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Bound 'de re' Pronouns and Concept Generators

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1. The problem

Consider (1), ignoring any reading where *female student* is interpreted 'de dicto' and any reading where *her* is interpreted referentially.

(1) John believes that every female student likes her mother.

(1) is felicitous in a scenario where John is looking at the set of actual female students, saying to himself: "for each x such that x is one of these individuals, x likes x's mother" (without necessarily acknowledging that the individuals in question are students, or even female). This reading – which we call the 'simple bound' reading – is read off the LF in (2).

(2) *John believes-*w_0 [1 [*every female student-*w_0 [2 [t_2 *likes-*w_1 *her*$_2$ *mother-*w_1]]]]

However, (1) is also felicitous in a scenario such as the following. Imagine the set of actual female students is {Mary, Sally, Betty}, and John is looking at pairs of pictures of them (i.e., two pictures of Mary, two pictures of Sally, and two pictures of Betty). Again, he may not be aware that they are students. For each pair, he mistakenly thinks its members are distinct from each other. That is to say, pointing first at the first member of the pair <Mary, Mary> and then at its second member, he thinks: "this woman likes that woman's mother" (this woman ≠ that woman); pointing at the first member of the pair <Sally, Sally> and then at its second, he thinks: "this woman likes that woman's mother"; and the same for Betty. We call this reading (first observed in Sharvit 2010) 'bound de re'. Importantly, this reading is not read off (2).

In section 2 we explain why the 'bound de re' reading cannot be read off (2) (in fact, it cannot be read off <u>any</u> version of (2)). In section 3 we present a version of the 'de re' theory of Percus & Sauerland (2003) that accounts for the 'bound de re' reading. Section 4 discusses an extension of the theory, which covers a wider range of facts.

2. Why does the LF in (2) not capture the 'bound de re' reading?

We now look at the naïve (non-relational) theory of belief 'de re', as well as the relational theory, and explain why neither of them can account for the 'bound de re' reading of (1): it is because both of these theories require either an LF such as (2) for (1), where *her* is bound "in John's mind", or an LF where *her* is not bound at all.

2.1. The naïve theory of belief 'de re'

Let us temporarily assume the following simplified semantics for *believe*.

(3) $[\![believe]\!]^g(w)(p^{<s,t>})(x) = 1$ iff $Dox_{x,w} \subseteq \{w' \in D_s: p(w') = 1\}$

Using standard compositional rules, we get (4) as the interpretation of the complement of *every female student*, and (5) as the truth conditions of (2) (@ is the actual world).

(4) For any w, $[\![$ 2 [t_2 *likes-*w_1 *her*$_2$ *mother-*w_1] $]\!]^{[1\to w]}$ = [λx . x likes in w the mother of x in w]

(5) $[\![$*John believes-*w_0 [1 [*every female student-*w_0 [2 [t_2 *likes-*w_1 *her*$_2$ *mother-*w_1]]]] $]\!]^{[0\to @]}$ = 1 iff $Dox_{John,@} \subseteq \{w \in D_s$: for all y such that y is a female student in @, [λx . x likes in w the mother of x in w](y) = 1$\}$.

This certainly captures the 'simple bound' reading of (1), but crucially not the 'bound de re' reading, according to which *her* is not bound "in John's mind". Scoping *every female student* above *believe* does not help (as in (6) – a variant of (2)), because we get the exact same interpretation as that in (5).

(6) [*every female student-*w_0] [3 [*John believes-*w_0 [1 [t_3 [2 [t_2 *likes-*w_1 *her*$_2$ *mother-*w_1]]]]]]

Besides, scoping the quantifier above the attitude verb is probably not possible for independent reasons: when the quantifier is downward-entailing, scoping it disrupts the intuitive truth conditions. For example, the intuitive truth conditions of (7) (on its 'de re' reading) require that for every actual female student x, John points at x thinking: "This person didn't pass the exam".

(7) John is certain that no female student passed the exam.

Scoping *no female student* above *certain* would allow for the possibility that John is unsure about some actual female student or other.

2.2. The relational theory of belief 'de re'

We now consider additional alternatives to (2), based on a more fine-grained semantics for *believe*. In sections 1 and 2.1 we assumed that predicates such as *female student* take pronominal world-denoting arguments. This allowed us to posit (2) as the LF of the 'simple bound' reading of (1) (without scoping the quantifier). In fact, using non-quantificational expressions (e.g., names), Quine (1956) already made a much stronger point, namely, that a 'de re' interpretation of an expression is not a simple matter of scope.

(8) Ralph believes that <u>Ortcutt</u> is a spy and, at the same time, he believes that <u>Ortcutt</u> is not a spy.

(8) has a reading that does not attribute to Ralph contradictory beliefs (imagine a situation where Ralph sees Ortcutt on two different occasions, but fails to acknowledge that the individual he saw on the first occasion is the one he saw on the second occasion). As long as we hang on to our naïve semantics in (3), it won't matter whether we scope *Ortcutt* above *believe*, or leave it 'in-situ': both options yield only the reading according to which Ralph has contradictory beliefs.

(9) *Ralph believes-*w_0 [1 [*Ortcutt is-*w_1 *a spy*]] *and Ralph believes-*w_0 [1 [*Ortcutt is-*w_1 *not a spy*]]

(10) [*Ortcutt* [2 [*Ralph believes-*w_0 [1 [t_2 *is-*w_1 *a spy*]]]]] *and* [*Ortcutt* [2 [*Ralph believes-*w_0 [1 [t_2 *is-*w_1 *not a spy*]]]]]

Capturing the relevant reading via "scoping" is possible, though, as long as the semantics of the attitude verb is made more fine-grained (Lewis 1979, Cresswell & von Stechow 1982 among others): *believe*$^{de\text{-}re}$ takes *Ortcutt* as one of its arguments, and requires an acquaintance relation to hold between Ralph and Ortcutt in the actual world, and between Ralph and some individual in Ralph's doxastic alternatives, see (11).[1] The LF in (12) follows Heim's (1994) version of this idea, called 'res'-movement.

(11) $[\![$*believe*$^{\text{de-re}}]\!]^{g}(w)(x)(P^{<e,<s,t>>})(z) = 1$ iff there is a salient acquaintance relation R such that:
  (i) $R(w)(x)(z) = 1$ and for all $y \neq x$, $R(w)(y)(z) = 0$; and
  (ii) $Dox_{z,w} \subseteq \{w' \in D_s$: there is a y such that: (i) $R(w')(y)(z) = 1$, (ii) for all $y' \neq y$, $R(w')(y')(z) = 0$, and (iii) $P(y)(w') = 1\}$

(12) $[\![$ [*Ralph believe*$^{\text{de-re}}$-*w_0-Ortcutt* [3 1 [*t_3 is-w_1 a spy*]]] $]\!]^{[0\to@]} = 1$ iff there is a salient acquaintance relation R such that:
  (i) Ortcutt is the unique y such that $R(@)(y)(Ralph) = 1$; and
  (ii) $Dox_{Ralph,@} \subseteq \{w \in D_s$: the unique y such that $R(w)(y)(Ralph) = 1$ is a spy in w$\}$

Depending on one's theory of LF movement, 'res'-movement may lead to a violation of island constraints (especially when there are multiple embeddings, as in *John believes that the woman that Ralph had seen the day before was a spy*).

But the more serious problem is that 'bound de re' readings are not generated: making *her* an argument of *believe* as in (13) takes it outside the scope of *every female student* (with the result that *her* can only be interpreted referentially). Scoping both *female student* and *her* above *believe* gives us (14), where *her* is still outside the scope of *every*.

(13) *John believe*$^{\text{de-re}}$-*w_0-her* [3 1 [*every female student-w_0* [2 [*t_2 likes-w_1 t_3 mother-w_1*]]]]
(14) *John believe*$^{\text{de-re}}$-*w_0-female-student-w_0-her* [3 1 [*every* [2 [*t_2 likes-w_1 t_3 mother-w_1*]]]]

One could perhaps toy with the idea of scoping *every* along with *her*. The details are far from clear (in particular, it would require saying that John is acquainted with $[\![$*every female student*$]\!]$). But more seriously, we would not get the right quantificational force below the attitude verb (in this connection see also our discussion of (7)). We therefore conclude that neither the naïve theory nor the relational theory can account for the 'bound de re' reading.

3. The solution – concept-generators

3.1. Belief 'de re' without movement

Concept-generator theory (Percus & Sauerland 2003): 'res'-denoting expressions are arguments of pronouns that denote concept generators, as defined in (15); the semantics of *believe* is (16).[2]

[1] This is a simplified semantics, that doesn't take into account the subject's beliefs 'de se'. A semantics that is more faithful to what the authors cited above assume is this:

(i) $[\![$*believe*$^{\text{de-re}}]\!]^{g}(w)(x)(P^{<e,<s,t>>})(z) = 1$ iff there is a salient acquaintance relation R such that:
  (i) $R(w)(x)(z) = 1$ and for all $y \neq x$, $R(w)(y)(z) = 0$; and
  (ii) $Dox_{z,w} \subseteq \{<w',z'> \in D_s \times D_e$: there is a y such that: (i) $R(w')(y)(z') = 1$, (ii) for all $y' \neq y$, $R(w')(y')(z') = 0$, and (iii) $P(y)(w') = 1\}$

[2] We are again simplifying (see Fn. 1). P&S's definition (see their Fn. 16) is closer to that in (i):

(i) A function G of type <e,<s,e>> is a suitable **concept-generator** for individual x in w iff:
  (a) $Dom(G) = \{z$: x is acquainted with z in w$\}$; and

(15) A function G of type <e,<s,e>> is a suitable **concept-generator** for individual x in w iff:
  (a) $Dom(G) = \{z$: x is acquainted with z in w$\}$; and
  (b) for all $z \in Dom(G)$, there is some acquaintance relation R such that: (i) $R(w)(z)(x) = 1$ and for all $y \neq z$, $R(w)(y)(x) = 0$; and (ii) and for all $w' \in Dox_{x,w}$: $R(w')(G(z)(w'))(x) = 1$ and for all $y \neq G(z)(w')$, $R(w')(y)(x) = 0$.

(16) $[\![$*believe*$]\!]^{g}(w)(p^{<<e,<s,e>>,<s,t>>})(x) = 1$ iff there is a suitable concept-generator G for x in w such that: $Dox_{x,w} \subseteq \{w' \in D_s$: $p(G)(w') = 1\}$.

(17) $[\![$ [*Ralph believe-w_0* [8 1 [*G_8(Ortcutt)(w_1) is-w_1 a spy*]]] $]\!]^{[0\to@]} = 1$ iff there is a suitable concept-generator G for Ralph in @ such that:
  $Dox_{Ralph,@} \subseteq \{w \in D_s$: G(Ortcutt)(w) is a spy in w$\}$

(18) $[\![$ [*Ralph believes-w_0* [8 1 [*G_8(he_3)(w_1) is-w_1 is a spy*]]] $]\!]^{g[0\to@]} = 1$ iff there is a suitable concept-generator G for Ralph in @ such that:
  $Dox_{Ralph,@} \subseteq \{w \in D_s$: G(g(3))(w) is a spy in w$\}$

To account for 'bound de re' pronouns, we crucially assume: (a) a flexible semantics for *believe* as in (19), instead of (16) (the value of n – and the type of p – are determined by the number of concept-generator abstractors); and (b) that bound pronouns as well as traces can be arguments of concept-generator pronouns. Thus, we generate both (20) and (21) as LFs of (1).

(19) $[\![$*believe*$]\!]^{g}(w)(p)(x) = 1$ iff there is a salient (and possibly empty) sequence of concept-generators $<G_1, G_2, \ldots, G_n>$ suitable for x in w such that: $Dox_{x,w} \subseteq \{w' \in D_s$: $p(G_1)(G_2)\ldots(G_n)(w') = 1\}$.
  (We will say that a sequence of concept generators s is suitable for x in w iff each member of the sequence is suitable for x in w.)

(20) Simple bound reading: the two concept-generator pronouns are co-indexed
  John believes-w_0 [8 1 [*every female student-w_0* [2 [*G_8(t_2)(w_1) likes-w_1 G_8(her_2)(w_1) mother-w_1*]]]]
  a. For any G and any w, $[\![$[2 [*G_8(t_2)(w_1) likes-w_1 G_8(her_2)(w_1) mother-w_1*]] $]\!]^{[8\to G,\,1\to w]} = [\lambda x$: $x \in Dom(G)$. G(x)(w) likes in w the mother of G(x)(w) in w]
  b. There is a concept-generator G suitable for John in @ such that: $Dox_{John,@} \subseteq \{w \in D_s$: for any y such that y is a female student in @, [λx . G(x)(w) likes in w the mother of G(x)(w) in w](y) = 1$\}$.

(21) 'Bound de re' reading: the two concept-generator pronouns are not co-indexed

  (b) for all $z \in Dom(G)$, there is some acquaintance relation R such that: (i) $R(w)(z)(x) = 1$ and for all $y \neq z$, $R(w)(y)(x) = 0$, and (ii) and for all $<w', x'> \in Dox_{x,w}$, $R(w')(G(z)(w'))(x') = 1$ and for all $y \neq G(z)(w')$, $R(w')(y)(x') = 0$.

And the semantics they assume for *believe* is:

(ii) $[\![$*believe*$]\!]^{g}(w)(p^{<<e,<s,e>>,<s,t>>})(x) = 1$ iff there is a suitable concept-generator G for x in w such that: $Dox_{x,w} \subseteq \{<w',x'> \in D_s \times D_e$: $p(G)(w') = 1\}$.

John believes-w_0 [9 8 1 [*every female student-*w_0 [2 [$G_8(t_2)(w_1)$ *likes-*w_1 $G_9(her_2)(w_1)$ *mother-*w_1]]]]

a. For any G,H and any w, $[\![[2\ [G_8(t_2)(w_1)\ \textit{likes-}w_1\ G_9(her_2)(w_1)\ \textit{mother-}w_1]]\ ]\!]^{[8\to G,\ 9\to H,\ 1\to w]}$ = [λx: x∈Dom(G) and x∈Dom(H). G(x)(w) likes in w the mother of H(x)(w) in w]

b. There is a pair of concept-generators $\langle G, H\rangle$ suitable for John in @ such that: $Dox_{John,@} \subseteq$ {w ∈ D_s: for any y such that y is a female student in @, [λx. G(x)(w) likes in w the mother of H(x)(w) in w](y) = 1}

For the de re ascription in (21) to be true John needn’t think anything of the form, “x likes x’s mother” (since t_2 and her_2, though co-indexed, occur with distinct concept generators).

3.2. Setting the record straight: what is borrowed and what is new

Previous work (Percus & Sauerland 2003, Anand 2006) has already provided the essential ingredients of our proposal. However, to our knowledge, no one till now has shown that there are readings that <u>only</u> the concept-generator theory can account for. Let us elaborate on this point.

First, notice an interesting difference between the ‘res’-movement theory and the concept-generator theory. In practice, the number of ‘res’-denoting expressions can be bigger than one (as in *John believed that Mary introduced Bill to Sue*). On the ‘res’-movement theory, we have to move all three ‘res-es’ (and ensure the type-flexibility of *believe*$^{\text{de-re}}$ accordingly). On the concept-generator theory, we can work with one type-fixed *believe*, as long as the ‘res’-denoting expressions are not coreferential. This is because the domain of the concept generator already – by definition – includes all the individuals that the “subject” is acquainted with.

(22) [*John believe*$^{\text{de-re}}$*-*w_0*-Mary-Bill-Sue* [4 2 3 1 [t_3 *introduced-*w_1 t_2 *to* t_4]]]
(23) [*John believe-*w_0 [8 1 [$G_8(Mary)(w_1)$ *introduced-*w_1 $G_8(Bill)(w_1)$ *to* $G_8(Sue)(w_1)$]]]

However, if the ‘res’-denoting expressions are co-referential, even the concept-generator analysis requires a flexible *believe* (such as our (19)). This is already noted in Anand (2006) (see also Percus 2006).

(24) Ralph believes that the woman who likes Ortcutt_2 will marry Ortcutt_2/him_2
(Ralph’s thought is: “The woman who likes this man will marry that man”)

(25) [*John believe-*w_0 [9 8 1 [*the woman who likes* $G_8(Ortcutt_2)(w_1)$ *will-marry-*w_1 $G_9(Ortcutt_2/him_2)(w_1)$]]]

But positing a flexible *believe* is not enough if we want to account for ‘bound de re’ readings: this requires allowing <u>bound</u> variables – traces and bound pronouns alike – to be arguments of concept-generator pronouns. Since Anand relies on an example such as (26), he doesn’t make this point about either traces or bound pronouns.

(26) Ralph believes that Ortcutt_3 hurt himself_3.

Indeed, Anand is right that to account for the reading where in Ralph’s “mind”, the hurter and hurtee are not the same person using concept-generators requires a flexible *believe*. But crucially, (26) does not show that the concept-generator analysis has an advantage over the ‘res’-movement analysis, as the relevant reading is easily accounted for with ‘res’-movement.

(27) a. <u>Concept-generator analysis</u>
[*Ralph believe-*w_0 [9 8 1 2 [$G_8(Ortcut_3)(w_1)$ *hurt-*w_1 $G_9(himself_3)(w_1)$]]]
b. <u>‘Res’-movement analysis</u>
[*Ralph believe*$^{\text{de-re}}$*-*w_0*-*$Ortcut_3$*-*$himself_3$ [3 2 1 [t_3 *hurt-*w_1 t_2]]]

Percus & Sauerland (2003), on the other hand, do acknowledge that bound pronouns can be arguments of concept-generator variables. They discuss examples such as (28).

(28) Every candidate believes that he will win.
(Every candidate x, pointing at a picture of x, without necessarily realizing that it is a picture of himself: “This guy will win”)

Again, (28) only shows that if the concept-generator theory is to be adopted, it needs to allow concept-generators to apply to bound pronouns. What (28) crucially doesn’t show is that the concept-generator theory has any advantage.

(29) a. <u>Concept-generator analysis</u>
[*every candidate* [4 [t_4 *believe-*w_0 [9 1 [$G_9(he_4)(w_1)$ *will-win-*w_1]]]]]
b. <u>‘Res’-movement analysis</u>
[*every candidate* [4 [t_4 *believe*$^{\text{de-re}}$*-*w_0*-*he_4 [4 1 [t_4 *will-win-*w_1]]]]]

Although Percus & Sauerland do not discuss traces, a similar point can be made about traces. Consider (30a), which can be analyzed equally well within the concept-generator theory or the ‘res’-movement theory: the former requires that we allow traces to be arguments of concept-generator pronouns;[3] the latter requires that we allow set-denoting expressions to undergo ‘res’-movement (and T_5 is a variable over sets).

(30) a. John believes that every female student jogs.
b. Concept-generator analysis
John believes-w_0 [8 1 [*every female student-*w_0 [2 [$G_8(t_2)(w_1)$ *jogs-*w_1]]]]
c. ‘Res’-movement analysis
John believes-w_0*-female-student-*w_0 [5 1 [*every* T_5 *jogs-*w_1]]

<u>Crucially</u>, only those examples where the pronoun is bound by an operator situated “below” *believe* (e.g., (1)) show the superiority of the concept-generator theory (from a semantic point of view): as we saw, these cases CANNOT be accounted for by ‘res’-movement.[4]

4. *Believe* as a universal quantifier over concept-generators

The semantics for *believe* that our proposal in Section 3 relies on is repeated below.

(31) $[\![\textit{believe}]\!]^g(w)(p)(x) = 1$ iff there is a salient (and possibly empty) sequence of concept-generators $\langle G_1, G_2, \ldots, G_n\rangle$ suitable for x in w such that: $Dox_{x,w} \subseteq \{w' \in D_s: p(G_1)(G_2)\ldots(G_n)(w') = 1\}$.

[3] In fact, the concept-generator idea can also be executed if we make the quantifier’s restrictor – and not the trace – an argument of a concept-generator (alternatives to (20) and (21) would also look like that).

[4] This is not entirely correct. Sharvit (2010) accounts for cases such as (1), but her analysis posits lexical items (*OP*, *every**) that are not independently motivated. Translated to ‘res’-movement, Sharvit’s analysis works only if: (a) *OP* in (i) applies to *female-student-*w_0 to yield a set of ordered pairs (whose first and second members are the same); (b) the trace T_5 in (i) is a variable over sets of ordered pairs; and (c) *every** in (i) (as opposed to the standard *every*) applies to a set of pairs to yield something of type $\langle\langle e,\langle e,t\rangle\rangle,t\rangle$.

(i) *John believes-*w_0*-*[*female-student-*w_0 *OP*] [5 1 [*every** T_5 [2 3 [t_3 *likes-*w_1 her_2 *mother-*w_1]]]]

This “existential” semantics is, in fact, sometimes too weak. To see this, consider (32a) and (32b): the former is acceptable in the scenario in (32c)/(32c’) as well as the scenario in (32d); the latter is unacceptable in the scenario in (32c)/(32c’), but acceptable in the scenario in (32d).

(32) a. John believes that Mary is French.
b. John believes that <u>only</u> Mary is French.
c. John looks at two pairs of pictures -- two pictures of Mary and two pictures of Sally -- and he doesn’t realize that the same person is depicted in each pair. Suppose now that John says: “The woman in red [who happens to be Mary] is French. The other three – including the woman in blue [who also happens to be Mary] – are Italian.”
c’. John looks at two pairs of pictures -- two pictures of Mary and two pictures of Sally -- and he doesn’t realize that the same person is depicted in each pair. Suppose now that John says: “The woman in gray [who happens to be Sally] is Italian. The other three – including the woman in yellow [who also happens to be Sally] – are French.”
d. John looks at two pairs of pictures -- two pictures of Mary and two pictures of Sally -- and he doesn’t realize that the same person is depicted in each pair. Suppose now that John says: “The woman in red [who happens to be Mary] is French and the woman in blue [who also happens to be Mary] is French. The other two are Italian.”

This calls for positing a “universal” semantics for *believe* as in (33).

(33) $[\![\textit{believe}^{U}]\!]^{C,g}(w)(p)(x)$ is defined only if: (i) $C_{x,w}$ is a set of contextually relevant n-long sequences of suitable concept generators for x in w ($|C_{x,w}| \geq 1$, and n is the number of $<e,<s,e>>$-arguments that p takes); and (ii) for all S ($= <G^{S}_{1}, \ldots, G^{S}_{n}>$) such that $S \in C_{x,w}$: $Dox_{x,w} \subseteq \{w' \in D_{s}: p(G^{S}_{1})\ldots(G^{S}_{n})(w') \text{ is defined}\}$.
When defined, $[\![\textit{believe}]\!]^{C,g}(w)(p)(x) = 1$ iff for all S ($= <G^{S}_{1}, \ldots, G^{S}_{n}>$) such that $S \in C_{x,w}$: $Dox_{x,w} \subseteq \{w' \in D_{s}: p(G^{S}_{1})\ldots(G^{S}_{n})(w') = 1\}$.

Suppose that in the scenarios in (32), H1 yields “the woman in red” for Mary, and “the woman in gray” for Sally; and H2 yields “the woman in blue” for Mary, and “the woman in yellow” for Sally (so $C_{John,@} = \{<H1>, <H2>\}$). *Believe*^{U} correctly predicts the judgments reported for (32b).

(34) $[\![$ *John believes*^{U}-w_0 [8 1 [*only Mary* [2 [$G_8(t_2)(w_1)$ *is*-w_1 *French*]]]] $]\!]^{C,[0\rightarrow @]}$ is defined only if: $Dox_{John,@} \subseteq \{w \in D_{s}$: H1(Mary)(w) is French in w and H2(Mary)(w) is French in w$\}$.
When defined, $[\![$ *John believes*^{U}-w_0 [8 1 [*only Mary* [2 [$G_8(t_2)(w_1)$ *is*-w_1 *French*]]]] $]\!]^{C,[0\rightarrow @]}$ = 1 iff: $Dox_{John,@} \subseteq \{w \in D_{s}$: neither H1(Sally)(w) nor H2(Sally)(w) is French in w$\}$.

On the other hand, the judgments reported for (32a) are predicted by (31); (33) imposes truth conditions that are too strong. Let us therefore assume that both are available. For some reason (that we do not fully understand yet) (33) is chosen whenever the “low” quantifier is downward-entailing. This is also evidenced by the following contrast (as before, John is standing in front of pictures of $<$Mary, Mary$>$, $<$Sally, Sally$>$, $<$Betty, Betty$>$).

(35) a. John believes that no female student likes her friend.
b. John believes that every female student likes her friend.

As we already saw, intuitions regarding (35b) are explained by “existential” *believe*. But notice that intuitions regarding (35a) are not: the truth of (35a) requires that, in John’s “mind”, not only is it the case that the first member of each pair doesn’t like the mother of the second member, but also that the second member of each pair doesn’t like the mother of the first. This is predicted by “universal” *believe*^{U} (assuming $C_{John,@} = \{<H1, H2>, <H2, H1>\}$).

<u>Summary</u>. ‘Bound de re’ readings of pronouns cannot be accounted for by any “scoping” mechanism, including ‘res’-movement, thus providing an argument in favor of the concept-generator theory. The kind of scenarios required to evaluate ‘bound de re’ readings – scenarios involving beliefs about the same individual under different acquaintance relations – also lead to the conclusion that *believe* must have a “universal” incarnation.