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SWEDISH REFLEXIVIZATION

The distribution of the reflexive pronouns mig and sig is a classical problem of Swedish grammar. Through the studies of Ljunggren (1901), Silverbrand (1901), Lindroth (1928, 1941) and Wellander (1935, 1947, p. 233-231) a large number of facts and generalizations have been uncovered. The present article is an attempt to describe these facts and generalizations in terms of an explicit rule, using the descriptive devices made available by generative grammar.

1. Swedish has reflexive pronouns only in third person. In first and second person there is no morphological distinction between reflexive and non-reflexive pronouns:

(1) a. Jag rakade mig  
    (I shaved myself)  
    b. Han rakade mig  
    (He shaved me)  
    c. Du rakade sig  
    (You shaved yourself)  
    d. Han rakade dig  
    (He shaved you)  
    e. Han rakade sig  
    (He shaved himself)  
    f. Han rakade honom  
    (He shaved him)

There are five non-reflexive third person pronouns in Swedish: han (he), hon (she), den (it, non-neuter), det (it, neutre) and de (they), but only one reflexive personal pronoun: sig, unmarked both for number and gender. There is also a possessive pronoun: sin, which agrees with its head noun in number and gender:

(2) Hon tvättade sin/hennes bil  
    (She washed her/hers car)
Sig (as well as other definite noun phrases) may be followed by the 
adverbial själv (self). Själv is obligatory if the reflexive 
pronoun is emphasized or can not be enclitically adjoined to the 
preceding word.

2. Diderichsen (1959) has formulated the following rule for the 
distribution of reflexive pronouns in Danish, a rule which 
provides an excellent point of departure for an analysis of 
Swedish reflexive pronouns as well (the translation and the 
numbering are mine):

"Sig and sin can always (and only) be used, where it is 
possible to regard this constituent as 'determining the 
predicate' (as Goal) in a 'hidden sentence' (asymmetrical 
relation), whose 'subject' (Source) is the (explicit or 
implicit) entity, to which the pronoun refers.

1. This use is obligatory whenever a verb (finite or 
infinite), an adjective or a verbal noun constitutes the 
finite or hidden sentence ('bears' the asymmetrical relations);

2a. It is moreover common in other cases, where there is a 
similar relation between the constituents, and

2b. in cases, where it is indicated that a constituent 
determining the predicate in a 'hidden' sentence is identical 
to the subject of the superordinate nexus.
In the last two cases, it is avoided in careful speech, if 
misunderstanding is possible.

3a. With plural subjects deras is used;
3b. With subjects denoting things not seldom deres, desen, 
especially where the thing bears a (semantic) object relation 
to a verbal noun." (Diderichsen 1959 p.67)

2. Case 1, covers reflexivization within simplex nominalizations 
and clauses:

(3) a. Hon_1 tvättade sig_1/'hennes_1
    (She washed herself/"her")

b. Hon_2 tvättar sina_2/'hennes_2 kläder
    (She washes her clothes)

c. Hans_1 beskrivning av sig_1/'honom_1 själv
    (His description of himself/"him")

d. Hans_1 beskrivning av sina_1/'hans_1 framtidsplaner
    (His description of his plans for the future)

(4) a. Jag bad honom_1 att tvätta sig_2/'honom_2
    (I asked him to wash himself/"him")

b. Jag bad honom_1 att tvätta sina_2/'hans_2 kläder
    (I asked him to wash his clothes)
c. Kvinnan som hade mördat sin hennes mangrep igår
   (The woman who had killed her husband was caught yesterday)
d. Kvinnan som polisen trodde hade mördat sin hennes man
   var oskyldig
   (The woman who the police thought had killed her husband
   was innocent)

In such cases, reflexivization is always obligatory, provided that
the following conditions are met:

(5) NP₂ is obligatorily reflexivized, if the sentence contains
another noun phrase, NP₁, such that
   (i) NP₁ and NP₂ are coreferential
   (ii) NP₁ precedes NP₂
   (iii) NP₂ commands NP₁
   (iv) NP₂ is in construction with NP₁ (NP₂ is dominated by the
       node which directly dominates NP₁)
   (v) NP₁ and NP₂ are not in different conjuncts of an NP-
       coordination
   (vi) NP₁ is directly dominated by NP or S

Condition (ii) states that there are no backwards reflexivization in
Swedish. There are, however, a few cases where a reflexive pronoun
may precede its antecedent in surface structure:

(6) a. Sina föräldrar träffar han en gång i veckan
    (His parents, he meets once a week)
b. Det var sig själv han tänkte på
    (It was himself he thought of)
c. En för sitt ändamål ovanligt lämpad produkt
    (One for its use unusually fitted product)

To account for these cases, it will be assumed that reflexivization
applies to the intermediate structures in (7).

(7) a. Han träffar hans föräldrar en gång i veckan
b. Det var han själv tänkte på honom själv
   [pronoun]
   c. En produkt den är ovanligt lämpad för dess ändamål

After reflexivization has applied, the rules RELATIVE CLAUSE FORMATION
and MODIFIER SHIFT (converting (7c) to (6c)), CLAIR SHIFT FORMATION
(converting (7b) to (6b)) and TOPICALIZATION (converting (7a) to
(6a)) apply.
Condition (iii) prevents reflexivization from applying across a sentence boundary ("Han vet att jag villar sig" ("He knows that I like himself")). Together with condition (iv), condition (iii) restricts the domain of obligatory reflexivization to a simplex clause or nominalization. The reason for using the relation in construction with rather than the relation command in condition (iv) is that only the former relation accounts for sentences like (8), whose constituent structure is (9).

(8) Hansföräldrar beundrade honom./*s sig.
    (His parents admired him/*himself)

(9)
```
     S
    /   \
   NP1   VP
    |    /  \  \
   NP2  NOM  V
    |    /  \  \
   N    hans föräldrar beundrade honom
```
Here conditions (i), (ii), (iii), (v) and (vi) are met. However, reflexivization is blocked. This blocking must be due to condition (iv). But this blocking can only be effected by means of the relation in construction with (NP3 is not in construction with NP2 in (9), since NP3 is not dominated by NP1), since NP2 commands NP2 in (9).

Condition (iv) has to be supplemented with condition (v), to exclude reflexivization within an NP-coordination (10). Condition (iv) allows reflexivization within NP0 in (11), since NP3 is in construction with NP1 (NP3 is dominated by NP0).

(10) Egon och hans/*s sig föräldrar var här igår
    (Egon and his parents were here yesterday)

(11)
```
  NP0
   /  \
  NP1 CONJ NP2
   |    /  \  \
  Egon och hans föräldrar
```
Condition (vi), finally, accounts for the contrast between (12a) and (12b).

(12) a. *Han_1 köpte hans_2 motocykeln av Sune_
   (He bought his motorcycle from Sune)
   b. Sune gav honom_1 hans_2 motocykeln
   (Sune gave him his motorcycle)

The obligatory reflexivization in the sentences in (4) is accounted for by making reflexivization apply cyclically. Reflexivization would then apply obligatory on the S_2 cycles, since the subjects of these clauses would be deleted only on the S_1 or S_0 cycles.

(13) a. S_1 [Jag bad honom_1 S_2 [han_1 tvätta {honom_1 hans_2 kläder}]]
   b. \[\triangleq \text{grep kvinnan_1} S_2 [hon_1 hade mördat hennes_1 man] igår]  
   o. S_0 [kvinnan_1 S_1 [polisen trodde S_2 [hon_1 hade mördat hennes_1 man]] var oskyldig]

2.2 Case 2a. covers reflexivization with non-subject antecedents. If NP_1 is a non-subject, reflexivization is optional rather than obligatory:

(14) a. Vi gav honom_1 sin_2/hans_2 bussa och lät honom_1 löpa
   (We gave him his gun and let him run)
   b. Vi visade åskådarna_1 till sin_2/deras_1 platser
   (We showed the spectators to their seats)
   o. Jag trodde att din avsikt var att återge Alarik_1 sin_2/hans_2 frihet
   (I thought your intention was to give Alarik his freedom back)

Hellan (1971 p.117) has pointed out that in cases with a non-subject antecedent, both NP_1 and NP_2 must be dominated by the same VP (or NOM):

(15) a. Tjvarna_1 [rånade Egon_1] på hans_2/izes kontor
   (The thieves robbed Egon at his office)
   b. Gästerna_1 [drack för mycket] hos Egon_1 på hans_2/izes födelsedagsfest
   (The guests drank too much at Egon's at his birthday party)
One part of this restriction follows from condition (iv). If NP₁ is dominated by VP₁, NP₂ can not be in construction with NP₁, unless NP₂ too is dominated by VP₁.

The other part of the restriction, that a non-subject antecedent must be dominated by VP or NOM, is captured by the following condition:

(16) NP₁ is either a left sister or a daughter of a VP or NOM with a relational head

This condition also exclude reflexivization within an NP-coordination, since NP₁ is neither left sister nor daughter of a NOM node in (11).

The qualification "with a relational head" is intended to account for an observation by Hellan (1973). He noted that a genitive NP may serve as antecedent for a reflexive pronoun only if it modifies a relational noun (that is, if it is subject of the head noun of the noun phrase):

(17) bara hans, möbler på hans, sitt kontor är värde en förmögenhet (Only his furniture in his office is worth a fortune)

(18) bara hans, vårdslöshet med sina, hans ägodelar har kostat honom en förmögenhet (Only his carelessness with his belongings has cost him a fortune)

Hellan (1973) proposed the following condition to account for the contrast between (17) and (18): 4

(19) NP₁ is an argument to the head of the NP or S which most directly dominates it

It would seem that condition (16) is only a reformulation of (19) in syntactic terms. However, there is at least one case where (19), but not (16), incorrectly blocks reflexivization. Consider e.g. sentence (20).

(20) Han, trodde vara rik i sin, hemstad (He was believed to be rich in his home town)

(21) [Δ trodde [han, vara rik] i hans, hemstad]
(20) is derived (21) through SUBJECT RAISING and PASSIVE. The derived subject then triggers the reflexivization of hans. But semantically the derived subject is not an argument to 
<tr>, only to <nominative>. Thus, condition (19) would incorrectly block (20).

2.3. Case 2b, accounts for sentences where reflexivization has applied across an S boundary into an infinitive complement (22a) or across an NP boundary into a subjectless nominalization (22b). In such cases reflexivization is optional, provided that no subject NP intervenes between NP₁ and NP₂ (22c, 22d) and provided that the antecedent is a subject (22e).

(22) a. Hon₁ bad mig klippa sig₁/henne₁ (She asked me to cut her hair)
    b. Han₁ tillåt offentligföranden av sina₁/hans₁ privatbrev (He allowed the publication of his private letters)
    c. Hon₁ bad mig att jag skulle klippa henne₁/sig₁ (She asked me that I should cut her hair)
    d. Han₁ tillåt mitt offentligförande av hans₁/sina privatbrev (He allowed my publication of his private letters)
    e. Jag lovade henne₁ att klippa henne₁/sig₁ (I promised her to cut her hair)

Subjects of subordinate clauses never undergo reflexivization (23a), though subjects of nominalizations do (23b).

(23) a. Han₁ firade sig₁ hade utnämnts till kapten (He celebrated that he had been appointed captain)
    b. Han₁ firade sig₁ utnämning till kapten (He celebrated his appointment to captain)

Thus, if NP₂ is dominated by S₁ in (24a), and NP₁ is not, reflexivization is optional if NP₃ is absent and blocked if it is present. Similarly, if NP₂ is dominated by NOM in (24b) and NP₁ is not dominated by NP₃, reflexivization is optional if NP₃ is absent and blocked if it is present. Reflexivization may apply across the boxed nodes in (24) only if NP₃ is absent (however, if NP₁ = NP₃ in (24b), reflexivization is of course obligatory).
Condition (iii) in (5) should then be replaced by the following condition:

(25) (iii') There is no node NP or S, which

a. does not dominate NP₁, but dominates NP₂ (in the case of S) or directly dominates a node NOM

which dominates NP₂ (in the case of NP), and

which furthermore

b. directly dominates an NP node ₃

If b. is not the case, reflexivization is optional. Otherwise, it is blocked. However, if sig is followed by själv (self) or if sin is followed by egna, NP₂ must command NP₁:

(26) a. Han₁ bad henne tvättå sig₁/själv
(He asked her to wash herself)

b. Han₂ bad henne tvättå sina₁/sina₂ egna kläder
(He asked her to wash his (own) clothes)

2.4. Of the cases in 2., only 3b. is valid for Swedish. The distinction between animate and inanimate NP's is salient in at least the following cases:

I. Inanimate subjects tend to trigger reflexivization less strongly than do animate subjects:
(27) a. Han ramlade ned från sitt torn
    (He fell down from his tower)

b. Tavlan fällde ned från sin krok
    (The painting fell off its hook)

This tendency is even more pronounced in passive sentences with inanimate subjects, where reflexivization is optional:

(28) a. Tjoven fördes till polisstationen i sin egen bil
    (The chief was brought to the police station in his own car)

b. Pengarna återlämnades till sin ägare
    (The money was returned to its owner)

II. Although reflexivization optionally applies to a structure like (29a), this is less natural if (29a) is derived from the phrase marker (29c) (at the beginning of the cycle on $S_0$) than if it is derived from (29b). In other words, reflexivization is more natural if the deleted or moved subject is inanimate (30a) than if it is animate (30b).

(29) a. $S_0[\np_1 \ldots \ s_1[\ v \ldots \ np_2 \ldots ]]$

b. $S_0[\np_1 \ldots \ s_1[\ np \[-anis]] \ v \ldots \ np_2 \ldots ]$

c. $S_0[\np_1 \ldots \ s_1[\ np \[-anis]] \ v \ldots \ np_2 \ldots ]$

(30) a. Hon kände själen mot sina panna
    (She felt the sea breeze crisscross her forehead)

b. Hon kände sjökaptenen smeka sina panna
    (She felt the sea captain caress her forehead)

III. Reflexivization can not apply to a structure like (29a) if $np_1$ is inanimate:

(31) a. *Den mager jorden tvingade båtorna att odla sig språnt
    (The meager soil forced the farmers to cultivate it sparsely)

b. *Den höga berget tvingade floden att göra en krusk omkring sig
    (The high mountain forced the river to meander around it)
3. So far, the following conditions on Swedish reflexivization have been isolated:

(32) a. NP₁ may reflexivize NP₂ if and only if
   (i) NP₁ and NP₂ are coreferential
   (ii) NP₁ precedes NP₂
   (iii) NP₂ is in construction with NP₁
   (iv) NP₁ is either a left sister or a daughter of a VP or NOM with a relational head
   (v) There is no S which dominates NP₂, but not NP₁, and which directly dominates an NP
   (vi) There is no NP which does not dominate NP₁, but which directly dominates a node NOM which dominates NP₂, and which directly dominates an NP

b. Reflexivization is optional if
   (i) NP₁ is a non-subject
   (ii) There is an S which dominates NP₂, but not NP₁, and which does not directly dominate an NP
   (iii) There is an NP which does not dominate NP₁, but directly dominates a node NOM which dominates NP₂, and which does not directly dominate an NP

c. (i) If NP₁ is [-animate], reflexivization is weaker than if NP₁ is [+animate]
   (ii) If NP₁ is an inanimate subject of a passive sentence, reflexivization is optional
   (iii) If reflexivization applies across an NP or S (as specified in b(ii) and b(iii)), NP₁ must be an animate subject. If the NP or S directly dominated an animate NP at the beginning of the cycle on which reflexivization applies, reflexivization is weaker than if the NP or S directly dominated an inanimate NP

Conditions a(i) - a(iv) are incorporated into the following rule:
(33) REFLEXIVISATION

\[
\begin{array}{ccccc}
X & NP_1 & Y & NP_2 & Z \\
\text{[+PRO]} & & & & \\
1 & 2 & 3 & 4 & 5 \Rightarrow \\
1 & 2 & 3 & 4 & 5 \text{[+REL]} \\
\end{array}
\]

Conditions: (i) 2 is either a left sister or a daughter of a VP or NNM with a relational head
(ii) 4 is in construction with 2

To capture the other conditions, the notion antecedent strength of 2 with respect to 4 will be introduced. The antecedent strength is expressed by a number between 1 and 0, and is intended to measure the capacity of a given NP to serve as antecedent for a given reflexive pronoun. Each phrase marker which meets the structural description of (33) is assigned the value 1. The antecedent strength is then calculated through rule (34). This rule is sensitive not only to properties of the phrase marker to which reflexivisation applies, but also to properties of the phrase marker which is the input to the cycle on which reflexivisation applies (RM_1).

(34) I. Multiply with \[ \begin{cases} 
1/2 \text{ if 2 is a non-subject} \\
3/4 \text{ if 2 is a non-subject in FM_1} 
\end{cases} \]

II. If there is a cyclical node A (NP or S) which dominates 4, but not 2, and it is not the case that A - NP and 4 is directly dominated by A

\[ \begin{cases} 
0 \text{ if A directly dominates an NP} \\
1/2 \text{ if A directly dominates an NP in FM_1} \\
3/4 \text{ if there is a cyclical subject of A and it is not the case that it is } [-\text{animate]} \\
\end{cases} \]

(The brackets indicate disjunctive ordering.)

Rule (34) will be exemplified through its application to the following sentences:

(35) a. Non_1 tvättar sig_2/'henne_1
    \[=\text{3a}\]

    b. Non_1 tvättar sina_2/'henne_2, klädar
    \[=\text{3b}\]

    c. Tavlarn_1 ramlade ned från sin_2/'?dec_1 krok
    \[=\text{27b}\]

    d. Pengarna_1 återlämnades till deras_2/sin_2 ägare
    \[=\text{20b}\]
(36) a. Hon, bad mig att jag skulle klippa henne\textsubscript{4}/\textsubscript{sig} \textsubscript{4} (=22c)
b. Han, firade att han\textsubscript{4}/\textsubscript{sig} \textsubscript{4} hade uträknts till kapten
   (=23a)
c. Hon\textsubscript{4}, kände sjuoluen smeke sin\textsubscript{4}/hennes\textsubscript{4} panna \textsubscript{panna} (=30a)
d. Hon\textsubscript{4}, kände sjukaptenen smeke sin\textsubscript{4}/hennes\textsubscript{4} panna \textsubscript{panna} (=30b)
e. Den nagra jorden, tvingade bönderna att odla
den\textsubscript{4}/\textsubscript{sig} \textsubscript{4} sparsamt
   (=31a)

(37) a. Vi visade åskrådarna\textsubscript{4} till sina\textsubscript{4}/deras\textsubscript{4} platsar (=14b)
b. Jag lovade henne\textsubscript{4} att klippa henne\textsubscript{4}/\textsubscript{sig} \textsubscript{4} (=22e)

In (35a) and (35b) reflexivization is obligatory. None of the rules in (34) are applicable. Consequently, the antecedent strength will be 1. In (35a) the antecedent is animate. Through rule I(c), the antecedent strength assigned will be 3/4. The antecedent in (35d) is inanimate and a non-subject in PK\textsubscript{4}, being a återlämnade pangarna, till deras\textsubscript{4} ägare. The antecedent strength will be 9/16 (3/4 from I(b) and 3/4 from I(c)).

(36a) and (36b) receive the antecedent strength 0 through rule II(p). Rule II(b) is applicable to (36c) and (36d) (PK\textsubscript{4} would be [hon, kände sjuoluen/sjukaptenen smeke henne, panna]). Since the cyclic subject of the subordinate clause in (36d) is [animate], rule II(c) is applicable. The antecedent strengths of (36c) and (36d) will be 1/2 and 3/8, respectively. To (36c), the rules I(c) (inanimate antecedent), II(b) and II(c) (inanimate antecedent and animate cyclic subject) are applicable. The antecedent strength will be 9/32.

(37a) receives the antecedent strength 1/2 through rule I(a) (the antecedent is a non-subject). Finally, the rules I(a), II(b) and II(c) apply to (37b), whose antecedent strength will be 9/32.

In sum, the following antecedent strengths are assigned through rule (34):

(38)

\[\begin{array}{c|c|c|c|c|c|c}
(35a) & OBL: & 1 \\
(35b) & OBL: & 1 \\
(35c) & OBL: & 3/4 \\
(35d) & OPT: & 9/16 \\
(36a) & + & 0 \\
(36b) & + & 0 \\
(36c) & OPT: & 1/2 \\
(36d) & OPT: & 3/8 \\
(36e) & + & 9/32 \\
(37a) & OPT: & 1/2 \\
(37b) & + & 9/32 \\
\end{array}\]
On the basis of these values, we can add the following condition to rule (39):

(40) (iii) OBL if the antecedent strength $\geq 3/4$

OBT if the antecedent strength $\geq 3/8$

4. As the rules II(a) and II(b) are formulated, reflexivization would obligatorily go down into a clause or nominalization which has no subject in FM$_4$. This formulation provides a way of describing the obligatory reflexivization of complements to basic relational nouns, such as bild (picture) and brot (brother).

(41) a. Han$_1$ visade mig en bild av sin$_1$/hans$_1$ syster
   (He showed me a picture of his sister)

b. Han$_1$ mötte en brot till sin$_1$/hans$_1$ fru
   (He met a brother of his wife)

If we assume that deep structure subjects are optional with such nouns (that only NP's with surface subjects are derived from NP's with deep subjects), the NP nodes dominating the underlined strings in (41) would not directly dominate any NP's in FM$_4$. Consequently, the antecedent strengths would be 1.

Another fact supporting this formulation of rule II is that reflexivization into infinitive clauses seems to be favored by the presence of a matrix verb which demands obligatory EQUI-NP DELETION:

(42) a. Hon$_1$ lät mig titta på sin$_1$ avhandling
   (She let me look at her dissertation)

b. Han$_1$ tvingade mig att skriva på sina$_1$ revereror
   (He forced me to sign his provisional notes)

Apparently, an obligatorily deleted subject blocks reflexivization much less than a subject which may show up in surface structure. Thus, obligatorily deleted subjects are treated almost as if they never had been present.

This is even more striking when we consider sentences like the following (Wellander 1947 p.241):

(43) a. Han låt inte en lord$_1$ bli bedragen av hans$_1$ egen skogsvaktare
   (lit. One does not let a lord get cheated by his own forester)

b. Han hjälpte sin dam$_1$ att få Yard på hennes$_1$ cigarett
   (He helped his lady to light her cigarette)
The sentences in (43) have (44) as underlying structure.

$$\text{(44)} \quad s_0 [ \text{NP}_1 \ldots \text{NP}_1 \ldots s'_1 [ \text{NP}_1 \ldots \text{NP}_1 \ldots ]]$$

Reflexivization should apply obligatorily on $s'_1$. Yet, $\text{NP}_1^d$ has not been reflexivized in the sentences in (43). The reason seems to be that only $\text{NP}_1$ has been considered as a possible antecedent. Once again, an obligatorily deleted subject has been "forgotten", and the infinitive clauses in (43) have been treated as if they were analogous to the NP's in (41). A possible way to take care of these facts would be to generate the sentences in (43) only derivatively, by means of an analogical rule (Hankamer 1977). A tentative formulation of such a rule is given in (45).

$$\text{(45)} \quad \text{If the surface structure SS}_1 \text{ is well-formed and the surface structure SS}_2 \text{ is not, where}$$

$$\text{SS}_1 = \ldots [ \text{NP} \; v_1 \; \text{NP} \; s'_1 [\text{VP}]] \ldots$$

$$\text{SS}_2 = \ldots [ \text{NP} \; v_1 \; \text{NP} \; s_1 [\text{NP} \; \text{VP}]] \ldots$$

the distribution of reflexive pronouns in SS$_1$ may be the same as if there had been no NP directly dominated by $s'_1$ at any stage of the derivation.

This rule also accounts for cases where reflexivization has applied down into a relative clause (Wellsander 1947 p.233):

$$\text{(46)} \quad \text{a. Han}_1 \text{ skulle behöva någon som tog hand om sig}_1$$

(He would need someone who would take care of him)

$$\text{b. I vaggan hade han}_1 \text{ med nöd en gammal käring som såg på sig}_1$$

(In the cradle, he had at most an old hag who looked after him)

At the point where reflexivization applies such sentences would have the structure (47), to which reflexivization is inapplicable.

$$\text{(47)} \quad s [ \text{NP}_1 \ldots \text{NP}_1 [ \text{NP}_1 [ \text{NP}_1 [ \text{NP}_1 \ldots \text{NP}_1 ] ] ]$$

The post-cyclic rule RELATIVE CLAUSE FORMATION would later obligatorily delete (or move) $\text{NP}_1$. Since the deletion is obligatory, rule (45) would be applicable.
5. In a recent paper, Bertil Rolf (1974) presents an analysis of Swedish reflexives based on the conditions on transformations proposed by Chomsky (1973), particularly the Tensed-S Condition (48) and the Specified Subject Condition (49).

(48) The Tensed-S Condition (TSC): "No rule can involve X, Y in the structure

... X ... [a ... Y ... ] ...

where a is a tensed sentence." (Chomsky 1973 p.236)

(49) The Specified Subject Condition (SSC): "No rule can involve X, Y in the structure

... X ... [a ... Z ... - WY ... ] ...

where Z is the specified subject of WY in a." (Chomsky 1973 p.237)

SSC would block reflexivization over an NP directly dominated by NP or S, while allowing reflexivization into a subjectless clause or nominalization. TSC would block reflexivization of subjects of subordinate clauses, all subordinate clauses with subjects are tensed in Swedish (48), while allowing reflexivization of subjects of NP's (NP are never tensed). Thus, SSC and TSC together define the possible domain of reflexivization in Swedish.

But these conditions do not account for the optionality of reflexivization into subjectless nominalizations and infinitive complements. Rule II would still be needed, though TSC and SSC make it possible to eliminate subrule (a). However, the elimination of subrule (a) in favor of TSC and SSC meets with problems in at least one case, the relative clause cannot be

(46). These sentences would incorrectly be excluded by TSC (assuming the prior application of rule (45)). Therefore, I will stick to the original formulation of rule II, though I fully realize the attractiveness of being able to eliminate a rule-particular condition in favor of one or several general conditions.
6. The final formulation of the reflexivization rule is given in (50).

(50) REFLEXIVIZATION:

\[
\begin{array}{cccccc}
X & NP & Y & NP & Z \\
[+PRO] & & & & \\
1 & 2 & 3 & 4 & 5 \\
\Rightarrow \\
1 & 2 & 3 & 4 & [+REFL] & 5 \\
\end{array}
\]

Conditions:

(i) 2 is either a left sister or a daughter of a VP or NOK with a relational head
(ii) 4 is in construction with 2
(iii) OBL if the antecedent strength \( \geq 5/4 \)

OPT if the antecedent strength \( \geq 5/6 \)

where the antecedent strength is calculated through the following rules:

I. Multiply with \( \begin{cases} 1/2 & \text{if 2 is a non-subject} \\ 3/4 & \text{if 2 is a non-subject in FM}_4 \end{cases} \)

\( 3/4 \) if 2 is [-animate]

II. If there is a cyclical node A which dominates 4, but not 2, and it is not the case that A = NP and A is directly dominated by A,

multiply with \( \begin{cases} 0 & \text{if A directly dominates an NP} \\ 1/2 & \text{if A directly dominates an NP in FM}_4 \\ 3/4 & \text{if there is a cyclical subject of A, and it is not the case that it is [-animate] and 2 is [+animate]} \end{cases} \)

The rule applies cyclically on NP and S. It is ordered after EQUI-NP DELETION and SUBJECT RAISING (to capture the distinction between infinitive complements and subordinate clauses) and after PASSIVE (since reflexivization is obligatory if the antecedent is an animate subject in a passive sentence, but only optional if the antecedent is an animate object in an active sentence).
FOOTNOTES

1. Sentences like (i) may be handled in an analogous way. Tense
(1970) has presented strong arguments for deriving at least some
relative constructions from deep structures like (ii). (i) might
then be derived from (iii).

(i) Den beskrivning av sig själv som John, gav var misvisande
(The description of himself that John gave was misleading)

(ii) \[ NP \rightarrow \Pi \rightarrow [\Delta] \rightarrow \cdots \rightarrow \Pi \rightarrow \cdots \] 

(iii) \[ NP \rightarrow [\Delta] \rightarrow \Pi \rightarrow \Pi \rightarrow [\text{en beskrivning av sig själv}] \]

2. Chomsky (1970) has argued that there are transformations which
cycle on both NP and S. I will assume that Swedish reflexivisation
is such a transformation.

3. That a node is a sister of another node means that they are both
directly dominated by the same node. A daughter of a node is any
node directly dominated by it. Thus, in the figure below, both
node B and node C are daughters to A. Furthermore, B and C are
sisters, B being the left sister of C and C the right sister of B.

The notion "relational head" may also deserve some comment. To
begin with, heads of VP's (verb) are almost always relational,
allowing at least one expressed argument (with the exception of
verbs like rain, snow, etc.). Heads of NP's (nouns) are
relational in two cases: 1) in case they are derived nouns (that is,
have the internal structure \[ HC \rightarrow X \rightarrow \cdots \rightarrow \text{SUPP} \], where \( X \) is ADJ,
V or \( \Pi \)), and 2) in case they have the subcategorisation feature
\[ [+ _{\Pi} \text{PP}] \], in which case the nouns are basic relational nouns like
picture of \( X \), temperature of \( X \), brother of \( X \) or cover of \( X \).

4. Actually, this condition is only one of four alternative
conditions.

5. Edmondson & Lindau (1972) propose to account for the domain
of reflexivisation by means of the following conditions:

(iv) "a. If \( A = S \) /if reflexivisation applies on an S cycle, \( JA \),
the domain of \( A \) equals all structure subtended by \( A \) down
to the next occurrence of \( S \), i.e. including \( \Pi \).
b. If \( A = \Pi \), the domain of \( A \) equals all structure subtended
by \( A \) down to the next occurrence of either \( \Pi \) or \( S \)."

Neither a. nor b. is correct, however. Condition a. erroneously
permits reflexivisation over a subject of a nominalization and
excludes reflexivisation into infinitive complements. Condition b.
erroneously excludes \[ NP \rightarrow \Pi \rightarrow \Pi \rightarrow [\text{en beskrivning av sig själv}] \].
6. The notion cyclical subject is defined in an appendix to Lakoff (1972). In this context, "the cyclical subject of A" is equivalent to "the NP directly dominated by A in the phrase marker which is the output of the first cycle on A".

7. The rules II(a) and II(b) account for conditions a(v), a(vi), b(iii) and b(iv) in (32). I(a) accounts for b(i) and I(c) for c(i). Condition c(iv) is accounted for by I(b) and I(c). Condition c(iii), finally, is accounted for by I(b), I(c), II(b) and II(c).

8. The values in (40) are of course subject to idiolectal variation. Probably, the values in (34) are subject to such variation, too.

9. Strictly speaking, NP° in (47) would block the occurrence of reflexive pronouns in the relative clause (in accordance with rule IIa). Thus, we would have to restrict the NP nodes which are cyclical nodes to those directly dominating NOM.

10. Chomsky (1975) uses TSC to eliminate the subcase of SUBJECT RAISING which turns complement subjects into matrix objects. According to Chomsky, sentence (v) has the derived structure (vi), rather than the commonly assumed (vii) (Rolf 1974 follows Chomsky in this respect).

   (v) Han ansåg mig likna Dracula
       (He considered me to be similar to Dracula)
   (vi) [ han ansåg [ mig likna Dracula]]
   (vii) [ han ansåg mig [likna Dracula]]

   However, the constituent structure (vi) incorrectly predicts that (viii) is ill-formed.

   (viii) Han ansåg mig likna sin bror
         (He considered me to be similar to his brother)

If mig had been a subject in (viii), reflexivization would have been blocked by SSC. Thus, a successful application of SCS to Swedish reflexivization presupposes the existence of the subcase of SUBJECT RAISING referred to above.
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