# The Challenge of Internal Readings

1. **External Reading**
   
   \(\text{Tom}_0\) read a\(^1\) book. Susan\(^2\) read a\(^3\) different book.

2. **Internal Reading**

   - **External reading (1):** there are two indexed, book-denoting DP’s, and it is asserted that book 1 and book 3 are distinct.
   - **Internal reading (2):** for every pair of boys \(<x_1, x_2>\), \(x_1\) read a book \(y_1\) and \(x_2\) read a book \(y_2\) and \(y_1 \neq y_2\).

   **The challenge:**
   
   - The sentence is asserting an inequality between *pairs* of books, but there is only one book-denoting DP in the sentence.
   - The books asserted to be distinct are those participating in pairs of reading events involving distinct boys.

# Brasoveanu’s Solution

Brasoveanu (2011) proposes three main innovations:

- **Distributive quantification:** “involves selecting pairs of distinct individuals and simultaneously evaluating the nuclear scope relative to each individual” (p. 110). This is argued to be a general feature of distributive quantification, although its effects are unobservable, except for these particular cases.

- **Stack mechanism:** collects pairs of quantified individuals, so that anaphoric reference is possible between them.

- **Offset:** Indexing using *offset* – the difference between the current element and the antecedent

## Lexical Meanings

Brasoveanu (2011) gives the following meanings for *same* and *different*:

1. **Different**
   
   \[\text{different}^n \rightarrow \lambda P_{\text{ct}}. \lambda v_e. P(v); *(P(u_{m+n}); \text{disjoint}\{u_{m+n}, u_n\})\]

2. **Same**
   
   \[\text{same}^n \rightarrow \lambda P_{\text{ct}}. \lambda v_e. P(v); *(P(u_{m+n}); \text{identical}\{u_{m+n}, u_n\})\]

   - Both *same* and *different* receive a subscript \(n\), coindexed with the local determiner index, and a superscript \(m\), which identifies the antecedent.

   - \(m\) is an *offset*; index of antecedent is \(m + n\). This is needed for internal reading, together with stack mechanism.

   - Underlined material is a presupposition that \(P\) holds of the antecedent.

   - * is stack-concatenation operator. By putting stacks together, this gives offset index something to point to.
External Reading

(5) Tom$^0$ read a$^1$ book. Susan$^2$ read a$^3$ different$^3$ book.
(6) \[u_0, u_1 | u_0 = Tom, book(u_1), read(u_0, u_1)];
\[u_2, u_3 | u_2 = Susan, book(u_3)] \star (book(u_3) \backslash \text{disjoint}(u_1, u_3)); \text{read}(u_2, u_3)\]

Internal Reading

(7) Every$^0$ boy read a$^1$ different$^2$ book.
(8) \[\text{max}^{u_0}(\text{atoms-only}\{u_0\}, \text{boy}(u_0));
\text{dist}^{u_0}(\text{atoms-only}\{u_1\}, \text{singleton}(u_1), \text{book}(u_1);
\star ((\text{book}(u_1 + 2) \backslash \text{disjoint}(u_1 + 2, u_1)); \text{read}(u_0, u_1)))\]

(Brasoveanu, ex (66), p 109)

- The set $u_0$ is the maximal set of boys
- dist$_{u_0}$ distributes over all pairs $<\text{boy}1, \text{boy}2>$ of elements of $u_0$
- Stack concatenation ($\star$ operator) joins pairs of instantiations of the nuclear scope

\[
\begin{array}{ccc}
\text{boy1} & \text{book1} & \star & \text{boy2} & \text{book2} \\
\text{boy1} & \text{book1} & \text{boy2} & \text{book2}
\end{array}
\]

- For every pair of boys $<u_0, u_2>$ and the books they read $<u_1, u_3>$, $u_1$ and $u_3$ are disjoint

3 Same and Parallelism

Hardt and Mikkelsen (2015) point to three types of cases where same is ruled out by violating parallelism, where and different or ordinary definite descriptions are acceptable.

(9) John didn’t read War and Peace. Negated Antecedent
   a. *But Susan read the same book.
   b. But he read a different book.

(10) John praised War and Peace. Parallel Antecedent
   a. *And Bill read the same book.
   b. But Bill read a different book.

(11) John caught a big fish. Distinct Antecedent
   a. *And he caught the same fish without any equipment.
   b. And he caught the fish without any equipment.

Key point from Hardt and Mikkelsen (2015): same does not merely compare individuals – it requires a parallel antecedent eventuality. Different doesn’t require parallel antecedent eventuality.

New Meaning for same:

(12) same$^m_{e_n} \rightarrow \lambda P. \lambda v. P(v); \star \text{parallel}(e_{n+m}, e_n)"

Examples (9) - (11) all reflect violations of Parallel. We show this for (10):

(13) [John$^0$ praised War and Peace$^1$$^2$].
    *And [Bill$^3$ read the$^4$ same$^3$ book$^5$]

(14) \[u_0, u_1, e_2 | u_0 = John, u_1 = \text{war-and-peace}, praise(e_2, u_0, u_1)];
\[u_3, u_4, e_5 | u_3 = Bill, book(u_4), u_4 = u_1, read(e_5, u_3, u_4)); \star \text{parallel}(e_5, e_2)\]

- $e_5$ and $e_2$ are not Parallel – no non-trivial common predicate for praise and read
Parallel

Two sentences S1, S2 are Parallel if one can

Infer \( P(a_1, a_2, \ldots) \) from the assertion of S1 and \( P(b_1, b_2, \ldots) \) from the assertion of S2, for a (non-trivial) common \( P \) and similar \( a_i \) and \( b_i \).

In other words:

- Two eventualities must contain similar predicates applied to similar arguments
- Two predicates count as similar if they both entail a non-trivial common relation
- The arguments are similar to the extent that similar predicates apply to them
- The two eventualities denoted by S1 and S2 must be distinct

(Kehler (2002), Hardt and Mikkelsen (2015), Hardt (2018))

4 A Presuppositional Alternative

Proposal

- same’s requirement for parallel eventuality is a presupposition

\[ \text{same}_{n,m} \leadsto \lambda P_{e_t} \lambda v_e. P(v); [e_p|\text{parallel}\{e_m, e_p\}]; [u_0|P(u_0)]; [u_n = u_0] \]

- different can also generate presupposition for parallel eventuality – it’s ambiguous between small presupposition (16) and large presupposition (17)

\[ \text{different}_{n} \leadsto \lambda P_{e_t} \lambda v_e. P(v); [u_m|P(u_m)]; [u_m \neq u_n] \]
\[ \text{different}_{n,m} \leadsto \lambda P_{e_t} \lambda v_e. P(v); [e_p|\text{parallel}\{e_m, e_p\}]; [u_0|P(u_0)]; [u_n \neq u_0] \]

- \( n \) is index of containing DP; \( m \) is index of containing eventuality-denoting phrase

- Presupposition: there is an eventuality \( e_p \) that is Parallel to eventuality \( e_m \); there is an individual \( u_0 \) such that \( P \) holds of \( u_0 \)

Unlike H&M, we allow two possibilities for different: it is optionally indexed with a containing eventuality-denoting constituent, in which case it generates a presupposition for a parallel eventuality. This still captures H&M’s observations ((9) - (11)), since parallelism is optional for different, but obligatory for same.

Resolving Presuppositions

Presuppositions are DRS structures that must either be

- BOUND: Find accessible antecedent \( x \) for presupposed discourse referent \( y \) – conditions on \( x \) must be compatible with those on \( y \). Replace all occurrences of \( y \) with \( x \)

- ACCOMMODATED: Find accessible antecedent DRS \( K_t \) for presupposed DRS \( K_s \). Merge DRS \( K_s \) with \( K_t \), at position of antecedent.

(Van der Sandt, 1992)
External Reading - No Quantifier

different1

(18) [Tom read a book]. [Susan read a different book].

(Presupposed material underlined)

(19) \[ [u_0, u_1, e_2, u_3, u_4, e_5] \text{tom}(u_0), \text{book}(u_1), \text{read}(e_2, u_0, u_1), \text{Susan}(u_3), \text{book}(u_4), \text{read}(e_5, u_3, u_4)];
\[ [u_6] \text{book}(u_6)]; [u_6 \neq u_4]

- BIND \( u_6 \) to \( u_1 \)

(20) \[ [u_0, u_1, e_2, u_3, u_4, e_5] \text{tom}(u_0), \text{book}(u_1), \text{read}(e_2, u_0, u_1), \text{Susan}(u_3), \text{book}(u_4), \text{read}(e_5, u_3, u_4), u_1 \neq u_4] \]

Internal Reading - Quantifier

different2

(21) Every boy [read a different book].

(22) \[ [u_0] \text{boy}(u_0)] \text{every} > [u_1, e_2] \text{book}(u_1), \text{read}(e_2, u_0, u_1)];
\[ e_3, u_4, u_5] \text{boy}(u_4), \text{book}(u_5), \text{read}(e_3, u_4, u_5)]; [u_6] \text{book}(u_6)]; [u_1 \neq u_6]

- BIND \( u_6 \) to \( u_5 \)

(23) \[ [u_0] \text{boy}(u_0)] \text{every} > [u_1, e_2] \text{book}(u_1), \text{read}(e_2, u_0, u_1)];
\[ e_3, u_4, u_5] \text{boy}(u_4), \text{book}(u_5), \text{read}(e_3, u_4, u_5)]; [u_1 \neq u_5]

- ACCOMMODATE \( e_3 \)

(24) \[ [u_0, e_3, u_4, u_5] \text{boy}(u_0), \text{boy}(u_4), u_0 \neq u_4, \text{book}(u_5), \text{read}(e_3, u_4, u_5)] \text{every} >
\[ u_1, e_2] \text{book}(u_1), \text{read}(e_2, u_0, u_1), u_1 \neq u_5] \]

- This gives the desired truth conditions: for every pair of boys \( u_0 \) and \( u_4 \) and book \( u_5 \) such that \( u_4 \) read \( u_5 \), there is a book \( u_1 \) that \( u_0 \) read, and the two books, \( u_1 \) and \( u_5 \), are not identical.

- We derive internal reading of same (25) in the same fashion (28). The only difference is that the nuclear scope asserts identity of the read books, rather than non-identity.

same

(25) Every boy [read the same book].

(26) \[ [u_0] \text{boy}(u_0)] \text{every} > [u_1, e_2] \text{book}(u_1), \text{read}(e_2, u_0, u_1)];
\[ e_3, u_4, u_5] \text{boy}(u_4), \text{book}(u_5), \text{read}(e_3, u_4, u_5)]; [u_6] \text{book}(u_6)]; [u_1 = u_6]

- BIND \( u_6 \) to \( u_5 \)

(27) \[ [u_0] \text{boy}(u_0)] \text{every} > [u_1, e_2] \text{book}(u_1), \text{read}(e_2, u_0, u_1)];
\[ e_3, u_4, u_5] \text{boy}(u_4), \text{book}(u_5), \text{read}(e_3, u_4, u_5)]; [u_1 = u_5]

- ACCOMMODATE \( e_3 \)

(28) \[ [u_0, e_3, u_4, u_5] \text{boy}(u_0), \text{boy}(u_4), u_0 \neq u_4, \text{book}(u_5), \text{read}(e_3, u_4, u_5)] \text{every} >
\[ u_1, e_2] \text{book}(u_1), \text{read}(e_2, u_0, u_1), u_1 = u_5] \]

Our presuppositional analysis yields the same results as Brasoveanu’s (2011) analysis, but relies on a standard notion of distributivity, together with general mechanisms for presupposition binding and accommodation.
A Constraint on Accommodation

- Why is $u_0 \neq u_4$ in the above DRS’s (24) and (28)?
- Without this condition, (24) would incorrectly be falsified if any boy only read a single book
- Accommodation involves merging discourse referents from presupposition DRS $K_s$, with those of the antecedent or target DRS $K_t$. (Van der Sandt (1992)[p 358])
- **Our proposal**: there is a general distinctness requirement on accommodation for each $x \in U(K_s)$ and $y \in U(K_t)$, $x \neq y$
- If there were a presupposed discourse referent $x$ and an antecedent discourse referent $y$ where we would not want to impose the distinctness condition, we could have bound $x$ to $y$ instead

External Reading - Quantifier

different

(29) Smith$^0$ [recommended War and Peace$^1$]$^2$ Every$^3$ boy [read a$^4$ different$^4$ book]$^5$.

(30) $[u_0, u_1 | smith(u_0), WP(u_1), recommend(e_2, u_0, u_1),$
$[u_3|boy(u_3)] < every > [u_4, e_5|book(u_4), read(e_4, u_3, u_4)];$
$[u_6|book(u_6)]; [u_4 \neq u_6]]$

$\cdot$ BIND $u_6$ to $u_1$
$[u_0, u_1 | smith(u_0), WP(u_1), recommend(e_2, u_0, u_1),$
$[u_3|boy(u_3)] < every > [u_4, e_5|book(u_4), read(e_4, u_3, u_4),u_4 \neq u_1]]$

Every boy read a book that was not War and Peace

5 Reflections

Presuppositions: the Analogy with Too

- *too* is generally described as presuppositional, generating a presupposition of a proposition that is parallel to the proposition denoted by the phrase which it syntactically modifies (Krifka (1999), Hardt et al. (2012)).

$[\phi \text{ too}]$ presupposes $\psi$ parallel to $\phi$

(31) Bill read *The Color Purple*.
  a. #Harvey read {the book/a book}.
  b. Harvey read {the book/a book} too.
  c. Harvey read the same book.

- In (31-b) the occurrence of *too* presupposes a parallel antecedent eventuality.
- (31-a) is infelicitous because it fails to generate this presupposition. (31-c) is felicitous, supporting the idea that *same*, like *too*, generates a similar presupposition.
- This follows from Maximize Presupposition! (e.g. Singh (2008) & Eckardt and Fränkel (2012)), which requires language users to make their utterances presuppose as much as possible.
Two *Different’s*

- Our proposal is that there are two *different’s*: *different₁* for external readings and *different₂* for internal.

- In support of this, we note that Danish uses different lexical items for the internal and external readings (see Brasoveanu (2011):96–97 for discussion of similar facts in German).

(32) Alle børnene læste *andre/forskellige* bøger.
    All *different₁/different₂* books.

(33) Susan læste The Color Purple. Hanne læste en anden/*forskellig* bog.
    Susan read The Color Purple. Hanne read a *different₁/different₂* book

6 Conclusions

- Internal and external readings for *same* and *different* reflect standard mechanisms of presupposition binding and accommodation

- *Same* alternates with the presuppositional particle *too*

- *Different* is lexicalized differently in some languages depending on whether it supports an internal or external reading

References


