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**Readings on  
Unbounded Dependencies  
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# The Status of Resumptive Pronouns in Swedish\*

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Ross (1967) notes that certain configurations constitute "islands" for unbounded rules in the sense that the otherwise general rules cannot extract out of such configurations, whether by movement or by deletion. Ross isolated a number of syntactic configurations as "islands"; for English the principal islands are the Complex Noun Phrase, the Left-Branch (or Possessive) NP, and the Sentential Subject. Other configurations or constructions have since been added to the list, notably embedded questions, known as "*wh*-islands".

Ross also observed that while some unbounded rules, such as Topicalization, obey these island constraints, others, such as Left Dislocation, do not. The difference is illustrated by the contrast in (1) and (2) with respect to the Sentential Subject Constraint and the Complex NP Constraint, respectively. The ungrammatical (a)-sentences are Topicalizations; the grammatical (b)-versions are Left Dislocations.

- (1) a. \*My father, that my mother supported \_\_\_ her whole life is well-known by the neighbors.  
b. My father, that my mother supported *him* her whole life is well-known by the neighbors.
- (2) a. \*Island constraints, Ross expressed the hope that all languages would obey \_\_\_\_\_.  
b. Island constraints, Ross expressed the hope that all languages would obey *them*.

Ross hypothesized that the relevant factor was the difference between having a gap or a resumptive pronoun in the "target" or "extraction" site, indicated by a dash or underlining in the example sentences. He proposed a dichotomy between two types of movement rules: "chopping" rules, which leave gaps and obey island constraints, and "copying" rules, which leave pronouns and do not obey island constraints.

There have been many different formulations of copying and chopping rules since 1967, but the distribution of resumptive pronouns and gaps in questions and relatives is usually still assumed to be largely complementary. Also, it has generally been assumed that resumptive pronouns will occur where extraction (with gaps) is impossible in English, as "islands" are supposed to be by and large universal, although recent papers by Allwood (1976), Rizzi (1978), Maling and Zaenen (1979), Taraldsen (1978), and Engdahl (1980), among others, point out the cross-linguistic variation that can be found even among Indo-European languages.

Our aim in this paper is to show that this view of resumptive pronouns is too simplistic. For Swedish the generalization that resumptive pronouns and gaps are

in complementary distribution does not hold. The following examples show that all four logical possibilities can occur: (3) shows that in some sentences both a gap and a pronoun are allowed; (4) gives an example in which a gap is allowed but not a pronoun; (5) illustrates the case in which a pronoun is allowed, but not a gap; and (6) illustrates the case in which neither a gap nor a pronoun is possible.

- (3) a. Vilken bok mindes ingen varför läraren frågade vem som skrivit \_\_\_\_?  
 b. Vilken bok mindes ingen varför läraren frågade vem som skrivit *den*?  
 'Which book remembers nobody why the-teacher asked who wrote (it)?'
- (4) a. Här är boken som jag läste \_\_\_\_.  
 b. \*Här är boken som jag läste *den*.  
 'Here is the-book that I read (\*it).'
- (5) a. \*Vem undrade alla om \_\_\_\_ skulle komma i tid?  
 b. Vem undrade alla om *han* skulle komma i tid?  
 'Who<sub>i</sub> wondered all if (he<sub>i</sub>) would come on time?'  
 'Who did everyone wonder if he would come on time?'
- (6) a. \*De blommorna talar jag med en man som säljer \_\_\_\_.  
 b. \*De blommorna talar jag med en man som säljer *dem*.  
 'These flowers am-I-talking with a man that sells (them).'

In this paper we will look at the distribution of resumptive pronouns in Swedish insofar as it provides evidence as to the nature of resumptive pronouns and island constraints. We will discuss the nature of the binding relations between extracted constituents and resumptive pronouns, and argue (contra Chomsky (1977)) that this binding cannot be considered a simple case of anaphoric binding. We will explain the noncomplementary distribution by arguing that island constraints have two sources: processing difficulties and functional deviance (in the sense of Kuno (1976)). Island violations of the former kind can be saved by a resumptive pronoun, whereas those violations that create functionally deviant sentences cannot.

Unbounded dependencies with resumptive pronouns, i.e. "copying" rules in Ross's terminology, are rare in English, but they are much more common in other languages. In Swedish, all unbounded dependencies (relative clauses, topicalizations, questions) give rise to resumptive pronouns under certain conditions. This fact is illustrated by the examples in (7) as well as in (5b) above.

- (7) a. De talade om den skrivning som Pelle undrade om det att Kalle redan läst *den* kunde göra någon skillnad.  
 'They talked about the exam<sub>i</sub> that Pelle wondered if [it] that Kalle had already read it<sub>i</sub> would make any difference in the result.'
- b. Kalle undrade alla om *han* skulle komma i tid.  
 'Kalle everybody wondered if he would come on time.'

(5b) is a question and (7b) a topicalization where the target site is an embedded subject; (7a) is a relative clause where the target NP is inside a sentential subject. (Such sentences with resumptive pronouns are used surprisingly often by English

speakers, as well, in their unguarded speech, but they are clearly felt to be substandard.)

Chomsky (1977) assumes that there is an essential difference in the binding relation between a trigger and a target according to whether the target is a gap or a pronoun. He suggests that in the case of a gap, the binding relation is syntactic, whereas in the case of a resumptive pronoun, as in (7), the binding relation is simply anaphoric. We will argue that the binding relation between trigger and resumptive pronoun must be distinguished from simple anaphoric binding. In so far as there exist any tests that could distinguish between the binding in sentences with resumptive pronouns and those with gaps, the binding relation is the same in both cases.

A case of simple anaphoric binding is illustrated in (8).

- (8) Jag såg Per i går; *han* såg bra ut.  
'I saw Per; yesterday; he; looked great.'

The main evidence for distinguishing the relations between antecedent and anaphor in (8) from the relation between antecedent and resumptive pronoun in (7) is distributional. It is best brought out by comparing the behaviour of resumptive pronoun in topicalized sentences and questions to the behavior of pronouns in Left Dislocation, which can be considered a construction in which the pronouns are genuinely "simply anaphoric" and in which the constituents can be assumed, even in a traditional transformational framework, to be base-generated in the place where they occur in the surface.

First, the distance requirement on resumptive pronouns in Swedish are very different from those on free pronouns. Resumptive pronouns cannot occur less than two clauses away from their antecedents. Free pronouns however, are not subject to this restriction: coreference is normally possible when the pronoun is only one clause down from its antecedent. This difference is illustrated by the contrast in (9).

- (9) a. Kalle, (jag tycker att) jag borde lära *honom* litet engelska.  
'Kalle; (I think that) I should teach him; a-little English.'  
b. \*Vem tycker du att jag borde lära *honom* litet engelska?  
'Who; do-you-think that I should teach him; a-little English?'

Note that this example shows that the distribution of resumptive pronouns is also different from that of so-called bound pronouns, which can occur in the first clause down from the antecedent, as illustrated in (10).

- (10) Varje lingvist tycker att *han* borde lära sig åtminstone ett annat språk.  
'Every linguist; thinks that he; should learn at least one other language.'

*Han* can be interpreted as coreferential with *varje lingvist*. Hence the binding between antecedent and resumptive pronoun is not the same as the semantic binding between quantifier and variable.

Another difference between resumptive pronouns and free pronouns is that free pronouns can be replaced by an epithet, whereas resumptive pronouns cannot. This fact is illustrated by the contrast in (11).<sup>1</sup>

- (11) a. Kalle, alla räknade med att *den idioten* ändå inte skulle komma i tid.  
'Kalle; everybody counted on (it) that the idiot; wouldn't come on time after all.'



- b. \*[En av sina; flickvänner]; jag undrade om det att Kalle; inte längre fick träffa henne; kunde ligga bakom hans dåliga humör  
 One of his; girlfriends. I wonder if it that Kalle; no longer sees her could lie behind his bad mood

In (a) the reflexive is contained in the subject of a clause that dominates the clause containing the "antecedent" and the result is bad whether the antecedent is a full NP or a pronoun. In (b) the reflexive is contained in a LD constituent, a position that we assume to be base-generated as such, as explained above, and the result is again bad. It does not help to have a possible antecedent that precedes in discourse as shown by ungrammaticality of the following sentence:

- (16) \*Vi talade om Kalle;. Sina; flickvänner säger att han är på dåligt humör  
 We talked about Kalle. His girlfriends say that he is in a bad mood

We can however get reflexives in topicalized or *wh*-moved positions, as shown by (17).

- (17) Vilken av sina; flickvänner tror du att Kalle; inte längre får träffa?  
 Which of his; girlfriends think you that Kalle; no longer sees?

The standard transformational explanation for this pattern is of course that reflexivization applies before rules like *wh*-movement.

Notice that the following is grammatical:

- (18) [Vilken av sina; flickvänner]; undrade du om det att Kalle; inte längre fick träffa henne; kunde ligga bakom hans dåliga humör?  
 Which of his girlfriends wondered you if [it] that Kalle no longer sees her could lie behind his bad mood?

Here again the link between "vilken av sina flickvänner" and "henne" cannot be "simply anaphoric binding" because then we would expect the grammaticality status of (18) to be the same as that of (15b). Instead we see that (18) behaves like (17), showing that both a resumptive pronoun and a gap allow the same type of relation to be established: if we assume (17) to be derived by the same rule as (18), we account for this pattern of grammaticality judgements.

It is obvious that the movement analysis of (18) is less attractive than that of (17) because we have to assume that the movement rule is followed by a lexical insertion rule, something one might want to avoid. We will not go into this aspect of the question here however, but rather make a second observation: namely that we have to assume that the rule that generates the question in (18) violates the sentential subject constraint; more specifically, if *wh*-questions are derived by *wh*-movement, the Sentential Subject Constraint (or the Subject Condition, in terms of Chomsky (1973)) is not a constraint on the application of *wh*-movement.

Given the differences between resumptive and free pronouns and the similarities between resumptive pronouns and gaps just noted, we can conclude that in Swedish at least the use of resumptive pronouns does not reflect a switch from *wh*-movement (or "syntactic" binding in a basegenerated framework) to anaphoric binding. Hence the reason that resumptive pronouns are used in some "islands" cannot be due to a difference in type of binding as Chomsky (1977) suggests.

We are left, of course, with our original question: what does the use of a resumptive pronoun change? We hypothesize that the difference lies in the fact that resumptive

pronouns facilitate processing. This idea is neither new nor counterintuitive; however, it is far from clear why it should be the case. There is experimental evidence to support the claim that resumptive pronouns do facilitate processing. In a preliminary experiment run at Brandeis University by Wall and Kaufman (1980), native speakers of English were presented with comparable sentences both with and without resumptive pronouns at 80 %, 60 % and 40 % compression. Subjects were asked to write down what they recalled immediately after hearing the sentences. Recall was significantly better for the sentences with resumptive pronouns than for comparable sentences with gaps, especially at 40 % compression when the processing task was the most difficult.

But why are pronouns easier to process than holes? One hypothesis that can be *rejected* is that resumptive pronouns help the listener locate the gap and thus reduce ambiguity. Resumptive pronouns characteristically have the same morphological shape as normal personal pronouns. Accordingly, when one hears them, they cannot immediately be identified as coreferential with some constituent *on hold* as opposed to some entity in the universe of discourse. Consider the sentences in (19).

- (19) a. *Vem undrade du om han verkligen tror att hon kommer att slå honom?*  
 Who did you wonder if he really thinks that she will beat him?
- b. *Vem undrade du om han verkligen slog  $\left\{ \begin{array}{l} \text{honom} \\ \emptyset \end{array} \right\}$ ?*  
 Who did you wonder if he really beat (him)?

The first underlined pronoun *han* could either be a resumptive pronoun coreferential with *vem*, or it could be a free pronoun referring to some person not explicitly mentioned in the sentence. There is no immediate way to tell which is the intended referent. (19a) remains ambiguous: either underlined pronoun could be a resumptive pronoun. In (19b), where the distance principle prohibits a resumptive pronoun in object position, the listener cannot be sure that *han* is a resumptive pronoun until he encounters the pronoun *honom* after the verb *slog*. If the listener encounters a gap on the other hand, then the gap will be linked to the question word *vem*, and the underlined *han* will be interpreted as a free pronoun.

We hypothesize that the linking of gaps to their antecedents is psychologically different from the linking of free anaphors to their antecedents. In the experiment described earlier, subjects made mistakes in remembering the constituents immediately following the gap, but had no such trouble remembering what followed a resumptive pronoun. This suggests that the strategy used to assign a gap to an antecedent is different, that in trying to figure out the predicate argument structure within a clause, people first try to assign the argument positions of the verb to constituents which are phonologically present (e.g. resumptive pronouns), and only when that fails do they look to constituents that they have somewhere in memory store.

This hypothesis leaves several points unexplained. Why is it commonly the case that resumptive pronouns cannot occur "too close" to their antecedents? Perhaps it is gaps that reduce ambiguity! We need to know more about the processing of resumptive pronouns before these questions can be addressed fruitfully.

But we would like to point out one implication of our hypothesis here, namely, that the structures in which resumptive pronouns should be found are in themselves more difficult to process than those out of which extraction is possible with a gap. Some evidence for this claim comes from sentential subjects. It has been found that

nonextraposed sentential subjects are more difficult to process than subordinate clauses which follow their main verbs (Holmes (1973)). The fact that resumptive pronouns are used in crossing dependencies in Swedish (Engdahl (1979)) suggests that crossing dependencies are harder to process than nested ones. Again further research is needed to test this claim.

Finally, if the function of resumptive pronouns is to facilitate processing, then they should be of no help whatsoever in a sentence which is unacceptable for a reason that is not related to processing.

This might well be true for extractions out of relative clauses. In the case of sentential subject, as seen in example (7a), resumptive pronouns can be used to make an extraction acceptable; but extractions out of some islands cannot be saved by resumptive pronouns, as illustrated in (6) and (20).

- (20) a. \*De blommorna talar jag med en man som säljer (*dem*).  
 b. \*Kalle känner jag flickan som gillar (*honom*).  
 Kalle, I know the girl who likes (him).

We hypothesize that island constraints have at least two distinct sources: processing difficulties and functional deviance in the sense of Kuno (1976). Note that some extractions out of relative clauses are acceptable, as illustrated in (21), to be contrasted with (20).

- (21) De blommorna känner jag en man som säljer.  
 'These flowers I know a man who sells.'

The fact that sentences such as (21) are good shows that the problem in (20) is not syntactic. Jens Allwood (1976) discusses various factors affecting the acceptability of such extractions. One such factor seems to be the definiteness of the head of the relative clause; another is the semantic content of the matrix or "bridge" verb. Kuno accounts for the difference in terms of the discourse function of relativization and topicalization. In (20) the relative clauses are about the heads; hence further extraction is impossible. (21) however can be interpreted as being about *the flowers* rather than about the head of the relative clause, and hence the extraction is good.

Unfortunately the appeal to functional constraints cannot be the whole explanation either: in some other languages, e.g. Irish, binding into relative clauses is possible even when the head is definite (McCloskey, personal communication).

Note that the fact that resumptive pronouns do not make the sentences in (20) acceptable provides still further support for our assertion that the binding involved is not anaphoric. The left-dislocated sentences corresponding to the ungrammatical topicalizations in (20) are good, as illustrated in (22).

- (22) a. De blommorna, jag talar ofta med en man som säljer *dem*/\*Ø.  
 b. Kalle, jag känner faktiskt flickan som gillar *honom*/\*Ø.

Note the different position of the matrix verb in (22) as compared to (20). Word order serves to distinguish Left Dislocation from Topicalization unambiguously in the Scandinavian languages. Presumably the syntactic binding relation that holds between a topicalized element and its gap or a resumptive pronoun is sensitive to the definiteness of the head of the relative clause (or to whatever else the right semantic property may be), but the anaphoric binding relation is not sensitive to the same property.



The contrast between (20) and (22) also implies that the discourse functions of Left Dislocation and Topicalization are different. Recent studies by E. Prince (1980) provide evidence that this is so English; (see also Th. Fretheim (1978) on the discourse function of Topicalization in Norwegian.)

Although these residual problems need further investigation, our discussion of the status of resumptive pronouns in Swedish shows clearly that their distribution is quite different from that of free pronouns and that the binding relation is syntactically like the binding relation for gaps. Furthermore, it suggests that a uniform account of island constraints is undesirable: certain island violations resulting from processing difficulties can be saved by a resumptive pronoun, whereas those islands that seem to involve functional deviance cannot.

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## Note

1. This seems actually too strong. Although (11b) is ungrammatical, (i) is not totally bad (Engdahl p.c.).

- (i) Kalle undrade alla om den slöflocken skulle komma i tid.  
Kalle did-all-wonder if the lazy bastard would come on time.

The status of epithets remains to be further investigated.

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