Rule H Without Structural Parallelism

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Abstract

Fox (2000) shows that a single principle, Rule H, can account for (i) Strong Crossover, (ii) the ban on co-binding, and (iii) Dahl's puzzle. Though elegant and appealing, Fox's analysis faces both conceptual and empirical problems. First, the analysis assumes a Structural Parallelism constraint on bound pronouns within elided VPs that lacks independent motivation. Second, the more recent literature has turned up some Dahl-like ellipsis phenomena that Rule H does not account for. So far, attempts to fix the preceding problems (mine included) have yielded principles that lack Rule H's explanatory scope. I will argue that Rule H can be tweaked to make the right predictions given only a Rooth-style contrast constraint on VP ellipsis. The trick is a modification to the definition of the set of focus alternatives. I assume that focus alternatives are defined directly by syntactic substitution (as proposed for independent reasons in **? ?**). As a consequence, the set of focus alternatives may be winnowed by the application of Rule H. This prevents the overgeneration which would otherwise occur under Fox's analysis in the absence of Structural Parallelism. Conversely, certain instances of undergeneration resulting from Structural Parallelism no longer arise.

Technical background: LFs à la Heim and Kratzer (1998)

▷ Each DP starts out with a (freely-assigned) index.

▷ When a DP moves, a λ-node is adjoined immediately below the landing site, and single (arbitrary) index is chosen for the λ-node and the trace.

▷ Thus, a moved phrase is not necessarily co-indexed with its trace.

▷ Type e DPs may QR.

▷ QR targets either VP or TP.

▷ Examples:

(1) John$_1$ thinks that he$_1$ is intelligent.
(2) [$_{\text{TP}}$ John$_1$ [$_{\text{TP}}$ λ_2 [$_{\text{TP}}$ t_2 thinks he$_2$ is intelligent]]].
(3) [$_{\text{TP}}$ John$_1$ [$_{\text{TP}}$ λ_1 [$_{\text{TP}}$ t_1 thinks he$_1$ is intelligent]]].
(4) [$_{\text{TP}}$ [Every boy] [$_{\text{TP}}$ λ_2 [$_{\text{TP}}$ t_2 thinks he$_2$ is intelligent]]].
(5) [$_{\text{TP}}$ [EB] [$_{\text{TP}}$ λ_2 [$_{\text{TP}}$ t_2 thinks [$_{\text{TP}}$ he$_2$ [$_{\text{TP}}$ λ_3 [$_{\text{TP}}$ t_3 loves his$_1$ mother]]]].

1. Rule H

(6) **Rule H**
A pronoun A can be bound by an antecedent B only if there is no closer antecedent C such that it is possible to bind A by C and get the same interpretation [of the minimal constituent containing A, B and C].
(C is closer if B c-commands C and C c-commands A.)

▷ The principle effect of Rule H is to block the following configurations:

(7) *Co-binding*

*Every boy [λ_1 [t_1 said that he$_1$ loves his$_1$ mother]]

(8) *Binding across a coreferential expression*

*John$_1$ [λ_2 [t_2 said that he$_1$ loves his$_2$ mother]]

▷ The co-binding configuration in (7) is blocked by the interpretatively equivalent transitive binding configuration in (9).

▷ Binding over a coreferential expression in (8) is blocked by the interpretatively equivalent configuration in (10):

(9) *Transitive binding*

John [λ_1 [t_1 said that he$_1$ [λ_2 [t_2 loves his$_2$ mother]]

(10) John$_1$ [λ_2 [t_2 said that he$_1$ [λ_3 [t_3 loves his$_3$ mother]]

▷ Rule H accounts for

  ▷ Dahl's puzzle

  ▷ Strong Crossover

  ▷ The ban on sneaky co-binding

1.1. The Dahl paradigm

▷ The Dahl paradigm (Dahl 1973, 1974) is illustrated in (11)–(12). When both pronouns in the first conjunct are anteceded by *John*, the pronouns in the elided VP may receive either strict or sloppy readings. However, the second pronoun may receive a sloppy reading only if the first does also:

(11) John knows that he loves his mother and Bill_{F} does too.

(12) John knows that John loves John's mother and
  a. *strict-strict*
  ...Bill knows that Bill loves Bill's mother.
  b. *sloppy-sloppy*
  ...Bill knows that John loves John's mother.
  c. *sloppy-strict*
  ...Bill knows that Bill loves John's mother.
  d. *strict-sloppy*
  *...Bill knows that John loves Bill's mother.

▷ Fox assumes that VP ellipsis is constrained by Structural Parallelism:

(13) **Structural Parallelism**
A bound pronoun within an elided VP must be bound in a structurally parallel configuration to the corresponding pronoun in the antecedent VP.

▷ The key observation underlying Fox's analysis of the Dahl paradigm is that each of readings (12a)–(12c) can be derived without using non-local binding:

(14) a. John [λ_1 [t_1 knows that he_1 [λ_2 t_2 loves his_2 mother]]] (12a)
and Bill_{F} [λ_3 does [t_3 know that he_3 [λ_4 [t_4 loves his_4 mother]]] too]
  b. John_1 knows that he_1 loves his_1 mother (12b)
and Bill_{F} does [know that he_1 loves his_1 mother] too
  c. John_1 [λ_2 [t_2 knows that he_2 loves his_1 mother]] (12c)
and Bill_{F} [λ_3 does [t_3 know that he_3 loves his_1 mother] too]

▷ Since Rule H is triggered by the presence of non-local binding configurations, it is clearly not violated in any of the LFs in (14).

▷ In contrast, (12d) can only be derived using non-local binding, as in (15) and (16):

(15) *Non-local binding in second conjunct*
John_1 knows that he_1 [λ_2 [t_2 loves his_2 mother]]
and Bill_{F} [λ_3 [t_3 does [know that he_1 loves his_3 mother]]] too

(16) *Non-local binding in both conjuncts*
John_1 [λ_2 [t_2 knows that he_1 loves his_2 mother]]
and Bill_{F} [λ_3 [t_3 does [know that he_1 loves his_3 mother]]] too

▷ Non-local binding in the second conjunct of (15) does not give rise to a violation of Rule H, since replacing [his_3] with a variable bound by [he_1] yields a distinct interpretation for the second conjunct.

▷ However, the binding dependency in the second conjunct of (15) is not matched by a structurally parallel binding dependency in the first, so Structural Parallelism is violated.

▷ Structural Parallelism is satisfied in (16), but the first conjunct violates Rule H, since replacing [his_2] with a variable bound by [he_1] yields the same interpretation.

▷ Thus, it is impossible to derive reading (12d) without violating at least one of Structural Parallelism and Rule H.

1.2. Strong Crossover

▷ Typical SCO configuration:

(17) *Who [λ_1 [did [he_1 say t_1 left]]]

▷ This co-binding configuration is blocked by Rule H because binding t_1 by [he_1] yields the same interpretation:

(18) Who [λ_1 [did [he_1 [λ_2 [t_2 say t_2 left]]]]]

1.3. The ban on sneaky co-binding

▷ Assume that Condition B is defined as in (19):

(19) **Condition B**
A pronoun may not be bound by a local c-commanding antecedent.

▷ This version of Condition B can easily be snuck around using co-binding. For example, it is not violated in (21):

(20) *Every boy [λ_1 [t_1 said that he_1 loves him_1]]

▷ The co-binding configuration in (21) is, however, blocked by Rule H.

▷ Note that reformulating Condition B to block local coindexation in addition to local binding won't help, since more complex configurations can be constructed where the offending pronoun is not coindexed with its local antecedent (Bach and Partee 1980):

(21) *Every boy [λ_1 [t_1 said that he_1 [λ_2 [t_2 knows that he_2 loves him_1]]]]

2. The Parallelism problem

▷ Structural Parallelism does not appear to follow from any independently motivated constraints on VP ellipsis.

▷ In particular, analyses of the licensing conditions on VP ellipsis stemming from Rooth (1985, 1992) do not enforce any kind of strict structural parallelism requirement on binding dependencies.

(22) **Definition of Focus Alternatives (DFA)**

The set of focus alternatives to a constituent ϕ is the set of $[\![\phi']\!]$ such that ϕ' can be obtained by replacing the focused subconstituents of ϕ by constituents of the same type.

(23) **Rooth-Style Contrast Constraint (RSCC)**

For ellipsis of a VP ϕ to be licensed, there must be a constituent ψ containing ϕ, and an antecedent constituent α, such that the semantic value of α is contained in the focus alternatives to ψ for all assignments.

▷ To see that RSCC does not enforce Structural Parallelism, consider the transitive binding LF in (24) together with the LFs in (24a)–(24d), which correspond to readings (12a)–(12d):

(24) John_1 [λ_2 [t_2 knows that he_2 [λ_3 [t_3 loves his_3 mother]]]]

a. Bill_F [λ_4 [t_4 knows that he_4 [λ_5 [t_5 loves his_5 mother]]]]
b. Bill_F knows that he_1 loves his_1 mother.
c. Bill_F [λ_4 [t_4 knows that he_4 loves his_1 mother]]
d. Bill_F [λ_4 [t_4 knows that he_1 loves his_4 mother]]

In each of (24a)–(24d), replacing [Bill] with its alternative [John] yields an LF with the same semantic value as (24). Thus, the semantic value of (24) is contained in the focus alternatives of each of (24a)-(24d).

▷ We can now clearly see the role of Structural Parallelism in Fox's analysis of the Dahl paradigm.

▷ It is only in the *first* conjunct of (12) that there is any possibility of local and non-local binding giving rise to the same interpretation (and hence triggering a violation of Rule H), whereas it is in the *second* conjunct that non-local binding must be blocked in order to rule out the unattested interpretation (12d).

Proposal

We can tweak the definition of focus alternatives so that the Rule H violation is triggered by a binding dependency in the second conjunct rather than by a binding dependency in the first conjunct. Then we don't need Structural Parallelism.

(25) **Strict Definition of Focus Alternatives (SDFA)**

The set of alternatives to a constituent ϕ is the set of all $[\![\phi']\!]$ such that ϕ' satisfies Rule H and can be obtained by replacing the focused subconstituents of ϕ by constituents of the same type.

3. The Dahl paradigm revisited

▷ Recall that on Fox's analysis, (26), which derives the unattested reading (12d), satisfies Rule H but violates Structural Parallelism:

(26) [$_\alpha$ John_1 knows that he_1 [λ_2 [t_2 loves his_2 mother]]]
and [$_\beta$ Bill_F [λ_3 [t_3 does [know that he_1 loves his_3 mother] too]]]

▷ RSCC+DFA is satisfied in (26), since [John] can substitute for [Bill] and α is therefore contained in the focus alternatives to β.

▷ The combination of Rule H and RSCC+DFA thus fails to block the unattested reading (12d).

▷ However, (12d) is blocked by the combination of Rule H and RSCC+SDFA.

▷ In order for ellipsis to be licensed in (26), the following proposition must be one of the alternatives to the second conjunct:

(27) John knows that John loves John's mother.

▷ A sentence denoting this proposition can be derived by replacing [Bill_F] with [John_1], yielding (29).[1] However, (29) violates Rule H, since its competitor **??** has the same interpretation:

(28) John_1 [λ_3 [t_3 does [know that he_1 loves his_3 mother] too]]

(29) John_1 [λ_3 [t_3 does [know that he_1 [λ_4 [t_4 loves his_4 mother]]] too]]

▷ We must now ensure that each of the available readings of the Dahl paradigm can be derived. This is straightforward, since we have already seen in (14) above that readings (12a)–(12c) can all be derived in accord with RSCC+DOA without using non-local binding. Since Rule H is evaluated only in the presence of a non-local binding configuration, it is clearly not violated in any of the LFs in (14), so RSCC+SDFA is also satisfied in these LFs.

[1] I assume that referential DPs must bear indices, though I suppress indices where they are not relevant. In (29), [John] must bear the index 1 and not e.g. 4 because no utterance context will determine an assignment g such that g(1) = g(4). Thus, if [John] bore an index other than 1 it could not denote the same individual as [he_1]. In other words, [John] must bear the index 1 for the same reason that it must do so in a sentence such as "*John_1 likes him_1" under the interpretation of "John likes himself."

4. The embedded Dahl paradigm (Roelofsen 2011)

4.1. With Rule H and Structural Parallelism

(30) Every worker says that he knows when he can take home his tools, and that the boss does too.

(31) a. *strict-strict*
. . . the boss knows when the boss can take home the boss's tools.
b. *sloppy-sloppy*
. . . the boss knows when the worker can take home the worker's tools.
c. *sloppy-strict*
. . . the boss knows when the boss can take home the worker's tools.
d. *strict-sloppy*
*. . . the boss knows when the worker can take home the boss's tools.

▷ The sloppy-sloppy reading in (31a) can be derived in accord with Rule H and Structural Parallelism using transitive binding throughout:

(32) [EW][λ_1[t_1 says that he$_1$[λ_2[t_2 knows when he$_2$[λ_3[t_3 can take home his$_3$ tools]]]] and that [TB][λ_4 does [t_4 know when he$_4$[λ_5[t_5 can take home his$_5$ tools]]]] too]]

▷ None of the other readings in (31) can be generated without violating at least one of Rule H and Structural Parallelism.

▷ In order to derive the strict-strict reading (31b) while respecting Structural Parallelism, it is necessary to have (at least) the first and second pronouns in the first conjunct bound by *every worker*, but this gives rise to a co-binding configuration that violates Rule H.

▷ For example, the LF in (33) is blocked by its competitor (34), which violates Structural Parallelism:

(33) [EW] [λ_1[t_1 says that [he$_1$ [knows when he$_1$[λ_3[t_3 can take home his$_3$ tools]]]] and that [the boss]$_F$ does [know when he$_1$[λ_3[t_3 can take home his$_3$ tools]]] too]]

(34) [EW] [λ_1[t_1 says that he$_1$[λ_2[t_2 [knows when he$_2$[λ_3[t_3 can take home his$_3$ tools]]]]]] and that [the boss]$_F$ does [know when he$_2$[λ_3[t_3 can take home his$_3$ tools]] too]]

▷ Similarly, to derive reading (31c) while respecting Structural Parallelism, the first and third pronouns in the first conjunct must be bound by *every worker*, and to derive reading (31d) while respecting Structural Parallelism, the first and second pronouns in the first conjunct must be bound by *every worker*.

▷ In both cases, a co-binding configuration is created and this gives rise to a violation of Rule H.

▷ **Conclusion: Rule H together with Structural Parallelism blocks two of the three attested readings of the embedded Dahl paradigm.**

4.2. With Rule H and RSCC+DFA

▷ There are LFs compatible with Rule H and RSCC+DFA that derive each of the four logically possible interpretations of the embedded Dahl paradigm. The LFs in question are given in (34) above (unattested reading) and (35)–(37):

(35) *sloppy-sloppy*
EW [λ_1[t_1 said that [α he$_1$[λ_2[t_2 knows when he$_2$[λ_3[t_3 can take home his$_3$ tools]]]]] and that [β [TB]$_F$[λ_4 does [t_4 know when he$_4$[λ_5[t_5 can take home his$_5$ tools]]]] too]]

(36) *strict-strict*
EW [λ_1[t_1 said that [α he$_1$[λ_2[t_2 knows when he$_2$[λ_3[t_3 can take home his$_3$ tools]]]]] and that [β [TB]$_F$ does know when he$_1$[λ_4[t_4 can take home his$_4$ tools]]] too]]

(37) *sloppy-strict*
EW [λ_1[t_1 said that [α he$_1$[λ_2[t_2 knows when he$_2$[λ_3[t_3 can take home his$_3$ tools]]]]] and that [β [TB]$_F$[λ_4 does [t_4 know when he$_4$ can take home his$_1$ tools]]]] too]]

▷ Each of these LFs has the property that when [the teacher] is replaced by its alternative [he$_1$], a constituent [he$_1$ knows . . .] is derived that has the same semantic value as the corresponding constituent in the first conjunct.

▷ **Conclusion: Rule H together with RSCC+DFA does not rule out any of the readings in (31) — as we would expect given the analogy between the original and embedded Dahl paradigms.**

Why (34) and (35)–(37) are consistent with Rule H and RSCC+DFA

(35) cannot violate Rule H since it contains no instances of non-local binding.

In each instance of non-local binding in (34), (36) and (37), the binder is [every worker]. In (34) and (36), binding [he$_1$] in β by the closer potential antecedent [the boss] would clearly give rise to a distinct interpretation in each case (the strict-strict and sloppy-sloppy interpretations respectively), so this binding dependency does not violate Rule H.

In the case of (37) we can either bind [his$_1$] in β by [the boss] or by [he$_4$]. Each option again gives rise to a distinct interpretation (the sloppy-sloppy interpretation in both cases), so that there is no violation of Rule H.

4.3. With Rule H and RSCC+SDFA

▷ As we saw in the case of the original Dahl paradigm, RSCC+SDFA imposes the required restrictions.

▷ Since Rule H forces the use of transitive binding in the first conjunct of (30), all of the action is in the second conjunct.

▷ Beginning with the unattested strict-sloppy reading (31d), there is only one pattern of binding dependencies in the second conjunct that derives this reading:

(38) EW [λ_1 [t_1 said that [$_\alpha$ he$_1$ [λ_2 [t_2 knows when he$_2$ [λ_3 [t_3 can take home his$_3$ tools]]]]]
and that [$_\beta$[the boss]$_F$[λ_4 does [t_4 know when he$_1$ can take home his$_4$ tools]]]]]

▷ Ellipsis in (38) is licensed only if (39) is one of the focus alternatives to β:

(39) [he$_1$] [λ_4 does [t_4 know when he$_1$ can take home his$_4$ tools]]
= "the worker knows when the worker can take home the worker's tools."

▷ The Rule H competitor for (39) is (40):

(40) [he$_1$] [λ_4 does [t_4 know when he$_1$ [λ_5 [t_5 can take home his$_5$ tools]]]

▷ Since (39) and (40) have the same interpretation ("the worker knows when the worker can take home the worker's tools"), Rule H is violated in (40), so that (40) is not in fact one of the focus alternatives to (39).

▷ As a result, ellipsis is not licensed in (38), correctly predicting the absence of reading (31d).

▷ We have already seen that RSCC+DFA is satisfied in the LFs in (35)–(37), which derive the available readings of the embedded Dahl paradigm.

▷ Given that none of the focus alternatives to β in these LFs involve non-local binding, RSCC+SDFA must also be satisfied, since Rule H will not winnow the set of focus alternatives.

▷ **Conclusion: Rule H together with RSCC+SDFA makes the right predictions with regard to the embedded Dahl paradigm.**

Analogy between original and embedded Dahl paradigms

The preceding analysis of the embedded Dahl paradigm is — as we would hope — exactly parallel to the analysis of the original Dahl paradigm. In each instance, the unattested reading is blocked because the focus alternative needed to license ellipsis is absent due to a Rule H violation in the LF from which it derives. The offending configuration is the following, where XP is a substitute for the focused subject of the elided VP:

(41) XP$_1$ [λ_1 [t_1 ... pro^A ... pro$_1^B$]]
(where pro^A is covalued with pro$_1^B$)

In the original Dahl paradigm, covaluation of pro^A and pro^B takes the form of coreference. In the embedded Dahl paradigm, pro^A is covalued with pro^B because both pronouns are bound by the same quantifier.

5. A further consideration favoring Rule H

▷ A number of alternative analyses of the Dahl paradigm tie it to VP ellipsis. E.g., the analysis of Schlenker (2005, 33-37) crucially depends on there being two independent pairs of pronouns, one in the antecedent VP and one in the elided VP.

▷ Rule H correctly predicts that the Dahl paradigm should show up in certain non-ellipsis contexts, such as (42):

(42) Only John$_F$ said that he loves his mother.
a. John is the only x such that x said x loves x's mother.
b. John is the only x such that x said John loves John's mother.
c. John is the only x such that x said x loves John's mother.
d. *John is the only x such that x said John loves x's mother.

▷ Local evaluation of Rule H is crucial here. The illicit reading in (42d) be derived only from the following LF:

(43) Only [$_\alpha$ [John$_1$]$_F$ [λ_2 [t_2 said that he$_1$ loves his$_2$ mother]]]

▷ The violation of Rule H is triggered by non-local binding within α, before *only* can make its contribution to the interpretation.

Conclusion

If focus alternatives are derived by syntactic substitution, and if Rule H acts as a filter on the output of substitution, then Fox's analysis of Dahl's paradigm can be recast without any appeal to Structural Parallelism. Since problems with Structural Parallelism have led a number of authors to reject the Rule H analysis, this is a welcome result. This is particularly so given that competing analyses of the Dahl paradigm are somewhat ad hoc and limited in their scope, whereas Rule H has considerable explanatory power in other domains.

Appendix: A problem with syntactic substitution

▷ Deriving focus alternatives directly via syntactic substitution may give rise to some problems. For example, consider (44):

(44) Out of all the real numbers, only [zero]$_F$ lacks a multiplicative inverse.

▷ Intuitively, the relevant set of alternatives in the case of (44) is the set of all propositions of the form 'X lacks a multiplicative inverse' where X is a real number, but it is far from clear that there is a DP corresponding to every real number.

▷ We can solve this problem while maintaining the spirit of the naïve syntactic substitution analysis.

▷ Beck (2006), building on Kratzer (1991), implements a Rooth-style analysis of focus where the focus-marking subscript $_{\text{F}}$ is indexed. The ordinary semantic value of an expression is, as usual, defined with respect to an assignment g; the focus semantic value is defined with respect to g and an additional assignment h, which interprets the indices of focus markers.

▷ Some example denotations:

(45) a. $[\![[\text{he}_\iota]]\!]^{\text{g}} = \text{g}(\iota)$
b. $[\![[\text{he}_\iota]]\!]^{\text{g,h}} = \text{g}(\iota)$
c. $[\![[\text{he}_\iota]_{\text{F}_\kappa}]\!]^{\text{g}} = \text{g}(\iota)$
d. $[\![[\text{he}_\iota]_{\text{F}_\kappa}]\!]^{\text{g,h}} = \text{h}(\kappa)$
e. $[\![[[\text{he}_\iota]_{\text{F}_\kappa}\ \text{left}]]\!]^{\text{g}} = 1$ iff $\text{g}(\iota)$ left
f. $[\![[[\text{he}_\iota]_{\text{F}_\kappa}\ \text{left}]]\!]^{\text{g,h}} = 1$ iff $\text{h}(\kappa)$ left
g. $[\![[[\text{he}_\iota]\ \text{left}]]\!]^{\text{g,h}} = 1$ iff $\text{g}(\iota)$ left

▷ The relevant definitions (definitions for $[\![\cdot]\!]^{\text{g}}$ are as in a regular H&K semantics):

(46) If ϕ is unfocused and simple, then $[\![\phi]\!]^{\text{g,h}} = [\![\phi]\!]^{\text{g}}$.

(47) If ϕ is unfocused and has immediate subconstituents ψ and ψ', where ψ and ψ' are of types $\langle\tau,\tau'\rangle$ and τ respectively, then $[\![\phi]\!]^{\text{g,h}} = [\![\psi]\!]^{\text{g,h}}([\![\psi']\!]^{\text{g,h}})$.

(48) If $\phi = \psi_{\text{F}_\kappa}$, then $[\![\phi]\!]^{\text{g,h}} = \text{h}(\kappa)$.

(49) **Focus alternatives**
$\text{FA}^{\text{g}}(\phi) = \{[\![\phi]\!]^{\text{g,h}} \mid \text{h} \in \text{H}\}$.

(50) **Strict focus alternatives**
$\text{SFA}^{\text{g}}(\phi) = \text{FA}^{\text{g}}(\phi) \setminus \cup\{\text{FA}^{\text{g}}(\psi) \mid \psi$ is a Rule H competitor for $\phi\}$.

(51) ψ is a **Rule H competitor** to ϕ iff ψ can be derived by binding a bound pronoun in ϕ by a closer antecedent.

(52) **Ad-hoc principle**
An expression ϕ is deviant if for some g, $[\![\phi]\!]^{\text{g}}$ is not in $\text{SFA}^{\text{g}}(\phi)$.
(This principle in combination with (50) and (51) replaces Rule H.)

(53) **Revised Rooth-Style Contrast Constraint**
For ellipsis of a VP ϕ to be licensed, there must be a constituent ψ containing ϕ and an antecedent constituent α such that for all assignments g, $[\![\alpha]\!]^{\text{g}}$ is contained in $\text{SFA}^{\text{g}}(\psi)$.

▷ The definition in (53) is partly based on the Focus Match constraint of Roelofsen (2011) and, like Focus Match, is designed to deal with cases where α contains free variables bound by a higher quantifier. (This is required to handle the embedded Dahl paradigm.)

Working through a simple Rule H violation

(54) *John$_1$ [λ_2 [t_2 said that he$_1$ loves his$_2$ mother]].

To begin with, note that for all g, h, $[\![(54)]\!]^{\text{g}} = [\![(54)]\!]^{\text{g,h}} = 1$ iff John said that John loves John's mother. (54) has a single Rule H competitor, (55):

(55) John$_1$ [λ_2 [t_2 said that he$_1$ [λ_3 [t_3 loves his$_3$ mother]]]].

For all g, h, $[\![(55)]\!]^{\text{g,h}} = 1$ iff John said that John loves John's mother. Thus, for all g, $\text{SFA}^{\text{g}}((54))$ is {1 iff J said J loves J's mother} \ {1 iff J said J loves J's mother}, which is the empty set. $[\![(54)]\!]^{\text{g}}$ is therefore not contained in $\text{SFA}^{\text{g}}((54))$, so that the ad-hoc principle (52) is violated. If the pronoun *he* in (54) referred instead to Bill, so that the Rule H competitor of (54) denoted 1 iff J said B loves B's mother, then for all g, $\text{SFA}^{\text{g}}((54))$ would be {1 iff J said J loves J's mother} \ {1 iff J said B loves B's mother}, which is simply {1 iff J said J loves J's mother}; the ad-hoc principle (52) would not then be violated.

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