Reciprocating *same*[1]
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Abstract. *same* can appear with a complement (the external construction) or associating with a plural element in the sentence (the internal construction). This type of alternation is observed with other relational modifiers as well (e.g. *enemy*, *neighbor*). However, *same* is unique in also being able to associate with the singular distributive quantifier *every* in the internal construction (e.g. *every child read the same book*). Here, I propose to derive this unique behavior from two independently evidenced phenomena: plural properties of *every* (Kratzer, 2000) and *same*'s scope-taking (Barker, 2007). Together, these two facts explain *same*'s behavior: by taking scope, *same* is able to enter levels of hierarchies where *every* behaves like a *plural*. The merit of this analysis is to provide a principled type-driven difference between *same* and other relational modifiers, which, I argue, is missed in other analyses.

Keywords: same, scope, relational modifier, reciprocal, every, cumulative readings.

1. Introduction

same can appear in two different constructions: in its external construction, *same* takes an *as*-complement; in the internal construction, *same* lacks such a complement and seems dependent for its interpretation on another element in the sentence, typically a plural (e.g. *Angela and Joshua*). I will call this element the *associate*.

(1) a. **External *same*.**
       Angela read the same book as Joshua.

    b. **Internal *same*.**
       Angela and Joshua read the same book.

Just like English, many languages use the same word in these two constructions, calling for unification(Charnavel, 2015; Dotlačil, 2010). Furthermore, the meanings of *same* in the two constructions are systematically related; namely, "*Angela and Joshua read the same book*" is true just in case "*Angela and Joshua read the same book as each other*".

Taking intuition from this paraphrase, one could say that internal *same* is a "*reciprocalized*" version of external *same*. Call this the reciprocal theory of *same*. The reciprocal theory of *same* seems strengthened by the fact that other modifiers than *same* show a reciprocal alternation between internal and external constructions (Charnavel, 2015).

(2) a. **External *enemy*:**
       Angela is an enemy of Joshua.
    b. **Internal *enemy*:**
       Angela and Joshua are enemies.

(3) a. **External *neighbor*:**
       Angela is a neighbor of Joshua.
    b. **Internal *neighbor*:**
       Angela and Joshua are neighbors.

The reciprocal theory of *same* however is challenged by a minimal variation on (1b), where the subject is replaced by a singular distributive quantifier, like *every*.

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(4) Every child read the same book.

If we try to construct a paraphrase for (4) in terms of the external reading, as we did for (1b), we form the ungrammatical (5):

(5) *Every child read the same book as each other.

In addition, the modifiers *neighbor* and *enemy*, which could appear in an internal construction, do not seem to license singular distributive quantifiers, like *same*:

(6) a. # Every poet is a neighbor.

    b. # Every poet is an enemy.[2]

Even leaving aside the reciprocal theory of *same*, (4) seems to lead to paradoxes. While *every* generally licenses inferences down to atoms, these inferences do not obtain when *every* is an associate of *same* (cf. (8)). These inferences suggest that either we must revise standard assumptions of *every* in this case or that some element outscopes *every* in that sentence.

(7) Every child read a book.   (8) Every child read the same book.
    → Jack read a book.   → # Jack read the same book.

All in all, this missed inference explains why sentences of the form of (4) have often required extra machinery in previous works (Brasoveanu, 2011; Dotlačil, 2010). In this paper, I propose a new solution to the challenge raised by (4). The solution I propose rescues the reciprocal theory that initially seemed so compelling.

The rationale behind this solution follows these steps: in the first section, I present standard arguments that at some level of LF, a singular quantifier like *every* makes available a plurality; in the second section, I construct an argument from Solomon (2009) that *same* must take scope at LF (Barker, 2007). Tying the facts from these two sections together, I conclude: by taking scope, *same* is able to enter domains of LF where *every* makes available a plurality. In the third section, I lay out the details of the reciprocal theory of *same*, whereby internal *same* is a reciprocal version of external *same* and requires a plural associate. Then, I proceed to show how the facts discovered in the first two sections explain why *same* can associate with *every* in (4). The fourth section presents some predictions of this theory. The fifth section compares the merits of this solution to previous solutions and points out a systematic over-generation issue faced by previous accounts; the solution defended here evades this problem.

2. Where singular *every* behaves like a plural

In this section, I present arguments from the literature that *every* makes available a plurality at some stage of the derivation. Several approaches to the denotation of *every* can make sense of these observations but I will present and adopt the proposal by Champollion (2010), because it is technically simpler and meshes better with the theory of *same* to be presented.

The first argument is the observation that *every* in object position gives rise to cumulative readings (cf. (9a), Schein (1993); Kratzer (2000); Haslinger and Schmitt (2018)), much like a definite plural (cf. (9b)). This cumulative reading is not predicted by a standard generalized quantifier approach to the meaning of *every*.

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[2]In the intended meaning of *the poets are enemies of each other*

(9)   a.   The 3 copy-editors caught every mistake.
⤳ *every copy-editor caught a mistake*
and every mistake was caught by a copy-editor.

   b.   The 3 copy-editors caught the 15 mistakes.

These examples could be taken to show that *every mistake* may sometimes denote the plurality of all mistakes. However, the example in (10) from Schein (1993) shows that when read cumulatively, *every* still behaves like a distributive quantifier with respect to elements in its scope. Thus, the numeral *two new plays* can only be read distributively (two new plays per player), rather than cumulatively (two new plays in total).

(10)   Three video games taught every quarterback two new plays.

A second argument that *every* makes available a plurality at some level of composition comes from the fact that *every* allow modification by expressions that normally target plural events. For instance, *unharmoniously* in (11a) modifies the plurality of events of students striking a note. In (11b), *one after the other* may only modify plural events (c.f. **Doc stared at you, one after the other*)

(11)   a.   Unharmoniously, every student struck a note.   (Schein, 1993: and refs therein)

   b.   Doc stared at every one of his companions, one after the other.

Many proposals capture these facts: Haslinger and Schmitt (2018); Champollion (2010); Kratzer (2000). For simplicity, I will present and adopt the proposal of Champollion (2010). Champollion makes the following assumptions: first, *every NP* denotes the plurality of all elements in the denotation of its restrictor. While it denotes a plurality, the trace of *every NP*, after Trace Conversion, carries singular number features. If nothing is done, interpretation cannot proceed because the predicate that *every NP* composes with is only defined for singular entities.

(12)   a. $[\![\text{every NP}]\!] = \bigoplus_{x \in [\![\text{NP}]\!]} x$

   b.
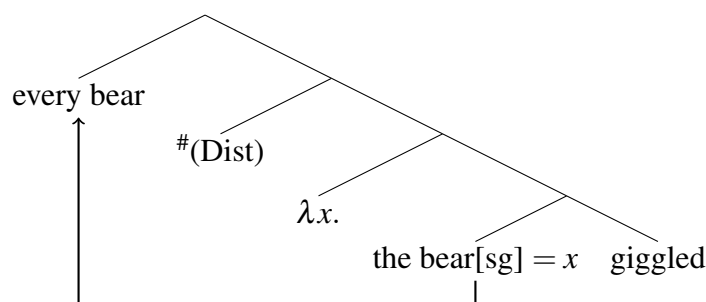
The only fix for this structure is to introduce a distributivity operator down to atoms to mediate between *every* and the predicate it combines with. In a nutshell, the syntactic requirement of the trace enforces the obligatory distributivity of *every*.

In the copy-editor sentence, repeated below in (13), another fix to the clash in number features is available. Given that there are now two plural-denoting expressions (*every mistake* and *the 3 copy-editors*), the clash may be resolved using a double-star operator (Beck and Sauerland, 2000), instead of a simple distributivity operator. The resulting meaning is the cumulative reading.

(13) a. The 3 copy-editors caught every mistake.

   b. [the 3 copy editors] [every mistake] ** $\lambda x.\lambda y$. [the copy-editors $= x$] caught [the mistake $= y$]

Although Champollion (2010) does not discuss it, I believe his proposal can be extended to capture ensemble events. Recall that *every NP* makes available a plural event, as diagnosed by adverbial modification with *unharmoniously* or *one after the other*. To capture this, all one needs is to upgrade the distributivity operators that we have used to the event realm. Since this will play no role in the subsequent analysis, I just give the reader the denotation I envision before reverting to event-less denotations:

(14) $[\![\text{Dist}]\!] = \lambda p_{evt}.\lambda X_e.\lambda E_v. \,\forall x \prec X, \exists e \prec E, p(e)(x) \wedge \forall e \prec E, \exists x \prec X, p(e)(x)$

This concludes our discussion of *every*. The main takeaway is that *every* is not a distributive quantifier at all levels of LF; at some level, it behaves like a *bona fide* plural referential expression. In the next section, I will return to *same* and construct an argument that it takes scope at LF. The account will then proceed as follows: by taking scope, *same* can access those levels of LF where *every* acts like a referential plural. *same* will thus be able to associate with *every* in the same way that it associates with definite plurals.

3. The presuppositions of *same* and the scope of *same*

As Charnavel (2011) and Solomon (2009) discuss, *same* contributes presuppositions, be it in the internal and the external construction. From (15a-b), one infers (15c). This inference of the existence of a book projects through negation and questions; it must then be a presupposition.

(15) a. Angela read the same book as Joshua.   (external construction)
       Angela didn't read the same book as Joshua.
       Did Angela read the same book as Joshua?

   b. Angela and Joshua read the same book.   (internal construction)
      Angela and Joshua didn't read the same book.
      Did Angela and Joshua read the same book?

   c. $\rightsquigarrow$ *Angela and Johua both read a book.*

There also seems to be a presupposition of uniqueness. From (16a-b), one infers (16c).

(16) a. Angela read the same book as Joshua.   (external construction)
       Angela didn't read the same book as Joshua.
       Did Angela read the same book as Joshua?

   b. Angela and Joshua read the same book.   (internal construction)
      Angela and Joshua didn't read the same book.
      Did Angela and Joshua read the same book?

   c. $\rightsquigarrow$ *Neither Angela nor Joshua read more than one book.*

As a side note, a minority of speakers do not share the uniqueness inference in (16). In spite of that, I found that these speakers seem to disprefer (17a-b). This is what is expected if they derive the uniqueness inference in (17c). We can make sense of the divergence between speakers and the contrast between (16) and (17) in the following way: in (17), the domain of the uniqueness presupposition is clearly defined (i.e. the letters comprised in a word) and less susceptible to

contextual restrictions; in (16) however, the domain of the uniqueness presupposition (i.e. the books read by Angela or Joshua) is more likely to be restricted by accommodating speakers.

(17) a. ? "*bar*" contains the same letter as "*cap*".

  b. ? "*cap*" and "*bar*" contain the same letter.

 c. ⤳ *neither "cap" nor "bar" contain more than one letter.*

Summing up, the presence of *same* triggers existence and, possibly, uniqueness presuppositions. The important observation is that the paraphrase of these inferences contains the main verb of the sentence (i.e. *read*) and the subjects (i.e. *Angela* and *Joshua*), that is to say material coming from outside the DP that hosts *same*.

(18) Joshua and Angela <u>read</u> the same book.
  Angela <u>read</u> the same book as Joshua.

  a. **Existence:** Joshua and Angela both <u>read</u> a book.

  b. **Uniqueness:** Neither Angela nor Joshua <u>read</u> more than one book

If *same* were interpreted where it is found in the overt syntax, it would be difficult to wire its meaning compositionally in such a way that the main verb is included in the presupposition it generates.

(19) Angela gave a picture to the same person as Joshua.

This seems to suggest instead that *same* is not interpreted where it is found (Barker, 2007). Simplifying Barker (2007) somewhat and temporarily zooming in on *external* same, we adopt the following structure:

(20)

Angela

same$_{\text{ext}}$ as Joshua λP_{et}

read

the P book
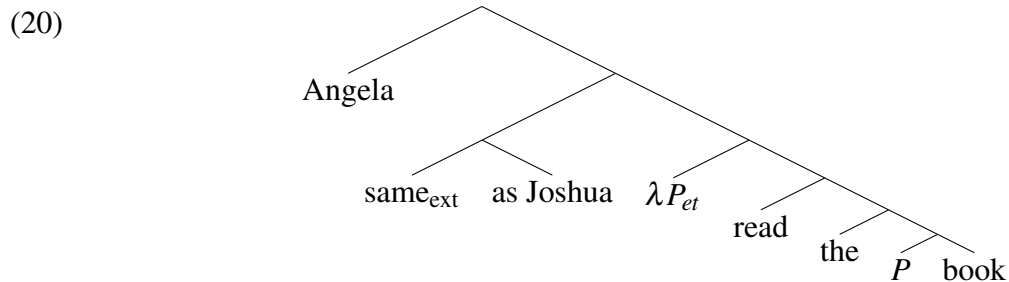
To give a meaning to this LF that generates the right presupposition, we face a decision point. Our first option is to hard-wire the presupposition of existence and uniqueness into the meaning of *same*. However, since *the* is usually assumed to trigger an existence and uniqueness presupposition, there is a second option: we can simply have *same* feed the λP abstract with a suitable property P and let the definite create the existence and uniqueness presupposition that the sentence carries. Both options have their merits[3]. I will pursue the latter without justification, since my main point is simply to show that only by scoping can we account for the presuppositions of sentences with *same*.

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[3]On the one hand, French allows *one same* and this item lacks the existence and uniqueness presuppositions we discuss (Charnavel, 2011), suggesting that it is *the* that contributes existence and uniqueness, as the second view would have it. On the other hand, even in French, this possibility is limited to *internal* same in generic contexts, suggesting that the second view misses some generalization. For an example of the first view, see Sun (this volume).

From the LF in (20), we deduce the type of *same*$_{ext}$ *as Joshua*: $((et)et)et$, the type of quantifiers over predicates that scope at predicate nodes. Writing a lexical entry for *same* will require some ingenuity but we can take stock on the paraphrase in (21a) and its slightly more logical rendition (21b). This paraphrase has the right existence and uniqueness presupposition (i.e. *Angela and Joshua both read just one book*), and the right assertion (i.e. *the book that Angela read is the book that Joshua read*).

(21)　a.　Angela read the book that Joshua read
　　　　　and Joshua read the book that Angela read.

　　　b.　Angela read the book λx. Joshua read the book $= x$
　　　　　and Joshua read the book λy. Angela read the book $= y$

Given the desired paraphrase and LF, finding the unknown lexical entry of *same* is a matter of abstracting away the lexical material in the paraphrase. Leaving that exercise to the reader, I present the result directly:

(22)　$[\![\text{same}_{\text{ext}}]\!] = \lambda x_e.\lambda P_{(et)et}.\lambda y_e.\ P(\lambda z.P(=z)(x)) \wedge P(\lambda z.P(=z)(y))$

The main takeaway of this section is that the presupposition of sentences with *same* can be used to demonstrate scoping. I chose a particular implementation of the scope theory, one that yields the observed presuppositions and applies to the external construction of *same*. But our main goal is to derive the internal construction of *same* and specifically, how *every* can associate with *same* in this construction. The next section fulfills that goal: I spell out the reciprocal theory of *same* presented in the introduction, according to which internal *same* is to external *same* what *enemies* is to *enemy of*.

4.　The reciprocal theory of *same* and how *same* associates with *every*

4.1.　Reciprocal alternations

According to the reciprocal theory of *same*, internal *same* roughly means "*same as each other*" ; it mirrors a similar alternation found in the relational modifiers that we discussed in the introduction.

(23)　a.　Angela is an enemy of Joshua.

　　　b.　Joshua and Angela are enemies.

I propose to capture the alternation in (23) by means of an operator $\text{REC}_{(eet)et}$, which reciprocalizes a relational predicate.

(24)　$[\![\text{REC}]\!] = \lambda R_{eet}.\lambda X_e.\ \forall x \neq y \prec X,\ R(y)(x)$

　　　a.　$[\![\text{enemy of}]\!] = \lambda y.\lambda x.x$ is a enemy of y

　　　b.　$[\![\text{REC enemy}]\!] = \lambda X.\ \forall x \neq y \prec X,\ x$ is a enemy of y

A reciprocalized predicate like REC *enemy* can only be true of pluralities that contain at least two individuals; this is welcome as (25) is not felicitous in out-of-the-blue contexts.

(25)　# Angela is an enemy.[4]

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[4]There is a felicitous reading of that sentence where it means something like *Angela is an enemy of us*. This is an instance of the relational reading of (23a) with a covert complement.

4.2. Applying REC to *same*

We would like to combine $\text{REC}_{(eet)et}$ with our meaning for external *same*, so that it yields the meaning of "*same as each other*". This is not possible for type reasons: REC is type $(eet)et$ and *same* is type $e((et)et)et$. To overcome this type clash, we would need our reciprocal operator to operate on the first and last argument of *same*, which are type e, but not on the middle one, which is type $(et)et$. This is possible with some standard type-shifting[5]. Specifically, we use the type-shifting in (26a) (an instance of Geach rule used for quantifiers in object position, Hendriks (1987)):

(27) $\llbracket \uparrow V_{(ea)b} \rrbracket = \lambda f_{eca}.\lambda x_c.\ \llbracket V \rrbracket (\lambda y.f(y)(x))$ (type $(eca)cb$)

This type-shifter, applied to REC, raises it to type of $(e((et)et)et)((et)et)et$. This type achieves what we want: it takes an object like *same*$_{ext}$ and removes its first argument slot (type e). The resulting meaning for internal *same* is given in (28); in simple words, this denotation gives "*X read the same book*" the meaning of "*for all x different from y atoms of X, x read the same book as y*"

(28) $\llbracket \text{same}_{\text{int}} \rrbracket = \llbracket \text{same}_{\text{ext}} \uparrow \text{REC} \rrbracket = \lambda P_{(et)et}.\lambda X.\ \forall x \neq y \prec X,\ \llbracket \text{same}_{\text{ext}} \rrbracket (y)(P)(x)$

We are now in position to specify the meaning of a simple internal construction of *same*, like (29a). The LF is (29b). In this LF, "$\lambda P.$ *read the P book*" and "*Angela and Joshua*" -the associate of *same*- are the two arguments of *same*$_{int}$.

(29) a. Angela and Joshua read the same book.

   b.
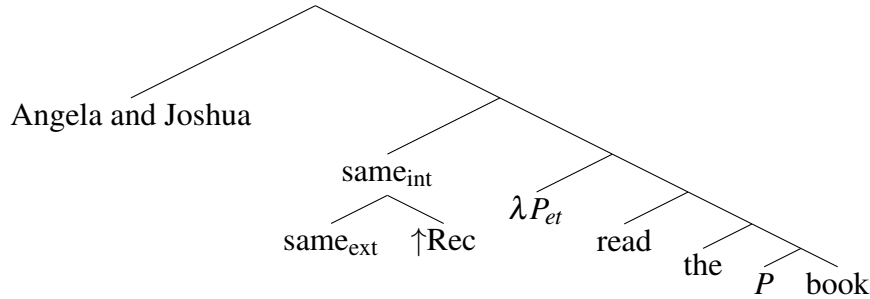
Given our assumptions about the meaning of internal *same*, this LF ultimately derives the paraphrase in (30c), through the critical steps in (30a-b).

(30) a. for x and y different atoms of Angela$\oplus$Joshua,
        $\llbracket \text{same}_{\text{ext}} \rrbracket (x)(\lambda P.$ read the P book$)(y)$ is true

   b. $\llbracket \text{same}_{\text{ext}} \rrbracket (\text{Angela})(\lambda P.$ read the P book$)(\text{Joshua})$ is true
        and $\llbracket \text{same}_{\text{ext}} \rrbracket (\text{Joshua})(\lambda P.$ read the P book$)(\text{Angela})$ is true.

   c. Angela read the book that Joshua read
        and Joshua read the book that Angela read

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[5]LF-movement of REC could achieve similar results but it would predict that REC can take arbitrary scope. The scope of covert reciprocalization seems to be local. For instance, (26a) cannot mean (26b):

(26) a. Poldevia and Plumland want Europeans to be enemies
    b. Poldevia want Europeans to be enemies of Plumland and Plumland want Europeans to to be enemies of Poldevia

and Joshua read the book that Angela read

Angela read the book that Joshua read.

4.3. Association with *every*

According to our meaning, internal *same* takes its associate as its second argument (i.e. argument *X* in (28)). For the same reason that internal *[REC enemy]* cannot take singularities as arguments, the denotation of *same* imposes that its associate, the argument *X*, contains at least two distinct atoms. Thus, internal *same* can only combine with pluralities. This is most welcome, as various singular expressions cannot occur in the internal construction:

(31)   Out-of-the-blue contexts[6]

   a.   # Some poetess read the same book

   b.   # Jane read the same book

However, our main puzzle is that *same* can associate with singular distributive quantifiers like *every*:

(33)   Every child read the same book.

This is where our discussion of section 2 plays a role. If we assumed a standard denotation for *every*, there would be no plurality in the structure of (33) that internal *same* could take as an argument. The sentence would be predcited to be as infelicitous as the sentences in (31).

But we have reviewed a number of arguments that *every* does make available a plurality at some level of representation. In the analysis of Champollion (2010) for instance, the structure of (33) is as in (34):

(34)
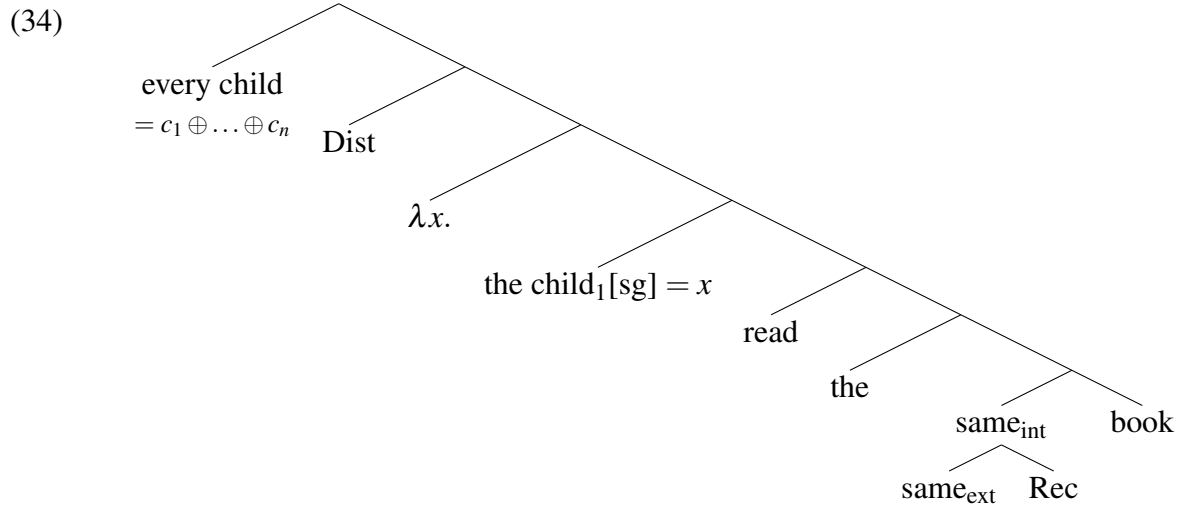
For *same*, it just needs to be in a position where it can take the plurality denoted by *every child* as an argument. Thankfully, we have arguments that *same* must take scope at LF so attaining

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[6]We have to be wary of parses where *same* is in its external construction but its *as*-complement is omitted because it is recoverable from context.

(32)   I read *Madame Bovary*. Some poetess read the same book ⟨~~as me~~⟩

Out-of-the -blue contexts rule this parse out and allow us to focus on genuine internal constructions. In that relation, cf. fn. 4.

this position will not be a problem for *same*. The final structure we reach is the following:

(35)
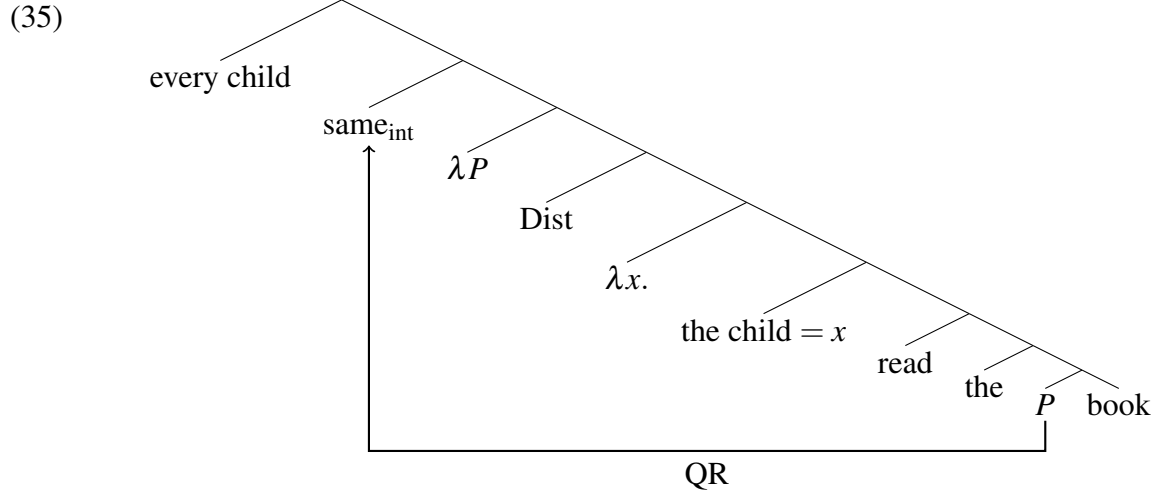
In this structure, *same* is able to take *every child* as its associate. Given the assumption that the denotation of *every child* is the same as the denotation of *the children*, the composition of this sentence turns out to be no different from the composition of a sentence like "*the children read the same book*"[7]:

(36)

$$
\begin{aligned}
[\![(35)]\!] &= [\![\text{same}_{\text{int}}]\!]\,(\lambda P.\ \text{read the } P \text{ book})\,([\![\text{every child}]\!]) \\
&= [\![\text{same}_{\text{int}}]\!]\,(\lambda P.\ \text{read the } P \text{ book})\,(c_1 \oplus \ldots \oplus c_n) \\
&= \forall x \neq y \prec c_1 \oplus \ldots \oplus c_n,\ [\![\text{same}_{\text{ext}}]\!]\,(x)\,(\lambda P.\ \text{read the } P \text{ book})\,(y) \\
&= \forall x \neq y \prec c_1 \oplus \ldots \oplus c_n,\ \ x \text{ read the book that } y \text{ read} \\
&\qquad\qquad\qquad\qquad\qquad \wedge\ y \text{ read the book that } x \text{ read}
\end{aligned}
$$

In short, association of *every* results from the combination of two factors: an underlying plural semantics for singular distributive quantifiers and the availability of scoping with *same*. Both of these factors can be argued for independently from *same*'s association with *every*.

We have solved our initial puzzle. But more questions remain: what in this proposal differentiates *same*, which can associate with *every*, from *neighbors*, which cannot? The next section draws the conclusions of our analysis and shows that this discrepancy is predicted.

5. Typology of relational predicates

Just like *same*, *neighbors* can appear in an external and an internal construction:

(37) a. **External *neighbor*:**
Angela is a neighbor of Joshua.
   b. **Internal *neighbor*:**
Angela and Joshua are neighbors.

(38) a. **External *same*:**
Angela read the same book as Joshua.
   b. **Internal *same*:**
Angela and Joshua read the same book.

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[7]As an astute reader may notice, *Dist* is unnecessary in (36) and could have been left out. This is because *Rec* already contains the meaning of distributivity; in the logic of Champollion (2010), any operator that breaks down a plurality into atoms can be used to resolve the conflict between plural *every* and its singular trace and *same*$_{int}$ can perform the role of Dist. I chose to represent *Dist* nonetheless to stay close to the presentation of sec. 2.

However, *neighbor* does not seem to associate with *every*, contrary to *same*.

(39)　a. *Every child is a neighbor.

　　　b. Every child read the same book.

This is but one of the differences between *neighbor* and *same*. Conspicuously, I used a copular sentence in (37). Predicative sentences reveal a discrepancy. The reading that (40) gets is not what we expect, given the meaning of the corresponding sentence with *same* in (41). Whereas (41) lead us to expect a meaning as in (40b) (obtained from (41) *mutatis mutandis*), we find (40a)[8].

(40)　Angela met a neighbor of Joshua
　　　a. the person Angela met is a neighbor of Joshua
　　　b. * the person Angela met is a neighbor of the person Joshua met

(41)　Angela met the same person as Joshua
　⟿ the person Angela met is the same as the person Joshua met

Both the lack of association with *every* and the unexpected (40a) reading can be subsumed under the same generalization: contrary to *same*, *neighbor* can only take local associates.

Given the current proposal, this generalization follows from type considerations. While *same as DP* has the quantificational type $((et)et)et$ that allows it to take scope meaningfully, *neighbor* is a simple relational predicate (eet) and as such, can only scope vacuously.

More concretely, consider the LF that derives the meaning of (41). If we try to adapt this LF to the case of *neighbor*, we find that the only acceptable LF type-wise is one where the trace is of the same type as the scoped element. This LF is equivalent to an LF where the scoping has not happened.

(43)　a. Angela [same as Joshua] λP. met the P person

　　　b. Angela [neighbor of Joshua] λP. met a P
　　　⟿ *Angela met a neighbor of Joshua*

The same reasoning explains the impossibility of association with *every*. As we saw, association with *every* is dependent on *same* taking the underlying plural denotation of *every NP* as an argument; this is achieved by taking scope. While a relational predicate like *neighbor* can take scope, it will only take scope vacuously and will therefore not be able to take *every NP* as an argument.

From a broader perspective, the discussion above draws the line between two types of items: the simple relational predicates (like *neighbor*) and the quantificational relational predicate (like *same*). They are superficially similar: both appear in the external construction and, through

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[8]With the appropriate contextual set-up, internal *neighbors* can get the missing (40b), as in the reading 1 of (42).
(42)　Angela and Joshua met neighbors
　　　a. **Reading 1:** the person(s) Angela met is a neighbor of the person(s) Joshua met
　　　b. **Reading 2:** Angela and Joshua met people who are neighbors of each other.
This exception is only apparent. As discussed in Charnavel (2015), the non-local scope reading (Reading 1) actually arises from a more basic local-scope reading (Reading 2) using contextually provided plural covers. As expected by this approach, the relevant reading disappears in the singular (e.g. *Angela and Joshua met a neighbor*)

application of REC, both will also appear in the internal construction. But two properties set apart the two classes: the possibility of non-local-associates and association with *every*.

6. Previous literature

In this section, I review different theories of association of *every*. Despite some advantages over the current proposal, all the theories I will review share the same problem: they cannot distinguish between the two classes of items that the last section reviewed. As such, they over-generate association of *every* with all relational predicates.

6.1. Plural Dynamic Semantics

Dotlačil (2010) adapts Brasoveanu (2011)'s theory of *different* to *same*. This theory relies on an enrichment of a plural dynamic framework. Without going into any details, the core insight is that in the scope of distributive predicates, it is possible for variables to access referents from a different quantificational case.

In concrete terms, using (44) as an example, the scope of *every child* introduces two referents for each quantificational case: a child at index 1 and a book at index 2. However, through a special primed index $1'$, pronouns are able to access referents from other quantificational cases (i.e. the other children, the other books)[9].

(44)   Every child 1 t_1 read the same book^2 (as *pro$_{2'}$*)

same is then given a meaning akin to *identical to*. With this meaning in hand and the special indexing made available by distributive quantification, we derive the correct reading of (44) as in (45):

(45)   Every child read the same book as the other books (read by the other boys).

This proposal's strength is that the meaning of *same* in external and internal constructions is the same, contrary to the current proposal where their meaning is related by REC. This strength turns out to be a weakness; there is nothing in the system to differentiate between *same* and the simple relational predicates like *neighbor*. Thus, with the same indexing this system uses to derive the internal reading of *same*, an internal reading of *neighbor* can be generated:

(46)   a.   Every boy 1 t_1 is a neighbor (of *pro$_{1'}$*).

     b.   **Reading:** every boy is a neighbor of every other boy.

6.2. Bumford (2015)

Another theory of association of *every* can be derived from the intriguing proposal of Bumford (2015) for the internal construction of *different*. His analysis is implied to extend to *same*. In a nutshell, the analysis relies on treating *every* as a generalized version of dynamic conjunction. Just as with the previous system, this allows referents from one quantificational case to be accessed by another. Concretely speaking, (47a) is read as (47b), where each successive update introduces a referent (indicated by superscripts) for the next update to pick up (subscripts). (In my presentation, the first update *-child 1 read the same book-* is distinguished from the other updates in not having a complement. I ask the reader to disregard this glitch in the sequel.)

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[9]This remains faithful to the spirit of the proposal, not to the letter. In the original proposal, stacks and index offset are used instead of the primed indices.

(47) a. Every child read the same book.

      b. Child 1 read the same book[1].
          Child 2 read the same book[2] (as pro_1)
          Child 3 read the same book[3] (as pro_2)
          . . .

Contrary to the previous framework, the proposed enrichment of the meaning of *every* is motivated by independent evidence (pair-list readings, internal readings of comparatives). Thus, this system looks more appealing. However, it suffers from exactly the same flaw. *same* is not distinguished from any other relational modifier; the same LF that generates an internal reading of *same* can deliver an internal reading of *neighbor*:

(48) a. Every child visited a neighboring town.

      b. Child 1 visited a neighboring town[1].
          Child 2 visited a neighboring (pro_1) town[2]
          Child 3 visited a neighboring (pro_2) town[3]
          . . .

6.3. Charnavel (2015)

Charnavel (2015) treats *same* as integrating a covert pronominal anaphor OTHER. Thus (49) has the structure of (49a), which in turn reads as (49b).

(49) Every boy read the same book.

      a. Every boy λx. read the same book as OTHER(x, y)
          where y are all the boys.

      b. Every boy read the same book as the other boy.

This approach looks similar to the current one, as it includes an element of reciprocity. Without the difference between scoping elements like *same* and non-scoping elements like *enemy*, the account will however predict both of those words to appear in the internal construction. Nothing is said to prevent the **Other** anaphor from being used in other constructions like *enemy*.

This approach has another more straightforward problem[10]. It predicts that the scope of *same* and the scope of *every* may be dissociated. In the current account, *same* has to scope to *every* to associate with its underlying plural denotation.

The following contrast illustrates that the latter prediction is correct, not the former. Speakers judge that (50a) can only receive the De Re reading in (51a), not the reading in (51b). The proposed paraphrase in (50b) can receive both readings.

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

      b. Every boy wants to wear the same shirt as the others.

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[10]Depending on how you set the dynamic semantics, the other accounts may face the same issue.

(51) a. **De Re:** each boy came to me and said: "I want to wear the orange shirt"
✓ (50a), (50b)

b. **De Dicto:** each boy came to me and said: "I want to be wearing the same shirt as the others."
✓ (50b), *(50a)

The explanation on the proposal that I defend is straightforward: because *want* is control, *every* may not scope under *want*. To associate with *every*, *same* must scope just below *every*. It must therefore outscope *want*, yielding a De Re reading of *every*.

The missing De Dicto reading may appear with internal *same*, if PRO can serve as a local associate of *same*. This happens when we use the definite plural *the boys*, instead of the singular *every boy*. In this case, the definite binds PRO in the plural. PRO, being interpreted as a plural, can serve as the associate of *same*.

(52) a. The boys want PRO$_{pl}$ to wear the same shirt.

b. **De Dicto:** the boys came to me and said: "we want to wear the same shirt."[11]

7. Conclusion and open ends

In this article, I have tackled the challenge raised by the internal construction of *every* to the naive reciprocal theory of *same*. I have provided evidence that *same* takes scope, building on work by Solomon (2009) and Charnavel (2011). I have reviewed evidence that *every* makes available some form of plurality at some level of representation. These two conclusions together explain how *every* comes to license *same$_{Rec}$* which must ordinarily combine with a plurality.

The general idea of the account has some room to maneuver. One could ask whether other theories of *every* that capture its plural behaviors can be meshed with the reciprocal theory of *same*. For instance, in Kratzer (2000), *every* does not make available a plurality of individuals but a plurality of events. To accommodate this event denotation, an adaptation of the current proposal would need to make *same* operate on events rather than individuals. Incidentally, the fact that *same* is sensitive to events has been argued for by Hardt and Mikkelsen (2015).

Another extension concerns the nature of the existence and uniqueness presupposition; this account assumed it to stem from the definite article. Since the main point was to show that any account of this presupposition would require scoping, I did not provide much motivation for this option. It might even be problematic, as it seems to predict the possibility of *a same book* (but see Charnavel (2011) on French).

More promising is the approach of Sun (2019), where the presuppositions stem from *same* itself and the use of the definite article is enforced by *Maximize Presupposition!*. This approach happens to embrace both the reciprocal theory of *same* and the scopal theory of *same*. As such, I believe that it could be fruitfully compounded with the current approach.

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[11]This reading is not only *De Dicto*; it is also interpreted as a collective wish. If the boys were interpreted distributively, PRO would refer to a singularity, barring association with *same*.

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