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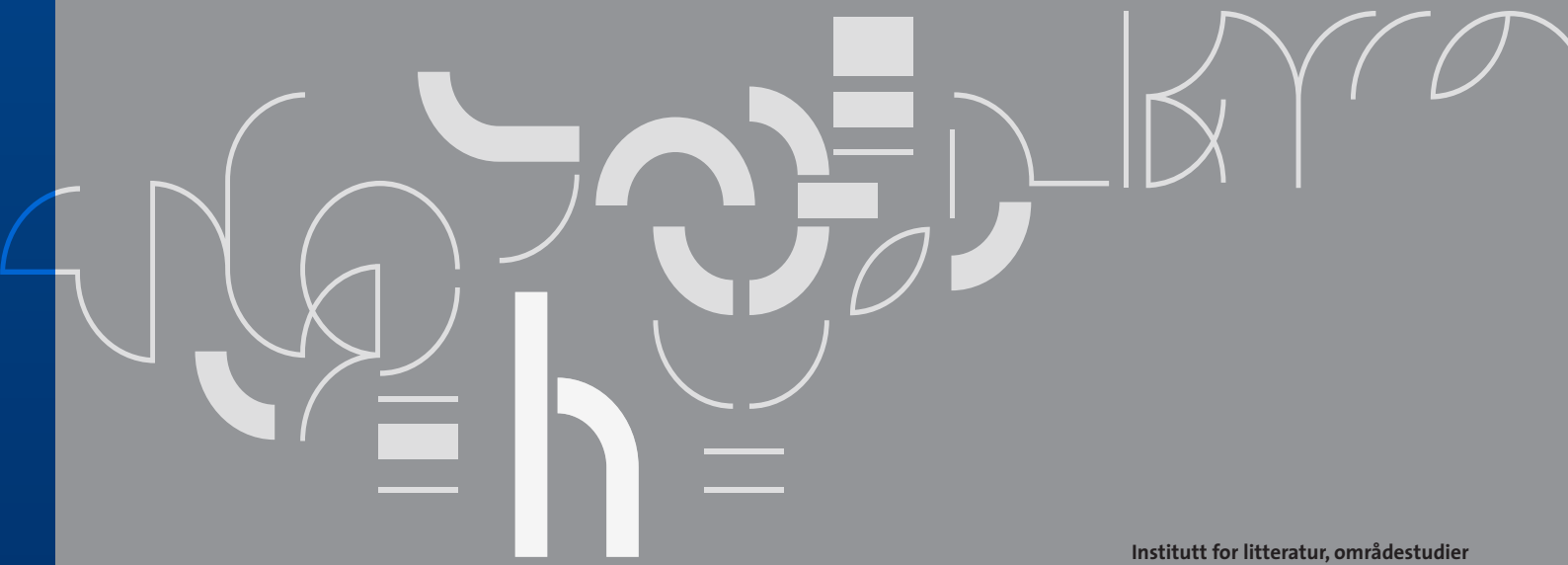
Uli Sauerland
Zentrum für Allgemeine Sprachwissenschaft



Institutt for litteratur, områdestudier
og europeiske språk

Department of Literature, Area Studies and
European Languages

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# Hardts Surprising Sloppy Readings: A Flat Binding Account *

Uli Sauerland
Zentrum für Allgemeine Sprachwissenschaft

uli@alum.mit.edu

**Abstract**

The paper presents an additional argument for a specific account of semantic binding: the flat-binding analysis. The argument is based on observations concerning sloppy interpretations in verb phrase ellipsis when the binder is not the subject of the elided VP. In one such case, it is important that one of the binders belong to the domain of the other. This case can be derived from the flat-binding analysis as is shown in the paper, while it is unclear how to account for it within other analyses of semantic binding.

## 1 Introduction

In a recent paper, I introduced a new account of semantic binding (Sauerland, 2007b). The purpose of this paper is to develop an additional argument in favor of the account. The argument is based on an investigation of cases of binding into elided structures extending observations by Takahashi and Fox (2005) and Hardt (2006).

Semantic binding is one of the central concepts of linguistic semantics. But since the mechanisms underlying semantic binding are rarely discussed, it is useful to recapitulate some basic properties of the concept. One core case of the phenomenon is binding of a pronoun by a quantificational expression in the same clause as in *Every boy likes his own father*. When applied to this sentence, the mechanism that establishes semantic binding has to ensure that, if John, Bill, and Harry are the relevant boys, John likes John's father Bill likes Bill's father, and Harry likes Harry's father. To ensure that the subject and the possessor position co-vary, any account of binding must involve a mechanism of storage and retrieval. Furthermore, the mechanism must have the capacity to store and retrieve more than one item since binding dependencies can overlap as in *Every boy*

*I thank Shoichi Takahashi, Kyle Johnson, Irene Heim, and the audiences at the University Oslo and and the University of Paris for comments on this work. Financial support from the German Research Council DFG (Emmy Noether Research Team, SA 925/1) is gratefully acknowledged. This is a proceedings paper written under time and space constraints and not professionally edited. Comments on how to improve the account or its presentation are welcome.

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*told his mother that he likes her.* The core distinction between the standard logic-based accounts binding and the flat-binding account I advocate concerns the nature of this storage and retrieval mechanism: standard accounts are position-based – the memory is organized in a sequence of positions and access to memory is always by reference to specific position. In the flat-binding model, however, memory is not structured into positions and retrieval of a particular kind of item from memory is only possible by making use to an inherent property uniquely identifying the item. The two accounts assume the different logical form representations illustrated in (1) for the example already discussed above, where I assume a version close to Heim's and Kratzer's (1998) textbook of the position-based account.[1] In particular, where the position-based account makes reference to specific positions of the memory structure assumed (i.e. the assignment sequence), the flat binding account employs definite descriptions to uniquely identify a referent in memory.

(1) Every boy likes his own father.
   a. *Position-based:* Every boy $\lambda 1$ $t_1$ likes $hi_1$'s own father.
   b. *Flat binding:* Every boy: the boy likes the boy's own father.

This paper develops a new prediction the flat binding account makes. The prediction concerns the interaction of ellipsis and pronominal anaphora. I call the phenomenon *Pseudo-Sloppy Readings*. These are similar to sloppy readings that are available in many cases of ellipsis. This prediction, which I explicate in detail in section 3 below. These are distinct from true sloppy readings as in *The boy likes his father and the man does too*. True sloppy readings on the flat binding analysis are derived on the basis of representations like (2) where the definite description the pronoun corresponds to in the antecedent VP and the elided VP is different (Sauerland, 2007a). The flat binding analysis relies on structure sharing for these cases to get the content of the definite description right, which is indicated by the lines connecting the two NPs in (2) (see section 3.3 below).

(2) The boy likes hi[~~the boy~~]'s father and the man does ~~like [the man]'s father~~

The flat binding account predicts, however, that there should be some cases where use of the same definite description in both the antecedent VP and the elided VP leads to a sloppy reading. I argue below that (3) is such a case.

(3) Every boy likes hi[~~the boy~~]'s father. Even this boy does ~~like [the boy]'s father~~

[1] I added a $\lambda$ in the representation in (1-a) over the representations of Heim and Kratzer (1998) since this makes the representations easier to read when not given as trees. The most interesting other variant within the class of position-based accounts are accounts based on combinatorial logic where the storage sequence is unified with the sequence of arguments of a predicate (Curry, 1930; Geach, 1972). For my purposes in this paper, however, the differences between the combinatorial logic based account and the standard position based account do not matter, hence, I concentrate on the standard account.

The representation for a normal sloppy reading like (2) differs from the pseudo-sloppy reading (3) only by the presence of structure sharing in (2). Furthermore, the interpretations of a normal sloppy reading and a pseudo-sloppy reading of the same sentence are identical. However, pseudo-sloppy readings are expected to be less constrained than sloppy readings. The argument for pseudo-sloppy readings in this paper is therefore based on cases where the normal sloppy reading is blocked, but we nevertheless observe a sloppy interpretation where a pseudo-sloppy interpretation is predicted to be possible. Specifically, I show in this paper that Hardt's surprising sloppy reading (Hardt, 2006) are a case where normal sloppy readings are blocked, but pseudo-sloppy readings like (3) are possible. This is indicated by contrast in (4), where (4-a) does not allow a sloppy interpretation, but Hardt's (4-b) does if Bill is a boy:

(4) a. #Nearly every boy said Mary hit him. But the adult witness didnt say she did.
b. Nearly every boy said Mary hit him. But Bill didnt say she did. (Hardt, 2006, (3))

Such contrasts argue for the existence of pseudo-sloppy interpretations. These in turn corroborate the flat-binding analysis since it predicts the existence of pseudo-sloppy interpretations.

Section 2 discusses the constraint exhibited in (4) in more detail and outlines the approaches of Takahashi and Fox (2005) and Hardt (2006). As we will see neither of the two account predicts the contrast in (4): Takahashi and Fox (2005) predict the sloppy interpretation to be impossible for both examples, while Hardt (2006) predicts the sloppy interpretation to be possible in both cases. Section 3 develops the relevant parts of the flat-binding account to show that the flat-binding account actually predicts the contrast in (4). Section 4 is the conclusion.

## 2 Constraints on Sloppy Interpretations

Sloppy interpretations have played a major role for accounts of VP-ellipsis since at least Sag (1976) and Williams (1977) worked on the topic. The initial problem it presents for the ellipsis theorist is that a pronoun that a pronoun that is not bound like *her* in (5-a) must refer to the same individual in both the antecedent and the elided VP. But, a bound pronoun like *his* in (5-b) can refer to two different individuals; John and Bill.

(5) a. John likes her father. Bill does ~~like her father~~, too.
b. John likes his father. Bill does ~~like his father~~, too.

Working in a framework where pronominal reference is determined by positions of an abstract assignment sequence, Sag (1976), Williams (1977), and Bach and Partee (1980) all drew the following conclusions. (5-a) shows that the indices born by a pronoun in an ellipsis and the corresponding pronoun in the elided phrase must be identical. Bound

pronouns, however, could be bound within the elided VP and its antecedent as shown in (6).[2]

(6) John does $\underbrace{\lambda x\ x \text{ like } x\text{'s father}}_{\text{antecedent}}$. Bill does $\underbrace{\lambda y\ y \text{ like } y\text{'s father}}_{\text{elided}}$.

The formal system derived from predicate logic these author's assumed predicts that alphabetic variants – constituents that are identical except for the indices of bound elements and their binders – have the same interpretation. Therefore, ellipsis is expected to be licensed in (6).

The Sag-Williams analysis predicts that a sloppy interpretation should only be possible when the binder is the subject of the elided VP: Only then can the elided VP and its antecedent both contain the $\lambda$-operator binding pronouns. Sag and Williams observe cases where this prediction is borne out. Consider the contrast in (7) from Hardt (2006): While a sloppy interpretation is available for (7-a), it is blocked for (7-b).

(7) a. John said Mary hit him. Bill did $\triangle$ too
$\triangle$ = said Mary hit John / said Mary hit Bill
b. John said Mary hit him. Bill said she did $\triangle$ too
$\triangle$ = hit John / *hit Bill (Hardt, 2006, (2))

However, starting with Evans (1988) researchers found that the generalization predicted by the Sag-Williams analysis is incorrect. Evans (1988) pointed out examples with extraction like (8-a) where the traces in the antecedent and the elided VP have different binders. Later also examples with pronouns like (8) were found that do not correspond to the Sag-Williams analysis (Jacobson, 1992).

(8) a. You can tell [which parts]$_i$ Partee wrote $t_i$ and [which parts]$_j$ Bach did ~~write $t_j$~~ (Evans, 1988, 125)
b. Everyone hopes that Sally will marry him, but Bill knows that she will $\triangle$
$\triangle$ = marry Bill (Hardt, 2006, (5))

Rooth (1992) proposed a new analysis of ellipsis licensing that allows ellipsis in cases like (8-a) and (8-b). In his analysis, ellipsis is licensed by a parallelism domain which must include the elided VP, but can be a bigger constituent than the just the elided VP. Rooth's statement of the parallelism furthermore uses a focus sensitive notion of parallelism according to which focussed constituents are exempt from parallelism. Specifically, Rooth's analysis requires licensing within a bigger constituent for the sloppy readings in

[2]The analysis assumes one ingredient first made explicit by Heim (1997) as the *No Vacuous Coindexing* Principle in (i). It blocks reuse of the same binder index.

(i) If an LF contains an occurrence of a variable v that is bound by a node $\alpha$, then all occurrences of v in this LF must be bound by the same node $\alpha$.

(8). For (8-a) the constituents relevant for licensing are indicated in (9), and also the focus on the subject of the second conjunct, which is necessary for parallelism.

(9) You can tell $\underbrace{[\text{which parts}]_i \text{ Partee wrote } t_i}_{\text{antecedent}}$ and $\underbrace{[\text{which parts}]_j \text{ [Bach]}_F \text{ did } \sout{\text{write } t_j}}_{\text{parallelism domain}}$

Rooth's analysis correctly predicts the possibility of ellipsis in (8), but incorrectly predicts that ellipsis should be licensed for the sloppy interpretation of (7-b). Takahashi and Fox (2005) show that this gap is filled by adding a condition that requires ellipsis to be maximized within a parallelism domain. Merchant (in print) showed in detail the need for this condition in cases of sloppy readings.[3] Takahashi and Fox propose to add the condition in (10) to Rooth's account of ellipsis licensing.

(10) *MaxElide* Elide the biggest deletable constituent reflexively dominated by P[arallelism]D[omain]. (Takahashi and Fox, 2005, (21))

Now the sloppy interpretation of (7-b) is correctly ruled out as shown by representation (11): The minimal parallelism domain must include the binder of the sloppy pronoun. But, then ellipsis is not maximal within this parallelism domain since ellipsis of the bigger constituent *say she hit him* is also be licensed.

(11) Bill $\underbrace{\lambda x \text{ said she did } \sout{\text{hit } x}}_{\text{minimal PD}}$

Takahashi and Fox's account correctly predicts the strict reading of (7-b) to be available since the parallelism domain can be smaller than the one indicated in (11). Furthermore, it predicts that the sloppy reading should become available if any of the material in the higher potential ellipsis target is focused and thereby blocks ellipsis. This prediction accounts for the availability of sloppy interpretations in (8).

Hardt (2006), however, shows that Takahashi and Fox's account makes the wrong prediction for the following example (repeated from (4)):

(12) Nearly every boy said Mary hit him. But Bill didnt say she did $\triangle$.
$\triangle$ = hit Bill (Hardt, 2006, (3))

Takahashi and Fox's account applied to (12) doesn't predict the sloppy interpretation to be available because ellipsis of the constituent *say she did* is licensed. Therefore, Hardt (2006) rejects the MaxElide condition and instead proposes the constraint in (13).

(13) Rebinding is possible only when necessary to satisfy parallelism.

[3] Ellipsis maximization was first suggested by (Fiengo and May, 1994, 107) in this context to the best of my knowledge.

Hardt assumes furthermore that (13) is checked sequentially for any potential parallelism domain containing the ellipsis site starting with the smallest. Whenever there is a focus domain licenses the strict reading but not the sloppy reading, the sloppy reading is blocked. Therefore, constraint (13) entails that sloppy readings should be constrained to two cases:[4] either the binder is part of the smallest parallelism domain containing the elided phrase or the binder in the antecedent is a quantifier and therefore a strict interpretation is not available.[5] Hardt's account correctly predicts (12) to permit a sloppy interpretation because the relevant binder in the antecedent is a quantifier. And for example (7-b), the sloppy reading is correctly ruled out because the strict reading is available.

However, the contrasts in (14) and (15) are problematic for Hardt's account. A quantifier is the binder in the first conjunct in all four examples. Nevertheless there is a contrast in grammaticality. I propose that the contrast is due to the fact that the binder in the second conjunct is an element of the domain of quantification of the quantifier in the first conjunct in (14-a) and (15-a), but not in (14-b) and (15-b).

(14) a. Nearly every boy said Mary hit him. But Bill didnt say she did.
b. #Nearly every boy said Mary hit him. But the adult witness didnt say she did.

(15) a. Almost every boy hopes that Sally will marry him. Even this boy hopes that she will.
b. #Almost every boy hopes that Sally will marry him, and even the teacher hopes that she will.

The generalization established is that a sloppy reading in apparent violation of MaxElide is possible if and only if the nominal binding into the elided VP denotes an individual that is an element of the domain of the quantifier binding into the antecedent VP. In the following section, I derive this generalization from the flat binding account.

[4]One further area where Takahashi and Fox's account differs from Hardt's are the examples (8). Hardt predicts (8) to be good because a quantifier binds the pronouns in the first clause, while Takahashi and Fox predict (8) to be good because some material between the binder and the minimal parallelism domain is focused. Hardt offers the absence of a sloppy reading in the example (i) to support his account. However, pragmatic factors independently create a bias towards the strict reading in (i), and the modified version in (ii) seems to allow a sloppy reading.

(i) Bill believes that Sally will marry him, but everyone knows that she won't. (Bach and Partee, 1980)

(ii) Bill still believes that Sally will marry him, but everyone else knows that she won't.

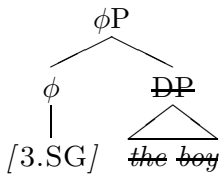
[5]Here, we are restricting our attention to examples where the elided VP is outside the scope of the binder of the antecedent clause. In other cases, quantificational antecedents can license strict readings.

# 3 Pseudo-Sloppy Readings

## 3.1 Flat Binding

The flat-binding account assumes that pronouns are always reduced definite descriptions. More specifically, pronouns are agreement heads followed by an elided DP in the structure shown in (16). In the following, pronouns are represented as him ~~[the boy]~~.

(16) him =




Languages that assign nouns to grammatical gender or noun classes provide one piece of direct evidence for the presence of a noun in pronouns. For example, a German speaker must use the appropriate gender when referring deictically to a piece of silverware: feminine *sie* for a fork, masculine *er* for a spoon, and neuter *es* for a knife. The appropriate gender is determined by the grammatical gender of the noun: *Gabel* ('fork') is feminine, *Löffel* ('spoon') masculine, and *Messer* ('knife') neuter. The same generalization – the noun class of deictic pronouns is determined by the noun class of the appropriate noun – is also observed in Bantu (Laura Downing, p.c.) and argues directly for the obligatory presence of a noun in every pronoun. Further evidence is presented elsewhere (Sauerland, 2007b, in print).

The flat binding analysis seems suitable for capturing the generalization developed at the end of the preceding section in a straightforward way: For (15-a), the representation in (17) can capture the sloppy interpretation, where VP-ellipsis should be licensed since antecedent VP and elided VP are identical. I call a sloppy reading resulting from identity of antecedent VP and elided VP as in (17) *pseudo-sloppy* since for the more familiar cases of sloppy interpretations such as (5-b) a different representation is necessary (see below).

(17) Almost every boy hopes that Sally will marry him~~[the boy]~~. Even this boy hopes that she will ~~marry him[the boy]~~.

Note that a representation like (17) would not predict a pseudo-sloppy interpretation for (15-b) since the subject of the second conjunct there, *the teacher*, is not a possible referent for *the boy*. The division between sloppy and pseudo-sloppy leads me to an account of the facts presented in the previous section where Takahashi and Fox's analysis is essentially maintained as a constraint only on sloppy readings, while Hardt's exceptions are analyzed as pseudo-sloppy readings. The goal of the remainder of this section is to integrate the flat binding account of (17) with general principles of DP and VP-ellipsis and to thereby delineate between cases where sloppy readings are available, where pseudo-sloppy readings are available, and where no sloppy interpretation is possible. This requires a more detailed understanding of the flat binding analysis.

The main concern of my 2007 paper (Sauerland, 2007b) was to show that, in any case of semantic binding, there are appropriate definite descriptions to allow the flat binding account to go through and that furthermore a general account of ellipsis would license DP-ellipsis of the definite description in all cases. Consider the two following examples:

(18) a. Every actress wrote about every singer that she likes her singing.
b. Every actress wrote about every actress that she likes her singing.

Example (18-a) raises the problem of individuals like Jennifer Lopez who is both an actress and a singer. (18) has an interpretation that is only true if Jennifer Lopez wrote to herself that she likes her singing in addition to many other acts of writing, which seems to result in non-uniqueness in representation (19).

(19) Every actress wrote about every singer that she~~[the actress]~~ likes her~~[the singer]~~'s singing

For this reason, individual concepts (i.e. functions from a set of worlds to individuals) and not bare individuals are the items stored in memory. In particular, I made use of the following definition: An individual concept $x$ is *maximal for property* $P$, if and only if a) $x$ is defined for all words $w$ where at least one individual with property $P$ exists and b) wherever defined $x$ yields an individual with property $P$ as value.[6] Now it is possible to capture Jennifer Lopez as a actress and Jennifer Lopez as a singer by using different concepts, one maximal for *actress*, the other maximal for *singer*, which both yield Jennifer Lopez as value for those worlds that are part of the common ground.

Example (18-b) leads to a further question since both quantifiers range over actresses. I (Sauerland, 2007b) argue though that the second noun phrase *actress* in examples similar to (18-b) can contain additional lexical material in the restrictors of the quantifiers. The representation (20) elaborates this proposal for (18-b).

(20) Every actress wrote about every $[\text{actress}]_F$ ~~[of interest to the actress]~~ that she~~[the actress]~~ likes her~~[the actress of interest to the actress]~~'s singing.

Note that because the property *actress of interest to the actress* is logically strictly stronger than the property *actress*, the maximal concepts corresponding to the former property are always defined for a smaller set of worlds than the later. However, any maximal concept for the property *actress of interest to the actress* also has the property *actress*. The definite *the actress* always chooses the maximal concept introduced by the quantifier *every actress* because a definite always chooses the concept with the biggest domain. Only *contextual* concepts, whose domain is exactly the context set, can be entered into discourse storage, while maximal concepts only remain in memory within a sentence. In sum, the partial salience order among concepts a definite description refers

[6] Properties are of type $\langle e, \langle s, t\rangle\rangle$ and adopt the convention a concept $x$ has property $P$ if and only if for all $w \in \text{domain}(P)$ the statement $P(x(w))(w)$ holds.

to is the following:[7]

1. maximal concept in memory with wide domain, i.e. maximal *actress*-concept
2. maximal concept in memory with small domain, i.e. maximal *actress of interest to the actress*-concept
3. contextual concept in memory, i.e. set of *actress*-concept corresponding to the actresses under discussion
4. concept not in memory, i.e. concepts of actresses in the current context set

As representation (19) illustrates, I assume that there may be both partial ellipsis or total ellipsis applying at the DP level. Both kinds of ellipsis may be licensed by a bigger parallelism domain like VP-ellipsis in Rooth's analysis (see above). For ellipsis licensing in DP, I apply the principle of deletion up to recoverability (Chomsky and Lasnik 1993 and others), where I assume that what needs to be recovered is the referent of the DP. Spelling out the condition requires several case distinctions depending on the category of the parallelism domain: definite DPs, other NPs and finally TPs. First consider definite DPs that do not contain a focus: Two structures are defined to be *Ellipsis Alternatives* if their phonological representations are identical. Then, a definite DP that contains no focus is licensed as a parallelism domain if and only if there is no ellipsis alternative DP$'$ such that DP$'$ refers grammatically to a concept $x'$ that has as its domain a superset of the domain of the concept that DP refers to. This case is for example relevant to pronouns, which are elided DPs and therefore must not contain any focus. For example, ellipsis in *she~~[the actress]~~* in (19) is licensed by this principle because the quantifier *every actress* introduces a maximal actress concept, which has maximal salience for *actress*. However, licensing of the two other ellipses in (19) does not follow yet.

The third condition licenses a definite DP that contains a focus as a parallelism domain: the most salient focus alternative of XP must be more salient than the most salient focus alternative for any focus alternative of XP. This condition is relevant for licensing ellipsis in *every [actress]$_F$ ~~[of interest to the actress]~~*. Two further assumptions I make are the following: One, the processing of *x write about* makes salient the set of people $x$ might write about, i.e. the set of people that are of interest to $x$ is added to memory. Two, ellipsis with NP as parallelism domain is licensed if ellipsis of the definite DP consisting of *the* and the NP is licensed. With these assumptions, ellipsis of the adjunct in *every [actress]$_F$ ~~[of interest to the actress]~~* is licensed: The focus alternative *the people of interest to the actress* refers to the concept of people of interest to the actress. And furthermore, though there is one ellipsis alternative referring to a more salient concept, namely *the actress* referring to the maximal actress-concept, using *the actress* to refer to the maximal actress concept is ruled out by MaxElide.

Finally, consider the ellipsis in her~~[the actress of interest to the actress]~~. Why is the ellipsis alternative strikeout[the actress] not preferred though it refers to a more salient

[7] I added the case of a concept not yet in memory where I assume a definite *the P* picks out the contextual concept referring to the plurality of all entities with property $P$ in each world of the context set. Sauerland (2007b) uses a second concept of salience in the account of number agreement. This is not relevant in the following. The concept of salience use here corresponds to d-salience

concept? In this case, ellipsis must be licensed with TP as a parallelism domain. The antecedent for *she~~[the actress]~~ [likes]$_F$ her~~[the actress of interest to the actress]~~ [singing]$_F$* can be the sentence *Every actress wrote about every actress ~~[of interest to the actress]~~ that ...* since *write that ... about* is a focus alternative to *like* via the inference from *x writes about y* to *x knows y*.[8]

### 3.2 Deriving Pseudo-Sloppy Readings

The system derives pseudo-sloppy readings in a different way from normal sloppy readings. Consider first case (15-a) of a pseudo-sloppy reading. The representation of this reading in shown in (21).

(21) Almost every boy hopes that Sally will marry him~~[the boy]~~.
Even the [demonstrative] boy hopes that she will ~~marry him[the boy]~~.

The universal quantifier *every boy* adds a maximal boy-concept, but also the contextual concept of all the boys to the memory. The pronoun *him~~[the boy]~~* refers to the maximal concept resulting in the bound interpretation. Then in the second clause, *the [demonstrative] boy* selects a contextual *boy*-concept – I assume that the feature *[demonstrative]* is interpreted as the property of being indicated by the center of a possible world through a gesture. Therefore, two contextual *boy*-concepts – that of all boys and that of the demonstrated boy – are contained in the memory set when *him~~[the boy]~~* is interpreted.[9] However, the singular marking of the pronoun *him* in the antecedent and the recency of *this boy* makes the singular concept it introduced the preferred antecedent for *his*. Finally ellipsis of the VP is licensed for any parallelism domain containing the VP because it is exactly identical to the antecedent.

Note that a pseudo-sloppy reading is predicted to be impossible in (22-a) in contrast to (22-b) because in (22-a) the maximal boy-concept remains available when the elided VP is interpreted.

(22) a. Almost every boy claims that Sally will marry him and that even this boy claims that she will.
b. Almost every boy claims that Sally will marry him. Even this boy claims that she will.

[8] Fox (1999) argues that inferencing can be involved in ellipsis licensing. That elided material is part of antecedent does not block ellipsis in this case because the parallelism domain containing the ellipsis contains a focus in a relevant position (cf. Sauerland 2004).

[9] The concept contributed by the quantifier seems to be available, too: Examples like (i) at least in German allow an interpretation where the store-keeper hopes that Mary will buy all the cats. A possible scenario for (i) is the following: In an animation movie, a pet store-keeper does not treat his cats very well. Mary enters the store and is looking at the cats. All the cats want to be bought and the store-keeper is hoping to make a lot of money.

(i) Every cat hopes that Mary will buy it. And the store-keeper does △, too.

The mechanism deriving pseudo-sloppy readings directly predicts the generalization observed at the end of the previous section: pseudo-sloppy readings are only available if the DP binding into the elided clause is an element of the range of the DP quantifier in the first clause. For example, observe representation (23) for (15-b). The DP *the boy* in the elided VP cannot refer to the teacher as would be necessary for the pseudo-sloppy interpretation.

(23) Almost every boy hopes that Sally will marry him~~[the boy]~~.
Even the teacher hopes she will ~~marry him[the boy]~~.

### 3.3 True Sloppy Readings

The account for pseudo-sloppy readings does not derive most cases of sloppy readings considered in the literature. To derive true sloppy readings within the flat-binding analysis, I developed an account in Sauerland (2007a) as already mentioned above. The account is based on the syntactic idea of structure sharing. (24) is an example exhibiting a true sloppy reading. If the elided VP has *like the boys father* in (24), only the strict reading results.[10]

(24) The boy likes his father and the man does too.

For the sloppy interpretation of (24) the representation in (25) is therefore necessary. Representation (25) makes us of structure sharing (or multi-dominance) (Gärtner 2002 and others). Specifically, the word *boy* is linked to the two positions of the structure marked with *XXX* and correspondingly *man* is linked to the two positions marked with *YYY*.

(25) Every XXX likes hi[the ~~XXX~~]'s father and
boy
the [YYY]$_F$ does ~~like hi[the YYY]'s father~~, too.
man

Furthermore the first position *man* is linked to is part of a focussed phrase. I define the focus alternatives of an LF-constituent YP as all phrases that are identical to YP except for the constituents dominated by an focus marking F. With this definition, the first conjunct of (25) is a focus alternative of the second conjunct because *man* is dominated by an F. Therefore, ellipsis is predicted to be licensed in (25) applying the ellipsis licensing assumptions of Rooth (1992).

Without the structure sharing relationship the sloppy interpretation of (24) cannot be licensed as the two candidate representations in (26) show: Representation (26-a) would receive the right interpretation, but because only the first occurrence of *man* is focussed

[10]For simplicity, the representation (24) does not represent movement of the subject, which I actually assume to be necessary.

(i.e. dominated by an F-mark), the first conjunct is not a focus alternative of the second. In (26-b) ellipsis is licensed, but in the second conjunct there is no unique salient boy that the definite description *the boy* could refer to as I argue in the following paragraph.

(26) a. Every [boy] likes hi~~[the boy]~~'s father and
the [man]$_F$ does ~~like hi[the man]'s father~~, too.
b. Every [boy] likes hi~~[the boy]~~'s father and
the [man]$_F$ does ~~like hi[the boy]'s father~~, too.

Furthermore the account predicts precisely the MaxElide constraint for true sloppy readings (Sauerland, 2007a). This can be seen quite easily: The key mechanism of the account of Takahashi and Fox (2005) is that ellipsis is not licensed in parallelism domains that do not include the binder of a sloppy pronoun. We can verify that this property is a corollary of the present account by looking at representation (25), specifically by considering the parallelism domain that consists of only the elided VP in (27). In this VP, the lexical item *man* is only dominated by one position and it is not dominated by an F-feature in this position. The mechanism of forming focus alternatives only can see the focus dominating the other position *man* is linked to if that position is part of the parallelism domain. Therefore the first conjunct of (24) does not provide an antecedent that would license (27) as a parallelism domain.

(27) ~~like hi[the YYY]'s father~~
man

It follows that parallelism domains must include the binding DP when ellipsis in a true sloppy interpretation is licensed. If we then adopt MaxElide from Takahashi and Fox (2005), all their results follow as constraints on true sloppy readings. Pseudosloppy readings, on the other hand, are not expected to be subject to the MaxElide constraint in the same way since Pseudosloppy readings are compatible with narrow parallelism domains.

## 4 Conclusion

The argument in this paper is based on data from the availability of sloppy interpretations with VP-ellipsis in English. In particular, it explained the contrast in (28): (28-a) allows a sloppy interpretation, while (28-b) does not.

(28) a. Nearly every boy said Mary hit him. But Bill didnt say she did. (Hardt, 2006, (3))
b. Nearly every boy said Mary hit him. But the adult witness didnt say she did.

The generalization underlying contrast (28) was shown to hinge on the question whether the subject of the second conjunct was an element of the domain of quantification in the first conjunct: *Bill* in (28-a) must be understood to refer to one of the boys quantified over in the first conjunct for the sloppy interpretation to be possible, but *the adult witness* in (28-b) cannot refer to a boy.

The generalization does not as far as I can see follows on position based accounts of binding. It follows however on the flat binding account of Sauerland (2007b). On this account, all pronouns are analyzed as covert definite descriptions. In particular, the first conjunct in (28) would be analyzed as *Nearly every boy said Mary hit him~~[the boy]~~*. The difference between (28-a) and (28-b) then derives from the fact that, if we insert in the second conjunct in (28-a) a VP exactly identical to VP in the first conjunct, an apparently bound reading results: *him* in *Bill didn't say Mary hit him~~[the boy]~~* can be interpreted as Bill if Bill is a boy. Since this mechanism does not derive true sloppy readings, I call the sloppy readings of example like (28-a) pseudo-sloppy. I furthermore showed that the mechanism deriving true sloppy readings within the flat binding analysis does not predict a sloppy reading for either example in (28). Therefore the contrast is accounted for completely. Since I do not know of a similar account on other analyses of binding than the flat binding analysis, the result supports the flat binding analysis.

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