TWO SUBTYPES OF SO-CALLED POSSESSED *PICTURE*-NPs[*]

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1. Introduction

Among other things, perhaps, binding is one of the areas where generative linguistics has achieved fair success thus far. Still, so-called *picture*-NPs have posed some problems to the theory. For instance, one challenge is that, while (1a) seems to suggest that the local domain for an anaphor embedded in those expressions is the NP/DP itself, in (1b) it appears to be as far as the whole matrix clause.

(1) a. */?John knows that [Mary's picture of himself] was in the newspaper.

b. John knows that [a picture of himself] was in the newspaper.

As a solution, there have been two basic proposals. One approach extends the local domain where an anaphor must be bound in such constructions as in (1b) (e.g. accessible SUBJECT (Chomsky 1981), BT-compatibility (Chomsky 1986a). In the other approach, anaphors within *picture*-NPs that do not have a possessive are altogether exempted from Binding Theory (e.g. exempt anaphora (Pollard and Sag 1992 & 1994), logophoric anaphora (Reinhart and Reuland 1993)).

Either way, however, two problems still remain unsolved. First, the ungrammaticality of sentences like (1a) is not so strong for some speakers, as pointed out by a number of researchers (e.g. Kuno 1987, Reinhart and Reuland 1993, Asudeh and Keller 2001, Keller and Asudeh 2001, Runner et al. 2002). Second, even for the same speaker, expressions like (1a) can induce different degrees of ill-formedness, depending on the head noun. For example, some speakers feel that (2) is much worse than (1a).

(2) *John knows that [Mary's criticism of himself] was videotaped.

Recently, Asudeh and Keller (2001), Keller and Asudeh (2001), and Runner et al. (2002) suggest that a DP in a possessed *picture*-NP as in (1a) is also free from the binding conditions. Although their proposal may clean up

[*] This research is an extention of a portion of the Ph.D. comprehensive evaluation, required in the doctoral program of linguistics at McGill University. I thank Lisa Travis very much for constant encouragement and helpful discussions. I am also grateful to Jonathan D. Bobaljik, Brendan Gillon, Kyle Johnson, Jon Nissenbaum, Susanne Wurmbrand and the audience of my talk at CLA 2004 for useful comments. All the errors and misanalyses that might be found in the paper are, of course, entirely my responsibility.

Actes du congrès annuel de l'Association canadienne de linguistique 2004.
Proceedings of the 2004 annual conference of the Canadian Linguistic Association.

the first problem, it does not offer an answer for the second. The present paper argues that there are, in fact, two subtypes of possessed *picture*-NPs: one in which the embedded DP is governed by the binding conditions and the other in which such a DP is exempt from those conditions but insted sensitive to discourse factors.

The rest of the paper is organized as follows. In section 2 I spell out all the basic assumptions which will be the bases for my analysis. Section 3 is the main section that discusses the problems brought up in the present section and other related issues. The conclusive remarks are contained in section 4.

2. The Basic Assumptions

In this section I spell out my basic assumptions. In section 2.1 I introduce Fox's (1993) reduction of Condition A to the chain condition. Section 2.2 provides two additional assumptions, which will turn out to be important to the analysis in the subsequent section.

2.1 The Reduction of Condition A to the Chain Condition

Following Fox (1993), I subsume Condition A under the chain condition. Basically, the chain condition requires the head of an A-chain to be +R and all the other links to be -R.[1] An A-chain is any sequence of coindexation headed by an A-position in which each link satisfies antecedent government. R is a syntactic property of referential independence, and having the positive value of this property is a necessary condition for an expression to function as an independent argument. It is assumed that R-expressions, pronouns, pro and A'-traces are +R and that anaphors and NP-traces are -R.[2]

This chain condition does the job that Condition A shall do in the general framework. Consider (3a) on the one hand and (3b) and (3c) on the other, which traditional Condition A typically rules in and rules out respectively.

(3) a. John hates himself. <John, himself>
b. *John hates myself. <John>, *<myself>

c. *John thinks that Mary hates himself.
<John>, <Mary>, *<himself>

There is just one A-chain in (3a): <John, himself>. The head of this chain is +R, because it is an R-expression, and the other link is -R, because it is an anaphor. Thus, the chain condition is well respected. On the other hand, (3b) contains two trivial A-chains. While <John> abides by the chain condition, <myself> does not, since the latter is -R despite being a head. Example (3c) is a case where the locality is violated. An A-chain cannot be formed between

[1] Note that unlike Chomsky's (1986b) condition on A-chains, which is a definitional condition, the chain condition here is a well-formedness condition.

[2] It is also usually assumed that PRO is +R. Although this point is irrelevant to the argument in the present paper, I do not share this assumption. For the discussion on this issue, see Uchiumi (2003).

John and *himself*, because they are too far apart. Consequently, the sentence has three chains: <John>, <Mary> and <himself>. Although the first two chains are well-formed, the last one is not, because it is headed by a -R link.

The chain condition exclusively applies to arguments of syntactic predicates. Holding a subject is a necessary condition for a head to form a syntactic predicate (Reinhart and Reuland 1993). Anaphoric elements that are not arguments of syntactic predicates are called logophors, which are exempted from the chain condition and restricted by discourse conditions of accessibility. For example, in (4), *himself* takes a long-distance antecedent, and *myself* does not have an antecedent at all.

(4) Max said that Lucie counted five tourists in the room
[apart from { himself]. / myself]. }
NOT SYNTACTIC PREDICATE (no subject)
(Fox 1993 (6b) p.3)

This is fine, because *himself/myself* here is a logophor. The preposition *apart from* does not have a subject and therefore does not form a syntactic predicate. Consequently, the chain condition is irrelevant, and to the extent that discourse conditions are met, the sentence is well-formed.

2.2 Two Additional Assumptions

Besides the reduction of Condition A to the chain condition, I adopt two more assumptions. As the first assumption, following Williams (1982), Barker (1995) and Asudeh and Keller (2001), I asume that the possessor DP (at least in English) is actually not a real subject of the *picture*-noun. In fact, I believe that the possessor position of a DP is a non-argument position. Below, I present two pieces of evidence to support such a view.

First, some speakers marginally allow a genitive reciprocal to have a long-distance antecedent as in (5b), whereas with an accusative reciprocal, such an antecedent is absolutely impossible as in (5a). As shown in (6), the source of the contrast is not that the "subject" of gerundive clauses is better in genitive than in accusative.

(5) a. *Holmes and Poirot believe [that Scotland Yard will appreciate [each other investigating the case]].

b. */?Holmes and Poirot believe [that Scotland Yard will appreciate [each other's investigating the case]].

(6) a. Holmes and Poirot believe [that Scotland Yard will appreciate [Miss Marple investigating the case]].

b. Holmes and Poirot believe [that Scotland Yard will appreciate [Miss Marple's investigating the case]].

This makes sense if we consider that the possessor position is an A'-position. If so, a genitive reciprocal is a logophor, since it is not an argument of a syntactic predicate. Then it should be free from the strict locality requirement by the chain condition.

Second, the possessive makes a domain opaque to *wh*-extraction. This is true if the relevant domain is a nominal as in (7) and a gerundive clause as in (8).

(7) a. Who$_i$ did you see [a picture of t_i]?
b. (?)Who$_i$ did you see [the picture of t_i]?
c. *Who$_i$ did you see [a girl's picture of t_i]?

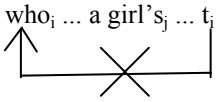
(8) a. What$_i$ did Holmes appreciate [PRO doing t_i]?
b. What$_i$ did Holmes appreciate [Poirot doing t_i]?
c. *What$_i$ did Holmes appreciate [Poirot's doing t_i]?

Many researchers suggest that for nominals, it is specific or existence-presupposing DPs which constitute islands (e.g. Fiengo & Higginbotham 1981, Stowell 1989, Enc 1991, Diesing 1992, Mahajan 1992). However, although this claim probably has some truth to it, I do not believe that it can be the whole story. For one thing, in (7c) the DP in which the extraction is blocked is not specific.[3] In English, there is a phenomenon called (in)definiteness spread, where the interpretation of a possessed DP is dependent on the (in)definiteness of the possessor (see Fassi Fehri 1989 & 1993, Siloni 1994, Longobardi 1996 among others). Refer to the pair of examples in (9).

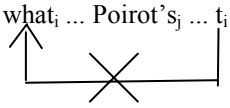
(9) a. There was a girl's dog in the park.
b. *There was the girl's dog in the park.

In *there*-constructions, the associate has to be what Milsark (1977) terms a weak NP. Thus, in grammatical (9a), where the possessor is indefinite, the *dog*-phrase must be a weak NP, while in ungrammatical (9b), where the possessor is definite, it must be a strong DP. Since the possessor in (7c) is *a girl*, which is indefinite, the DP containing it should be weak or nonspecific. For the other thing, as can be seen in (8), the condition is clearly extendable to gerunds, in which the contrast is not specific versus nonspecific but the presence versus absence of a possessive.

(10) a. *... who$_i$ ... a girl's$_j$ ... t_i



b. *... what$_i$ ... Poirot's$_j$ ... t_i



Therefore, my account for the above paradigms is purely syntactic. Namely, in (7c) and (8c) the *wh*-phrase moves across the possessive, which is an

[3] I am grateful to Kyle Johnson (pc) for pointing out this fact.

A'-element, as depicted in (10). This is a violation of relativized minimality in Rizzi (1990).[4]

My second additional assumption is that, while *criticism* potentially takes two arguments: Agent and Theme, *picture* takes only Theme as its argument. As for the latter, it makes no difference even if the possessor DP is construed so-called 'agentively', namely as the producer of 'the picture'. This is the same as *Mary* is not an argument of *cake* in *Mary's cake* even if it is interpreted as the producer of 'the cake'.

The relevant point is that only *criticism* is deverbal and inherits an argument structure from *criticize*, which is clearly a two-place predicate. Indeed, *picture* can also be used as a verb as shown in (11), though its meaning is figuratively shifted.

(11) Mary pictured the worst case scenario.

In this case, as well as the object, the subject is really a thematic argument, presumably Experiencer. However, I believe that $picture_V$ is inherently different from *criticize* in terms of its derivation. For the latter, the unmarked form is the verb *criticize* itself, which is the base for the noun *criticism*, whereas for the former, the unmarked form is $picture_N$, and $picture_V$ is derived from *have ... in one's (mental)* $picture_N$, where $picture_N$ is incorporated into *in* and then into *have* in the lexicon (see Hale and Keyser 1993 for the discussion of the derivation of such denominal verbs). Thus, the claim that Theme is the only potential argument for the noun *picture* can be maintained.

3. The Analysis

In this section I provide the main argument of the paper. In section 3.1 I claim, based on the assumptions spelled out in the previous section, that the possessed *picture*-NPs headed by nouns like *picture* and those headed by nouns like *criticism* have distinct structures. This turns out to elucidate the problems introduced in section 1. In section 3.2 I show that *picture* and *criticism* also behave differently with respect to the disjoint reference effect and illustrate that by accepting the analysis in 3.1, it can be given a natural explanation as well. Finally, in section 3.3 I take up result nominals.

3.1 Two Subtypes of Possessed *Picture*-NPs

Based on those assumptions spelled out in section 2, I postulate the structures for the relevant part of (1a) and (2) as in (12a) and (12b) respectively. For ease of reference, the original examples are reproduced below.

(1) a. */?John knows that [Mary's picture of himself] was in the newspaper.

[4] I do not know why (7b) is a little awkward for some speakers. Maybe, this has to do with the specificity condition, mentioned above. But whatever the reason may be, the contrast between (7b) and (7c) still seems to be clear even to those who accept the former only marginally.

(2) *John knows that [Mary's criticism of himself] was videotaped.

(12) a. [$_{DP}$ Mary's [$_{NP}$ picture of himself]]
NOT SYNTACTIC PREDICATE (no subject)

b. [$_{DP}$ Mary$_i$'s [$_{NP}$ t_i criticism of himself]]
SYNTACTIC PREDICATE

In (12a) the noun *picture* does not project any specifier, and *Mary* is directly generated as the possessive of the DP. Meanwhile, in (12b) the same item is base-generated as Spec of NP and subsequently moves to the possessor position. Thus, even with the assumption that the possessor DP is not a true subject, *criticism* in (2) still forms a syntactic predicate, since it has a subject, the trace of *Mary*. On the other hand, *picture* in (1a) does not, because it lacks a genuine subject.

Then *himself* in (2) must abide by the chain condition. However, since it is too far away from *John*, an A-chain cannot be properly formed between them (see (3c)). Consequently, though -R, the former heads the chain, which is ill-formed. As for the reflexive in (1a), the chain condition is not applicable, and the sentence may be awkward for discourse reasons. Assuming, as is standard, that discourse conditions are not universal or can even be subject to speaker variations, the unstable acceptability status of (1a) can be accounted for.

Therefore, the structures in (12) neatly solve the problems introduced in section 1.

3.2 The Disjoint Reference Effect

Contrary to what is typically noted in the literature, Keller and Asudeh (2001) report that in their experiment, using magnitude estimation[5], the subjects moderately accepted *picture*-noun pronouns coreferential with its possessor as in (13).

(13) Hanna found Peter's$_i$ picture of him$_i$.
(Keller & Asudeh 2001 (v) Table2 p.486)

This result was fully replicated in my survey based on traditional grammaticality-judgments methodology. In fact, most of my informants judged (14a) to be in the acceptable range.

(14) a. Mary's$_i$ pictures of her$_i$.

[5] Magnitude estimation is an experimental technique commonly used in psychophysics to measure how much sensation a person is feeling from sensory stimuli like brightness, loudness or tactile stimulation. It requires subjects to estimate the magnitude of physical stimuli they perceive and assign numerical values to them, relative to the standard stimulus, which is already given a certain value. Bard, Robertson and Sorace (1996) and Cowart (1997) demonstrate that this method is also effective in measuring linguistic intuitions such as grammaticality judgments.

b. *Mary's$_i$ criticism of her$_i$ was videotaped.

However, even for those who accepted (14a), sentence (14b) is sharply ungrammatical.

This contrast can be explained under the present analysis in conjunction with Reinhart and Reuland's (1993) version of Condition B as in (15).

(15) A reflexive semantic predicate is reflexive-marked.
(Reinhart and Reuland 1993 (41) p.678)

A predicate is reflexive if and only if two of its arguments are coindexed. Furthermore, there are two ways that a predicate can be reflexive-marked. First, it is reflexive-marked if its head itself is lexically reflexive. For example, such verbs as *behave* and *wash*, as opposed to say, *criticize*, are inherently reflexive in the lexicon. Hence, sentences (16a) and (16b) are interpreted reflexively roughly in the same way as (17a) and (17b), whereas (16c) is not synonymous with (17c).

(16) a. Mary behaved at the party.
b. John washed in cold water.
c. Bill is always criticizing.
(17) a. Mary behaved *herself* at the party.
b. John washed *himself* in cold water.
c. Bill is always criticizing himself.

The other way to make a predicate reflexive-marked is to use a compound reflexive like English *oneself* or Dutch *zichzelf* as one of its arguments. Thus, (15) says that if two (or more) arguments of a predicate are coindexed, then this predicate requires a marker either on the head or one of its arguments which indicate that it is actually reflexive.

Now, the structures for (the relevant part of) (14a) and (14b) should be as given in (18a) and (18b) respectively.

(18) a. [$_{DP}$ Mary$_i$'s [$_{NP}$ pictures of her$_i$]]
NON-REFLEXIVE SEMANTIC PREDICATE

b. [$_{DP}$ Mary$_i$'s [$_{NP}$ t$_i$ criticism of her$_i$]]
REFLEXIVE SEMANTIC PREDICATE

Both *picture* and *criticism* form a semantic predicate, since the semantic predicate does not require a subject (Reinhart and Reuland 1993). But crucially, only the latter is reflexive. More importantly it is not reflexive-marked, because the head *criticism* is not lexically reflexive, and the pronoun *her* is used instead of *herself*. This leads to the violation of Condition B in (15). As for (18a), Condition B does not apply or is vacuously satisfied.

To sum up, the analysis proposed in section 3.1 has another advantage. Namely, it can account for the contrast in (14).

3.3 Result Nominals

So far, I have claimed that, while *picture* takes only Theme as its argument and is associated with a structure in (12a) or (18a), *criticism* potentially takes two arguments, Agent and Theme, and is associated with a structure in (12b) or (18b). In section 2.2 I have suggested that the difference is that only the latter is derived from a two-place verb *criticize,* from which it inherits its argument structure.

Up to this point, however, we have only focused on a subclass of deverbal nouns, namely process nominals. But it is well known that there exists another subclass called result nominals. Conceptually, result nominals are similar to *picture* in that they designate not an event but an entity. Then it is not surprising if those nominals do not project an external argument in their structure as well.[6] So let us hypothesize that result nominals have the first type of structure rather than the second type.

The above hypothesis should potentially be testable with *criticism*. But it turned out that for this noun, some speakers found that the result interpretation was not very natural, perhaps due to the existence of a better word *critique*. It seems that *evaluation* is a more appropriate word to use for this purpose, since people obtain the result reading from it with relative ease. Hence, I constructed the following pair of examples with *evaluation*, which should test the hypothesis at issue in terms of the disjoint reference effect.

(19) a. *Mary's$_i$ evaluation of her$_i$ was videotaped.

b. (*)Mary's$_i$ evaluation of her$_i$(, which she got from Mrs. Smith,) was seen by her parents.

Sentence (19a) is biased towards the process reading of *evaluation* by the verb *videotape*, whereas in (19b) the result reading is promoted by the parenthetical. If the hypothesis is right, the latter should be judged to be grammatical and the former to be ungrammatical.

I asked 12 speakers for the judgments on these sentences. The result was that it was only 3 of them (=25%) who perceived the contrast.[7] This number is hard to interpret. Still, it is unquestionable that much fewer speakers accepted (19b) than I had anticipated.

I think that there are basically three ways to interpret the result. The first possible interpretation is that my hypothesis that for result nominals, the external θ-role is suppressed is simply wrong. The 3 speakers' judgments that (19b) is acceptable are performance errors of sorts. However, I should add here that, as far as those 3 speakers are concerned, the contrast in (19) appears to be fairly clear. The second possibility is quite the opposite. That is, my hypothesis is utterly correct, but for some reason, many of my informants accidentally categorized (19b) as ill-formed. For instance, the deverbal noun

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[6] See also Grimshaw (1990) for the view that result nominals lack a syntactic argument structure altogether.

[7] Actually, one informant gave a full check to both (19a) and (19b). But this is probably a performance error in grammaticality judgments.

evaluation might not have been an ideal choice for this test, or sentence (19b) might not have been devised wisely enough to facilitate the result reading. Finally, there is a possibility that my hypothesis is essentially right but that the outcome of the grammaticality judgments also reflects the truth about how language works. For example, it might be that the suppression of the external θ-role in result nominals really exists but is optional and perhaps quite a marked operation.

At this point, it is premature to determine which of the above possibilities is actually the case. At any rate, further research is encouraged that investigates the structure of result nominals in relation to binding.

4. Conclusion

In the present paper I have argued that there are two subtypes of so-called possessed *picture*-NPs. In one kind, the possessor DP is base-generated in the possessor position as in the case of *picture*, and in the other, such a DP is raised from the NP inside as in the case of *criticism* (in the process reading). I have further claimed that Condition A, which is subsumed under the chain condition in this paper, is only applicable to anaphors embedded in the latter. As for those embedded in the former, something like discourse conditions is relevant.

This approach explains why sentences such as (1a) have variability in judgments, depending on the speaker. Moreover, it also provides an answer to the puzzle that some people judge (2) to be distinctly worse than (1a). Also, in section 3.2 I have shown that by adopting those subtypes of possessed *picture*-NPs, the divergent behavior between *picture* and *criticism* with respect to the disjoint reference effect, which is otherwise mysterious, can be accounted for. Finally, in section 3.3 I have briefly discussed the structure of result nominals.

Picture-NPs have been problematic for the theory of anaphora for quite a while, and various suggestions have been made as to how they can be integrated into the theory. This paper is intended as another contribution to the better understanding of anaphors both data-wise and theory-wise. The paper has provided some new data, which had, as far as I know, not been presented elsewhere. Also, it has made some theoretical proposals, which if they are on the right track, will help to build a more comprehensive theory of anaphora.

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