Pronoun Movement in Dream Reports

Orin Percus and Uli Sauerland

Università Vita-Salute San Raffaele/ Tübingen Variables Project (Percus)
University of Massachusetts, Amherst / Tübingen Variables Project (Sauerland)
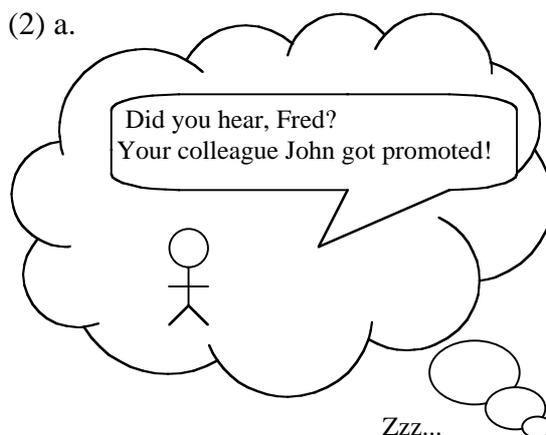
1.   Kinds of dreams

When you dream, you can dream that you are someone else.   John does this. John is very jealous of his colleague Fred, who seems to have all the good things in life: money, a beautiful house, a charming wife, prize tulips, everything. Sometimes he falls asleep and dreams he *is* his colleague Fred. Perhaps it is a subconscious attempt to get his hands on those things. One kind of dream that John has had is the kind of dream we depicted in cartoon-style in (1a).   This is a kind of dream in which the dream-self got promoted, and so we could characterize it as in (1b).

Interestingly, (as we know from Lakoff 1972,) when you dream that you are someone else, *you* can appear in the dream as a third person. John has had this kind of dream too. One such dream looked as in (2a). This is *not* a dream in which the dream-self got promoted, and we could characterize it as in (2b).

(1) a.

Did you hear, Fred?
You got promoted!

Zzz...

(2) a.

Did you hear, Fred?
Your colleague John got promoted!

Zzz...

b. In John's dream, *the dream-self* got promoted.   b. In John's dream, *John* got promoted.

Note that these two very different kinds of scenarios can both be described by the English sentence in (3). We might thus say that (3) has one reading that we could paraphrase as in (1b) and one reading that we could paraphrase as in (2b).

(3)   John dreamed that he got promoted.

In this paper, we are going to talk about the kinds of scenarios that sentences of the general form in (4a) can describe, and paraphrases of the kind we have given -- paraphrases of the kind in (4b) -- will be useful. Here is some shorthand so that we can talk about these paraphrases easily ((5)). We will say that a dream-sentence of the form *X dreams that ...pronoun...* admits a reading in which the pronoun has *the dream-self* as its "correlate" if we could express this reading with a paraphrase in which *the dream-self* substitutes for the pronoun. And we will say that it admits a reading in which the pronoun has *X* as its "correlate" if we could express this reading with a paraphrase in which *X* substitutes for the pronoun. What we have seen here is that the sentence in (3) admits both a reading in which *the dream-self* is the correlate of *he*, and a reading in which *John* is the correlate of *he*.

(4)   a. X dreamed that ...pronoun^1...pronoun^2...pronoun^n...

        b. In X's dream, ...DP^3...DP^4...DP^m...

(5)   <u>Shorthand</u>. A dream-sentence S1 of the form in (4a) has a reading in which DP^j is the <u>correlate</u> of pronoun^i if we can paraphrase this reading with a sentence S2 of the form in (4b) where DP^j occupies the place that pronoun^i occupies in S1.

2.   Kinds of ways in which sentences talk about dreams

The dream-sentence we just considered contained a single pronoun, and allowed both a reading in which *the dream-self* is the pronoun's correlate and a reading in which the subject of *dream* is the pronoun's correlate. On the face of it, one might expect dream-sentences with more than one pronoun to behave analogously, and to allow a multiplicity of readings -- readings on which any pronoun can have either *the dream-self* or the "dream-subject" as its correlate. But interestingly, this is not what we find. There seem to be further restrictions on how dream-sentences are interpreted. These restrictions will be the focus of our attention in this paper.

To see these restrictions at work, consider the sentence in (6). It seems that we find the following pattern. We can take the sentence in (6) to express that, in the speaker's dream, the dream-self was marrying the dream-self's grand-daughter ((7a)). We can take it to express that, in the speaker's dream, the dream-self was marrying *the speaker's* grand-daughter ((7b)). But we can not take it to express that, in the speaker's dream, *the speaker* was marrying the *dream-self's* grand-daughter ((7c)). That is, there

is a reading that is excluded: the one on which the "dream-subject" is the correlate of the first pronoun (*I*), and *the dream-self* is the correlate of the second pronoun (*my*).

(6)   I dreamed that I was marrying my grand-daughter.

(7)   What (6) can express:

      a. In my dream, the dream-self marries the dream-self's grand-daughter.

      b. In my dream, the dream-self marries my grand-daughter.

      c. # In my dream, I marry the dream-self's grand-daughter.

      d. In my dream, I marry my grand-daughter.

(8)   Summary: # the "dream-subject" (*I*) is the correlate of *I*,
                        the dream-self is the correlate of *my*

To see that the sentence *can* express (7b) – that, in the speaker's dream, the *dream-self* was marrying *the speaker's* grand-daughter -- imagine Scenario 1.

> Scenario 1: John, in his old age, longs for his youth. It begins to affect his dreams. Often, when he has the opportunity to meet a young man in his prime, he dreams the following night that he *is* that person, and imagines the events in that person's life from that person's point of view.   It happened the other day, after he received a visit from his recently married grand-daughter and her husband Bill. The couple had spoken a lot about their recent wedding, which John had not managed to attend. That night John dreamed that he was Bill, and imagined what the wedding must have been like from Bill's perspective.

In the dream of John's that Scenario 1 describes, the *dream-self* is marrying the grand-daughter of *John* -- someone who isn't the dream-self. Now suppose John told us afterwards our sentence in (6), *I dreamed that I was marrying my grand-daughter*.[1] Knowing the facts, we would say the sentence was true. This intuition reflects that the sentence can express (7b).

To see that the sentence *cannot* express (7c) – that, in the speaker's dream, *the speaker* was marrying the *dream-self's* grand-daughter – imagine Scenario 2.

> Scenario 2: John's wife has recently lost her grandfather Bill, who played an important role in her life. As she tries to come to terms with the loss, she shares with John many old memories of hers, and John too begins to recall moments from his past in which Bill played a part. Soon, one image in particular begins to haunt him, and it is from his own wedding: Bill was visibly upset at the wedding, and John never found out why. Probably to wrestle with this question, one night John dreams that he *is* Bill, and dreams

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[1] In presenting this paper at conferences, whenever we read this sentence, we made an effort to read it with as "neutral" an intonation as possible: roughly speaking, we put an intonational break between *dreamed* and the embedded clause, and we pronounced the embedded clause without a break. The judgments were always immediate.

about what the wedding must have been like from Bill's perspective. He sees the couple approaching the altar...

In the dream of John's that Scenario 2 describes, someone who *isn't* the dream-self – John – is marrying the *dream-self's* grand-daughter. Now suppose John told us afterwards our sentence in (6), *I dreamed that I was marrying my grand-daughter*. Knowing the facts, we would *not* say the sentence was true. This intuition reflects that the sentence *cannot* express (7c). Note by the way that by contrast we *would* judge the minimally different sentence in (9) to be true.

(9)   I dreamed that my grand-daughter was marrying me.

Analogous remarks, by the way, apply to the sentence in (10), *John dreamed that he was marrying his grand-daughter*, which from now on we will use as a reference point. We just used the *I*-sentence up to now because we find that the judgments are a little more immediate. The sentence in (10) has a variety of readings, but it *cannot* express (11c) -- that, in John's dream, *John* was marrying the *dream-self's* grand-daughter. And in this respect there happens to be a contrast with the minimally different sentence in (13).

(10)   John dreamed that he was marrying his grand-daughter.

(11)   What (10) can express:

      a. In John's dream, the dream-self marries the dream-self's grand-daughter

      b. In John's dream, the dream-self marries John's grand-daughter.
          (imagine that John dreams he is his grand-daughter's husband, cf. Scenario 1)

      c. # In John's dream, John marries the dream-self's grand-daughter
          (imagine that John dreams he is his wife's grandfather, cf. Scenario 2)

      d. In John's dream, John marries John's grand-daughter

(12)   Summary: # the "dream-subject" (*John*) is the correlate of *he*,
                          the dream-self is the correlate of *his*

(13)   John dreamed that his grand-daughter was marrying him.

So, apparently, pronouns in dream-sentences do not allow the full range of construals that one might expect. This has not been noticed before, as far as we know, and it also doesn't follow from anyone's theory of how attitude reports are interpreted. So there is something to be explained. What exactly is the generalization about the readings that dream-sentences admit? And what do these restrictions tell us about the way language works? These are the questions we will try to answer now.

3.   A generalization

The generalization (we claim) is this:

(14)   <u>The Oneiric Reference Constraint</u> (ORC)

A sentence of the form

X dreamed that ...pronoun...

allows a reading in which the pronoun has *the dream-self* as its correlate only when the following condition is met: *some* pronoun whose correlate is *the dream-self* on the reading in question must not be asymmetrically c-commanded by any pronoun whose correlate is *X*.

We just saw an example of how this generalization applies. Our sentence (10) (repeated as (15a)) does not allow a reading in which *the dream-self('s)* is the correlate of *his* and the "dream subject" (*John*) is the correlate of *he*, given that *he* c-commands *his*. A second case is in (16). Naturally, to verify this, you will have to invent scenarios similar to those we considered, but (16a) does not allow a reading in which *the dream-self('s)* is the correlate of *my* and the "dream subject" (*I/me*) is the correlate of *me*.   This follows from the ORC given that *me* c-commands *my*.

(15)   a. John dreamed that he was marrying his grand-daughter.
         b. # paraphrase: In John's dream, *John* was marrying *the dream-self's* grand-
                daughter.
         c. # *the dream-self('s)* is the correlate of *his*, the "dream-subject" is the correlate
            of *he*.

(16)   a. I dreamed that Mary was introducing me to my grand-daughter.
         b. # paraphrase: In my dream, Mary introduced *me* to *the dream-self's* grand-
                daughter.
         c. # *the dream-self('s)* is the correlate of *my*, the "dream-subject" is the correlate
            of *me*.

The reference to asymmetric c-command in our statement of the ORC is crucial. This can be seen by comparing our original sentence in (15a) to (17a), where the first pronoun does *not* c-command the second. Here, in contrast to our first example, we admit a reading in which the "dream-subject" is the correlate of the first pronoun and *the dream-self* is the correlate of the second pronoun. This reading renders (17a) capable of describing Scenario 1.

(17)   a. John dreamed that his grand-daughter was marrying him.
         b. paraphrase: In John's dream, *John*'s grand-daughter marries *the dream-self*.

(Cf. Scenario 1)
   c. the "dream-subject" is the correlate of *his*, *the dream-self* is the correlate of *him*.

Likewise crucial is the stipulation that the correlate of the c-commanding pronoun is *X* (what we have been calling the "dream-subject") rather than a term identifying another individual. As we indicate in (15'), when the correlate of the first pronoun in our original sentence is different from the "dream-subject" – and identifies some other salient individual – the correlate of the second pronoun can perfectly well be *the dream-self*.

(15')   b. OK paraphrase[2]: In John's dream, *Fred* marries *the dream-self*'s grand-daughter.
         c. *Fred* is the correlate of *he*, *the dream-self* is the correlate of *his*.

4. Kinds of dreams, and possible worlds

What can we learn from this generalization? We will now argue that it supports a certain idea about how the meanings of dream-sentences are built up out of their constituents. Our argument will rely on a possible worlds analysis of attitudes (Hintikka 1969, Lewis 1979), however, so before turning to our proposal we will briefly introduce this background.

We assume that to describe John's dreams is to describe a range of possible worlds. John situates himself as one of the people in each of these worlds.[3] With this in mind, let us go back to the paraphrases that we used and ask what they mean.

First, what does it mean for John to have a dream in which the dream-self gets promoted? It means that, in each world compatible with what John dreams, *the person John identifies as himself* gets promoted. We have written this in one conventional way in (18b), quantifying over individual-world pairs.

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[2] (i) represents an attempt to bring out this paraphrase:

(i) John: No, no, I dreamed that *he* [pointing to Fred] was marrying my grand-daughter.
   Joan: You see? John dreamed that *he* was marrying his grand-daughter.

(ii) contains an analogous case. Joan's utterance in (ii) can receive a paraphrase on which *Fred* is the correlate of *him* and *the dream-self* is the correlate of *his*. To at least one of us, this paraphrase of Joan's utterance in (ii) comes more naturally than the intended paraphrase of Joan's utterance in (i) – no idea why.

(ii) John: No, no, I dreamed that Mary was introducing *him* [pointing to Fred] to my grand-daughter.
   Joan: You see? John dreamed that Mary was introducing *him* to his grand-daughter.

[3] We will make the simplifying assumption (contra Lewis 1979) that John is never in doubt about which individual it is.

(18) a. In John's dream, the dream-self gets promoted.

 b. Given any pair <y,w>
  where w is a world compatible with John's dream
  and y is the individual in w who John identifies as himself,
 y gets promoted in w.

What about a dream of John's in which *John* gets promoted? We assume that a single individual cannot inhabit two different worlds. In that case, while informally speaking we would say that this is a dream involving one person, John, a more accurate description would be as in (19b) -- where J is a certain individual concept that in each of John's dream worlds yields the individual we intuitively might think of as John. Similarly, a dream of John's in which *the dream-self* marries *John*'s grand-daughter should be explicated as in (20b).

(19) a. In John's dream, John gets promoted.

 b. Given any w
  where w is a world compatible with John's dream,
 J(w) gets promoted in w.

(20) a. In John's dream, the dream-self marries John's grand-daughter.

 b. Given any pair <y,w>
  where w is a world compatible with John's dream
  and y is the individual in w who John identifies as himself,
 y marries J(w)'s grand-daughter in w.

5.   A proposal

Now here is the view that we think the ORC supports. It takes for granted a theory of interpretation basically along the lines of Heim and Kratzer 1998.[4]   A crucial aspect of the view we are proposing is that it involves a special analysis of personal pronouns like *he*.

The main idea is that pronouns like *he* sometimes play the role that relative pronouns have been argued to play (cf. Heim and Kratzer 1998).   That is, behind the form of a simple pronoun lurk two different kinds of objects: one simply functions as a variable, as standardly assumed, but the other is to all intents and purposes like a relative pronoun. It has no interpretation on its own.   It moves. When it does so, it leaves just

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[4] We assume in what follows that the denotation of an LF for a sentence is a function from worlds to truth values – a "proposition."   (We will use the term "property" for a function from individuals to propositions.) To say that an LF describes a situation is to say that, if this situation were to obtain, the LF's denotation – with respect to some assignment – would map the world to 1.

below its target position an element that functions as an abstraction operator, and it leaves in its original position a trace, which functions as a variable. (We will distinguish the special relative-like pronoun with a star[5], as in (21b).)

(21) a. John dreamed that *the avalanche hit him*   cf. (22) a. the man *who the avalanche hit*

b. him* [λ_1 [the avalanche hit t_1]]   b. who [λ_1 [the avalanche hit t_1]]

The other major ingredient of the view[6] is that *dream* has a denotation that selects for a property ((22)). These two ingredients together will have consequences for how the meanings of dream-sentences are built out of their constituents.   One consequence is that sentences like *John dreamed that he got promoted* or *John dreamed that the avalanche hit him* will have LFs that specifically express readings on which *the dream-self* is the correlate of the pronoun. We can derive such LFs by generating the pronoun in the embedded clause as a starred pronoun and moving it -- (23) and (24) show that, when we then combine the embedded clause with the verb *dream,* we will obtain the property of having a kind of dream in which the dream-self plays a role.

(22) $[[\text{dream}]]^g = \lambda P. \lambda x. \lambda w.$ For all $<y,w'>$ in $\text{DREAM}_{x, w}$, $P(y)(w') = 1$.

(DREAM$_{x, w}$ stands for the set of pairs $<y, w'>$ such that w' is a world compatible with x's dream in w, and y is the individual in w' who x, in w, identifies as himself.)

(23)   a. (that) he got promoted

b. he* [λ_1 [t_1 [$_{V'}$ got promoted]]] $\Rightarrow$ $\lambda x. \lambda w.$ x gets promoted in w

c. dream that he got promoted

d. **dream** [he* [λ_1 [t_1 [$_{V'}$ got promoted]]]] $\Rightarrow$ $\lambda x. \lambda w.$ For all $<y,w'>$ in $\text{DREAM}_{x, w}$,
                                                                                                        y gets promoted in w'

(This is the property of having a dream in which the dream-self gets promoted.)

(24)   a. (that) the avalanche hit him

b. him* [λ_1 [the avalanche hit t_1]] $\Rightarrow$ $\lambda x. \lambda w.$ the avalanche hits x in w

c. dream that the avalanche hit him

d. **dream** [him* [λ_1 [the avalanche hit t_1]]] $\Rightarrow$ $\lambda x. \lambda w.$ For all $<y,w'>$ in $\text{DREAM}_{x, w}$,
                                                                                                        the avalanche hits y in w'

(This is the property of having a dream in which the avalanche hits the dream-self.)

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[5] The star is a tribute to Castañeda 1966.

[6] This second ingredient is inherited from Chierchia 1991.

Why do we think the ORC supports this proposal? The reason is this. A salient aspect of the proposal is that, in order for an LF to yield a reading in which *the dream-self* is a pronoun's correlate, it will have to contain movement of a starred pronoun. We naturally expect constraints on movement to limit the kind of LFs we can form by moving a starred pronoun. We thus expect that there should be limits on the kinds of readings that we can obtain where *the dream-self* is a pronoun's correlate.   Well, the ORC describes some limits on the readings we can obtain where *the dream-self* is a pronoun's correlate. We think that the readings the ORC blocks are readings we expect to be blocked once we posit movement of a starred pronoun. Specifically, they are readings we expect to be blocked once we recognize that pronoun movement is subject to a constraint of the sort that follows from the Minimal Link Condition.

In the next section, we will argue this in detail. We will try to show that, once we posit pronoun movement, and recognize that pronoun movement is subject to a movement constraint of the kind we mentioned -- which we will call "superiority" -- we can understand why the ORC exists. [7]

But one thing first.   We have just described certain LFs that will talk about dreams where *the dream-self* is a pronoun's correlate, but we haven't given any indication yet of what kind of LFs could give rise to the other kind of dream, where the subject of *dream* is the pronoun's correlate. We should say something about that.

Below we have detailed some assumptions that are relevant to this question.[8] There are a variety that we could have chosen – we chose these because we felt they could be assimilated most quickly[9] – but they all lead to the same basic upshot. Their basic upshot is this: an LF will yield a reading where the subject of *dream* is the pronoun's correlate when the pronoun is realized as a (normal, unstarred) variable pronoun that remains in situ, and when this variable is bound by a lambda just below the

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[7] It is worth noting a curious prediction of the proposal as stated: *dream* cannot combine directly with a clause that lacks a starred pronoun (since only clauses with starred pronouns denote properties). What happens, then, when *dream* seems to combine with such a clause (say, a clause without any pronoun at all)? Perhaps there is some silent element that attaches to the clause and "type-shifts" it to a property. Interestingly, we think there is evidence for this: the Binding Theory is sensitive to the presence of this silent element. We can't go into the details here, but the argument relies on facts like the following: *John dreamed that he kissed himself* can describe a dream of John's in which the dream-self kissed John; *John dreamed that Mary kissed himself*, however, cannot describe a dream of John's in which Mary kissed John.

[8] These assumptions imply that there are items in LFs that we have ignored until now, like variables over possible worlds. We will continue to omit these items from our diagrams, for readability, but assume throughout that they are there.

[9] For other assumptions that would do just as well, see Percus and Sauerland (to appear). The assumptions there would allow us to maintain that names denote individuals rather than concepts, but at the same time the LFs associated with dream reports would be a little more complicated.

subject of the dream-sentence.[10] You can read the next section for completeness if you like, but this basic upshot is all you have to bear in mind for the rest of the discussion.

5.1.   Some further assumptions

The assumptions we alluded to are these. We will assume that the denotation of a name like *John* is an individual concept – one that, in each of a given person's dream worlds (and in the actual world), will take us to the person in that world that we would identify as "John." We will similarly assume that, when we move a concept DP, the trace will be a variable over concepts (t^c_i), and just below the moved item will be an abstractor over concept variables (λ^c_i). And we will assume that (normal, unstarred) pronouns can be variables over concepts as well as individuals, and accordingly can get bound by an abstractor over concept variables.

Along with this, we will assume – not too controversially -- that syntactic structures contain variables over possible worlds (w_i) and items that function as abstractors over these variables (λw_i). This means that we can form embedded clauses like (23b), where one pronoun stays in situ and combines with a world variable. (23c,d) show what can happen as a result. Suppose this clause combines with *dream* ((23c)), the subject of *dream* moves up to [SPEC, IP], and the lambda the subject leaves binds the pronoun ((23d)). The resulting LF, a property of individual concepts, will hold of the *John*-concept if its bearer has a dream in which *John* plays a role.

(23)   a. (that) he was marrying his grand-daughter

  b. he* λ_3 [λw_1 [$_{VP}$ w_1 t_3 was marrying **[his$_2$ w_1]** grand-daughter]   ]

   ⇨ $[[(23b)]]^g = \lambda x. \lambda w.$ x marries the grand-daughter of g(2)(w) in w

  c. **dream [**   he* λ_3 [λw_1 [$_{VP}$ w_1 t_3 was marrying **[his$_2$ w_1]** grand-daughter]   ]   **]**

   ⇨ $[[(23c)]]^g = \lambda x. \lambda w.$ For all $<y,w'>$ in DREAM $_{x, w}$,
                                 y marries the grand-daughter of g(2)(w') in w'

  (This is the property of having a dream in which the dream-self marries the grand-daughter of the person associated with the g(2) concept.)

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d. λ^c_2 [λw_4 [$_{VP}$ w_4 [t^c_2 w_4]

        dream [he* λ_3 [λw_1 [$_{VP}$ w_1 t_3 was marrying **[his$_2$ w_1]** grand-daughter]]]

     ⇨   [[(23d)]]^g = λk. λw. For all <y,w'> in DREAM $_{k(w), w}$,
                          y marries the grand-daughter of k(w') in w'

     (This "property" will hold, e.g., of John, if he has a dream in which the dream-self marries the grand-daughter of *John*.)

6. How the proposal explains the ORC

The ORC says that a certain kind of reading is impossible for a dream-sentence. To explain the ORC is to explain why dream-sentences with embedded pronouns do not have any LFs with this kind of reading. Here we will argue that we can explain this once we adopt the proposal we just outlined.   The proposal implies that, to give rise to the impossible reading, the sentence's LF would have to take a certain kind of format. But constraints on movement will prevent us from creating LFs that take this format.

6.1. Implications of our proposal for the ORC

Given our proposal, what would an LF have to look like in order for it to give rise to a reading that the ORC blocks?

We used a slightly different wording before, but what the ORC says is that sentences of the form *X dreams that ...* don't have readings with the following properties: (i) some embedded pronoun has *the dream-self* as its correlate on the reading in question; (ii) some embedded pronoun whose correlate is *X* on the reading in question asymmetrically c-commands (in the pronounced structure) every embedded pronoun whose correlate is *the dream-self* on the reading in question.

What does this mean as far as the LFs of these sentences? To answer this, we need to understand what kinds of LFs for *X dreamed that ... pronoun ...* give rise to readings where *pronoun* has *the dream-self* as its correlate, and what kinds of LFs give rise to readings where *pronoun* has *X* as its correlate.

On our proposal, there turn out to be two ways in which an LF for *X dreamed that ... pronoun ...*   could give rise to a reading where *pronoun* has *the dream-self* as its correlate. The LF could be one where *pronoun* is realized as a starred pronoun that moves. Or the LF could be one where *pronoun* is a variable bound by (the λ below) a starred pronoun that moves. (To convince yourself of this second option, look at (24).) And we have seen that there is only one way worth considering in which the LF could give rise to a reading where *pronoun* has *X* as its correlate: the LF must be one where the pronoun is a variable pronoun bound by a lambda just below the subject of *dream*.

(24)   a. John dreamed that he was marrying his grand-daughter.

        b. conceivable LF

           John [λ^c_1 ... t^c_1 ...dreamed that [he* [$\lambda_{2...}$ **t_2** was marrying **his$_2$** grand-daughter]]

               he is a starred pronoun, *his* is a variable bound by the lambda that *he* leaves behind

        c. [[(24b)]]^g = λw. for all <y,w'> in DREAM$_{J(w),w}$,
                             y marries the grand-daughter of y in w'

        d. The reading this expresses:

           In John's dream, *the dream-self* was marrying *the dream-self*'s grand-daughter.

So what kinds of LFs are blocked? In a nutshell, those of the form in (25). These LFs contain a starred pronoun (marked *pro**). And they also contain a variable pronoun (marked *pro$_i$*) bound by the λ below the subject. In these LFs, the variable pronoun *pro$_i$* asymmetrically c-commands the base position of the starred pronoun and all variable pronouns the starred pronoun binds.

(25)   * .. **λ^c_i** [$_{VP}$ t^c_i ...[$_{V'}$ dream [pro* **[λ_j [...pro$_i$ ... t_j ...]]**]]]]

        where pro$_i$ asymmetrically c-commands[11] t_j and all embedded pronouns with index j

An example of the ORC's implications is in (26). The potential LF for *John dreamed that he was marrying his grand-daughter* in (26a) falls under the description in (25). The variable pronoun *he* c-commands the base position of the starred pronoun *his** and is bound by the subject. It leads to the reading on which the correlate of *he* is *John* and the correlate of *his* is *the dream-self*. This reading is impossible, the ORC captures that, and so the ORC implies that this LF must be ruled out.

(26)   a. John [λ^c_1 ... t^c_1 ...dreamed that [his* [$\lambda_{2...}$ **he$_1$** ...was marrying **t_2** grand-daughter]]   ]

               his is the starred pronoun, *he* is a variable bound by the lambda below the matrix subject

        b. [[(26a)]]^g = λw. for all <y,w'> in DREAM$_{J(w),w}$,
                          J(w') marries the grand-daughter of y in w'

        c. The reading this expresses:

           In John's dream, *John* was marrying *the dream-self*'s grand-daughter.

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[11] We assume that in the structure [pro$_i$ w$_k$], the world variable is adjoined and so pro$_i$ counts as c-commands everything that the whole complex c-commands.

6.2. "Superiority" accounts for (25)

We will now argue that constraints on movement will rule out configurations of the kind in (25). (25) violates a constraint that we will call "superiority," a feature-based Attract Closest kind of constraint of the sort that much current theory assumes. More generally, we will argue that "superiority" excludes LFs of the kind in (27), of which (25) is a special case. (27) has two important properties: (i) the variable pronoun asymmetrically c-commands the base position of the moved pronoun; (ii) the variable pronoun is bound by the λ below the matrix subject.[12]

(27) * .. $\boldsymbol{\lambda^c_i}$ $[_{VP}$ t^c_i ...$[_{V'}$ dream $[$ pro* $\boldsymbol{[\lambda_j\ [\ ...pro_i\ ...\ t_j\ ...\ ]\ ]}$ $]]]]$

where $\mathbf{pro_i}$ asymmetrically c-commands $\mathbf{t_j}$

Some background is required to see this, so we will spend a moment introducing the background. It concerns how morphological agreement works in structures that involve variable binding.

Interlude: Background about agreement[13]

Here is one basic phenomenon to bear in mind. In constituents that are interpreted as predicate abstracts, the morphological features of bound pronouns – like the gender feature of *his* or the person feature of *my* – don't seem to be interpreted. But at the same time, there are constraints on *what* morphological features the bound pronoun can have. In a sentence of the form *Only I did PRONOUN's homework*, for example, if we want the pronoun to be a bound variable, it must take the form *my*. It can't be *his*. (Look at (28) to convince yourself of these claims.)

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[12] As it stands, (27) is reminiscent of a lot of syntactic configurations that are ruled out. For instance, it would look like strong crossover if the two indices were the same. This suggests that the ban on (27) can very likely be assimilated to other constraints on movement as well. (In fact, it is easy to formulate a constraint from which both strong crossover and the ban on (27) follow -- see Percus and Sauerland 2002.)

[13] This discussion is based on Heim 1994, Kratzer 1998, Schlenker 1999. Our concern here is just to establish some empirical generalizations; we refer to these sources (and to von Stechow, this volume) for steps toward an explanation.

(28)   a. Intended reading: I did my homework, but no one else did his homework.
        b. Possible form[14]: **[Only I]** $\boldsymbol{\lambda^c_1}$ t^c_1 did **my**$_1$ homework
        c. Impossible form: **[Only I]** $\boldsymbol{\lambda^c_1}$ t^c_1 did **his**$_1$ homework
        d. Evidence that the features of *my* aren't interpreted in (b) (at least not in the
           normal way): the constituents below the trace in (28b) and in (28e) seem to get
           different interpretations.
        e. **[Only he]** λ^c_2 t^c_2 did **my**$_1$ homework.

Similar remarks apply to starred pronouns once we adopt the idea of starred
pronoun movement. We have assumed that starred pronouns on their own are not
interpreted. But at the same time there are constraints on what morphological features
the starred pronoun can have. For a sentence like *I dreamed PRONOUN* was sick* to
talk about a dream in which the dream-self was sick, the starred pronoun has to be *I**. It
can't be *he**.

(29)   a. Intended reading: In my dream, the dream-self was sick.
        b. Possible form: I dreamed [**I*** [λ_1 t_1 was sick]]
        c. Impossible form: I dreamed [**he*** [λ_1 t_1 was sick]]

It is easy to express what the generalizations are. On the one hand, it seems,
bound variable pronouns must "share features" with the DP sister of the constituent that
is bordered by their binder. On the other hand, starred pronouns in dream-complements
must "share features" with the subject of *dream*. This is the background we wish to
establish. Apart from what we have said in this paper up till now, we must accept that
there are constraints on what morphological features bound variables and starred
pronouns can have.

End of interlude.

We needed this background because the movement constraint that we are interested in
explicitly refers to morphological features.

We are assuming a constraint that looks like (30). It says roughly: "Don't move
over an agreeing item that c-commands you." For convenience we call it "superiority."
It is basically a feature-based Attract Closest constraint, and happens to be a corollary of
Chomsky 1995's Minimal Link Condition.

(30)   "Superiority": At a given point in the derivation, if you are faced with the option of
        moving two different items α and β to the same position, if α asymmetrically c-
        commands β, and if α and β have the same features, then do not move β.

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[14] For our purposes here, we assume that quantifiers like *only* are evaluated with respect to Aloni
2000-style "conceptual covers," and quantify over concepts in that cover. $[[(28b)]]^g$ will be λw. the I-
concept is the only concept K in the salient conceptual cover such that, in w, K(w) did K(w)'s homework.

Now, bearing in mind what we have said about agreement, let's go back to the configurations we wanted to rule out, and look at the pronouns. For concreteness, let's consider our example in (26) (repeated as (31a)).

(31)   a. * John [λ^c_1 ... t^c_1 ...dreamed that [his* [$\lambda_{2...}$ **he$_1$** ...was marrying **t$_2$** grand-daughter]]]

b. Reading: In John's dream, *John* was marrying *the dream-self*'s grand-daughter.

Never mind what those features are exactly that are relevant for superiority: we will just assume that pronouns have *some*, and – importantly – that they include features other than person number, and gender.[15] (That is, we assume that pronouns that are pronounced the same can differ with respect to their total collection of features.) We have not marked all the features on the LF in (31a), but the thing to notice is that, in this LF, the generalizations we noted about agreement will entail that the two pronouns will have to have been generated with the same features. This is because on the one hand the subject and the bound variable pronoun have to share features, and on the other hand the subject and the starred pronoun have to share features.

But now suppose that indeed the two pronouns are generated with the same features. In that case, (31a) will constitute a superiority violation, because the starred pronoun will have moved over an agreeing pronoun that c-commands it. Note that the same problem does not arise for the minimally different LF in (32a), which unlike (31a) gives rise to a possible reading -- the reading on which *the dream-self* is the correlate of *he*, and the "dream-subject" is the correlate of *his*. Here, for the same reason, the two pronouns would have to have been generated with the same features, but here the starred pronoun has not moved over an agreeing pronoun that c-commands it.

(32)   a. John [λ^c_1 ... t^c_1 ...dreamed that [he* [$\lambda_{2...}$ **t$_2$** ...was marrying **his$_1$** grand-daughter]]]

b. Reading: In John's dream, *the dream-self* was marrying *John*'s grand-daughter.

Indeed, if you think about the general configuration we started out with -- the configuration in (27) -- you will see that structures of this kind could not arise. Given the binding pattern, the two pronouns would have to have been generated with the same features. But in that case, given the c-command pattern, to form this LF the starred pronoun would have to have moved over an agreeing pronoun that c-commands it. This

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[15] This assumption is crucial for explaining why LFs such as the one responsible for reading (15'b) do not violate superiority. This LF would be one where a starred pronoun moves over a c-commanding pronoun with the same person, number and gender features. The difference between this LF and (31a) would be that, in this LF, the c-commanding pronoun would be free. A consequence of this detail is that, if pronouns contain a feature other than person, number, and gender – a feature with respect to which *he* and *his** can but need not differ – then in the LF for (15'b) nothing will force the two to share this feature.

kind of movement violates superiority.

(27)   * .. $\boldsymbol{\lambda^c_i}$ [$_{VP}$ t^c_i ...[$_{V'}$ dream [pro* $\boldsymbol{[\lambda_j\ [\ ...pro_i\ ...\ t_j\ ...\ ]\ ]}$]]]]

where pro$_i$ asymmetrically c-commands t$_j$

7.   Further directions

Could the proposal we made here help us to understand other phenomena that have been discussed in the literature?   Here is one likely connection.

       One way of looking at what we did in this paper is as follows.   We proposed that we should account for the semantics of dream reports by assuming, among other things, that there are pronouns which are semantically like relative operators (*pro**) as well as pronouns that function as variables (*pro$_i$*).   We showed that, once we make these assumptions, we must acknowledge a constraint on what kinds of representations we can generate: representations of the form in (33) are impossible.   And we argued that this constraint should be assimilated to known constraints on movement.   To make this final argument, it was crucial to note that in configurations of this kind, the two pronouns must agree.

(33)   * .. λ_i [t_i ... [pro* $\boldsymbol{[\ \lambda_j\ [\ ...pro_i\ ...\ t_j\ ...\ ]]}$]]

       where pro$_i$ asymmetrically c-commands t$_j$

       From this standpoint, the plot of our paper strongly echoes the plot of Percus 2000.   Percus 2000 suggested[16] that, to account for the semantics of a variety of sentences, it is useful to assume that there are unpronounced items that are semantically like relative operators as well as unpronounced items that function as variables[17]. (We will call these items *shpro** and *shpro$_i$* because they are unpronounced.)   But that paper pointed out as well that, once we make these assumptions, we must acknowledge constraints on what kinds of representations we can generate.   In particular, configurations of the form in (34) are impossible:[18]

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[16] See in particular the final pages of the article (pp. 226-228).

[17] Specifically, variables over situations in the sense of Kratzer 1989.

[18] The arguments in Percus 2000 involve counterfactuals, sentences with adverbial quantifiers, and also attitude reports.   When it comes to attitude reports, there are some divergences between that paper's assumptions and ours, so it remains to be seen whether the same arguments can be made given our assumptions. But in any event, the existence of shpro*, shpro$_i$, and the constraint in (34) can be justified on the basis of the remaining kinds of sentences.

(34) $*$ .. λ_i [t_i ... [shpro* **[λ_j [shpro$_i$ ... t_j ...]]**]]

where shpro$_i$ asymmetrically c-commands t_j

Percus 2000 did not offer an explanation for the constraint in (34). But, since it looks just like the constraint in (34), it is natural to think that the explanation should be the same. Assuming that the explanation *is* the same, we can conclude that, for some reason, in configurations of the kind in (34), the two "pronouns" must agree. The question this raises is: why must they agree ? This is a new question that deserves research.

To conclude, here is an issue that we haven't dealt with. We have argued here that, sometimes, when we see a pronoun inside a dream-complement, that pronoun is a special item that looks like a standard variable pronoun but acts like a relative operator, and moves at LF to a position just above the dream-complement. There is an alternative claim that would have much the same effect. It is that, in just those places, the pronoun that we see is a resumptive pronoun left by the movement of a silent relative operator to a position just above the dream-complement. (The resumptive pronoun would be to all intents and purposes like a trace: it would be a variable bound by the lambda that movement creates.) This alternative proposal essentially generates the same LF representations that our proposal does. The major difference has to do with the kind of movement that occurs from the position in which the pronoun is pronounced: on our proposal, it is the kind of movement that does not get pronounced, but on the alternative proposal it is the kind of movement that gets pronounced.

Is this alternative proposal tenable? That depends in part on how well it fits in with theories of the distribution of resumptive pronouns. Maybe pursuing it could add to an understanding of resumptive pronouns. Does it have anything else to offer? We have not touched on the issue of whether the movement that we have posited in dream-complements is subject to islands. If it turns out not to be, that would follow naturally from the alternative proposal: the kind of movement that leaves resumptive pronouns is of course not subject to islands. We leave this direction open for investigation.

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(Percus)
Facoltà di Psicologia
Università Vita-Salute San Raffaele
Via Olgettina 58
20132 Milano (MI)
Italia

percus.orin@hsr.it

(Sauerland)
Department of Linguistics
South College
University of Massachusetts
Amherst, MA 01003
USA

uli@alum.mit.edu