Be Bound or Be Disjoint!

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1.   Two Observations

We begin our paper with two observations. The first is that sets of highly-parallel utterances are plausibly analyzed as providing partial answers to a common QUESTION-UNDER-DISCUSSION (Roberts 1998, Büring 2003). The utterances in (1a)-(1b), for instance, are naturally seen as each providing an answer to the (explicit or implicit) question in (1a):

(1)   (What does Mary like?)
      a.   Mary likes haggis, and
      b.   She likes scrapple.

When implicit, this question must be inferred based on the denotations of the 'answers', their intonational properties, and the context. Crucial to this is QUESTION-ANSWER CON-GRUENCE, the fact that the meaning of each answer must be included in the set of alternatives representing the question (see references above).

      The second (and more novel) observation is that utterances containing certain binding configurations lead to what we call DISJOINTNESS PRESUPPOSITIONS. Consider (2):

(2)   a.   Who$_1$ thinks that John loves his$_1$ wife?
      b.   # John.

Informants report that as an answer to (2a), (2b) is strange. Many report the intuition that the respondant is being snarky, as if she should have known that John was not among the intended answers.[1] This intuition contrasts with example (3a), for which the answer (3b) is considerably more natural.

(3)   a.   Who$_1$ thinks that he$_1$ loves John's wife?
      b.   John.

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[1]Of course, (2) is a perfectly well-formed Q/A sequence if the question is read as 'Who thinks that John loves John's wife', but this is not the reading of interest here (as indicated by the indexing in (2a)).

To draw the intuition out a little further, consider (4), which — again on the reading indicated — is judged to be true iff I hope to have John at my apartment and someone else hopes to have him at their apartment (perhaps John is a celebrity, in town for just a day):

(4)   Not [only I$_F$]$_1$ am hoping that John will spend the day at my$_1$ apartment.

Clearly, it is not sufficient for the truth of (4) if I hope to have John over, John is hoping to spend the day at his own apartment, and no one else has any hopes about John visiting them. John, in short, is not among the possible alternatives to *I*.

The pertinent conclusion, it seems to us, is that in both (2) and (4) the domains of *who* (possible answers to the question) and *only* (alternatives to the speaker) are presupposed to exclude John. We furthermore submit that this presupposition is triggered by the fact that a DP referring to John c-commands a pronoun bound by *who/only I*: *his/my* carry a presupposition of disjointness with John.

Ultimately we would want such disjointness presuppositions to be a natural side-effect of the mechanism for deriving utterance interpretations. The only system that, to our knowledge, does something like that is the one described in Schlenker (2005), which captures many of the same cases we discuss (albeit with a very different mechanism). For current purposes, however, we will simply state the following generalization:

Be Bound or Be Disjoint! (BBBD!): If a pronoun p is free in the c-command domain of a (non-Wh) DP α, p bears a presupposition of disjointness with α (unless α itself binds p)

Under BBBD!, the meaning of example (2a), repeated below as (5a), would be represented as in (5b), which is in turn glossed as (5c).

(5)   a.   Who$_1$ thinks John loves his$_1$ wife?
        b. $\lambda p.\exists x[person(x) \wedge p = thinks(x, loves(John, wife(x))) \wedge \underline{x \not\circ John}]$
        c.   the set of propositions 'x thinks that John loves x's wife' where x is a person other than John

The underlined part of (5b) is the relevant presupposition, to be read as 'x is disjoint with John'. This excludes the proposition that John thinks that he (himself) loves his (own) wife from the set of propositions denoted by (5a).

Similarly, the matrix VP in (4) is translated as (6a); combined with *not only I*, this yields (6b), which correctly excludes John as the relevant alternative x:

(6)   a. $\lambda x.hope(x, SpendDayAt(apartment(x))(John)) \wedge x \not\circ John$
        b. $\exists x[x \neq spkr \wedge hope(x, SpendDayAt(apartment(x))(John)) \wedge \underline{x \not\circ John}]$

In the remainder of the paper, we show how these two observations combined explain a variety of so-called MISSING READINGS phenomena, as witnessed in VP-ellipsis, deaccenting, *only*, and related constructions.

2.   Dahl Effects

2.1   The Phenomenon

Let us start by considering VP-ellipsis, as in (7):

(7)   John loves his mother, and Bill does too.

Following standard terminology, we will refer to the clause containing the site of the elided VP as the TARGET clause, and the clause that contains the antecedent as the SOURCE clause. As is well known, a bound pronoun in the source can give rise to ambiguities in the target; the target of example (8), for instance, can mean that Bill loves John's mother (the STRICT reading) or that Bill loves his own mother (the SLOPPY reading).

(8)   John$_j$ loves his$_j$ mother, and Bill$_b$ does too. [loves his$_{j/b}$ mother]

Missing readings puzzles, now a well-studied phenomenon in ellipsis, were first discussed by Dahl (1974) with respect to example (9).

(9)   John thinks he loves his wife, and Bill does too.

Assuming that both pronouns are bound in the source clause, a naïve theory of strict and sloppy interpretations — in which each pronoun can be interpreted strictly or sloppily — predicts the four readings shown in (10a)–(10d). As Dahl noted, however, it only has three, missing the reading shown in (10d).

(10)   a.   Bill thinks John loves John's wife.   (all-strict: BJJ)
                  $\lambda x.thinks(x, loves(John, wife(John)))$

          b.   Bill thinks Bill loves Bill's wife.   (all-sloppy: BBB)
                  $\lambda x.thinks(x, loves(x, wife(x)))$

          c.   Bill thinks Bill loves John's wife.   (mixed sloppy–strict: BBJ)
                  $\lambda x.thinks(x, loves(x, wife(John)))$

          d.   # Bill thinks John loves Bill's wife.   (# mixed strict–sloppy: BJB)
                  $\lambda x.thinks(x, loves(John, wife(x)))$

Unlike the meanings shown with (10a)–(10c), the one shown with (10d) is not available as a possible interpretation of the missing VP. This is despite the fact that it, like (10a)–(10c), generates the meaning of the source clause when applied to the source subject's referent, John (which we take to be the most obvious necessary, though clearly not sufficient, condition on VP ellipsis resolution).

2.2   Binding and BBBD!

In the ensuing discussion, we will assume without loss of generality the system for semantic binding of Büring (2005). The general rule for binding is shown in (11), which is illustrated in the derivation shown in (12).

(11) $[\![\beta_i X]\!]^g = \lambda x.[\![X]\!]^{g[i \to x]}(x)$

(12)   a.   John β_1 loves his$_1$ mother.
       b.   John $\in [\![\beta_1$ loves his$_1$ mother $]\!]^g$
       c.   John $\in \lambda x.[\![$ loves his$_1$ mother $]\!]^{g[1 \to x]}(x)$
       d.   John $\in \lambda x.x$ loves $g[1 \to x](1)$'s mother
       e.   John loves John's mother.

It should be noted that the binding in (12) is forced upon us (for the intended interpretation, that is) by BBBD! from above. To see why, consider the pertinent structure in which *his* is a free pronoun:

(13)   a.   John loves his$_i$ mother.
       b. $love(John, motherof(x)) \wedge \underline{x \not\Leftrightarrow \text{John}}$

Since *his* is c-commanded, but not bound, by *John*, it introduces a presupposition of disjointness with John, making coreference between *his* and *John* impossible. Generally, by BBBD!, the only anaphoric dependency possible between a pronoun and a DP that c-commands it is binding, not coreference.[2]

     This effect carries over to more complex dependency patterns such as the source in (9): Neither *he* nor *his* can be coreferent with *John*, since — not being bound — they will introduce a disjointness presupposition with John. This is not all though; *he* and *his* cannot be CO-BOUND by *John* either. Consider (14a):

(14)   a.   * John β_1 thinks he$_1$ loves his$_1$ wife
       b.   John $\in \lambda x.x$ thinks x loves x's wife $\wedge \underline{x \not\Leftrightarrow x}$

Here, *his* is not bound by *he*, and therefore introduces a disjointness presupposition with *he*. The result is an uninterpretable structure, (14b). The only possible representation for the source in (9) is therefore (15):

(15)   John β_1 thinks he$_1$ β_2 loves his$_2$ wife

Example (15) displays what we will call TRANSITIVE BINDING.[3] No disjointness presuppositions are introduced (*he* is bound by *John*, hence no presupposition; *his* is bound by *he*, and no longer free in the c-command domain of *John*, so no presupposition either).

     BBBD! will force transitive (or 'minimal') binding in any structure of this shape, and generally, binding wherever possible. This result has been argued to be desirable independently (Rule H and Have Local Binding! in Fox (2000) and Büring (2005) respectively).

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[2] Note that *his$_1$* in (12a) does not introduce a disjointness presupposition with John, since *John* binds *his$_1$*. In fact, in the representations assumed here, *his$_1$* is not even free in the c-command domain of *John*, since it is bound by β_1. This is generally the case for any bound pronoun and the DP that binds it, which is why the 'unless α binds p' part in the definition of BBBD! above is in parentheses.

[3] The choice of index 2 is irrelevant; we could have indexed everything 1 with the same semantic result, but we will avoid such 're-use' of indices for the sake of clarity.

It should be noted, too, that all of the readings in (10), including the missing (10d), have well-formed representations given our assumptions so far (we use superscripts to indicate free pronouns with a particular reading; this is just for expository convenience):

(16) a. Bill thinks he^J β_1 loves his$_1$ wife   (all-strict: BJJ)
         b. Bill β_1 thinks he$_1$ β_2 loves his$_2$ wife   (all-sloppy: BBB)
         c. Bill β_1 thinks he$_1$ loves his^J wife   (mixed sloppy–strict: BBJ)
         d. Bill β_1 thinks he^J loves his$_1$ wife   (# mixed strict–sloppy: BJB)

Example (16d) does introduce a presupposition — that *his* $\not\approx$ *he^J* — but this is unproblematic given that *his* is bound by *Bill*. So Dahl's puzzle remains as yet unexplained.

In the next section, we will show how the puzzle can be solved using the first observation we made at the beginning if the paper.

2.3   The QUD Analysis Applied to Dahl's Puzzle

We observed in the introduction that sets of clauses bound by parallelism are plausibly analyzed as providing partial answers to a (generally inferred) QUD. Because the source and target clauses in the VPE examples we have been considering are bound by parallelism, we would therefore expect our observation to apply to them, possibly constraining their interpretation. More concretely, question-answer congruence predicts that a source-target pair will only be felicitous under a particular interpretation if a suitable QUD can be inferred to which the source and target each provide partial answers.

We claim that this constraint, combined with the disjointness presuppositions created by BBBD!, explains the Dahl puzzle. We illustrate by stepping through the different readings for example (9). Take the all-strict reading (10a): John thinks John loves John's wife, and Bill thinks John loves John's wife. We are now looking for one question that has both of these propositions as answers. That question is 'Who thinks that John loves his (John's) wife?', which is a perfectly fine question.

More formally, question and answers are represented as in (17):

(17) (Who thinks that John β_1 loves his$_1$ wife?)
         a. John β_2 thinks that he$_2$ β_3 loves his$_3$ wife, and
         b. Bill does [think that John β_4 loves his$_4$ wife] too.

Because *John thinks that John loves John's wife* (17a) and *Bill thinks that John loves John's wife* (17b) are both in the set denoted by *Who thinks that John loves John's wife*, this question can be accommodated as a QUD to generate the all-strict interpretation of (9).

Example (18) shows the QUD that licenses the all-sloppy reading in (10b):

(18) (Who β_1 thinks that he$_1$ β_2 loves his$_2$ wife?)
         a. John β_3 thinks that he$_3$ β_4 loves his$_4$ wife, and
         b. Bill does [β_5 think that he$_5$ β_6 loves his$_6$ wife] too.

Again, the question-answer congruence condition is met. The same is true for (10c): (19) shows the QUD that licenses the acceptable mixed reading:

(19)   (Who β_1 thinks that he$_1$ loves John's wife?)

     a.   John β_2 thinks that he$_2$ β_3 loves his$_3$ wife, and
     b.   Bill does [β_4 think that he$_4$ loves John's wife] too.

Something goes wrong, however, when it comes to the QUD that would be needed to license the unattested mixed reading in (10d). The two 'answers' — that John thinks John loves John's wife, and that Bill thinks John loves Bill's wife — point to the question 'Who thinks that John loves his wife?' (with *his* bound by *who*):

(20)   (Who β_1 thinks that John loves his$_1$ wife? (and his$_1$ $\not\approx$ John))

     a.   # John β_2 thinks that he$_2$ β_3 loves his$_3$ wife, and
     b.   Bill does [β_4 think that John loves his$_4$ wife] too.

But by BBBD!, this QUD carries the disjointness presupposition that *his* is not coreferential with John. Whereas the question itself is perfectly felicitous, the proposition *John thinks that John loves John's wife* is not in the answer set it denotes. As such, (20a) does not provide an answer to this question, and the passage is infelicitous under this reading.

     To sum, the two observations we made in the introduction combine to explain the Dahl puzzle. In the next section we will compare our approach to that of Fox (2000), arguing that ours is both conceptually and empirically preferable.

3.   The Standard Account, and Its Limitations

3.1   Locality of Binding and NP Parallelism

To account for the missing readings facts, Fox (2000) proposes Rule H, which requires locality of binding (see also Kehler 1993 for a similar idea):

(21)   Rule H:
     A pronoun, γ, can be bound by an antecedent, α, only if there is no closer antecedent, ϕ, such that it is possible to bind γ to ϕ and *get the same semantic interpretation*. (p. 115)

Rule H has the by now familiar effect of forcing transitive binding in a sentence like the source of (9), which offers two otherwise synonymous possible binding configurations:

(22)   a.   John β_1 thinks he$_1$ β_2 loves his$_2$ wife.
     b.   * John β_1 thinks he$_1$ loves his$_1$ wife.

Because both options result in the same interpretation, Rule H dictates that the existence of (22a) renders (22b) ungrammatical.[4] It is worth noting that, unlike BBBD!, Rule H

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[4]Büring (2005) presents a slight generalization of Rule H, called Have Local Binding! (or HLB!). Since Büring's HLB! achieves the same effect as Fox's in all examples considered here, we will only refer to

is TRANSDERIVATIONAL, in that the grammar has to 'know' about the possibility of the binding configuration in (22a) in ruling out the configuration in (22b).

Rule H is not enough in itself to capture the missing readings data. Fox therefore introduces an additional constraint on parallel dependencies:

(23)   *NP Parallelism* (Fox 2000)
       NPs in the antecedent and elided VPs must either

       a.   have the same referential value (Referential Parallelism) or
       b.   be linked by identical dependencies (Structural Parallelism)

Clause (23a) allows for pronouns to receive a strict interpretation, and (23b) allows for sloppy interpretations. As Fox notes, this constraint does not follow independently from any other grammatical principle, and hence it needs to be stipulated as an independent one.

With these constraints in hand, the Dahl facts can be captured:

(24)   John β_1 thinks he$_1$ β_2 loves his$_2$ wife.

       a.   Bill thinks he$_j$ loves his^J wife.   (BJJ)
       b.   Bill β_1 thinks he$_1$ β_2 loves his$_2$ wife.   (BBB)
       c.   Bill β_1 thinks he$_1$ loves his^J wife.   (BBJ)
       d.   Bill thinks he^J β_1 loves his$_1$ wife.   (BJJ again)
       e.   # Bill β_1 thinks he^J loves his$_1$ wife.   (BJB)

As before, there are four options with respect to pronoun interpretations: Each of the two pronouns can be interpreted following (23a) or (23b). The three available readings, shown in (24a)–(24c), are again predicted to be possible. Case (24d), however, in which we interpret *he* using (23a) and *his* using (23b), does not result in the missing interpretation. Instead, because the second pronoun is bound to the first in the source, binding it in parallel in the target causes it to receive the 'strict' interpretation, and hence (24d) derives the same all-strict reading as (24a). There is thus no way to recover the missing reading in (24e); doing so would require that the second pronoun be bound directly to the matrix subject in the source, which was the configuration specifically blocked by Rule H.

We will henceforth refer to the combination of Rule H and the NP Parallelism constraint in (23) as the STANDARD ACCOUNT. Both this account and ours capture the facts regarding (24). However, for a variety of reasons we think that the QUD/BBBD! based account is preferable; one such reason is that it captures a number of cases not obviously within the reach of the Standard Account.

3.2   Deaccenting

The missing readings phenomenon is not specific to VP-ellipsis. A variety of (arguably) non-elliptical phenomena show the same pattern of missing readings, including, for example, *do so*, *do it/that*, anaphoric deaccenting, and *only*. For instance, consider the case of anaphoric deaccenting shown in (25):

Rule H in our discussion. All our comments and criticisms apply to both rules, however.

(25)   John thinks that he loves his wife, and BILL$_F$ thinks that he loves his wife TOO.

Assuming the target VP is fully deaccented, the potential fourth reading is still missing: The second clause in (25) cannot mean that *Bill thinks that John loves Bill's wife*. It should be clear that the QUD analysis accounts for these facts in the same way as the cases involving ellipsis, assuming that the sentence containing the deaccented VP and the one serving as the source are parallel answers to a common QUD.

      Rooth (1992) and Tancredi (1992) convincingly argue that a proper subset of the constraints on ellipsis also constrain deaccenting, in particular those on focus structure, or Givenness. Our concern is whether the Standard Accounts's NP Parallelism constraint is plausibly seen as one of those. Whereas it might seem reasonable to see NP Parallelism as somehow falling out of an interpretation mechanism for reconstructing the meanings of elided VPs (the analysis in Kehler (1993) does exactly this, for instance), such reasoning does not apply to overt VPs; there is no obvious reason why bound pronouns that happen to occur within a deaccented VP should be subject to an additional parallelism constraint beyond those constraints that govern deaccentability on all constituents. As such, we find that our analysis captures both sets of facts in a more general and well-motivated manner.

3.3   *Only*

We have previously argued that the missing readings phenomenon has parallels in a 'missing answer' phenomenon in questions, and a 'missing alternatives' phenomenon in sentences with *only*. Consider again an example involving *only*-NP, such as (26):

(26)   Only John thinks that he loves his wife.

    a.   No other X thinks that John loves John's wife.
    b.   No other X thinks that X loves X's wife.
    c.   No other X thinks that X loves John's wife.
    d.   # No other X thinks that John loves X's wife.

As in the other constructions discussed so far, (26) is missing reading (26d). We have hinted at how this follows from BBBD! The representation of the missing reading is (27):

(27)   Only John β_1 thinks that he^J loves his$_1$ wife (and *his$_1$ $\not\Leftrightarrow$ he^J*)

Crucially, *he* must not be bound by *only John*, which would yield (26b), nor bind *his*, which would yield (26a) or, again, (26b). As a result we get the presupposition that *his* does not refer to John; and that in turn makes it impossible for the entire predicate β_1 *thinks that he^J loves his$_1$ wife* to be applied to *only John*, because that would require that it hold of John, in violation of the presupposition.[5]

      Notably, the Standard Account fails here: Each binding relation in (26) results in a distinct interpretation, and so all are allowed by Rule H. Further, NP Parallelism is ill-

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[5]We do not assume *he* to introduce any presupposition regarding *only John*. *Only John* is not referential, so no literal disjointness of reference could be required here. We hope to provide a more general discussion of disjoint reference effects with quantificational NPs in future extensions of this proposal.

suited to capture such examples; unless one posits an analysis of *only* that involves an ellipsis operation, it is not clear what parallelism would be computed with respect to.

3.4 Questions

A parallel argument can be made for the question case. As argued in section 1, the question *Who$_i$ thinks that John loves his wife$_i$* excludes John from the set of possible answers, which follows from the disjointness (BBBD!) presupposition triggered by *his*:

(28) Who β_1 thinks that John loves his$_1$ wife? (and $his_1 \not\Leftrightarrow$ John)

Informally, the problem is that *his* is bound by *who*, 'crossing' the closer DP *John*. But Rule H cannot rule out this configuration (because binding *his* to *John*, and/or replacing *John* with a pronoun bound by *who* would change the meaning), nor should it — after all, the question is perfectly well-formed, it only has a particular presupposition.[6] So once again, the analysis developed here seems to be more general than the Standard Analysis.

3.5 Reverse Dahl Effects

As discussed in Fox (2000), the Standard Account correctly predicts the space of readings for examples like (29):

(29) Sue claims that Bob is fond of her apartment, and HE does too. (claim that he is fond of her/#his apartment)

As indicated, the target clause can mean that John claimed that he is fond of *Sue's* apartment, but not that he claimed that he is fond of *his own* apartment. Such examples, which we term REVERSE DAHL cases, are captured by the Standard Account since NP Parallelism fails to hold between the source and the sloppy *his$_2$* in (30b):

(30) Sue β_1 claims that Bob is fond of her$_1$ apartment, and Bob β_1 does
    a.   claim that he$_1$ is fond of her^S apartment
    b.   # claim that he$_1$ β_2 is fond of his$_2$ apartment

Our analysis also makes this prediction. Example (31) shows the QUD that licenses the acceptable reading (30a):

(31) (Who claims that Bob is fond of Sue's apartment? (NO PRESUP))
    a.   Sue β_1 claims that Bob is fond of her$_1$ apartment, and
    b.   Bob does [β_2 claim that he$_2$ is fond of Sue's apartment] too.

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[6]Again, NP Parallelism will not be of help, since no ellipsis is involved. We could potentially derive the ill-formedness of the answer *John!*, assuming that it is derived by ellipsis from a full answer like *John is who thinks John/he^J loves his wife* using Rule H and NP Parallelism. However, we submit (though for reasons of space cannot demonstrate here) that this misses the point: The problem is not that the actual answer sentence is structurally deficient, but that the *question itself* excludes that answer.

And as desired, the unavailable reading (30b) fails on the QUD analysis:

(32)   (Who β_1 claims that Bob is fond of her$_1$ apartment? (and *her$_1$* $\neq$Bob))

    a.   Sue β_1 claims that Bob is fond of her$_1$ apartment, and

    b.   # Bob does [β_2 claim that he$_2$ β_3 is fond of his$_3$ apartment] too.

As was the case when ruling out the missing reading for the regular Dahl case in (20), the QUD that would otherwise be required to license the infelicitous reverse Dahl reading comes with a disjointness presupposition. This presupposition means that (32b) is not a felicitous answer to the question, and so the reading is ruled out. Note that whereas it was the source clause that was an infelicitous answer to the QUD in the orginal Dahl cases like (20), it is the target clause that is infelicitous for the reverse Dahl case in (32).

      Cases in which the VP is only deaccented rather than elided behave, and are explained, analogously. More interestingly, we can construct reverse Dahl effects with *only* as well. Consider (33):

(33)   a.   Only Sue claimed that Bob is fond of her$_1$ apartment.

     b.   Bob remained quiet.

Sentence (33a) has two readings: that Sue is the only x who claimed that Bob is fond of Sue's apartment, which is licensed by the QUD in (34a); and that Sue is the only x who claimed that Bob is fond of x's apartment, which is licensed by the QUD in (34b) (we use x in lieu of a gender-neutral possessive here):

(34)   a.   Who claimed that Bob is fond of Sue's apartment? (NO PRESUP)

     b.   Who β_1 claimed that Bob is fond of x_1's apartment? (and x_1 $\neq$ Bob)

The sentence is disambiguated to the first of these by (33b), however. This is predicted by the present account. Why? Example (33b) strongly suggests that Bob is one of, or even the, relevant alternative to Sue in the domain of *only*. Hence we interpret (33a) to entail that Bob didn't claim that he is fond of Sue's apartment, which is an answer to the QUD in (34a). Could we also interpret (33a) as entailing that Bob didn't claim to be fond of *his* apartment? No, because that would address the QUD (34b), which carries a presupposition that the apartment owner is not Bob. So the only QUD under which it is felicitous to have Bob be a focus alternative to *Sue* in (33a) is (34a).

      We would like to point out two facts about this example. First, no ellipsis is involved here, so as with the first set of cases involving *only*, it is unlikely that the Standard Account would be applicable. Second, and more interestingly, unlike the original *only* case in (26) above, the presupposition introduced by BBBD! doesn't make the actual sentence containing *only* in (33a), on either construal, contradictory; it merely adds a presupposition to it. So as with the question cases, blocking a particular coindexing/binding would be insufficient. Put differently, even if one could somehow come up with an ellipsis analysis, the fact that either reading is possible, but one of them restricts the set of focus alternatives to *Sue*, is in principle beyond the reach of analyses that completely block coindexing/binding patterns, such as the Standard Account.

4.   Partial Semantic Binding and E-type Pronouns

In this last section, we discuss a class of examples involving partial semantic binding that to our knowledge has not been addressed before. Consider (35):

(35)   John told Mary that they should love his children, and Bill did too.

According to most informants, judgments about possible readings here parallel those for the regular Dahl cases. That is, the three readings in (36a)-(36c) are acceptable, whereas the reading shown in (36d) is missing:

(36)   a.   Bill told Mary that John and Mary should love <u>John's</u> children.
        b.   Bill told Mary that <u>Bill and Mary</u> should love <u>Bill's</u> children.
        c.   Bill told Mary that <u>Bill and Mary</u> should love <u>John's</u> children.
        d.   # Bill told Mary that <u>John and Mary</u> should love <u>Bill's</u> children.

Our analysis (as well as any that incorporates a 'binding over coreference' preference, such as the Standard Account) represents the source clause of (35) as shown in (37). Note that the pronoun *they* here is indexed 1,2, which means it denotes, for any assignment g, the smallest plurality containing $g(1)$ and $g(2)$, which in (37) means the plurality consisting of John and Mary (cf. chapter 9 of Büring 2005, Rullman 2004, for more on partial binding).

(37)   John β_1 told Mary β_2 that they$_{1,2}$ should love his$_1$ children.

The unattested reading (36d) for the target is available under the Standard Account as in (38): *they*$_4^J$ has the same referential value as *they*$_{1,2}$ in the source (37) — John and Mary — and *his$_3$* is bound in parallel to *his$_1$* in (37):[7]

(38)   Bill β_3 told Mary β_4 that they$_4^J$ should love his$_3$ children.

Our analysis seems to fare better, since the QUD needed to license (37) and (38) as answers carries a disjointness presupposition that rules out (37):

(39)   (Who β_1 told Mary β_2 that they$_2^J$ should love his$_1$ children?
                                       (and *his$_1$* $\not\ni$ <u>John and Mary</u>))
        a.   # John β_1 told Mary β_2 that they$_{1+2}$ should love his$_1$ children.
        b.   Bill β_1 told Mary β_2 that they$_2^J$ should love his$_1$ children.

On the other hand, the QUDs that license the available readings (36a) and (36c) — *Who β_1 told Mary β_2 that they$_2^J$ should love John's children*, and *Who β_1 told Mary β_2 that they$_{1,2}$ should love John's children* — are fine and without presuppositions.

      Unfortunately, however, the QUD needed to license the all-sloppy reading (36b) introduces a presupposition incompatible with (37) (as does, in fact, (37) itself, as the reader is invited to verify):

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[7] *They*$_4^J$ is of course just an expository shorthand for *they*$_{i,4}$, where i is an index such that $g(i)$=John.

(40)   (Who β_1 told Mary β_2 that they$_{1,2}$ should love his$_1$ children?

<div align="right">(and his₁ $\not\approx$ $g(1)$ and Mary))</div>

a.   # John β_1 told Mary β_2 that they$_{1,2}$ should love his$_1$ children.
b.   # Bill β_1 told Mary β_2 that they$_{1,2}$ should love his$_1$ children.

So the disjointness presupposition bars not just reading (36d), but reading (36b) too, contrary to intuitions.

To rule (36b) back in, we propose an alternate analysis involving a variant of e-type pronouns. We illustrate the idea for the source clause in (35) first, which we now render as in (41a):

(41)   a.   John β_1 told Mary β_2 that they$_{1+2}$ β_3 should love [THE $f(x_3)$'s] children.
b.   John β_1 told Mary β_2 that they$_{1,2}$ β_3 should love [the male among them$_3$]'s children.

His here is analyzed as an e-type pronoun, consisting of THE, the regular definite article, f, a function from individuals to sets of individuals, which needs to be provided contextually, and a bound variable x_3 (see e.g. Elbourne 2000, and references therein). For this particular example, we want f to be interpreted as that function which maps any plurality to the set of male atoms in it. This is paraphrased in (41b).

The analysis for the QUD (36b) and its answers is as shown in (42), in which no disjointness presuppositions are involved:

(42)   a.   (Who β_1 told Mary β_2 that they$_{1,2}$ β_3 should love [the male among them$_3$]'s children?)
b.   John β_1 told Mary β_2 that they$_{1,2}$ β_3 should love [the male among them$_3$]'s children.
c.   Bill β_1 told Mary β_2 that they$_{1,2}$ β_3 should love [the male among them$_3$]'s children.

This circumvents the problem, but is there any independent evidence that this kind of e-type pronoun is available in contexts like these? We think that there is; consider (43a)–(43c):

(43)   a.   (Virtually all couples agreed that the woman is no less representative of the household than the man.) Yet, while the Joneses have **her** name on the lease, none of the other couples do.
b.   (Most people feel strongly about the importance of the rabbi at a wedding.) Indeed, the Snyders think that they should put **his** name on their invitation, and so do the Snodgrasses.
c.   According to John and his wife, only they were ok with **her** former husband attending their wedding.

Sentence (43a) has a reading in which none of the other couples have the name of *the woman in that couple* on the lease. Similarly, sentence (43b) has a reading in which the Snodgrasses think that they should put *their own* rabbi's name on their invitation. Finally, sentence (43c) can mean that no other couple was okay with *the woman in that couple*'s

former husband attending their wedding. All of these sloppy readings require an e-type interpretation of the kind assumed in our earlier examples for the relevant pronoun.

The QUD analysis therefore captures the facts for examples that involve partial semantic binding and e-type pronouns. Earlier we criticized the Standard Account for not ruling out the unavailable reading (36b). Is this still valid, given the availability of e-type pronouns? As it stands, Rule H still does not rule out the pertinent structure. The pronoun *his* in (38) could not be bound to *they* without changing the interpretation. It could, however, be replaced by an appropriate e-type pronoun bound by *they*, as we did in (41), and yield the same interpretation. So one could amend Rule H so as to consider not only alternative binding patterns, but also alternative structures in which regular pronouns are compared to e-type pronouns with more local binders. While we do not know if this would yield the correct results generally, it would presumably rule out (36b) in pretty much the same way BBBD! does.

Clearly, however, such a reformulation of Rule H would take transderivationality to a new level, considerably enlarging the set of structures to be compared. Perhaps this will not bother friends of transderivational constraints much more than the original Rule H did, but it is not welcome news to those already skeptical of them. Suffice it to say that BBBD! extends to the plural cases naturally and without the need to invoke any transderivational considerations at all.

5.   Conclusions

To conclude, we have described an analysis that captures missing readings facts – both Dahl and Reverse Dahl – across a variety of constructions, including VP-ellipsis, deaccenting, questions and *only*-NPs. Previous analyses have only considered the ellipsis cases and are, it seems, not easily extended to questions and *only*. Furthermore, unlike previous analyses, the analysis presented derives the facts without positing a transderivational locality of binding constraint, nor an overlaid parallelism constraint. Finally, we also discussed and analyzed the facts regarding a set of cases not noted previously that involve dependencies between plural and singular pronouns.

The analysis advocated here leaves open many remaining questions, which are the subject of continuing work. Perhaps most obviously, our analysis requires that hearers infer QUDs that contain enough structure so as to encode binding conditions. Whereas there is perhaps no reason to expect that implicit questions would work any differently than explicit ones (which we would expect to contain binding relations), a further examination of the source of disjointness presuppositions is in order.

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