Disjoint reference and the typology of pronouns

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1 Issues in Binding Theory

1.1 Accounting for disjoint reference

Obviation versus Blocking. Two approaches to the distribution of anaphors and pronominals have been explored in Binding Theory. The OBVIATION approach, originating in Lasnik 1976 and extensively developed in the GB tradition, posits autonomous disjoint reference principles which directly filter out illicit coindexations in certain structural domains. The BLOCKING approach treats disjoint reference derivatively, by making anaphors obligatory under coreference in the binding domain, and invoking a syntactic or pragmatic principle that forces disjoint reference pronominals in the "elsewhere" case.[1]

1 My interest in reflexive pronouns comes partly from historical syntax and partly from the Case theory that Dieter Wunderlich and I have been thinking about since 1991. The first version of this paper was written that year, and I was fortunate to be able to discuss it with Dieter at the time, who made insightful suggestions especially about the Swedish material. I then set it aside for some years, realizing that many of the things I was trying to do were being done in a more sophisticated way by Reinhart & Reuland and by Burzio. Still, my conclusions differed from theirs on some points, and so I returned to the paper in 1996, adding the OT analysis, which was presented at an OT syntax conference at Stanford, and revising it once more for this publication in honor of Dieter Wunderlich.
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Obviation. Chomsky 1981 equated the domains of both anaphoric binding (principle A) and of disjoint reference (principle B) and defined this domain in terms of government. If principles A and B hold in the same domain, anaphors and pronominals must be in complementary distribution. This theory faces the conceptual problem that the complementarity lacks a deeper rationale, and the empirical problem that the predicted complementarity systematically fails to hold in certain structural configurations. Subsequent versions of Binding Theory either tried to exploit the partial complementarity so as to achieve a simpler and theoretically more attractive formulation of the theory, or to address the empirical problem of overlapping distribution by having principles A and B apply in different domains. These two endeavors proved hard to reconcile.

A first attempt to distinguish the domains of principle A and B was to define "governing category" differently for anaphors and pronominals (Huang 1983, Chomsky 1986, 169). Chomsky's redefinition was couched in partly θ-theoretic terms. He introduced the notion of a COMPLETE FUNCTIONAL COMPLEX (CFC), defined as a maximal projection in which a predicate's complements and subject (in effect, all its θ-roles) are realized, and reformulates Principles A and B to the following effect:

(1) An anaphor/pronominal must be bound/free in the least CFC containing a lexical governor in which it could be bound/free.

The idea behind [1] is that a pronominal can always satisfy Binding Theory (BT) by being free in the minimal NP that contains it, but an anaphor, because it must be bound, can satisfy Binding Theory only in the minimal CFC that contains a potential antecedent for it (one to which the anaphor *could* be bound). It follows that the distribution of pronominals and anaphors can overlap in the subject position of NPs. But this resolves just a small part of the overlapping distribution problem.

That a domain defined in terms of a predicate's arguments (akin to the CFC) is specifically the domain of disjoint reference (Principle B effects) was argued by Hellan (1983, 1988), Sells (1986) (Sells 1986), and Farmer and Harnish (1987), (Farmer and Harnish 1987) who each proposed some version of the principle stated in [2], sometimes called OBVIATION, a term borrowed from Algonquian grammar.

(2) OBVIATION: Coarguments have disjoint reference.

A second key idea is that disjoint reference is a principle of *semantic* interpretation which requires certain types of arguments of multi-place predicates to be distinct.[2] (Keenan 1974, Bach and Partee 1980, Pollard and Sag 1983, Sells 1991, Pollard and

2 Semantic disjoint reference also plays a key role in the theory of reciprocals developed by Heim, Lasnik, and May (1991), (Heim, Lasnik and May 1991), though they do not unify it with the disjoint reference phenomena seen in pronouns and reflexives.

Sag 1992, Reinhart and Reuland 1993). Reinhart and Reuland explicitly argue that principle A is defined on syntactic predicates and principle B on semantic predicates.

The proposal developed below adopts both these ideas. Obviation will be argued to be a universal violable constraint interacting with other constraints in the ranked constraint systems that define the binding patterns of languages.

Blocking. The second approach to disjoint reference replaces principle B by a BLOCKING constraint that makes anaphors obligatory in their binding domain under the appropriate conditions, superseding the coreferential interpretation of pronominals in that domain. Blocking can be seen either as a grammatical condition applying to syntactic representations (Bouchard 1983, Yadurajan 1987, Burzio 1996, Burzio 1998),[3] or as an extragrammatical (pragmatic) condition involving generalized conversational implicature, informativeness, hearer strategies for recovering speaker meaning, etc. (Dowty 1980, Reinhart 1983a, Reinhart 1983b, Farmer and Harnish 1987, Levinson 1987, Levinson 1991, 2000).

Combining Blocking and Obviation. The main thesis of my paper is that Blocking and Obviation are not competing accounts of disjoint reference, but that *both* — appropriately formulated — constitute universal constraints that interact with each other, and with other constraints, in accord with partly language-specific rankings. I establish their independence by showing that one applies to a syntactic representation, the other to a semantic interpretation, that they apply to different classes of elements, and that they apply in different domains. Conceptually, they differ as well. Blocking is related to the "Elsewhere" principle that governs morphological expression; following Burzio's work I treat it as an Economy principle. Obviation, on the other hand, is a constraint on the licensing of coreferential coarguments which is specific to binding theory.

1.2 The Typology of Pronouns

With the advent of OT, grammatical theory has become inseparable from typology. In a pioneering typology of reflexives and reciprocals, Faltz (1977) showed that their binding properties vary along at least two dimensions: the size of the domain within which they must be bound, and the nature of the antecedent in the clausal domain. He further noted that, since languages may have several anaphors that differ in these

3 Distant antecedents of this idea include Chomsky's "Avoid Pronoun" Principle, and the rules of "obligatory reflexivization" in earlier transformational treatments (Lees and Klima 1963, Kuno 1987).

respects, the binding domain and the antecedent requirement is a lexical property of individual anaphors, rather than simply a syntactic property of the language at large. These conclusions were confirmed by Yang (1983), and their consequences were explored in the more general framework of the principles-and-parameters approach to syntax by Wexler and Manzini (1987). Independently, Everaert (1986) and Thráinsson (1991) proposed to specify the binding properties of anaphors by systems of cross-classifying features. Hellan (1983), working from Norwegian, arrived at still another featural parametrization (greatly elaborated in Hellan 1988), which was further developed by Bresnan, Halvorsen, and Maling (1985), whose ideas were in turn extended and formalized by Dalrymple (1993).

In the spirit of these studies I argue that the typology of pronouns emerges from two cross-classifying properties: whether they are obviative or not, i.e. whether they can license a coreferential coargument, and what their antecedent domain is. The antecedent domain is defined by a hierarchy of constraints which impose successively inclusive requirements on the structural relation between the pronoun and its antecedent. The factorial typology predicts a class of pronominal elements which have hitherto not been recognized in Binding Theory. I show that this predicted class, *referentially dependent pronominals*, is cross-linguistically well attested, and in fact is instantiated in one pronoun of modern English. The constraint hierarchy defines five successively more inclusive antecedent domains, each characterizing a class of pronouns. These five types of pronouns are cross-classified for obviation. The resulting inventory of possible pronouns is richer than what traditional Binding Theory countenances, but offers a better approximation to the attested diversity of anaphoric systems. This simple typology appears to match the range of known pronouns quite well.[4]

1.3 Gaps and Optionality

"One form, one meaning" may be the grammatical ideal, but deviations from it in both directions are ubiquitous in grammar, anaphora not excepted. Contextual neutralization of semantic distinctions is a normal part of pronominal expression, and so are multiple realizations of the same meaning, such as "optional" long-distance anaphora. Such complementarity failures are potentially problematic for any theory that relies on Blocking, but OT makes available interesting new approaches for accounting for them. To deal with gaps I will make use of the idea suggested by Legendre, Smolensky, and Wilson (1996) that markedness constraints can enforce gaps, violating a lower-ranked faithfulness constraint that prohibits them.

4 The cross-linguistic data now assembled in Huang 2000 poses a number of prima facie difficulties for this claim, but deeper study of the problematic binding systems is required.

Optionality, in the form of variation between pronouns and reflexives in ostensibly identical contexts, is every bit as common in anaphora as gaps are. However, not all apparent variation can be taken at face value. In fact, I will argue that many apparent cases of "optional reflexivization" that have been cited again and again in the literature are not optional at all but reflect different meanings, i.e., they correspond to different inputs. Once these cases of fake optionality are sorted out, the multiple constraint rankings approach explored by Anttila (1997) and others can be seen to be eminently suited for the residue of genuine optionality in the domain of Binding.

2 Coargument Disjoint Reference

2.1 Four generalizations about disjoint reference

In English and other familiar languages, the distinction between obviative and proximate pronouns converges with that between pronominals and anaphors (reflexive/reciprocal elements). But many languages distinguish between obviative and proximate reflexives (e.g. Swedish *sig* versus *sig själv*), and some distinguish between obviative and proximate pronominals (e.g. Algonquian). The obviation requirement and the binding domain, then, are in fact independent properties of pronouns.

In addition to Principle B effects, the Obviation constraint accounts for a class of disjoint reference phenomena that are not addressed by standard versions of Binding Theory. Four such phenomena are treated below. Two of them involve the absence of an expected reading in an anaphoric element. One such gap is that the "coreferential" as opposed to the "bound anaphora" interpretation of reflexives is lacking in certain contexts. I tentatively formulate the relevant descriptive generalization as follows:

(3) An anaphor whose antecedent is a coargument has a bound variable but not a coreferential reading.

The other gap concerns the distributive reading of plurals and conjoined DPs.

(4) A plural or conjoined DP which overlaps in reference with a coargument has a collective reading but not a distributive reading.

The other two generalizations are, on the face of it, syntactic, for they involve distributional constraints on the occurrence of certain anaphoric elements, and they are language-specific, or more precisely, overtly instantiated in a minority of languages. First, disjoint reference phenomena are not restricted to pronominals. Some languages, such as Norwegian (Hellan 1988) have OBVIATIVE REFLEXIVES, usually morphologically simple (rather than compounded). Such obviative reflexives are subject to a disjoint reference constraint:

(5) An obviative and its coarguments have disjoint reference.[5]

Conversely, not all pronominals are obviative. Some languages (such as the Algonquian languages) have two series of pronominal endings, OBVIATIVE and PROXIMATE, whose distribution is grammatically constrained as follows:

(6) At most one coargument may be proximate.

The four generalizations [3]-[6] will be subsumed under a generalized account of Principle B effects in which an Obviation constraint plays a key role. I take them up in turn below.

2.2 Bound Variable vs. Coreferential Readings

VP anaphora. Generalization [3] is famously manifested in VP anaphora. Reflexive pronouns (e.g. English *himself*) get only the bound anaphora reading when their antecedent is a coargument, so that "sloppy identity" is obligatory. Elsewhere, there is an ambiguity between the bound variable and coreferential readings, as illustrated by [7] (Hestvik 1990).

(7) John considers himself competent, and so does Fred. *(ambiguous)*

a. Fred considers John competent, too. *(strict)*

b. Fred considers himself competent, too. *(sloppy)*

If we assume that the second conjunct in *do so* VP anaphora gets its meaning from the first, then [7] has the strict reading (a) from [8a] and the sloppy reading (b) from [8b].

(8) a. λx (x considers (John competent)) (John) *(coreferential)*

b. λx (x considers (x competent)) (John) *(bound variable)*

The point of interest is the contrast between [7] and the ostensibly parallel [9], where the "sloppy" reading is obligatory,

(9) John hates himself, and so does Fred.

a. $\neq$ Fred hates John, too.

b. Fred hates himself, too.

and where the reflexive, therefore, has only the bound variable reading of [10b].

(10) a. λx (x hates $y \wedge y$ = John) (John)

b. λx (x hates x) (John)

5 *Coarguments* are arguments of the same predicate (Hellan 1988). For example, *Mary* and *John* are not coarguments in *Mary considers John (to be) a fool*, because *John* is not an argument of *consider*; rather, *John* is an argument of *be a fool*, and the lowest argument of *consider* is *John (to) be a fool*.

This observation has been expressed by saying that the bound variable reading is obligatory when the anaphors are "locally bound" (Lebeaux 1985, Bouchard 1983, Hestvik 1990). But what exactly is the relevant "local" domain? Contrary to what is often assumed, it is not configurationally defined. The right generalization rather seems to be that the bound variable reading is obligatory *when the antecedent is a coargument*. All anaphora, local or not, shows both readings as long as the antecedent is not a coargument:

(11) a. John thought that Mary's parents would approve of someone like himself, and so did Fred. (*ambiguous*)
= "Fred thought that they would approve of someone like Fred" *(sloppy)*
= "Fred thought that they would approve of someone like John" *(strict)*

b. John loves his wife, and so does Fred. (*ambiguous*)

c. John has a picture of himself, and so does Fred. (*ambiguous*)

d. Mary quoted everyone except herself, and so did Bill. (*ambiguous*)

e. John will succeed in spite of himself, and so will Fred. (*ambiguous*)

Reappearance of the ambiguity. Introducing another predication, whether explicit or covert, restores the strict reading. For example, [12] has both the strict reading [12a] ("...than Ted defended John") and the sloppy reading [12b] ("...than Ted defended himself") (Sells, Zaenen and Zec 1987):

(12) John defended himself better that Ted did.
a. λx ((x defended x) better than ((λy (y defended x)) (Ted))) (John)
b. λx ((x defended x) better than ((λy (y defended y)) (Ted))) (John)

Similarly, many speakers find [13] ambiguous between the readings "...nobody else hates John", and "...nobody else hates themselves" (Dahl 1973). On the assumption that *only P* means "P and nobody other than P", the two meanings would correspond to the following representations, both of which are consistent with Obviation.

(13) Only John hates himself.
a. λx ((x hates x) $\wedge$ ($\forall$ $y \neq x$ (y doesn't hate x))) (John)
b. λx ((x hates x) $\wedge$ ($\forall$ $y \neq x$ (y doesn't hate y))) (John)

But if *only* is construed with the reflexive, the sentence remains unambiguous, the only translation being [14]:[6]

6 Note also that *Everybody likes John* does not entail that John likes himself (although it is compatible with it), since *John* need not be part of the domain of quantification. A person complaining *Nobody likes me* would not be consoled by being reminded that, after all, he does like himself.

(14) John hates only himself.
λx ((x hates x) $\wedge$ ($\forall\ y \neq x$ (x doesn't hate y))) (John)

Again, the local non-coargument case [15] is ambiguous.

(15) Only John considers himself to be smart.
a. "Nobody else considers themselves to be smart"
b. "Nobody else considers John to be smart"

What is the local domain? (Lebeaux 1985) and (Bouchard 1983) identify the local domain with the governing category which constitutes the Binding Domain for Principle A. But in fact, it does not coincide with the domain that the other locality properties pick out: namely, the domain within which the binding relation observes c-command (or its equivalent), where split antecedents are prohibited, and where free variation with pronouns is not allowed. For example, picture noun anaphora notoriously has non-local properties, yet shows the ambiguity between the strict and sloppy reading, as in [11c]. The point is that both antecedent-anaphor relations below are local (where the brackets demarcate an argument structure), but only in (b) is the bound variable interpretation obligatory.

(16) a. X_i [$\mathrm{Y}_i \ldots$]
b. [$\mathrm{X}_i \ldots$ Y_i]

Hestvik 1990 interprets the contrast between [7] and [9] in almost the opposite way. According to him, it is Principle A which applies in the coargument domain, while Principle B applies in the domain of the governing category, as a purely syntactic principle in the spirit of (Chomsky 1981). The anaphors in the subject position of ECM constructions, as in [7], and presumably in the other non-coargument cases in [11] as well, are then dealt with by extending the core binding domain by the "accessible subject" condition (as in Chomsky 1986). Hestvik considers this extended domain to be a non-local binding domain, taking the availability of the strict identity reading under *do so* ellipsis (as in [7]) as the essential criterion for non-local binding, notwithstanding the fact that the other locality diagnostics (c-command, obligatoriness of the anaphor) pick out a different kind of locality, as discussed in section 2.1 above. On that approach, it remains unexplained why obligatory bound variable interpretation should hold precisely in the "core binding domain" (a fact which for us is a direct consequence of Obviation). Actually the coargument domain has to my knowledge not been shown to constitute the binding domain for any anaphor in *any* language. Therefore, far from being the core binding domain, it is probably not a binding domain at all (although it is the domain of the universal Obviation principle); the real minimal binding domain is the so-called "extended" binding domain (the accessible subject domain). That assumption will prove to be a productive one, furnishing the

key to explaining contrasts such as those in [43a] vs. [47a] in section 2.4 below.

Disambiguation in Russian. In English, the distinction between the bound variable reading and the coreferential reading of pronouns normally has no direct formal reflex. But in languages with a suitable inventory of pronominal elements the distinction becomes overt. In Russian, the reflexives *svoj* (poss.) and *sebja* (acc.) can have not only third person antecedents, but also first and second person antecedents, in which case they compete with the regular first and second person possessive pronouns. Precisely in the coargument case, the reflexive is however obligatory, and has only the bound variable reading (Dahl 1973).

(17) a.*Ja ljublju odnogo menja.
I like one me
'I like only me.'

b. Ja ljublju odnogo sebja.
I like one self
'I like only myself.' *(bound variable only)*

When the pronoun is not a coargument of its antecedent, the contrast between pronominal and anaphor marks the coreferential versus bound variable reading:

(18) a. Ja ljublju moju ženu, i Ivan tože.
I love my wife, and Ivan also.
'I love my wife, and Ivan also (loves my wife).' *(coreferential)*

b. Ja ljublju svoju ženu, i Ivan tože.
I love self's wife, and Ivan also.
'I love my wife, and Ivan also (loves his wife).' *(bound variable)*

Let's begin by formulating the constraints behind the Russian data. If all goes well, our constraints should account also for the generalizations illustrated in [7]–[11] about English, and for the Swedish and Algonquian data to follow.

Towards an analysis. Given that arguments are associated with variables and that these variables are assigned to individuals, there are three possible relations between a pronoun and a (potential) antecedent: *bound anaphora* (they are coindexed, i.e. associated with one variable), *coreference* (distinct variables, which are assigned to the same individual), and *disjoint reference* (distinct variables assigned to distinct individuals). Writing arguments as A, B…, variables as *x*, *y*…, and individuals as a, b…, I will use the mnemonic notation in [19]:

(19) a. *Bound anaphora:* A_x — B_x ($x \rightarrow a$)

b. *Coreference*: A_x — B_y ($x \rightarrow a$, $y \rightarrow a$)

c. *Disjoint reference*: A_x — B_y ($x \rightarrow a$, $y \rightarrow b$, $a \neq b$)

Therefore Binding Theory cannot be based simply on coindexing. We need not only constraints on anaphoric relations, marked by the coindexation of arguments in certain syntactic domains, but also constraints governing the interpretation of the coindexed arguments.

Assume that the inputs are syntactic structures with variables and assignment to intended referents. The constraint system determines the most harmonic output corresponding to a given input. The input candidate set are logical forms, with any coindexation and with any assignment of individuals to variables. Suppose in particular the following constraints:

(20) Constraints:

a. BINDING DOMAIN: A pronoun has a compatible antecedent in a designated domain D.

b. OBVIATION: An obviative and its coarguments have disjoint reference.

c. PROX: A proximate is a bound anaphor (i.e. it is indexed to the same variable as its antecedent).

(The BINDING DOMAIN constraint will not play a role until section 3, but is included here for future reference.) I further assume a PARSE constraint which bars the null candidate. However, PARSE is outranked by the constraints in [20], with the effect that some inputs have no outputs.

These constraints account for the gaps noted above, but do not yet suffice to select a unique output in all cases. The choice between remaining candidates is adjudicated by two markedness (economy) constraints, which respectively penalize featural (semantic) complexity and morphological complexity. Featural economy selects anaphors over pronominals (the assumption is that the latter have richer intrinsic feature content), and morphological exonomy selects simple pronouns over morphologically complex pronouns (as in Burzio 1998).

(21) ECONOMY

a. FEATURAL ECONOMY: Avoid pronominals.

b. MORPHOLOGICAL ECONOMY: Avoid morphologically complex pronouns.

Let us assume that the pronouns of Russian have the same properties as the corresponding pronouns of English, except that the reflexives *svoj, sebja* have no person features. As in English, then, the reflexives are proximate, and the pronominals, such as *menja, moju*, are obviative. The tableau in [22] indicates the relevant properties of the input logical forms using the notation in [19]. Candidate sets 1 and 2 illustrate

coargument reflexives, with the bound anaphora and coreferential readings, respectively, and candidate sets 3 and 4 illustrate non-coargument reflexives (possessives, in this case) with the same two readings. For each of these input readings, three output candidates are given: the candidate with a pronominal, the candidate with an anaphor, and the null candidate (the syntactic gap).

(22)

			BD	OBVIATION	PROX	PARSE	ECONOMY
1a.	x→ *a*	Ja$_x$ ljublju menja$_x$		*!			*
1b. ☞		Ja$_x$ ljublju sebja$_x$					
1c.		∅				*!	
2a.	x→ *a*, y→ *a*	Ja$_x$ ljublju menja$_y$		*!			*
2b.		Ja$_x$ ljublju sebja$_y$			*!		
2c. ☞		∅				*	
3a.	x→ *a*	Ja$_x$ ljublju moju$_x$ ženu					*!
3b. ☞		Ja$_x$ ljublju svoju$_x$ ženu					
3c.		∅				*!	
4a. ☞	x→ *a*, y→ *a*	Ja$_x$ ljublju moju$_y$ ženu					*
4b.		Ja$_x$ ljublju svoju$_y$ ženu			*!		
4c.		∅				*!	

Gaps in the output, which violate the PARSE constraint, arise when higher-ranked constraints exclude the alternative candidates. Thus, a coargument reflexive does not get a coreferential reading; contrast candidate set 2 with candidate set 4.

2.3 An obviative reflexive

Swedish *sig*. We come now to generalization [5]. The existence of obviative reflexives has been demonstrated in several languages, notably Hellan's classic study of Norwegian anaphora (1988). I will draw my examples from Swedish, whose *sig* is very similar to Norwegian *seg* (Diderichsen 1937) and Danish *seg* (Vikner 1985).

Unlike morphologically complex reflexives such as English *himself*, bare *sig* cannot have a coargument as its antecedent.[7]

7 There is a class of verbs for which this statement does not hold (see 3.8 below).

(23) a. *John föredrar sig.
John prefers refl
'John prefers himself.'

b. *John$_i$ berättade för Per$_j$ om sig$_{i,j}$.
John told for Per about refl
'John$_i$ told Per$_j$ about himself$_{i,j}$.'

In the finite domain within which *sig* must be bound, it can however be freely anteceded by a c-commanding subject, as long as it is not a coargument. This is illustrated in [24] by ECM and small clause constructions and by possessives and complements of nouns.

(24) a. John anser sig ha blivit bedragen.
John considers refl have become cheated
'John considers himself to have been cheated.'

b. John betraktar sig som expert.
John regards refl as expert
'John regards himself as an expert.'

c. John älskade sina barn.
John loved refl's children
'John loved his (own) children.'

d. John hittade en bild av sig i tidningen.
John found a picture of refl in newspaper-the
'John found a picture of himself in the newspaper.'

The subsystem of Swedish pronouns of interest here is built from three classes of morphemes: *(1)* the pronominals (*han, hon, honom, henne, hans, hennes* "he, she, him, her, his, her (poss.)" etc., *(2)* the obviative simple reflexive *sig*, with its possessive form *sin*, and *(3) själv*, which can occur on its own and be combined with either the reflexives or the pronominals, like German *selbst*, French *même*, Spanish *mismo*, Italian *stesso* (Giorgi 1983), Russian *sam* (Klenin 1980).

Sig is subject-oriented and allows long-distance binding:

(25) a. Generalen$_i$ tvingade översten$_j$ att hjälpa sina$_{i,j}$ soldater.
general-the forced colonel-the to help self's soldiers
'The general forced the colonel to help his soldiers.'

b. Han$_i$ hjälpte sin$_i$ dam$_j$ att få eld på sin$_{i,j}$/hans$_{i,*j}$/hennes$_{*i,j}$
he helped self's lady to get fire on self's/his/her
cigarrett.
cigarette
'He helped his date to light his/her cigarette.'

In [25] the short binding is also permissible because the genitive and the PRO subject of the infinitive clause are not coarguments. But because of the disjoint reference requirement, [26] is unambiguous:

(26) Generalen$_i$ tvingade översten$_j$ att hjälpa sig$_{i,*j}$.
'The general forced the colonel to help himself.' ('himself' = the general)

Contrast [27], where *lova* "promise" is a subject control verb, and neither reading is acceptable:

(27) Generalen$_i$ lovade översten$_j$ att undersöka sig$_{*i,*j}$.
'The general promised the colonel to examine himself.'

Here the Obviation constraint applies within the lower clause, blocking coreference of *sig* and PRO *(generalen)*. The subject requirement on the antecedent of *sig* blocks it from being coindexed with *översten*, so the sentence is ungrammatical. Thus, the coindexation in [27] is ruled out by [20].[8] These data support the claim that Obviation is a semantic constraint. If Obviation were a syntactic constraint on coindexing, long-distance binding (acceptable in Swedish as [26] shows) should be able to make an "end run" around Obviation, referring to its coargument (PRO) indirectly by being bound to its antecedent (*generalen*, in this case). Some special stipulation would then have to exclude the unwanted coindexation in [28].[9]

(28) *Generalen$_i$ lovade översten$_j$ att PRO$_i$ undersöka sig$_i$.

Unsurprisingly, the various forms of the pronominal *honom* are also subject to Obviation, like their English counterparts. So the sentences in [29] are also ungrammatical;

(29) a. *John$_i$ älskar honom$_i$.
'John$_i$ loves him$_i$.'
b. *John$_i$ berättade för Per$_j$ om honom$_{i,j}$.
'John$_i$ told Per$_j$ about him$_{i,j}$.'

and [30] is unambiguous, and has the same meaning as the version with the anaphor *sig* in [26]:

(30) Generalen$_i$ tvingade översten$_j$ att undersöka honom$_{i,*j}$.
'The general forced the colonel to examine him.'

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8 Suppose we assign *generalen* $= x_k$, *översten* $= x_l$, *PRO* $= x_m$, *sig* $= x_n$, where (by the coindexing in [28]) $x_k = x_m$, $x_k = x_n$. At the level of interpretation, suppose we assign individual A to variable x_k. Then, since $x_k = x_m$, A must be assigned to x_m, and since $x_k = x_n$, A must be assigned to x_n. But assigning A both to x_m and to x_n violates [20b]. On the other hand, the acceptable [26] can be assigned an interpretation in accord with [20].

9 Perhaps requiring preference to be given to the closer of two eligible binders (as in Hellan 1988:178, Hellan 1990).

The function of *själv*. Where *sig* and *honom* are excluded by Obviation, as in [23]-[26], they can be rendered grammatical by the simple addition of *själv*:

(31) a. John älskar sig själv.
'John loves himself.'

b. John$_i$ berättade för Per$_j$ om sig$_i$ själv.
'John told Per about himself.'

c. John$_i$ berättade för Per$_j$ om honom$_j$ själv.
'John told Per about himself.'

d. Generalen$_i$ tvingade översten$_j$ att undersöka sig$_j$ själv.
'The general forced the colonel to examine himself.'

Of course, ECONOMY still applies, so that *honom* is blocked by *sig*. Thus, [30] (on the indicated coindexing) remains ungrammatical even with *själv* added, because it loses to [31d] on ECONOMY.

Själv is a pronominal operator which excludes other contextually determined or implicit entities (Edmondson and Plank 1978, König 1991). In particular, emphatic *P själv* means "P, rather than someone else", i.e. "P personally". In the combinations *sig själv* and *honom själv*, the effect of *själv* is to negate Obviation. Sidestepping the interesting question how to derive this function of *själv* from its emphatic meaning, we can think of it as having inherently the feature [−obviative], which it adds to *sig* and *honom* (while leaving all their properties intact, including the [+anaphor] feature of *sig*). Therefore, addition of *själv* renders the sentences in [23] grammatical. But, even though combining with a pronoun to negate Obviation is perhaps *själv's* most important function in the language, it can very well be used elsewhere as well, either redundantly, or for emphasis. This accounts for the appearance of *själv* outside of any binding context:

(32) a. Det gäller honom själv.
'It concerns him [not someone else].'

b. Honom själv känner jag inte.
'Him, I don't know.'

c. Kungen själv lovade att komma.
'The king himself [not (just) someone else] promised to come.'

d. Kungen lovade själv att komma.
'The king promised [personally, on his own] to come.'

e. Kungen lovade att komma själv.
'The king promised to come himself [in person].'

In each example of [32], omitting the *själv* yields a grammatical sentence. In fact, wherever the simple pronoun *honom* or *sig* is permissible, it is usually possible to add

själv, if clarity or emphasis require it:[10]

(33) a. John betraktar sig själv som kompetent.
'John regards himself as competent.'

b. John anser sig själv ha blivit bedragen.
'John believes himself to have been cheated.'

c. John hittade en bild av sig själv i tidningen.
'John found a picture of himself in the newspaper.'

d. Generalen$_i$ tvingade översten$_j$ att befalla löjtnanten$_k$ att raka honom$_{?i,j,*k}$ själv.
'The general forced the colonel to order the lieutenant to shave him himself (*or:* ... by himself).'

One of the virtues of the present approach is that these other uses of *själv* need not be treated as unrelated "emphatic" reflexives. More than just economy is gained thereby. If there really are two *självs*, we would expect that they could occur together. But this is not possible, see [34c]:[11]

(34) a. Ministern angrep kungen själv.
'The minister attacked the king himself [no less a personage than the king].'

b. Ministern själv angrep sig själv.
'The minister himself attacked himself [lesser officials attacked themselves too].'

c. *Kungen angrep sig själv själv.
'The king attacked himself [no less a personage than himself].'[12]

---

10 If this is equally true in Dutch, then Koster's objections to the coargument condition do not go through (Koster 1986, 328). In so far as they are based on cases of optional *zichzelf* outside of the coargument domain, they could be interpreted in the same way as suggested here for Swedish.

11 On the English emphatic reflexive *he himself* see (Bickerton 1987). The literature on emphatic reflexives is divided on the question whether the "emphatic" and ordinary reflexive uses can be subsumed under the same lexical element. The unitarian view that I am assuming here has been argued for Trique *ma*$^{31\tilde{7}}$ *ã*^{13} (Hollenbach 1984), for Dutch *zelf* (Everaert 1986:42), for Italian *stesso* (Napoli 1989:335), and for Old English *self* (Mitchell 1985, section 475, Ogura 1989:46, who notes that *self* "has no reflexive function by itself" (p. 23), and Levinson 1991). The contrary position is taken for Persian by Moyne (1971), for Chinese by Tang (1989), and for Norwegian by Hellan (1988:63). Hellan suggests that the two words *selv* differ in stress, but this claim deserves closer examination. At least in Swedish, it does not seem to be true (nor in Dutch, according to Everaert, *voce*).

If there are two distinct elements *själv*, this is mysterious. If we take the "reflexives" *sig själv, honom själv* to be simply "emphatic" *själv* associated with *sig* and *honom*, the data in [34] are as expected.

A further consequence is that coreference between the subject and the possessive counterpart of *sig* is allowed, because they are not coarguments. So in [35], the bare possessive reflexive *sin* can refer to the subject:

(35) John$_i$ angrep sina$_i$ vänner.
'John attacked his friends.'

Unlike the Russian possessive reflexive (see [17], [18]), the Swedish possessive reflexive is ambiguous between the bound variable and coreferential readings in the local domain, and correspondingly the non-reflexive possessive (e.g. **hans* in [35]) is then excluded. This contrast is predicted by our analysis (see [42] below).

The possessive reflexive *can* be reinforced with the adjective *egen* "own" (corresponding to *själv*), if emphasis or other reasons require it:

(36) John$_i$ angrep sina$_i$ egna vänner.
'John attacked his own friends.'

For the same reason, in [37], coreference between the object *Per* and the genitive pronoun *hans* is permitted. Obviation is inapplicable because they are not coarguments, and Blocking is inapplicable because objects cannot antecede reflexives.

(37) Vi gav Per$_i$ hans$_i$ lön.
'We gave Per his salary.'

It also follows that *sig* without *själv* is fine in [38], again because the conjuncts of the co-ordinate NP are not coarguments of the subject, the coargument rather being the entire conjoined NP *sig och Maria*, as in [38a].[13] Naturally, since the antecedent of *sig* must be a superior (e.g. c-commanding) subject it cannot be found in a coordinate phrase, as in [38b].

(38) a. Han$_i$ berättade om sig$_i$ och Maria.
He told about himself and Maria.
b. Maria$_i$ och $\left\{\begin{matrix}\text{*sin}_i \\ \text{hennes}_i\end{matrix}\right\}$ vän$_j$ berättade om henne$_{i,j}$.
'Maria and her friend talked about her.'

Finally, Obviation directly accounts for the gap seen in [39], which (like its English analog [43]) cannot be had by Blocking alone:

12 Though [34c] could conceivably mean 'The king attacked himself by himself/on his own', with adverbial *själv* having scope over the VP, to the extent that this makes sense.

13 Also in Norwegian, sentences like *Frisøren barberer seg og kundene* "The barber shaves himself and the customers" are fully acceptable. Cf. Hellan (1988:105).

(39) John$_i$ och Lisa$_j$ föraktar $^{?}$honom$_i$/$^{?*}$honom$_i$ själv/*sig$_i$/*sig$_i$ själv.
'John and Lisa despise him(self).'

The analysis. *Honom* and *sig* are [+obviative]; *sig* is moreover reflexive, i.e. specified as requiring a (subject) antecedent in the finite domain; *själv* is an operator which exempts elements from Obviation, making them [−obviative] (i.e. proximate). The system is thus fully compositional, in that *själv* makes a unitary contribution to the pronouns it combines with, which is related to the intrinsic meaning which it has outside of those combinations:

(40) a. *sig*: [+reflexive, +obviative]
b. *sig själv*: [+reflexive, −obviative]
c. *honom*: [−reflexive, +obviative]
d. *honom själv*: [−reflexive, −obviative]

We are now ready to lay out the constraint tableaux for Swedish *sig* in the local domain. Tableau [41] shows the analysis of reflexive objects, first of the coargument type, such as [23], and then of the non-coargument type, such as [24].

(41)

			BD	OBVIATION	PROX	PARSE	ECONOMY
Coarguments (e.g. [23])							
1a.	x→ *a*	sig		*!			
1b. ☞		sig själv					*
1c.		honom		*!			*
1d.		honom själv					**!
1e.		∅				*!	
2a.	x→ *a*, y→ *a*	sig		*!			
2b.		sig själv			*!		*
2c.		honom		*!			*
2d.		honom själv			*!		**
2e. ☞		∅				*	
3a.	x→ *a*, y→ *b*	sig	*!				
3b.		sig själv	*!		*		*
3c. ☞		honom					*
3d.		honom själv			*!		**
3e.		∅				*!	
Non-Coarguments (e.g. [24])							
4a. ☞	x→ *a*	sig					
4b.		sig själv					*!
4c.		honom					*!
4d.		honom själv					**!
4e.		∅				*!	
5a. ☞	x→ *a*, y→ *a*	sig					
5b.		sig själv			*!		*
5c.		honom					*!
5d.		honom själv			*!		**
5e.		∅				*!	
6a.	x→ *a*, y→ *b*	sig	*!				
6b.		sig själv	*!		*		*
6c. ☞		honom					*
6d.		honom själv			*!		**
6e.		∅				*!	

The constraints account straightforwardly for the coreferential versus bound variable readings of reflexives. As candidate sets 1 and 2 in tableau [41] show, *John hatar sig själv*, like its English equivalent *John hates himself*, predicates of John only the property of "'self-hating", not the property of 'John-hating".

Tableau [42] shows another consequence of the obviative character of the Swedish reflexive: the ambiguity of the reflexive possessive in the local domain between the bound variable and coreferential readings, and the exclusion of the corresponding non-reflexive (see [35]). Being obviative, the reflexive *sin* is not subject to PROX, hence is available in both readings, and preferred to the non-reflexive *hans* by ECONOMY.

(42)

			BD	OBVIATION	PROX	PARSE	ECONOMY
1a.	x→ *a*	John$_x$ angrep hans$_x$ vänner.					*!
1b. ☞		John$_x$ angrep sina$_x$ vänner.					
1c.		∅				*!	
2a.	x→ *a*, y→ *a*	John$_x$ angrep hans$_y$ vänner.					*!
2b.☞		John$_x$ angrep sina$_y$ vänner.					
2c.		∅				*!	

In this way our analysis unifies two differences between Swedish and Russian which have hitherto been ignored, or at best treated as unrelated: that simple coargument reflexives are unacceptable in Swedish and acceptable in Russian, and that possessive reflexives are ambiguous between the bound anaphora and coreferential readings in Swedish, but have only the former reading in Russian.

2.4 Collective vs. Distributive Readings

The second coargument disjoint reference effect, stated in [4], is illustrated in [43].

(43) a. We prefer me.

b. I like us.

Such sentences have sometimes been claimed to be ungrammatical (Higginbotham 1985:576, Lasnik 1989:151). But as Reinhart & Reuland 1993 point out, only the distributive reading is excluded, while the collective reading is fine, and can be brought out clearly in appropriate contexts such as [44]:

(44) a. By an overwhelming majority, we preferred me.

b. We have a terrific team. I really like us.

The group denoted by the plural expression must participate in the event as a single collective entity, and not as separate individuals. Thus, [44a] means that the choice is made as a group, perhaps by a collective act of voting, and [44b] means that I like us qua team — not that I like all (or even any) of my teammates individually. In contrast to cases like [44], the distributive interpretation is readily available in non-coargument contexts like [45].

(45) I want us to have good reputations.

As Reinhart and Reuland point out, this suggests a semantic version of Principle B.

Two remarks on these cases will help clarify the issue. First, mere collaboration or joint participation of several agents in an event is not enough for the collective interpretation; [46a], for example, does not felicitously describe a situation in which John and Mary are each taking care of John part of the time, and [46b] does not felicitously describe an act of murder-cum-suicide.

(46) a. *John$_i$ and Mary$_j$ are taking care of him$_i$

b. Jim Jones killed them all with poisoned Kool-Aid.

Since coreference must be with respect to the whole group denoted by the plural or conjoined NP's, and disjoint reference is distributive over the members of the group, there is actually no fully acceptable way to express coreference with respect to one of the members of the set denoted by the antecedent in sentences like [43]. This is a gap in the language's expressive repertoire.

Secondly, the distributivity of disjoint reference is bidirectional, as [20b] entails. Disjoint reference is distributive over the members of the group regardless of whether the group is referred to by the antecedent ([43a]) or by the pronoun (split antecedent cases like [43b]). Consequently, collective interpretation allows for partial overlapping of reference whether the group-denoting element is the antecedent or the pronoun, as in [44].

In contrast, outside of the coargument domain, the distributive reading of the pronominals is fully acceptable, as long as there is no possibility of a reflexive (see [47]) or *Pro* (see [48]). For example, in [47a], the pronominal *us* is not excluded (for it is not a coargument of its antecedent *I*), nor pre-empted by a reflexive (*ourselves* is excluded since it has only partially overlapping reference with *I*).

(47) a. I believe $\left\{\begin{matrix}\text{us}\\ \text{*ourselves}\end{matrix}\right\}$ to have been cheated.

b. Richard$_i$ and Pat$_j$ both regard $\left\{\begin{matrix}\text{him}_i\text{/her}_j\\ \text{*himself/*herself}\end{matrix}\right\}$ as innocent.

c. I prefer to call us rape statistics. (Letter, *NYT* 21.4.1991.)

d. John$_i$ and Mary$_j$ both have a picture of $\left\{\begin{matrix}\text{him}_i\text{/her}_j\\ \text{*himself/*herself}\end{matrix}\right\}$.

e. In spite of $\left\{\begin{matrix}\text{me}\\ \text{*myself}\end{matrix}\right\}$, we will succeed.

f. Both John$_i$ and Ann$_j$ must have decided to promote everyone except $\left\{\begin{matrix}\text{him}_i\text{/her}_j\\ \text{*himself}_i\text{/*herself}_j\end{matrix}\right\}$.

(48) a. I want us to be friends.

b. John$_i$ and Mary prefer his$_i$ going to the movies.

c. Neither John$_i$ nor Mary$_j$ had enough film for her$_j$ to take the pictures.

d. Mary$_i$ and I were waiting, she$_i$ having arrived slightly before me.

The correct distribution of the distributive and collective reading of plurals is accounted for by the previously developed constraints. [49] shows how *I like us* has only a collective reading (candidate set 1, x→ *a*, y→ *b*), and lacks a distributed reading (candidate set 2, x→ *a*, y→ *a*+*b*+*c*...), and how **I like ourselves* is excluded.

(49)

			BD	OBVIATION	PROX	PARSE	ECONOMY
Coarguments: I like ___.							
1a. ☞	x→ *a*, y→ *b*	us					*
1b.		ourselves	*!		*		**
1c.		∅				*!	
2a.	x→ *a*, y→ *a*+*b*+*c*...	us		*!			*
2b.		ourselves	*!		*		**
2c. ☞		∅				*	

2.5 Gaps

Another argument that Obviation and Economy are separate constraints comes from gaps. Obviation prohibits pronominals from referring to coarguments even in places where the binding conditions do not allow anaphors to be used in their place. In fact, in the coargument domain, gaps in the distribution of reflexives are never simply filled in by pronominals. For example, in [50], *them* is ruled out by Obviation even though *themselves* is also impossible, split antecedents being impermissible in local binding domains (I symbolize split antecedents by the plus notation, e.g. *them*$_{i+j}$).

(50) John$_i$ confronted Bill$_j$ with $\left\{\begin{matrix}\text{*them}_{i+j}\\ \text{*themselves}_{i+j}\end{matrix}\right\}$.

Since the exclusion of the pronominal in [50] cannot be due to blocking by a reflexive, such sentences give independent evidence for Obviation.

In [51] and [52], the pronominal is again ruled out by Obviation, even though the reflexive is also impossible, for the prominence requirements on the antecedent are not satisfied.

(51) a. I showed $\left\{\begin{matrix}\text{*him}_i \\ \text{*himself}_i\end{matrix}\right\}$ to John$_i$ in the mirror.

b. I showed $\left\{\begin{matrix}\text{*him}_i \\ \text{*himself}_i\end{matrix}\right\}$ John$_i$ in the mirror.

(52) a. Mary talked about $\left\{\begin{matrix}\text{*him}_i \\ \text{*himself}_i\end{matrix}\right\}$ to John$_i$.

b. Mary talked about John$_i$ to $\left\{\begin{matrix}\text{*him}_i \\ \text{*himself}_i\end{matrix}\right\}$.

c. John$_i$ and Mary$_j$ both admire $\left\{\begin{matrix}\text{*him}_i\text{/*her}_j \\ \text{*himself}_i\text{/*herself}_j\end{matrix}\right\}$.

Strikingly, a pronominal cannot refer to an object coargument even where object antecedents for reflexives are disallowed generally, as in German:

(53) Die Maria$_i$ hat $\left\{\begin{matrix}\text{sich}_{i,*j} \\ \text{ihn}_{*i,*j}\end{matrix}\right\}$ dem Hans$_j$ genau beschrieben.
'Maria described self/him exactly to Hans.'

For this reason, [54] and [55] exactly reverse the pattern of [47] and [48]:

(54) a. I believe $\left\{\begin{matrix}\text{*me} \\ \text{myself}\end{matrix}\right\}$ to have been cheated.

b. Richard$_i$ regards $\left\{\begin{matrix}\text{*him}_i \\ \text{himself}\end{matrix}\right\}$ as innocent.

c. I call $\left\{\begin{matrix}\text{*me} \\ \text{myself}\end{matrix}\right\}$ Captain Nemo.

d. Mary$_i$ has a picture of $\left\{\begin{matrix}\text{*her}_i \\ \text{herself}\end{matrix}\right\}$.

e. In spite of $\left\{\begin{matrix}\text{*me} \\ \text{myself}\end{matrix}\right\}$, I will succeed.

f. You must have decided to promote everyone except $\left\{\begin{matrix}\text{*you} \\ \text{yourself}\end{matrix}\right\}$.

(55) a. I want (*me) to be your friend.

b. John$_i$ prefers (*his$_i$) going to the movies.

c. Mary$_i$ didn't have enough film (*for her$_i$) to take the pictures.

d. Mary was waiting, (*she) having arrived before me.

These are local binding domains where the pronouns are not coarguments of their antecedent. The pronominals are blocked by reflexives in [54], and by PRO in [55].

Summing up: the pattern of distribution of anaphors and pronominals results from the joint application of two independent principles, Obviation and Blocking. Obviation explains the contrast between [43], [50] and [47]-[48], and Blocking explains the contrast between [54]-[55] and [47]-[48]. Violation of either Obviation or Blocking by itself produces a deviant sentence but the crispest ungrammaticality comes from joint violation of both.

2.6 Morphologically marked Obviation

Finally we turn to generalization [6]. Morphologically marked Obviation, at least as instantiated in Algonquian languages such languages as Cree and Ojibwa (Dahlstrom 1986, Schwartz and Dunnigan 1986:292, Grafstein 1988, Grafstein 1989, Aissen 1997), is also a manifestation of coargument disjoint reference, but one that falls within "syntax" as traditionally demarcated. These languages distinguish between two sets of pronominal affixes, obviative (the morphologically marked category), and proximate. Above the clausal level, the use of proximates and obviatives is determined by discourse structure, the basic generalization being that proximate forms are reserved for the current discourse topic (or topics, since in certain cases there may be more than one concurrent topic). A switch of obviation serves, typically, to foreground another topic. Within a clause, obviation is rigorously controlled by the constraint that there can be at most one proximate third person argument.[14] For example, in these Ojibwa examples (from Grafstein 1989) the obviation marker is obligatory in the coargument case in [56], but determined by the abovementioned discourse condition in [57] and [58]:

(56) a. John o-wa:bam-a:-an
John 3-see-3-OBV
'John$_i$ sees him$_j$'

b. *John o-wa:bam-a:
John 3-see-3(PROX)
'John$_i$ sees him$_i$'

(57) a. animoš o-gike:nda:n bo:žẽs ga:zo-d
dog 3-know cat hide-3
'The dog knows that the cat is hiding.'

14 Dahlstrom notes that, although only animate nouns bear overt obviative marking in Cree, the verbal syntax shows that inanimate nouns also are obviative under the appropriate conditions.

b. animoš o-gike:nda:n bo:žẽs-an ga:zo-ini-d
dog 3-know cat-OBV hide-OBV-3
'The dog knows that the cat is hiding.'

(58) a. Mary o-gi:-oǰi:ma:-an John o-gosis-an
Mary 3-PAST-kiss-OBV John 3-son-OBV
'Mary kissed John's son.'

b. Mary o-gi:-oǰi:ma:-an John-an o-gosis-ini
Mary 3-PAST-kiss-OBV John-OBV 3-son-FURTHEROBV
'Mary kissed John's son.'

Which argument is obviative and which is proximate in this case depends on the inflection of the verb, the rule being that the subject of a direct verb is proximate, and the subject of an inverse verb is obviative (Dahlstrom 1986:110). From the point of view of discourse organization (though not syntactically!), inverse forms are comparable to passives, and so we can say that the proximate is assigned to the syntactically more prominent argument (Dahlstrom, ibid.).[15]

The clause-internal distribution of Algonquian endings follows if we assume that only the obviative endings are subject to the OBVIATION constraint.

The obviative endings have the same property as English pronouns, of not allowing coreference of coarguments. The proximate endings, like reflexives, are referentially dependent, but unlike them, their antecedent need not be confined to a syntactically defined domain. Rather, it is a discourse topic, which can be introduced at any point in a discourse and maintained across an arbitrarily long stretch of it. The proximates thus fall in with a large class of pronouns, discussed in the next section, which have the property that they cannot introduce a discourse referent. It is the referentially dependent status of proximates that is the primary regulator of distribution of proximates versus obviatives across clause boundaries. Obviatives are referentially independent, i.e. unrestricted as to how they can pick up their reference. Hence proximates block obviatives in discourse in Algonquian, in much the same way as reflexives block pronominals in the binding domain.

Consequently, although the obviatives are analogous to familiar pronouns, their surface distribution is much more restricted because they are blocked, but by the more widely licensed morphologically unmarked category of proximates. In effect, they are confined to coargument disjoint reference function within clauses, and in discourse to new topics. From this perspective, both obviatives and proximates fit perfectly into

15 Other discourse-related factors, such as empathy, seem to play a role as well, Dahlstrom suggests.

the typology of pronominal categories, and both have, in fact, familiar counterparts in English.

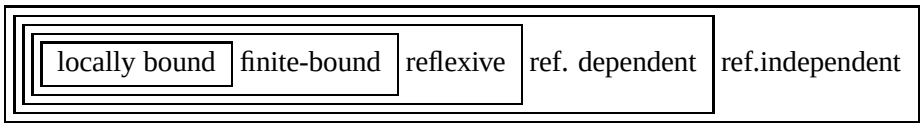
An important additional piece of evidence that obviation and blocking are independent constraints in Ojibwa as well comes from a key observation of Dahlstrom (1986). She noted that under certain conditions a narrative can maintain two concurrent proximates.[16] In such cases, precisely when *both* are clausemates, one of them, the syntactically less prominent one, obligatorily becomes obviative. In the subsequent discourse, both then resume again as proximate.

3 The Typology of Pronouns

3.1 Antecedent domain

In order to flesh out the typology, we must specify the domains within which pronouns can require their antecedent to be located. They are defined by a hierarchy of constraints which impose successively more restrictive requirements on the locality relation between the anaphor and its antecedent. The domains form a strict hierarchy of inclusion:

(59)



The hierarchy is constituted by four binary divisions:

(60)

a. A pronoun may be REFERENTIALLY INDEPENDENT or REFERENTIALLY DEPENDENT. Referentially independent pronouns can (but need not) introduce something new into the discourse. For example, they can have deictic and demonstrative uses. Referentially dependent pronouns cannot introduce anything new into the discourse: they must have at least a "discourse antecedent".

b. Referentially dependent pronouns may be REFLEXIVE or NON-REFLEXIVE. (Referentially independent pronouns are necessarily non-reflexive.) Reflexive pronouns need a *syntactic* antecedent. Non-reflexive pronouns can (but need not) get their reference from context/discourse.

c. Reflexive (hence referentially dependent) pronouns may be FINITE-BOUND or NON-FINITE-BOUND. (Non-reflexive pronouns are necessarily non-bound.) Finite-bound pronouns require an antecedent within

16 For example, she cites the sentence "When they (PROX) arrived there, he (PROX) had already shot the buffalo." (p. 114).

the same finite clause. Non-finite-bound pronouns can (but need not) have an antecedent within the same finite clause.

d. Finite-bound (hence reflexive and referentially dependent) pronouns may be subject to the requirement that they be LOCALLY BOUND, or not. Locally bound pronouns require an antecedent in the first accessible subject domain. Non-locally bound pronouns can (but need not) have a "long-distance" antecedent.

Here are some illustrative diagnostic contexts for the antecedent domain. The category of a pronoun is defined by the maximum domain in which its antecedent may be found. The contexts define a hierarchy of five domains.

(61) a. *Referentially independent:*
It's ___!
We need to talk about ___, ___, and ___.

b. *Referentially dependent:*

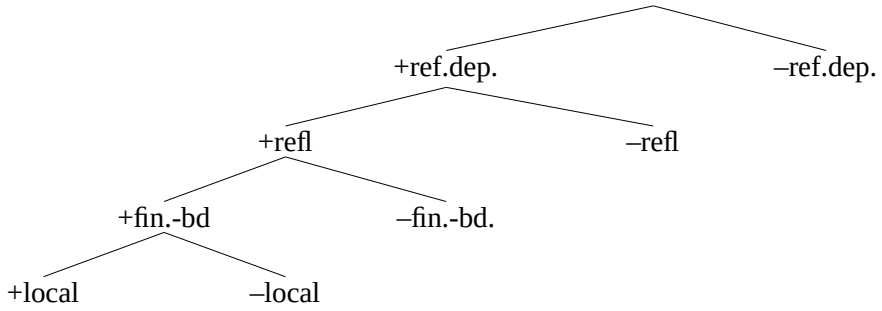
1. *Non-reflexive*:
John$_i$ is here. I saw ___$_i$. (discourse antecedent)
2. *Reflexive*:
   i. *Non-bound:*
   John$_i$ thought that I would criticize ___$_i$.
   John$_i$ was sad. Why didn't Mary love ___$_i$?[17]
   ii. *Finite-bound*:
      A. *Non-locally bound:*
      John$_i$ asked me to criticize ___$_i$.
      B. *Locally bound:*
      John$_i$ criticized ___$_i$. (reflexive)
      John$_i$ showed Bill$_j$ ___$_{i,j}$ in the mirror.

Thus, *him* can appear in [61a], so it is referentially independent. *It* can appear in [61b] but not in [61a], so it is referentially dependent. *Himself* can only appear in [61b2iiB], so it is locally bound.

The five pronoun types cross-classify with the obviation property [±Obviative], together yielding ten logically possible types of pronominal elements. The full typology, with a representative example of each type, is given in [62].

(62) *The pronoun typology*

17 This is the *logophoric* case, in the strict sense of an element whose reference is determined in relation to the speech, thought, or point of view represented in the containing discourse (Sells 1987).



[–O]:	*himself*	*sebja*	Icelandic *sig*	Turkish *kendisi*	—
[+O]:	—	Sw. *sig*	Marathi *aapaṇ*	Greek *o idhios*	*him*

The typology in [62] diverges from traditional Binding Theory in two respects. First, it differentiates by a hierarchy of binding domain specifications what Binding Theory has so far classed together as pronominals, i.e. [−reflexive] elements, and secondly, it treats Obviation as an independent cross-classifying property of all types of pronouns.

Two likely functional requirements on pronouns are EXPRESSIVENESS and CONTRASTIVENESS, defined as follows. A pronominal system is expressive if it provides the means to mark both coreference and non-coreference in any domain (as presumably all languages do). This is the case if the language has at least a referentially independent pronoun, and a non-obviative one. Formally, is is equivalent to the assumption that PARSE universally outranks ECONOMY. A pronoun is contrastive if it is obviative or referentially dependent, i.e. if its relation to its antecedent is constrained in some way. I make the following conjecture:

(63) a. *Expressiveness:* All pronominal systems are expressive.

b. *Contrastiveness:* All pronouns are contrastive.

[63b] implies that the gap in the top ([–O]) line of [62] is systematic: referentially independent pronouns are universally obviative. A non-obviative referentially independent pronoun, if it existed, would be a "universal pronoun" which had neither coreference nor disjoint reference restrictions, and in particular could be used both as a demonstrative and as a reflexive. Thus, [63a] guarantees the expressiveness of a language's pronominal inventory, [63b] complements it by ensuring the functionality of each element in the inventory.

The most restricted category, obviative locally bound reflexives, might at first sight seem non-existent as well. If obviation is defined as before, then a pronoun of this type would be virtually useless, for the obviation requirement prohibits it from having a coargument antecedent while its local binding requirement can only be satisfied by

an antecedent in the same clause. On the other hand, it is precisely for locally bound reflexives that we need to specify subject-orientation, so as to distinguish between reflexives like English *himself*, which can be anteceded by objects, and reflexives like German *sich*, which require subject antecedents. It is tempting, therefore, to take locally bound subject-oriented reflexives such as German *sich* as being obviative. This move at one stroke fills the empty slot in the typology and accommodates subject-orientation without adding an extra feature or parameter to the system. The intuition is that although reflexives which must be locally bound cannot literally satisfy the coargument disjoint reference requirement, they can satisfy a relativized form of it, which requires disjoint reference from all coarguments but the structurally most prominent one. Formalizing this idea is however not a trivial matter.

3.2 Referentially independent pronouns

A pronoun, *qua* lexical element, is referentially independent if and only if it *can* introduce new discourse referents. It doesn't *have* to introduce new discourse referents; in fact the present typology excludes the possibility of pronouns that *cannot* get their reference anaphorically, and as far as I know there are none.[18] Referentially independent pronouns include, by definition, all pronouns which allow a deictic or demonstrative use, whatever other uses they may have in addition.[19]

The resulting typology of pronouns, though richer, is actually more constrained in what it predicts about the range of possible anaphors. What needs to be specified about a pronoun is whether it is obviative, and what antecedent domain constraint it is subject to. Blocking and, for obviative elements, the domain of obviation, are fixed.

In sections 3.3–3.8 below I document examples of the different antexedent domains, with special attention to the category of referentially dependent non-reflexive pronouns, which are not countenanced in traditional theories. In section 4 I then turn to a number of empirical issues raised by the claim that the domain of obviation is universally fixed.

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18 The "contrastive pronouns" described in Heath (1983) come close, but they seem to be regular pronouns plus a focus clitic.

19 I take deixis in a narrow sense which does not include "ambient reference", e.g. (A to B, in reference to a man running towards them waving his hands excitedly): *What do you think he wants?* Here the pronoun is not introducing a new element into the discourse; rather, it is already present in virtue of the situation. — I think that my view is not really inconsistent with the idea that *all* pronouns are referentially dependent, (e.g. Roberts 1987, Partee 1989). Some distinction corresponding to referential dependency in my sense would have to be drawn in any case.

3.3 Referentially dependent non-reflexive pronouns

Identifying the category. Many languages lack reflexive pronouns entirely and simply use personal pronouns in their place, such as Manam (Lichtenberk 1983:126), Jiwarli (Austin 1989), Gumbaynggir (Levinson 1991), Old English, and Frisian (Tiersma 1985). Even more commonly, personal pronouns fill in for missing reflexives in some categories, e.g. non-third person in German, animates in Chamorro (Chung 1989), and genitives in English. These can be considered referentially dependent pronouns, of the non-obviative variety. The obviative counterparts of this category are modern German masculine and feminine *er, sie* in reference to inanimates, and neuter *es* in reference to animates, and modern English *it* as opposed to *he, she, they*.

Three main diagnostics distinguish referentially dependent pronouns from referentially independent pronominals, all flowing from the requirement for a discourse antecedent.

First, since true deixis (pointing) introduces new discourse referents, referentially dependent pronouns cannot be used in a strictly deictic way.

(64) (Pointing:)

a. I mean him over there.

b. Ich meine ihn da. (Pointing to a boy.)

c. *Ich meine ihn da. (Pointing to a table.) (OK: Ich meine den da.)

d. *I need IT, not IT. (OK: I need this, not that.)

Secondly, since pronouns heading restrictive relative clauses introduce new discourse referents, referentially dependent pronouns cannot head restrictive relative clauses:

(65) a. He who hesitates is lost. (OK as restrictive)

b. *Er, der zögert, ist verloren. (cannot be restrictive)

c. Der(jenige), der zögert, ist verloren. *Or:* Wer zögert, ist verloren.

d. *It which he said is true.

e. That which he said is true. *Or:* What he said is true.

A third criterion is that referentially dependent pronouns, like true reflexives, do not appear freely in predicative positions.

(66) a. The mysterious benefactor turned out to be him.
*The mysterious object turned out to be it.

b. I wish I could become him!
*I wish I could become it!

This follows if we assume that elements in predicative positions cannot be referentially dependent.[20] I will assume that they are not referential at all.

Thus the contrast between the English and German pronouns seen in [65]-[66] identifies the former as independent pronouns and the latter as referentially dependent pronouns.

Old English. In Old English, the personal pronouns *hē hēo hit* "he, she, it", in addition to their free pronominal use, are capable of referring to any argument of the same clause:

(67) a. & he hine & his ðeode gelædde to mærsianne
and he him and his people brought to celebrate
'and he brought himself and his people to celebrate' (*Bede* 5 19.468.7)

b. þonne wolde heo ealra nyhst hy baþian & þwean
then would she of all latest her bathe and wash
'(having first washed the other servants of Christ that were there) then she would last of all bathe and wash herself' (*Bede* 4 19.318.20)

c. ac mid inneweardre heortan monic mid hine sprecende smeade
and with inmost heart often with him speaking reflected
'in his innermost heart he often argued with himself' (*Bede* 2 8.124.22)

d. þætte nænig biscopa hine oðrum forbære
that no bishop him others-DAT advance-SUBJ-3P
'that no bishop shall put himself above others' (*Bede* 5.278.27)

It turns out that they have exactly the properties of referentially dependent pronouns.

First, Old English personal pronouns are not used deictically as in [64].

Second, it appears that Old English *hē hit hēo* cannot head restrictive relative clauses. Although grammars do not seem to note it, Old English, *he hēo hit* as heads of relative clauses seem to require specific contextually identifiable referents:[21]

20 This is superficially contradicted by constructions like *John is not himself today.* But *himself* here is not referential. Rather, it means something like "the way he usually is". If there were a referential dependency between *John* and *himself*, the sentence would be contradictory.

21 Adherence to this rule improves the editor's translation in many instances, e.g. *BlHom* 19.32, 167.35, 169.4, 197.3, *ÆCHom* II 8.4, 24.12, 124.27, *CP* 57.18, 20, *Bede* 2 9.132.27. In each of these cases, the context makes clear that the head *he* refers to an established discourse antecedent, confirming the claim that the Old English personal pronouns are unrestricted.

(68) He ongann on ðære menniscnysse, seðe æfre wæs and æfre bið God
he began in this humanity who ever was and ever will be God
'He [Christ], who ever was and ever will be God, began in humanity.'
(*ÆCHom* ii.8.4)

In contrast, the demonstrative pronoun *sē sēo þæt* with a relative clause can be generic:

(69) Se ðe eow gehyrsumað, he gehyrsumað me *(ÆCHom ii.50.7)*
He who obeys you, obeys me (restrictive)
= Der(jenige), der…; Wer… (not *Er, der…, cf. [65])

The relative clause pattern is thus as follows:

(70) a. He…, (se)(þe)… — nonrestrictive

b. Se…, (se)(þe)… — restrictive or nonrestrictive

Third, like modern German, Old English apparently did not allow the simple pronouns in predicative position. That is, sentences like [71] do not seem to be attested in Old English:

(71) a. *We ne magon hie weorþan.
'We cannot become them.'

b. *Se cuma wæs ic.
'The guest was I.'

c. *ðæt husel is gastlice he.
'In a spiritual sense, the eucharist is He.'

In principle, OE *hē hēo hit* could be used to refer to any discourse referent once it has been introduced. However, there seems to have been a tendency to use them in reference to the primary discourse topic. To mark a change of topic, the demonstrative pronoun *sē sēo þæt* is typically used. The "subject-changing" function of OE *sē*, noted in (Mitchell 1985:129 for examples like [72], is then probably really a topic-changing function:

(72) Hi habbað mid him awyriedne engel, mancynnes feond, and se hæfð andweald... (*ÆCHom* ii.488.14)
They have with them a corrupt angel, the enemy of mankind, and he has power over...

It is important that referential dependency is not reducible to a pronoun's ability to be stressed or focused: referentially dependent pronominals can very well be stressed and even be put into focus position, provided only that they have a discourse antecedent:

(73) a. First Max kissed the monster, and then *it* kissed *him*.

b. Erst hat die Maria den Max geküsst, und dann hat *er sie* geküsst.
'First Maria kissed Max, and then *he* kissed *her*.'

c. *Ihn* hat sie doch geküsst!
Surely she kissed *him*!

In Old English as well, contrastive uses were admissible as long as they were referentially dependent (as in [73]):[22]

(74) þa Cwenas hergiað hwilum on ða Norðmen ofer ðone mor, hwilum þa Norðmen on hy (*Orosius*)
Sometimes the Finns make raids on the Norwegians across the mountains, sometimes the Norwegians on them [i.e. on the Finns]

Therefore referential dependency is not the same as "weakness" in the sense of Rigau 1986 and others: it may be that all "weak" pronouns are referentially dependent, but the converse does not hold.[23]

Nor are referentially dependent pronouns necessarily "logophoric" (Hagège 1974, Clements 1975, Sells 1987, Zribi-Hertz 1989, Koopman and Sportiche 1989, Pollard and Sag 1992). That is, the reference is not necessarily characterized in terms of the speech, thought, orientation, or point of view represented by the containing discourse, as for example the logophoric reflexive in [75] is:[24]

(75) ...the Kommandant$_i$ had taken good care to read the reports about himself$_i$ that Verkramp$_j$ had submitted. (Tom Sharpe, *Riotous Assembly*, Pan 1973, p. 12)

Obviation: Turkish vs. Greek. Another pronoun plausibly analysed as referentially dependent, of the [−obviative] type, is Turkish *kendisi*. It can be bound sentence-internally, but when not so bound, it "must pick out an individual that is already in the domain of discourse, and cannot be used to introduce an individual into the domain of discourse" (Enç 1983); it "cannot be accompanied by a demonstration".[25]

22 Similarly in Middle English:

It liketh hym at the wrastlyng for to be,
And demeth whether he do bet or he (Chaucer, PF 165)

23 The recent three-way classification of Cardinaletti & Starke (1996) is also based on different criteria than the one in the text.

24 First person pronouns, and to some extent also second person pronouns, are an important special case. They appear readily outside of "represented thought/speech" contexts (Reinhart and Reuland 1991).

25 Enç credits some of these observations to an unpublished paper by N. Tölek. Enç (1989:76) on the other hand states that *kendisi* can be deictic; I assume she means "free", for *kendisi* is not, apparently, acceptable in "pointing" contexts.

Greek *o idhios* (Iatridou 1986) probably also belongs here. C. Condoravdi (class lectures 1988) points out that it does not need to be bound within its sentence:

(76) O Yanis$_i$ mas simvulepse na figume amesos. O idhios$_i$ tha efevge
the Yanis us advised to leave immediately the same PRT left
argotera.
later
'Yanis advised us to leave immediately. He was to leave later.'

It does however require at least a discourse antecedent, so that its deictic use, for example, is inadmissible, and it can have a bound variable interpretation (e.g. with a quantified antecedent). Since it need not be syntactically bound, its antecedent can be an object:

(77) O Yanis$_i$ ipe ston Kosta$_j$ oti i Maria agapai ton idhio$_{i,j,*k}$.
the Yanis told to Kostas that the Maria loved the same
'Yanis told Kostas that Maria loved him.' ('him' must be Yanis or Kostas)

So Greek *o idhios* has the hallmarks of a referentially dependent pronoun. But unlike the other referentially dependent pronouns cited here, *o idhios* is restricted to emphatic/contrastive (focused) uses. It is [+obviative], and absolutely cannot refer to a coargument:

(78) O Yanis agapa *ton idhio / ton eafton tu.
The Yanis loves the same / the self his
'Yanis loves himself.'

The genitive *tu idhiu* also prefers to be bound outside its clause:

(79) O Yanis agapa tin mitera $^{??}$tu idhiu / tu.
The Yanis loves the mother his same's / his
'Yanis loves his mother.'

This can't be by obviation because they are not coarguments. In fact, the deviance is weaker than in the coargument case [78], and is presumably due of blocking of the morphologically complex *tu idhiu* by the simple reflexive clitic *tu* in the local domain.

Child language. The provision of the category of referentially dependent pronouns with an unrestricted binding domain in the typology of [62] suggests a simple explanation for some otherwise puzzling acquisition data. Children, in a wide range of experimental tasks, have been found to violate principle B more often than principle A (Grimshaw and Rosen 1990), and they seek to assign discourse antecedents to pronouns in preference to interpreting them deictically (*ibid.* p. 200). Presumably children faced with the task of interpreting sentences like *The Smurf is talking to him* (perhaps in the absence of a plausible deictic context) resort to the assumption that *him* is a [−obviative] pronoun after all. Given that referentially dependent pronouns

can have an unrestricted domain, this would not reflect a disregard of UG principles of Binding Theory, but simply a temporary resetting of the Obviation parameter for this pronoun to its marked value [−obviative], under the positive evidence provided by the experimenter. As we have just seen, this hypothesis would have been right on target for the real English data of a thousand years ago.[26] I suspect that similar effects occur even with adult speakers. In soliciting grammaticality judgments I have noticed that even some informants who unhesitatingly reject long-distance binding at first, begin to waver after being subjected to repeated instances of it.

Other instances of referentially dependent pronouns. Many pronouns which have been described as requiring "topic" antecedents probably belong here. For example, Saxon (1986:210) states that Dogrib *we-* (the counterpart of the famous Navajo *bi-*) "seems to be appropriate only in situations where [its] referent has some status as a discourse topic"; and for Korean *caki* it has been claimed that there are no syntactic constraints on the antecedent, but it is normally the discourse topic (Hong 1989); *caki* itself cannot apparently introduce a new discourse topic.[27]

As discussed in section 2, the proximate pronouns of Algonquian seem to be referentially dependent pronouns as well.

Standard versions of Binding Theory would have to say that referentially dependent pronouns are ambiguous between pronominals and anaphors, i.e. that they are entered in the lexicon with two distinct feature specifications, both [−anaphor, +pronominal] and [+anaphor, −pronominal]. This kind of homonymy is suggested by Koster 1986 for *hem* in certain Dutch dialects (p. 325), and for the English possessive pronouns (p. 343). Given the features that standard Binding Theory provides, the pronominal and the anaphor must be listed separately because there is no way to subsume them under a single underspecified lexical entry with neutralization of the relevant features.[28]

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26 Grimshaw and Rosen (1990) also report evidence that children tend to reject pronominals more if the coargument antecedent is quantified, accepting e.g. *Is mama bear washing her?* more readily than *Is every bear washing her?* This fits well in the present account in that the latter sentence (having a quantified antecedent) must be a case of bound anaphora. The children making this distinction were, so to speak, learning Russian (see section 2 above). The expectation would then be that the distinction would emerge in older children with an established system of reflexives.

27 Of course, it is not always easy to distinguish unrestricted pronouns from logophoric pronouns, and there may be intermediate and mixed cases. The example that Saxon cites does suggest, though, that the antecedent Dogrib *we-* is not solely determined by logophoricity, and Hong explicitly argues the same for *caki*, although logophoricity, "empathy" and the like do play some role (see also Cho 1985).

28 Chung has argued that this apparently unhappy consequence is actually a fortunate one.

The remaining types have been identified as different kinds of long-distance anaphors in the literature and can be dealt with briefly here.

3.4 Finite-bound reflexive pronouns

These pronouns require a c-commanding antecedent in the Root domain, i.e. possibly the subject of a superordinate finite clause. Icelandic *sig* is of this type (Thráinsson 1979).

An obviative reflexive that must be bound in this domain is Marathi *aapaṇ* (Joshi 1989, Dalrymple 1993):

(80) Jane-ne$_i$ John-laa$_j$ kaḷavle ki aapaṇ$_{i,*j}$ turangaat aahot
Jane-ERG John-ACC informed that self prison-LOC was
'Jane$_i$ informed John$_j$ that self$_{i,*j}$ was in prison.'

Malayalam *ṭaan* (Mohanan 1982) is also obviative and require an antecedent in the Finite domain. The Eskimo null pronoun (Bok-Bennema 1984) seems to be another instance of this type.

3.5 Non-locally bound reflexive pronouns

This category is represented by Swedish *sig*, which may be bound out of an infinitive clause but not out of a finite clause:

(81) a. Generalen$_i$ tvingade översten$_j$ att hjälpa sina$_{i,j}$ soldater.
'The general forced the colonel to help self's soldiers.'

b. Generalen$_i$ sade att översten$_j$ skulle hjälpa sina$_{*i,j}$ soldater.
'The general said that the colonel should help self's soldiers.'

She shows that in Chamorro, certain language-specific syntactic constraints single out those configurations in which the ambiguous pronouns are bound (coindexed with a c-commanding or preceding antecedent), and argues that this constitutes evidence for a covert distinction between pronominals and anaphors in that language (Chung 1989). Suppose however that the pronouns in question belong unambiguously to a category of pronoun which have the property that they may be bound (coindexed with an antecedent) in some local domain, but need not be bound. Then the grammatical constraints which Chung defines on anaphors can be reformulated as constraints on coindexation, and do not require multiple lexical entries. In other words, rather than referring to the distribution of elements with any particular set of intrinsically specified pronominal features, the conditions can refer to bound and free *uses* of pronouns. This has the additional virtue of avoiding the need to postulate lexical homonymy in a whole series of pronouns (in Chamorro, saving us from having to say that all animate pronouns would be systematically homonymous between pronominals and anaphors).

3.6 Locally bound reflexive pronouns

Most complex reflexives are of this type. Their morphology reveals their origin as strategies for defeating Obviation. In one type, the reflexive is maneuvered into a non-coargument position, as in reflexives of the form POSS+N (where N = 'head', 'body' etc.). In the other, its Obviation is annulled by an element such as *self*.

3.7 Variation

Let us assume that the hierarchy of binding domains is induced by a set of successively more restrictive constraints. For concreteness, let BD_2 be the constraint that requires the antecedent to be in the same finite clause and let BD_1 be the constraint that requires the antecedent to be in the same clause (locally bound). Then "optional reflexivization" in Swedish is derived by allowing the ranking of BD_1 to vary. The glosses for the four candidate sets are: (1) 'John considers himself to be intelligent', (2) 'J asked M to criticize him', (2′) 'J asked M to criticize herself', (3) 'J thinks M will criticize him', (3′) 'J thinks M will criticize herself'.[29]

29 The PROX constraint, which plays no critical role in these cases, is omitted from these tableaux for reasons of space.

(82)

Swedish: Long-distance *sig*			BD$_2$	OBV	ECON	BD$_1$
1a.	☞	J$_i$ anser $_{\text{IP}}$[sig$_i$ vara intelligent]				
1b.		J$_i$ anser $_{\text{IP}}$[honom$_i$ vara intelligent]			*!	
1c.		J$_i$ anser $_{\text{IP}}$[sig$_i$ själv vara intelligent]			*!	
1d.		J$_i$ anser $_{\text{IP}}$[honom$_i$ själv vara intelligent]			**!	
2a.	☞	J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_i$]				*
2b.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_i$]			*!	
2c.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_i$ själv]			*!	*
2d.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_i$ själv]			**!	
2a′.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_j$]		*!		
2b′.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_j$]		*!	*	
2c′.	☞	J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_j$ själv]			*	
2d′.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_j$ själv]			**!	
3a.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_i$]	*!			*
3b.	☞	J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_i$]			*	
3c.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_i$ själv]	*!		*	*
3d.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_i$ själv]			**!	
3a′.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_j$]		*!		
3b′.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_j$]		*!	*	
3c′.	☞	J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_j$ själv]			*	
3d′.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_j$ själv]			**!	

(83)

Swedish: Local *sig*			BD$_1$	BD$_2$	OBV	ECON
1a.	☞	J$_i$ anser $_{\text{IP}}$[sig$_i$ vara intelligent]				
1b.		J$_i$ anser $_{\text{IP}}$[honom$_i$ vara intelligent]				*!
1c.		J$_i$ anser $_{\text{IP}}$[sig$_i$ själv vara intelligent]				*!
1d.		J$_i$ anser $_{\text{IP}}$[honom$_i$ själv vara intelligent]				**!
2a.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_i$]	*!			
2b.	☞	J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_i$]				*
2c.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_i$ själv]	*!			*
2d.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_i$ själv]				**!
2a′.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_j$]			*!	
2b′.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_j$]			*!	*
2c′.	☞	J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera sig$_j$ själv]				*
2d′.		J$_i$ bad M$_j$ $_{\text{IP}}$[PRO$_j$ kritisera honom$_j$ själv]				**!
3a.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_i$]	*!	*		
3b.	☞	J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_i$]				*
3c.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_i$ själv]	*!	*		*
3d.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_i$ själv]				**!
3a′.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_j$]			*!	
3b′.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_j$]			*!	*
3c′.	☞	J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera sig$_j$ själv]				*
3d′.		J$_i$ tror $_{\text{CP}}$[M$_j$ ska kritisera honom$_j$ själv]				**!

3.8 *Attack* vs. *defend*

Having seen how the class of pronominal anaphors exemplified by Swedish *sig* supports the existence of an independent Obviation constraint, we now draw on its distributional properties for another piece of support for the specifically semantic character of Obviation. Hellan (1988:108 ff.) noted a puzzling difference between the two verb types illustrated in [84], represented by *angripa* "attack" vs. *försvara* "defend" (I use again Swedish examples throughout).[30]

(84) a. Han angrep $\left\{\begin{matrix}\text{*sig.}\\ \text{sig själv.}\end{matrix}\right\}$ 'He attacked himself.'

30 A similar contrast is reported for Dutch (Everaert 1986:204).

b. Han försvarade $\left\{\begin{array}{l}\text{sig.}\\ \text{sig själv.}\end{array}\right\}$ 'He defended himself.'

Verbs of the *attack* type require the complex reflexive *sig själv*, as would be expected by what we have said so far. Verbs of the *defend* type unexpectedly may have the bare simple reflexive *sig*. Replacing *attack* in [26] by such a verb therefore restores the ambiguity:

(85) Generalen$_i$ tvingade översten$_j$ att försvara sig$_{i,j}$.
'The general forced the colonel to defend him/himself.'

Additional examples of each type of verb are given in [86]:

(86) a. Verbs requiring long reflexives: *hata sig själv* 'hate oneself', *föredra sig själv* 'prefer oneself', *undersöka sig själv* 'examine oneself', *förstå sig själv* 'understand oneself'

b. Verbs allowing short reflexives: *tvätta sig* 'wash (oneself)', *raka sig* 'shave (oneself)', *gömma sig* 'hide (oneself)', *rädda sig* 'save oneself', *förnedra sig* 'demean oneself'

Hellan (1988:109 ff.) proposes to explain the *defend* verbs as being intransitives of inherently reflexive form, analogous to such inherently reflexive intransitive verbs as *ångra sig* 'repent', *skynda sig* 'hurry'. The reason they can have bare *sig* then would be that their *sig* is not an argument, hence a fortiori not a coargument of anything. Hellan's most convincing piece of evidence that *defend*-type reflexives are syntactically intransitive is that they pattern with intransitive verbs in being able to occur in presentational constructions:

(87) a. *Det tvättade mig en grupp soldater vid stranden.
'There washed me a group of soldiers by the shore.'

b. Det tvättade sig en grupp soldater vid stranden.
'There washed themselves a group of soldiers by the shore.'

c. Det satt en grupp soldater vid stranden.
'There sat a group of soldiers by the shore.'

There is however at least as good evidence that the *defend*-type reflexives are also syntactically transitive, with *sig* functioning as a real object. First, the reflexive can be conjoined with a full lexical NP object:

(88) Han tvättade sig och sina barn.
'He washed himself and his children.'

Secondly, unlike the *sig* of inherently reflexive verbs, the *sig* of *defend*-type verbs can have a long-distance antecedent (contrast [89] with [85]).

(89) Generalen$_i$ tvingade översten$_j$ att skynda sig$_{*i,j}$.
'The general forced the colonel to hurry.'

Third, while inherently reflexive verbs can't share their *sig*, either with each other (see [90a]) or with *defend*-type verbs (see [90b]), *defend*-type verbs can do so freely with each other (see [90c]):

(90) a. *Han ångrade och skyndade sig. 'He repented and hurried.'

b. *Han ångrade och rakade sig. 'He repented and shaved.'

c. Han tvättade och rakade sig. 'He washed and shaved.'

The data in [85], [88], and [90] only make sense if *defend*-type reflexives can be transitive too.

So *defend*-type reflexives must have a dual argument structure, transitive and intransitive (as Hellan himself suggests). That is, *sig* with these verbs is ambiguously either an object or an intransitivizing clitic which lexically saturates the object's θ-role.

It follows that the bare *sig* in the transitive [90c] is a coargument of its antecedent, in apparent violation of Obviation. So the ability of *defend*-type verbs to take bare *sig* cannot be explained solely by their intransitivity, for the *transitive* variants of these verbs have exactly the same puzzling property.

There is more evidence that points to the same conclusion. Consider [91]:

(91) Frisören rakar vanligtvis sig (själv) först och kunderna
barber-the shaves usually self (himself) first and customers-the
efteråt.
afterwards
'The barber usually shaves himself first and the customers afterwards.'

Clearly [91] is transitive, for each of the conjuncts *sig* and *kunderna* has to be an argument in its own right, yet *själv* is not required in the first conjunct. Moreover, *sig* can be clefted with *defend*-type verbs, and not with inherently reflexive verbs. Clefted *sig* obviously has to be an argument, yet can stand on its own without *själv*:[31]

(92) Det var sig (själv) som han försvarade/*ångrade.
'It was himself that he defended/repented".

The conclusion is that *defend*-type verbs probably have both a transitive and an intransitive variant, but the reflexive form of *both* is exempt from Obviation. We must look elsewhere for an explanation.

Since Obviation is a constraint on semantic interpretation (section 2) it is reasonable to look for a semantic solution to the problem posed by the *defend*-type verbs as well. The key assumption will be that their internal arguments are proximate. This property

31 See von Bremen (1984:220) for more evidence that *sig* can have argument status in Swedish. The second sentence might be acceptable as a correction.

will be used to explain both why they can be intransitive and why, when transitive, their reflexive object needs no *själv*.

Suppose the special property of *defend*-type verbs is that their objects are inherently proximate, i.e. [–obviative]. Then, if the reflexive pronoun, normally obviative, is proximate in [84b], it is free to be coreferential with the subject there. As for the intransitive version of these verbs, let us assume that it is the result of lexical reflexivization. Clearly lexical reflexives are always proximate. If follows that lexical reflexivization is available just for this class of verbs.

The difference between the *defend* and *attack* classes undoubtedly has something to do with whether the activities they denote are stereotypically "other-directed". The following contrast is suggestive:

(93) a. John's defense (possibly = "John's defense of himself")

b. John's attack ($\neq$ "John's attack on himself")

The *defend*-verbs typically denote physical activities, two important subclasses being "grooming" verbs such as "wash" and "shave" and verbs denoting position and orientation such as "rise" and "lean", independently of agentivity (Kemmer 1993). Along the lines of the pragmatic accounts suggested by Faltz (1976), Kemmer (1993), and Levinson (1991), one could say that the suspension of Obviation is inapplicable to stereotypically other-directed actions, which therefore would not require *själv* to prevent Obviation if coreference is in fact intended, and for the same reason could be intransitivized by θ-role fusion.

While this is not implausible as an explanation for the origins of the distinction, it seem that it must be viewed as grammaticized to some extent, at least in the Scandinavian languages. If it were purely pragmatic in nature, it should be defeasible: that is, it should be possible to coerce a bare *sig* by appropriate manipulation of the context or situation. For example, if *själv* is motivated by a defeasible presumption of other-directedness, then in a discussion where specifically self-hatred is the topic it ought to be possible to say *hata sig*, without *själv*, which is not the case, I believe.[32]

4 Real and Apparent Complementarity Failures

Formulations of Binding Theory diverge greatly in how much overlap they allow in the distribution of anaphors and pronominals. The predictions range from strict com-

32 However, it *is* sometimes possible to accommodate bare *sig* by focusing on a particular meaning of the verb. A striking example is the observation of Hellan (1988) that the verb meaning "admire", normally an *attack*-type verb, allows the bare reflexive if it refers to admiration of the physical self (the nonstative sense, as in "John was admiring himself in the mirror.)

plementarity (e.g. Chomsky 1981) to several different kinds of restricted overlap (e.g. Huang 1983, Chomsky 1986, Dalrymple 1993) to quasi-independent distribution (e.g. Wexler and Manzini 1987, who allow pronoun-specific domain parametrizations for Principle A and Principle B, though restricted by certain global constraints; see below.) Strict complementarity is surely too strong: most languages show "optional reflexivization" in at least some contexts. But obviously not every conceivable kind of variation actually occurs in languages. The question is how to constrain the variation in a principled way. The proposed approach to anaphora has some direct consequences in this respect which are borne out by the cross-linguistic data.

Consider in particular the distribution of ordinary pronominal elements in relation to that of reflexives. Because of Obviation and Blocking, they should never overlap in local domains. We must now consider some apparent classes of systematic exceptions to this claim.

4.1 Snake sentences

There is apparent free variation between anaphors and pronominals in adverbial phrases of the type illustrated in [94]:

(94) a. John saw a snake$_i$ near him$_i$/himself$_i$.

b. Mary$_i$ wrapped the blanket around her$_i$/herself$_i$.

Some theories of anaphora have been set up in such a way as to predict this variation. The present approach implies that there is no free variation here, but a structural difference. The PP can be either an argument, (an adverbial or a prepositional object), in which case we get a reflexive, or functionally part of the predicate, in which case we get a pronominal.

Evidence for this view comes from cases where only the pronominal is possible and cases where only the reflexive is possible. They have clearly distinguishable structural characteristics. The following descriptive generalizations hold:

(95) a. A reflexive is possible if and only if a referential expression can be substituted for it.

b. A pronominal is possible if and only if the PP can be predicated of the object.

This is illustrated by the following bits of discourse:

(96) a. John$_i$ aimed the gun at *him$_i$/himself$_i$.

1. *The gun is at him now.
2. Last time he aimed it at Fred.

b. John$_i$ brought the gun with him$_i$/*himself$_i$.

1. The gun is with him now.
2. *Last time he brought it with Fred.

In [96a], John's gun is not "at him" (no predication) but it is aimed "there" (locative argument), so the reflexive is obligatory. In [96b], on the other hand, John's gun is "with him" (predication) but it is not brought "there", so the pronominal is obligatory.

We can test these generalization on the following contrasts (Kuno 1987:66):

(97) a. John$_i$ wrote to Mary about *him$_i$/himself$_i$.
(*Mary is about him. He also wrote about Fred.)

b. John$_i$ referred Mary to *him$_i$/himself$_i$.

c. John$_i$ compared Bill with *him$_i$/himself$_i$.

d. John$_i$ addressed the letter to *him$_i$/himself$_i$.

e. John$_i$ fell in love with *him$_i$/himself$_i$.

(98) a. John$_i$ has many friends around him$_i$/*himself$_i$.
(Many friends are around him. *He also has friends around Fred.)

b. John$_i$ left his family behind him$_i$/*himself$_i$.

c. John$_i$ has an air of aloofness about him$_i$/*himself$_i$.

d. John$_i$ has passion in him$_i$/*himself$_i$.

e. John$_i$ has no gumption in him$_i$/*himself$_i$.

That the reflexive is obligatory in cases [96a] and [97]) is not surprising. This is what would be expected on most theories, including the present one. It is the pronominal cases such as [96b] and [98] which require an explanation. A small clause analysis is implausible, for reasons discussed by Chomsky (1981) and others. For example, it would not account for the fact that the pronoun in this construction has the properties of a bound anaphor, as revealed by obligatory sloppy identity and non-substitutability of epithets:

(99) a. John brought the gun with him, and so did Mary. *(unambiguous)*

b. *John$_i$ brought the gun with the idiot$_i$.

It would also fail to generalize to cases like [100], where predication is presumably out of the question:

(100) John looked around him.

Another peculiarity of sentences like [96b], [97], and [100] that needs to be explained is the fact that the pronoun cannot be stressed.

I will assume that the argument structure of these sentences specifies the PP as containing a proximate non-reflexive pronoun, which (as the constraints dictate) must be interpreted as a bound anaphor. This is a remnant in Modern English of the much

wider proximate use of the pronominals in Old and Middle English seen in [74] ff. Semantically, the PP in effect joins with the verb into a combination that functionally constitutes a single predicate. That is, *John left his family behind him* is parallel to *John left his family behind*, and so on. In contrast the reflexive in *John aimed the gun at himself* is an independent argument:

(101) a. Reading of [96a]: $\lambda y \lambda x$ [x aimed the gun at y] (John)

b. Reading of [96b]: λx [x brought the gun with x] (John)

The peculiarity of the construction is that the bound anaphor is expressed by a clitic pronoun agreeing with the predicate's subject.

As in the case of the Swedish *attack* vs. *defend* contrast, the fact that Obviation is sensitive to the lexical semantics of the predicate confirms its status as a semantic constraint.

4.2 Processing factors

A similar prima facie problem for Blocking approaches (including the ECONOMY constraint adopted here), which on closer analysis turns out to be an argument for Obviation, appears in several languages including Swedish. Even though Blocking is the norm in Swedish, it is sometimes suspended for possessives in casual usage, so that they can, contrary to the general rule, corefer with the subject of the same clause. This happens particularly under three conditions (Wellander 1959:234 ff.).[33] First, if the subject is passivized, especially when it is also non-human:

(102) Ordet realism$_i$ är här taget i sitt$_i$/dess$_i$ ursprungliga bemärkelse.
word-the realism is here taken in self's/its original sense
'The word "realism" is here understood in its original sense.'

Secondly, if the pronoun precedes its antecedent (i.e. if it is contained in a topicalized constituent):

(103) Nere i Skåne, hos sin$_i$/hennes$_i$ väninna friherrinnan C., hade hon$_i$
down in Scania, at self's/her friend countess-the C., had she
ådragit sig en luftrörskatarr.
contracted self a bronchitis
'Down in Scania, at self's/her friend the countess of C's (place), she had contracted bronchitis.'

And third, if the pronoun is "distant" from its antecedent:

33 Wellander's study is based on sentences culled from journalistic prose. His material is reviewed and discussed from a generative semantics perspective by Hellberg (1980).

(104) Han$_i$ hade träffat henne$_j$, då de båda var helt unga, hos sin$_i$/hans$_i$
He had met her, when they both were quite young, chez self's/his
gamle vän B.
old friend B.
'He had met her, when they both were quite young, at self's/his old friend B's place.'

If this is a processing effect, we would expect it to occur in other languages as well where the same conditions obtain. In fact, similar variation in genitives occurs under corresponding conditions in other Scandinavian languages. Counterparts from Danish prose are cited in Diderichsen 1937:52-53. One Icelandic consultant judged the pronominal to be a marginal option for the Icelandic versions of all three sentences; the other did so for [102] and rejected it for [103] and [104]. In Russian, the possessive reflexive *svoj*, even with a third person antecedent, can sometimes alternate with the pronominal under similar special conditions (Yokoyama 1975).

Wellander further observes that when several of these factors coincide, the pronominal "can satisfy even a more fastidious linguistic intuition":

(105) Flickan$_i$ tvingas just under sin$_i$/hennes$_i$ ömtåligaste ålder att byta
girl-the is forced just under self's/her most sensitive age to change
skola.[34]
school.
'The girl is forced precisely at self's/her most sensitive age to change school.'

(106) ... faster Lotta$_i$, som av familjen mot sin$_i$/hennes$_i$ vilja och trots
... aunt Lotta, who by family-the against self's/her will and in spite of
sin$_i$/hennes$_i$ ungdomskärlek giftes bort med brukspatron på J.
self's/her youth-love was married away with factory boss on J.
... aunt Lotta, who was married off to the factory boss at J. by her family against self's/her will and in spite of self's/her youthful love.

Presumably what is going on here is that under conditions of processing complexity the syntactic blocking effect is weakened. Crucially, *the same conditions have no weakening effect on Obviation.* Thus, in sentences comparable to [102]–[106], non-possessive pronominals cannot be understood as coreferential with a coargument subject, as in [107]:

(107) Läsaren$_i$ måste konfronteras med sig$_i$ själv/*honom$_i$ själv.
'The reader must be confronted with himself.'

34 Here Wellander points out that the pronominal is more natural when the adverbial clause is separated by commas.

The fact that Economy is sensitive to syntactic and processing factors, while Obviation is unaffected by them, is another argument that these constraints are distinct.

4.3 Is the Disjoint Reference Domain Universal?

I have argued that the Obviation rule is universal, in the sense that if an elements is obviative, is is always disjoint in reference from its coarguments. Can disjoint reference also apply in some domain larger than the coargument domain? It has been explicitly claimed that it can (e.g. Harbert 1986, Wexler and Manzini 1987, Kapur, Lust, Harbert, and Martohardono 1993, Sells 1991). The existence of such cases would require specifying additional language-specific syntactic or semantic disjoint reference domains, against the spirit and letter of the present proposal. Let us look at some of the instances where disjoint reference has been argued to apply in larger domains.

Sells (1991) suggests that the pronominals as subjects of gerunds in sentences like [108a] are ungrammatical because of a disjoint reference requirement, which does not apply to subjects of "factive" gerunds, as in [108b]:

(108) a. John$_i$ prefers (*his$_i$) going to the movies. (= [55b])

b. Only Churchill remembers his giving the speech about blood, sweat, and tears.

He proposes that disjoint reference actually applies not just to coarguments but in a more inclusive semantic domain, the "situated domain". If this can replace the coargument domain as the domain of disjoint reference universally, the above results would go still go through. But it is not clear that this modification is necessary. Sells' central evidence for non-coargument disjoint reference could also be dealt with in another way. Suppose that nonfactive gerunds like [108a] are control structures, functionally equivalent to infinitival complements (Kiparsky and Kiparsky 1971:357). They would thus be handled by Economy rather than by an extension of disjoint reference to a wider domain. As far as I am aware, the only potential difficulty for this proposal is that some speakers, according to Sells, exclude coreference even in cases where control is presumably out of the question. Such speakers, then, would reject sentences of the type:

(109) *Maria$_j$ told John$_i$ about him$_i$ losing the bet.

Here a Blocking account is also possible: for speakers with these judgments, we may suppose that *him* is blocked by *his*.

In a number of systems with long-distance binding, the disjoint reference domain is said to be the Finite clause. Icelandic is reported to be such a system (Thráinsson 1991, Kapur et al. 1990), a particularly interesting one because it allows reflexives to

be bound in the Root domain. It seems, though, that there may be more variation in usage, at least for some speakers. My consultant exactly replicated the Swedish/Russian pattern of "optional long-distance reflexivization" we saw in [25]:

(110) a. Jón$_i$ neyddi Gunnar$_j$ til að skipa Páli$_k$ að raka hann$_{i,j,*k}$.
'John forced Gunnar to order Paul to shave him.'

b. Hann$_i$ hjálpaði vinkonu$_j$ sinni$_i$ að kveikja í sigarettuni sinni$_{i,j}$/hans$_{i,*j}$/-hennar$_{*i,j}$.
'He helped his date to light self's/his/her cigarette.'

And Hyams (according to Grimshaw and Rosen 1990:202) has found that adult Icelandic speakers presented with such sentences actually prefer assigning the pronominal a long-distance antecedent to interpreting is as referring to some discourse element.

In Gothic, reflexives are almost always used in the Finite domain (Kapur et al. 1990), but there is at least one example of a coreferential pronominal in this domain, so the case is not clear-cut.[35] For Russian, Peshkovskij 1956:164 states that, while reflexive pronouns are optional in long-distance binding in modern Russian, they were required there in earlier stages of Slavic. Latin is sometimes said to be a language in which long-distance reflexives are obligatory, but as the grammars make clear, they are merely preferred, with variation conditioned by point of view (logophoricity). The following example shows that a pronominal can very well have an antecedent in the finite domain.[36]

(111) ut eum in Syria sisterent, orabat (Tacitus, H. 2,9)
that him in Syria place-Subj-3Pl begged-3Sg
'He begged (them) to place him in Syria.'

The cross-linguistic similarity of long-distance binding patterns is underscored by preferences that look like processing effects which influence the accessibility of long-distance binding relations, which seem to work very similarly in unrelated languages. In multiply embedded infinitive constructions, it is relatively hard to get the intermediate subject as a binder (*översten* in [112]; the lowest subject is of course ineligible by Obviation).

(112) Generalen$_i$ tvingade översten$_j$ att befalla löjtnanten$_k$ att raka sig$_{i,?j,*k}$.
'The general forced the colonel to order the lieutenant to shave self.'

35 Mark 1.10 *Gasahv usluknans himinans jah ahman swe ahak atgaggandan ana ina* "He saw the heavens open up and the Holy Ghost come towards him [pronominal] like a dove" Diderichsen 1937:59.

36 See Kühner and Stegmann (1966), p. 610-612, who also suggests that the striving to avoid ambiguity is involved.

The identical effect has been reported for Czech and Russian (Bílý 1981) and for Chinese (Battistella 1989, Tang 1989:109, 115).

We see, then, that the contexts of "optional reflexivization" examined here do not invalidate the Obviation constraint, but on the contrary support it. Needless to say, many other empirical challenges remain to be met before the universality of coargument Obviation can be confidently accepted.

4.4 Conclusion

The distribution of pronominals and reflexives reflects both Obviation, here argued to be a universal constraint which requires coarguments to have disjoint reference, and Blocking, here taken to be an economy constraint. These constraints were shown to interact with a hierarchy of binding domain constraints to generate a typology of pronouns. The constraint system predicts the category of obviative reflexives, previously described empirically in some languages, and explains a surprising relationship between the blocking of coargument reflexives, in the non-coargument case, the ambiguity of those reflexives between the bound anaphora and coreferential readings. The constraint system also predicts the novel category of referentially dependent non-reflexive pronouns, for which we provided cross-linguistic documentation.

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