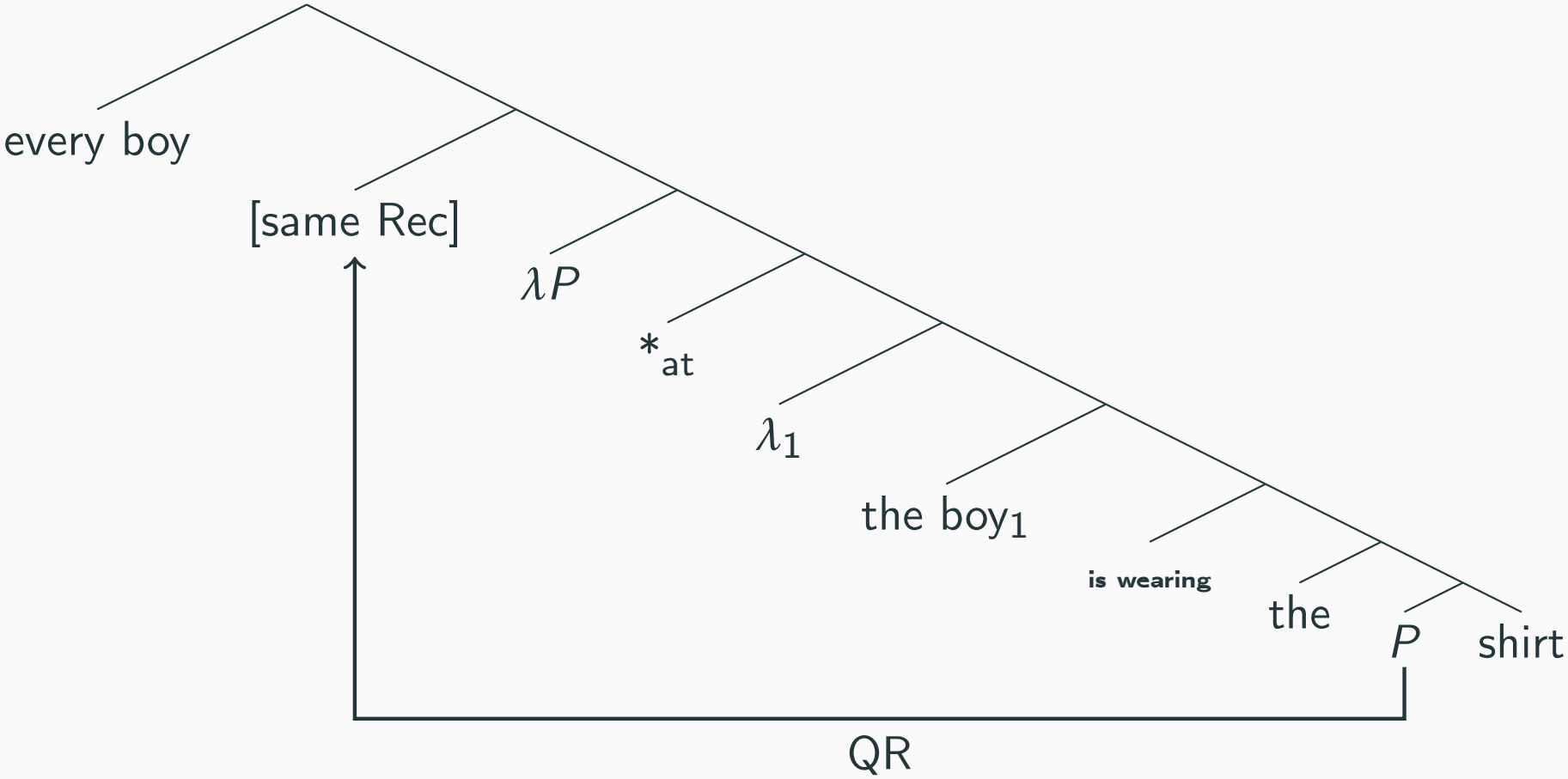

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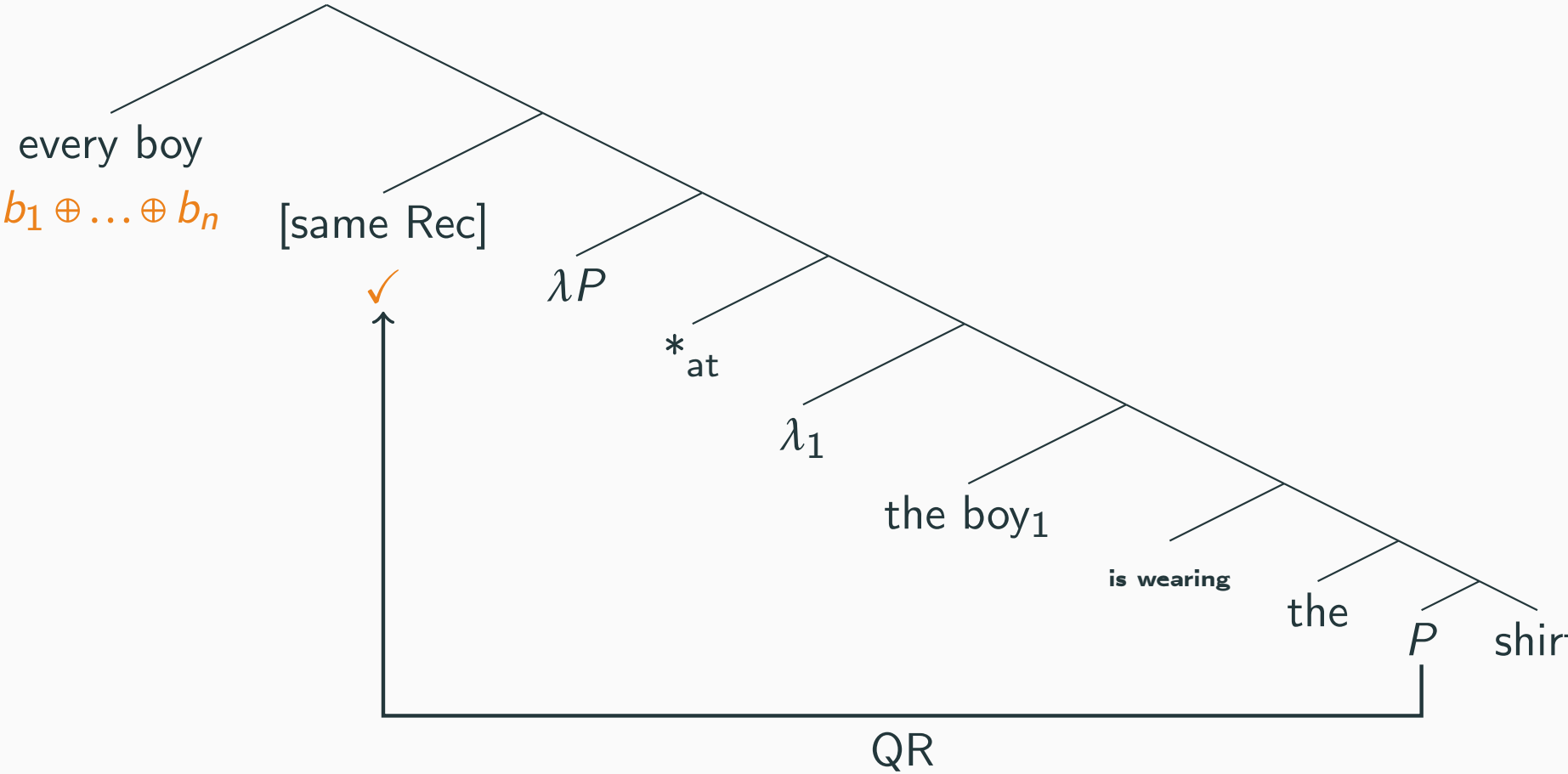
every boy
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[same Rec]
✓
λP
$*_{at}$
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P
shir
QR

Summary

- Internal *same* must combine with a plural licensor.

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- Internal *same* must combine with a plural licensor.
- Internal *same* can take scope.
- At some level of composition, *every* makes available a plurality
- Internal *same* is licensed by *every* because it can take scope at that level

Further predictions

Prediction

If *same* associates with *every*, it must scope as high as *every*.

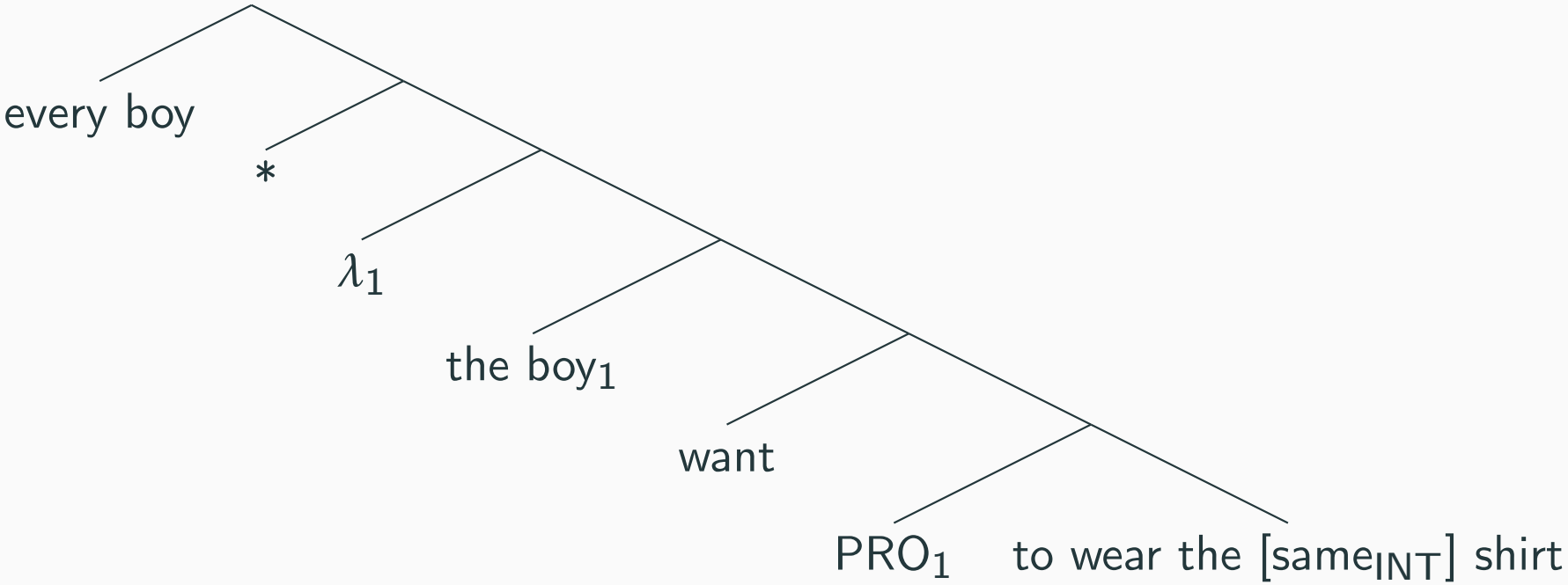
Obligatory De Re readings of *same*

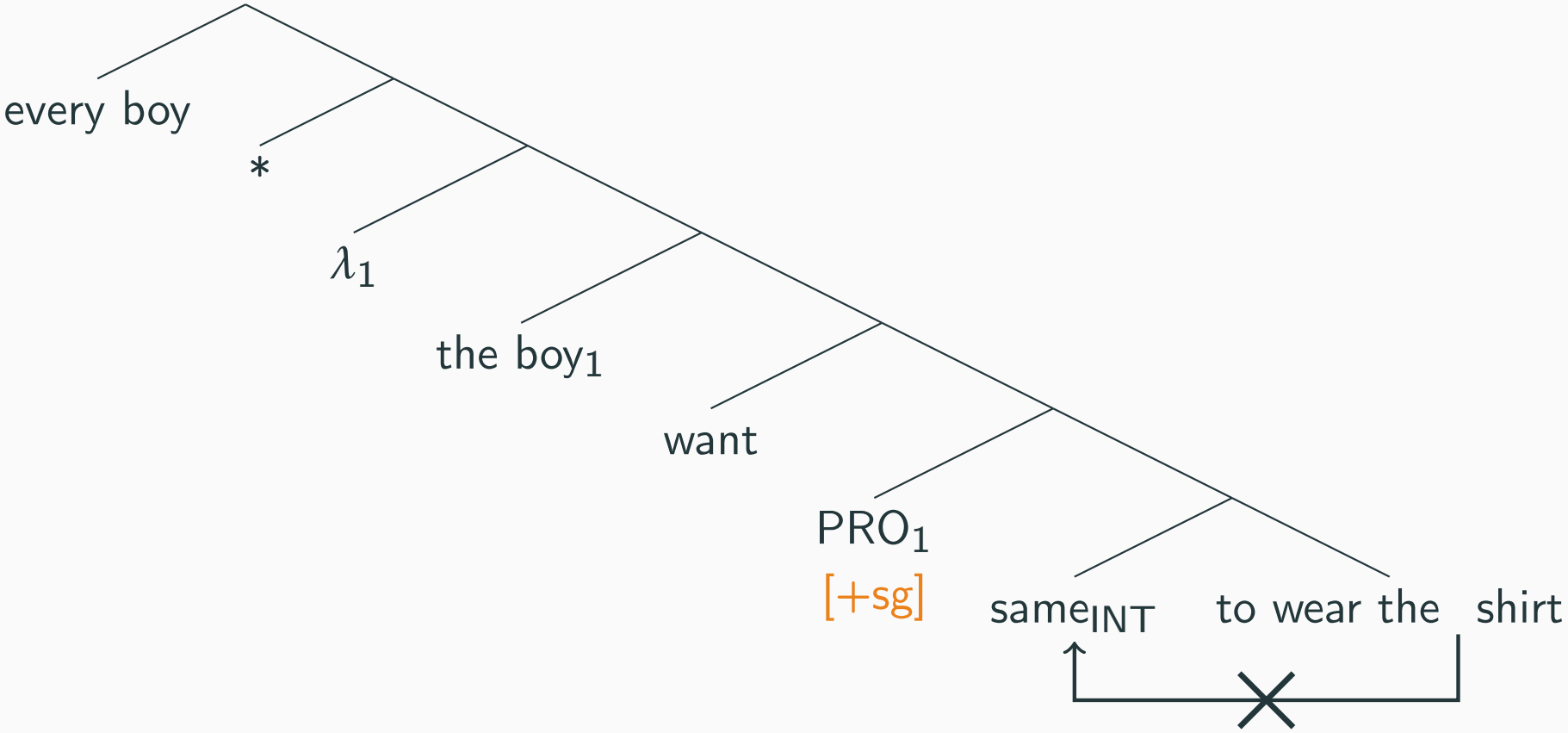
(24) a. Every boy wants to wear the same shirt.

b. The boys want to wear the same shirt.

(25) a. **De Re:** each boy came to me and said: "I want to wear the orange shirt"
✓ (24a), (24b)

b. **De Dicto:** the boys came to me and said: "we want to wear the same shirt"
✓ (24b), *(24a)


every boy
*
λ_1
the boy$_1$
want
PRO$_1$
to wear the [same$_{\text{INT}}$] shirt


every boy
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PRO$_1$
[+sg]
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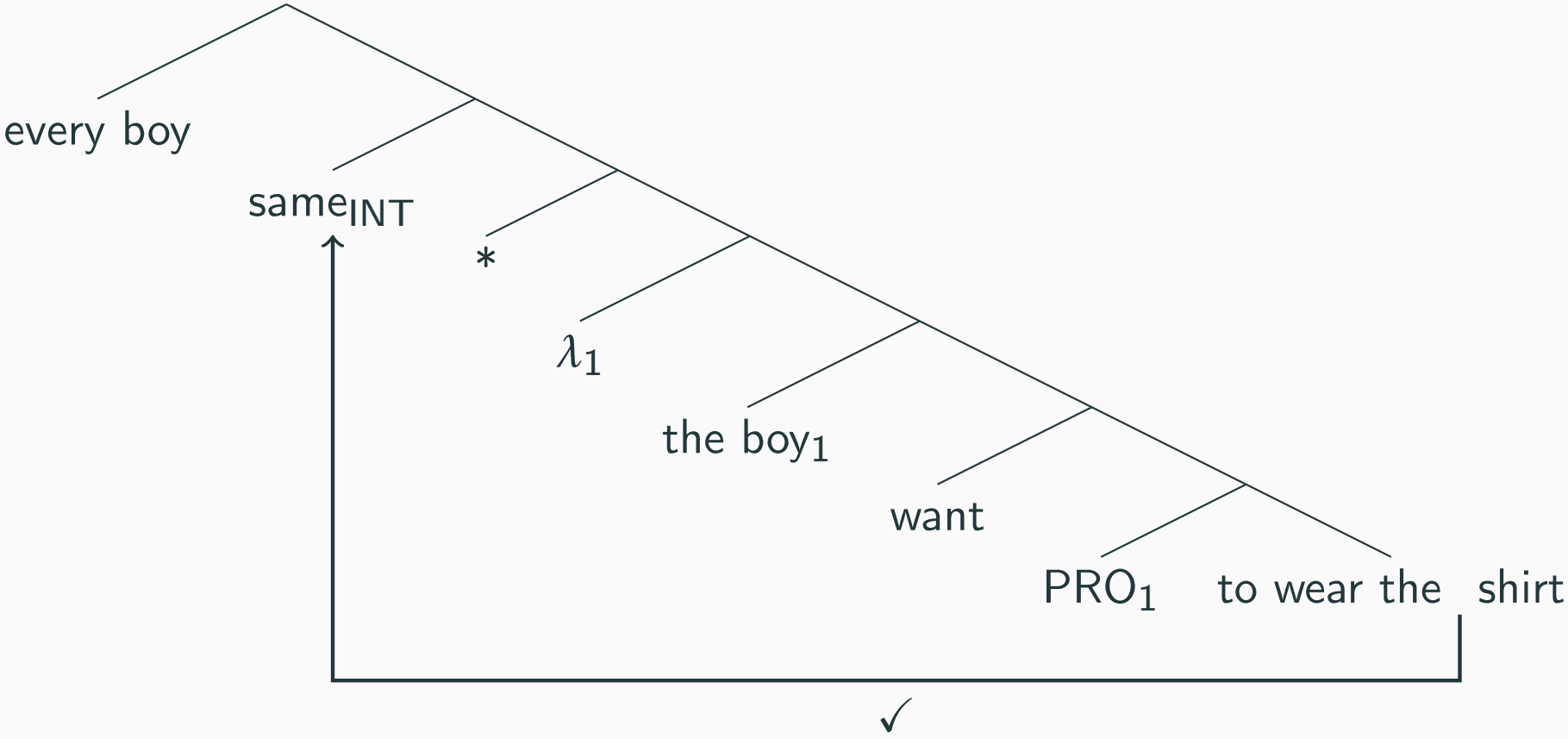
shirt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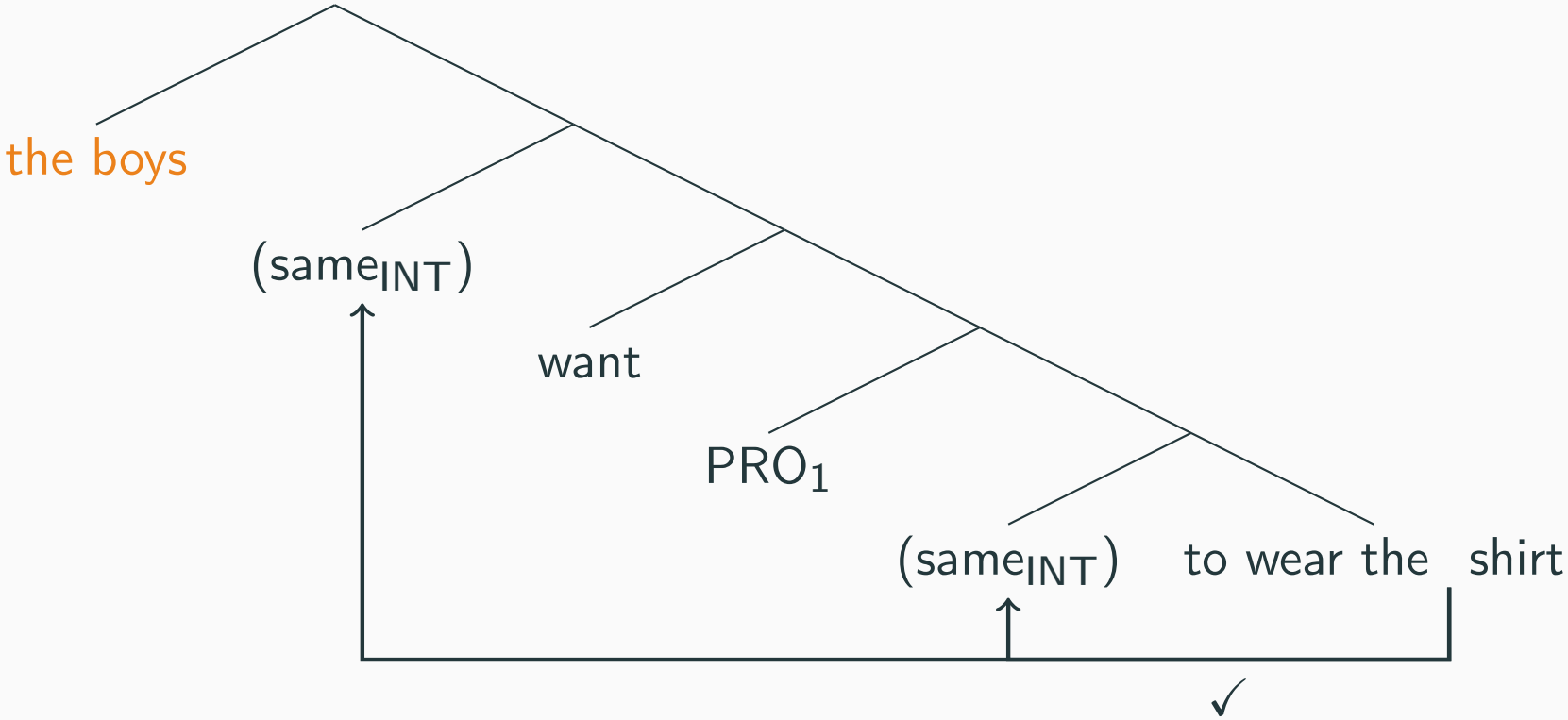

the boys
(same$_{INT}$)
want
PRO$_1$
(same$_{INT}$)
to wear the shirt
✓

Typological predictions

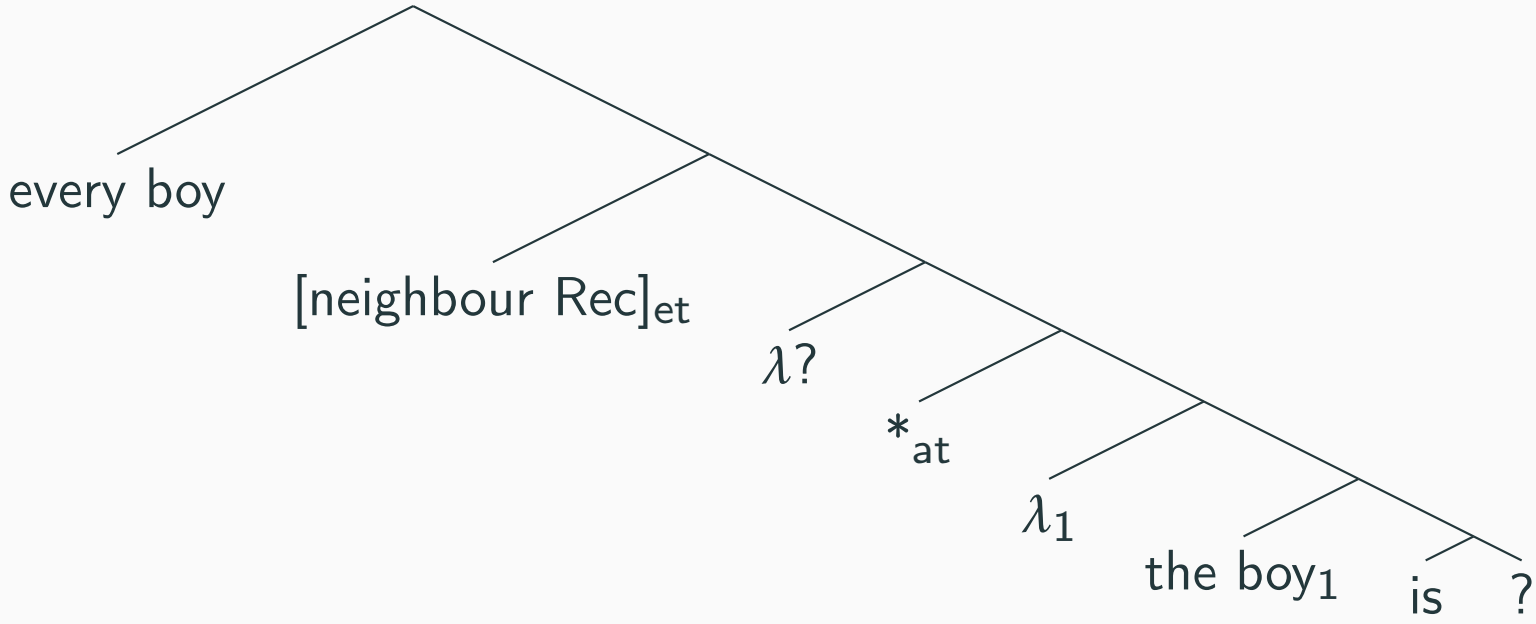
neighbour partakes in the reciprocal alternation but is not licensed by *every*.

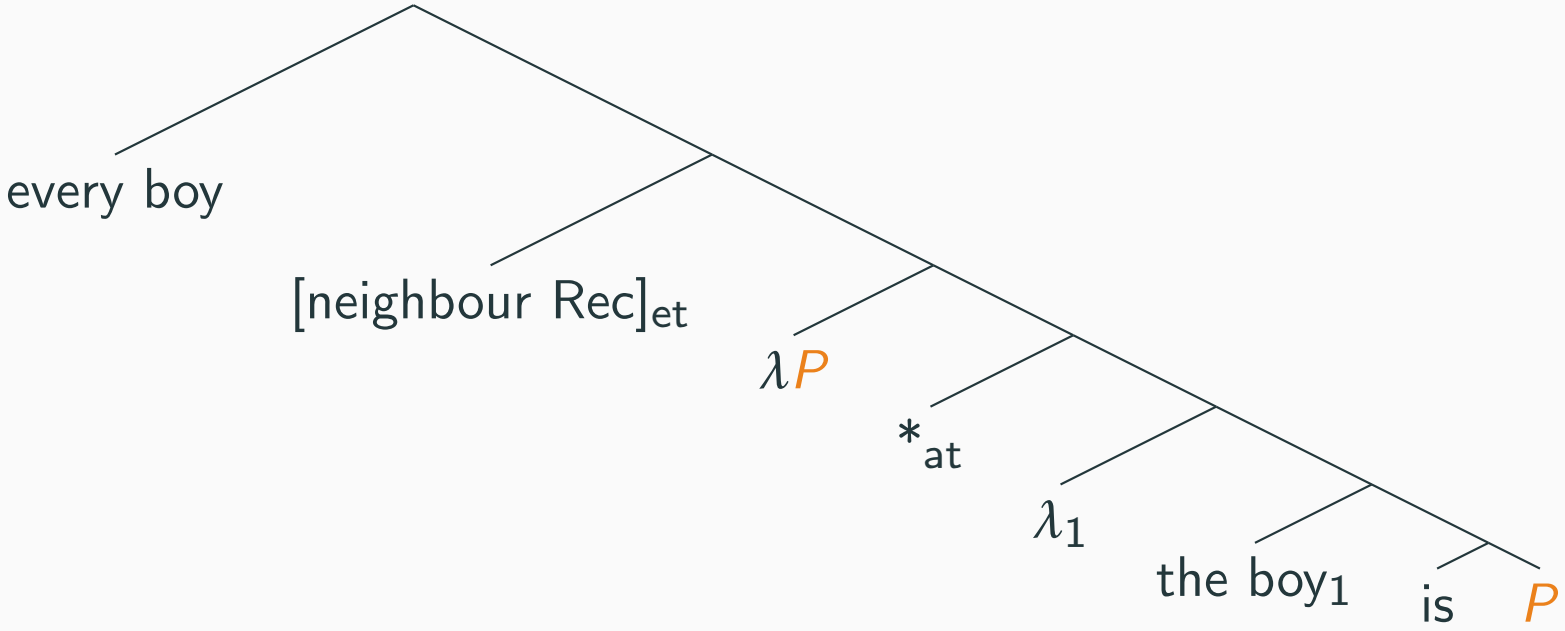
(26) a. # Every boy is a neighbour.

b. Every boy is wearing the same shirt.

This is expected if *neighbour* does not take (meaningful) scope

(27) $[\![\text{neighbour}]\!] = \lambda x.\lambda y.\ x$ is a neighbour of y


every boy
[neighbour Rec]$_{et}$
λ?
*$_{at}$
λ_1
the boy$_1$
is
?



Doesn't do much for us...

Typology of alternators

Simple

- External readings

(28) City 1 is a friend of City 2.

Quantificational

- External readings

(32) Boy 1 is the same boy as boy 2.

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- No internal readings with singular distributive quantifiers

(31) # Every child is a friend

Quantificational

- External readings

(32) Boy 1 is the same boy as boy 2.

- Internal readings in predicative positions

(33) Boy 1 and boy 2 are the same boy.

- Internal reading with plural licensors

(34) Incredible! Unknowing, they visited the same cities.

- Internal readings with singular distributive quantifiers

(35) Every child is the same.

Points of comparison

The Other anaphor: Charnavel (2015a); Sun (2018)

There is a special Other anaphor in the lexicon[2].

(36) Every boy$_1$ wears the same shirt <as Other$_{1,2}$>
(where 2 → the boys)

Other$_{i,j}$ = the individuals in plurality *j* other than *i*

[2] Charnavel equates this anaphor with a reciprocal. Sun, pointing to the fact that *every* does not license reciprocals, defends the version of the analysis presented here.

The Other anaphor: Charnavel (2015a); Sun (2018)

- The same entry that is used for internal *same*, can be used for external *same* (contrary to the current analysis)
- They also provide an account of the similarity the complement of *same* and equatives (not presented here)

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- The same entry that is used for internal *same*, can be used for external *same* (contrary to the current analysis)
- They also provide an account of the similarity the complement of *same* and equatives (not presented here)

$\rightsquigarrow$ I focus on their account of association with *every*.

Over-generation problems

(37) a. # Every boy $\lambda 1$. visited an enemy (of $\text{Other}_{1,2}$)
$\rightsquigarrow$ the boys visited enemies of each other

b. # Every boy $\lambda 1$. is an enemy (of $\text{Other}_{1,2}$)
$\rightsquigarrow$ the boys are enemies

Does not predict correlation between scopes

It will also miss the correlation between the scope of *same* and the scope of *every*[3].

(38) a. Every boy λ_1 wants PRO_1 λ_2 to wear the same shirt (as $\text{Other}_{2,\ 3}$).

b. $\approx$ every boy wants to wear the same shirt as the other boys. (*)
$\approx$ *De Dicto reading*

[3]There is a missing bit here ; the analysis uses (more accurately, I believe) ACD-elided clausal complements. But the resolution of the ellipsis may be rather local and the De Dicto reading is available under that resolution.

The plural dynamic line: Dotlačil (2010); Brasoveanu (2011)

Their account is couched in PCDRT. In broad strokes, this account posits that *every* (and distributivity operators at large) makes available discourse referents from other quantificational cases.

(39) a. Every boy^1 wears a shirt^2

b.

1	2
$\texttt{boy}'_1$	$\texttt{shirt}'_1$
$\texttt{boy}'_2$	$\texttt{shirt}'_2$
$\texttt{boy}'_3$	$\texttt{shirt}'_3$

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(39) a. Every boy^1 wears a shirt^2

b.

1	2	1′	2′
$\mathtt{boy}'_1$	$\mathtt{shirt}'_1$	$\mathtt{boy}'_2 \oplus \mathtt{boy}'_3$	$\mathtt{shirt}'_2 \oplus \mathtt{shirt}'_3$
$\mathtt{boy}'_2$	$\mathtt{shirt}'_2$	$\mathtt{boy}'_1 \oplus \mathtt{boy}'_3$	$\mathtt{shirt}'_2 \oplus \mathtt{shirt}'_3$
$\mathtt{boy}'_3$	$\mathtt{shirt}'_3$	$\mathtt{boy}'_1 \oplus \mathtt{boy}'_2$	$\mathtt{shirt}'_2 \oplus \mathtt{shirt}'_3$

(40) Every boy^{1} is wearing the same shirt^{2} (as pro$_{2'}$).
(where $2'$ are the shirts of the other boys.)

Since $2'$ are the shirts worn by the other boys, this yields the right reading.

The plural dynamic line: Dotlačil (2010); Brasoveanu (2011)

Just as the previous analysis, the same entry is used for internal *same*, can be used for external *same* (contrary to the current analysis)

Over-generation

Any anaphor could in principle refer to the extra referents ; in particular, other relational predicates could receive internal readings in the same way that *same* does:

(41) a. Every boy^1 preferred his shirt^2 over it/them$_{2'}$.
↔ his shirt over the other boys' shirts

b. Every boy^1 is an enemy (of 1').
↔ boys are enemies of each other.

Minor point of comparison

- Primed indices are not part of the basic toolkit of PCDRT ; it is a feature that is only needed for *same*. The present account makes stipulations about *every* but they receive independent motivations.

Loose ends

Other nominal licensors

each does not seem to license cumulative reading, but it does license *same*.

(42) a. Three copy-editors caught each mistake. (cumulative)

b. We gave each participant the same clue.

But we ought to be more careful! Not only is the cumulative reading absent, so too is the surface scope reading.

(43) Three copy-editors caught each mistake

a. **inverse:** ✓each mistake was caught three times

b. ***surface:** three copy editor missed no mistakes

c. ***cumulative:** every mistake was caught by one of the 3 and every one of the 3 caught one.

each is not freely available ; it requires some form of licensing. When a numeral is present, the licensing condition impose inverse scope. But inverse scope is independently known to be unsuitable for cumulative readings of quantifiers

Thomas and Sudo (2016) confirm experimentally that when the licensing conditions of *each* are met, the cumulative reading obtains naturally.

(44) Three video-games taught each quarter-back two new plays

Romance *same*

Singular *no* is a degraded licensor.

(45) a. ?? No boy wears the same shirt

b. ? No boys wear the same shirt

c. No two boys wear the same shirt

This is to be expected if singular *no* does not make available a plural at any level of composition that *same* can associate with.

On the other hand, the equivalent of *no* in Romance languages (n-words) can license *same* in the singular[4].

(46) *Aucun journal ne porte le même titre*
No newspaper not bears the same title

No two newspapers have the same title.

[4] *No* does not license *one and the same* in Romance

Summary

- Licensing of *same* by distributive singular quantifiers poses a compositional problem and threatens a simple-minded reciprocal analysis of *same* alternation
- I suggested the following solution:
  - *every* makes available a plurality at some level of composition
  - Internal *same* is a reciprocalized external *same*
  - *same* takes scope
- The crucial parts of the account have independent motivation:
  - *every* give rise to cumulative readings, makes available ensemble events
  - the presuppositions of *same* suggest scoping
- It remains to be seen how reliant this account is on Champollion (2010)'s analysis of *every*
- . . . band how to extend to similar items like *different*

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