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THE ROLE OF THE ANTECEDENT IN ANAPHORIC RELATIONS*

1. INTRODUCTION

In this article, I attempt to provide an account of the fact that the binding properties of subjects of NPs systematically distinguish two groups of languages. In languages like Chinese, Japanese, Malayalam, subjects of NPs seem to have a sufficient "proximity" to an NP external antecedent to allow a reflexive, and yet a sufficient "distance" from it to also allow a pronoun, as in (1).

(1) a. *Chinese* (Huang (1983))
Zhangsan$_i$ kanjian-le [{ziji$_i$ / ta$_i$} de shu]
Zhangsan see-aspect [self / him of book]
'Zhangsan$_i$ saw his$_i$ book'

b. *Malayalam* (Mohanan (1982))
moohan$_i$ [{tante$_i$ / awante$_i$} bhaaryaye] nulli
Mohan [self's / he's wife] pinched
'Mohan$_i$ pinched his$_i$ wife'

In contrast, in Indo-European languages, subjects of NPs seem to be sufficiently "near" an NP-external antecedent to both allow a reflexive and exclude a pronoun, as in (2).

(2) a. *Latin* (Bertocchi and Casadio (1980))
Ioannes$_i$ [sororem {suam$_i$ / *eius$_i$}] vidit
Ioannes [sister self's / *his] saw
'Ioannes$_i$ saw his$_i$ sister'

b. *Russian* (Timberlake (1979))
On$_i$ uze rasskazal mne o [{svoej$_i$ / *ego$_i$} zizni]
He already tell me about [self's / *his life]
'He$_i$ had already told me about his$_i$ life'

c. *Danish* (Pica (1984))
Jorgen$_i$ elsker [{sin$_i$ / *hans$_i$} kone]
Jorgen loves [{self's / *his} wife]
'Jorgen$_i$ loves his$_i$ wife'

This important fact is not accounted for by past analyses. In particular, the one of Chomsky (1986a: 170ff), following that of Huang (1983), accounts only for the Chinese-type facts of (1). It does so by relativizing the locality constraints to the type of bound element. In that analysis, if a subject is an

anaphor, its binding domain is defined as the next higher phrasal level, while if it is a pronoun the binding domain is defined as the same structure of which the element is the subject. Under this elaboration, the facts in (1) are brought into line with the long-standing Binding Theory of (3) below, since the reflexives are "locally" bound in the main clause, while the pronouns are "locally" free in the bracketed NP. The problem, however, is that the pronouns in (2) should then also be permitted.

(3) A. An anaphor must be locally bound
B. A pronoun must be locally free
C. An R-expression must be free

In contrast to the Indo-European languages in (2), others, including English, permit bound pronouns as in (4), apparently siding with the "Chinese"-type languages.

(4) John$_i$ read [his$_i$ book]

This appearance is illusory, however, since the facts in (4) already fall under a different generalization to which I return shortly, which is that lack of a reflexive always licenses a locally bound pronoun. English and other Indo-European languages lack possessive reflexives, and for this reason they employ bound possessive pronouns instead, as in (4). Once we take account of this, the distinction between Indo-European languages and the languages of (1) is quite clear.

In what follows, I will argue that, in binding relations, an important role is played by the antecedent, which may be more or less "perspicuous", contributing to the well-formedness of the anaphor accordingly. I will argue specifically that the difference between (1) and (2) does not reflect different degrees of locality in the binding relation, but precisely a difference in the antecedent, which is more perspicuous in the Indo-European languages that in those of the other group. I will attempt to relate this fact to the different types of inflection that the subject antecedent is associated with, and propose in particular that in the languages of (1) the inflection is "weaker" because it does not manifest subject-verb agreement. I will argue that this results in a lesser prominence of the overall phrasal substructure containing the subject and the inflection, which, in a sense, is the true antecedent for the reflexive. I will then interpret the acceptability of the pronouns in (1) versus their exclusion in (2) by taking the availability of a pronoun as being always inversely proportional to the availability of the corresponding anaphor –the same mechanism that I take to be at work in (4). On this view, the different distribution of the pronouns follows from the non-optimality of the reflexive in (1), due to the weaker antecedent, versus

its relative optimality in (2), where the antecedent is "stronger".

In discriminating among antecedents, binding of subjects of NPs appears to differ from local binding of objects, which exhibits no comparable discrimination, requiring the reflexive and excluding the pronoun in both groups of languages with all (subject) antecedents. We will see that this is due to the fact that binding of subjects of NPs is in fact not strictly "local", but rather more akin to long-distance anaphora. We will argue that it is that relative non-locality which, by placing an independent strain on the interpretation of reflexives, makes the role of the antecedent critical.

We will see that both main ingredients of this approach, namely the assumption that the antecedent makes a difference, and the assumption that possessive reflexivization is like long-distance anaphora, receive independent support from the very detailed discussion of Russian reflexives in Timberlake (1979), which, like the contrast between (1) and (2), poses serious challenges to past analyses.

The general approach I will propose departs from past ones in several respects beside assigning a role to the antecedent, and in particular by taking the choice between a reflexive and a pronoun to result from the compounded effects of several conditions, each of which defines gradient well-formedness, rather than outright grammaticality. Certain aspects of the analysis will necessarily be tentative due to the extent of the theoretical overhaul proposed. The latter, however, seems well-justified by the facts.

In the next few sections, we lay out our general premises for a the theory of binding, showing later on how they lead to the solution of the original problem. We begin by considering the relation between anaphors and pronouns in section 2. In section 3 we consider the locality conditions that anaphors must satisfy. In section 4 we see how antecedents contribute to the well-formedness of anaphors, and in section 5 we return to the possessives to formulate our solution.

2. THE STRUCTURE OF THE BINDING THEORY

In related work, I have argued that bound elements are not selected on the basis of the three principles in (3) above, but rather according to the hierarchy in (5).

(5) Binding hierarchy (anaphor first):
a. Anaphor > b. Pronoun > c. R-expression

The principle in (5) is taken to mean that a lower-ranked element, in particular a pronoun, can be used only to the extent that a higher-ranked one, namely an anaphor, cannot. This, in turn, depends on the locality and other

conditions that the anaphor must satisfy. As argued in Burzio (1991), the principle in (1) has certain conceptual as well as empirical advantages compared with the formulation in (3). The former, because it is naturally interpretable as a principle of "referential economy", given that the progression "anaphor, pronoun, R-expression" is clearly one of increasing referentiality. Alternatively, given a general line-up of referential and morphological content to which we return, (5) can also be interpreted as a principle of "morphological economy", imposing minimal use of morphological information. In contrast, (3) seems to associate each class of NPs with arbitrary conditions. At the more empirical level, (5) directly accounts for the fact that, aside from some distributional overlaps (like that of (1)) to which we also return, pronouns and anaphors stand in a complementary distribution—an accident, if they fell under independent principles. In particular, (5) explains why a bound pronoun is always possible when the corresponding reflexive "defaults", regardless of the exact reason. This occurs not only in the better known case of (6a), where the "default" of the reflexive is due to violation of locality (Specified Subject Condition), but also in the cases illustrated in (6b-e).

(6) Bound pronouns:

a. John$_i$ wanted [Mary to see {*himself$_i$ / him$_i$}]

b. Ja emu$_i$ skazal vse o {*sebe$_i$ / nem$_i$} ... (Russian)
I him told everything about self / him
'I told him$_i$ everything about himself$_i$ ...'

c. Io$_i$ parlo di {*se$_i$ /me$_i$} (Italian)
I talk about self /me
'I talk about myself'

d. Jean$_i$ n'aime que {*soi$_i$ / lui$_i$} (French)
Jean not loves but self / him
'Jean only loves himself'

e. he$_i$ cladde hym$_i$ as a poure laborer (Middle English)
'He clad himself as a poor laborer'

The case in (6b) (Timberlake 1979: 115) illustrates the "subject-antecedent" restriction on a certain kind of reflexives, found in many languages. With object antecedents, as this restriction bars the reflexive, a bound pronoun always results. The cases in (6c,d) illustrate the workings of what I have referred to in Burzio (1991), (in press) as "Pseudo-Agreement". Certain reflexives, such as those represented in each of (6b-d), are morphologically invariant for all of gender, number, and person, a fact which I interpret as

actual lack of morphological features (see Burzio (1992) for specific arguments). If correct, this means that these reflexives cannot truly agree with their antecedents in the sense of sharing identical features, but can only "pseudo" agree, in the sense of not bearing distinct features. However, different languages differ in their tolerance for pseudo-agreement (in fact, different items within the same language may differ, like clitics versus nonclitics, versus possessives). Many Western Indo-European languages draw a distinction between first-second and third person, permitting pseudo-agreement with the latter but not with the former, as in (6c) above, where a bound pronoun is again allowed under reflexive default. Other languages, like Russian and most of Eastern Indo-European, are more permissive, tolerating pseudo-agreement with all persons (and numbers), and hence reversing the facts of (6c) (see Timberlake (1979: 113, ex.14). But there are also languages which are even less permissive than the former (e.g. Italian), excluding pseudo-agreement with all persons, and tolerating it only with "impersonals", namely elements like "one" or "arbitrary" PRO. This is the case of French *soi* in (6d), where again a locally bound pronoun results. Finally, (6e) (Faltz (1977: 19) illustrates the case of languages (like Old and Middle English, and with some qualifications Frisian and West Flemish) which lack reflexives altogether, and which thus allow locally bound pronouns systematically. English possessives, which do not exist as reflexives, are simply a subcase of this kind as noted for (4) above.[1] The persistence of complementarity under such varied conditions as illustrated in (6) is a remarkable accident for a formulation that has independent principles. The problem is in fact even more specific. For consider that the presence of antecedent restrictions (requiring that the antecedent be a subject/third person/etc.) is coextensive with a specific type of reflexive morphology, precisely the one described above as being invariant–English-type reflexives, which vary in person and number (*myself, yourself,* etc.) never exhibit such restrictions. A characterization of such antecedent restrictions would therefore have to link them with the relevant morphological properties of the reflexives, hopefully in an explanatory, cause-and-effect manner. Now note that, in order to express the facts in (6), the formulation in (3) would have to build the antecedent restrictions not only into principle A, stating for example that the anaphor in (6b) must be *subject* bound, but also into principle B, stating that the pronoun must be *subject* free, hence allowed in (6b). The problem with this is that, while this kind of restriction is coextensive with a certain reflexive morphology as just noted, there is no correlation with *pronominal* morphology, so far as we know. That is, the pronouns of Russian, (/ Italian/ French/ Middle English/ etc.) do *not* appear to be any

different from those of (Modern) English –only the reflexives are. Hence, a relevant extension of (3) ((3B) in particular) would be asserting that the morphology of reflexives determines the form of the binding principle for pronouns. And, while this state of affairs is not logically impossible, it seems highly unlikely. In particular, one cannot imagine that there could be a cause-and-effect relation between reflexive morphology and a principle for pronouns if the latter is independent, any more than there could be a cause-and-effect relation between reflexive morphology and, say, the principles controlling wh-movement.

In sum, the fact that a principle B turns out to have curious and accidental properties is the proof of its non-existence, and of the fact that the distribution of pronouns is rather just the residue of that of anaphors, or the "elsewhere" case (as had also been argued by Bouchard (1983), Pica (1984)).[2]

While accounting for the general complementarity, the formulation in (5) would, however, seem to incorrectly exclude well-known overlaps in the distribution of anaphors and pronouns, like that of (1) above. Yet, it is not the case that (5) excludes all overlaps in principle. Rather, certain specific circumstances make distributional overlaps quite consistent with the formulation in (5). One of these is structural ambiguity. For example, Chomsky (1986a: 170f) argues that apparent overlaps like *The children$_i$ heard stories about them$_i$ / each other$_i$* are due to the presence of "PRO" subject of NP in one case, thus excluding the anaphor via the "Specified Subject Condition" and licensing the pronoun, and to the absence of PRO in the other case, hence permitting the anaphor. Whether or not this is the correct account of the cases in question, the fact is that structural ambiguity is one possible source of (apparent) overlaps under (5), which must be considered.

Another possible source of overlaps is semantic non-equivalence, which is in some sense analogous to the "structural" non-equivalence just discussed. Thus, consider the cases in (7), where the underscored complex forms are often argued to be anaphoric, and yet occur in the same structural environments as the simple pronoun counterparts of (6).

(7) Complex forms:

a. ja ... stal rassprasivat' xudoznika$_i$ o *nem samom$_i$* (Russian)
I start question artist about him same
'I ... began to question the artist$_i$ about himself$_i$'

b. Io$_i$ parlo di *me-stesso$_i$* (Italian)
I talk about me-same
'I talk about myself'

c. Jean$_i$ n'aime que *lui-même*$_i$ (French)
Jean not loves but him-same
'Jean only loves himself'

d. *him self*$_i$ he$_i$ hynge (Middle English)
'He hanged himself'

There is reason to suppose that such complex forms, which combine a pronoun and an intensifying element meaning "self / same", have a special semantic function (Zribi-Hertz (1980), Kuno (1988, 2.5)). The same is true of their possessive counterparts like English *his-own* (Saxon (1990)). In essence, their function is that of "asserting" the coreferential relation, either for contrastive purposes, or to overcome an inherent semantic bias. The semantic distinctness of simple and complex forms is shown precisely by semantically biased contexts, which force a choice between them. For instance, in the context "x chatters with y", where the inherent semantics strongly disfavors identity of x and y, the complex form is required, e.g. French *lui-même*, and not *lui* (examples and further discussion in Burzio (1991), Zribi-Hertz (1980)). This result is analogous to that of English *John*$_i$ *was getting on *his*$_i$ */ his own*$_i$ *nerves*, where coreference must also overcome the inherent semantic bias of the expression. In contrast, in a context like "x had the whole team with y", where the semantics strongly favors identity of x and y, the simple form is required, e.g. French *lui* and not *lui-même*. This is analogous here to *John*$_i$ *lost his*$_i$ */ *his own*$_i$ *cool*, which is similarly biased *for* coreference. Distributional overlaps of pronouns and complex anaphors such as those of (6)-(7) are therefore not counterexamples to the anaphor-first principle in (5), since we need not suppose that the latter operates across semantically distinct structures, any more than we need suppose it operates across syntactically distinct ones.[3]

A third kind of overlap, more directly relevant to our main concern, is made possible by our specific interpretation of the anaphor-first principle (5), and of other relevant conditions. Our interpretation differs from more common views in two respects. The first is in taking conditions to define degrees of well-/ill-formedness, rather than absolute well-formedness. The second is in taking grammaticality to be well-formedness relative to alternatives, i.e. to consist of "best"-formedness, rather than just well-formedness as defined by the conditions. These two differences are partly related. In particular, it is clear that the second is contingent on the first since, unless well-formedness was graded, all well-formed structures would be on a par, and there would be no notion of "relative" well-formedness distinct from just "well-formedness". On the proposed view then, pronoun/anaphor over-

laps may simply arise from an even tension between different conditions, which may sanction comparable degrees of well-formedness for both anaphor and pronoun. The conditions at play may be in particular the "anaphor-first" condition, which always favors the anaphor, and the locality conditions, which may sometimes weigh *against* the anaphor, and hence indirectly favor the pronoun, as in the cases we discuss in the next section.

3. LOCALITY CONDITIONS

3.1 The SSC and Long-distance Anaphora

Past research has featured many attempts to characterize the phenomenon of "long-distance" anaphora (LDA) illustrated in (8) below.

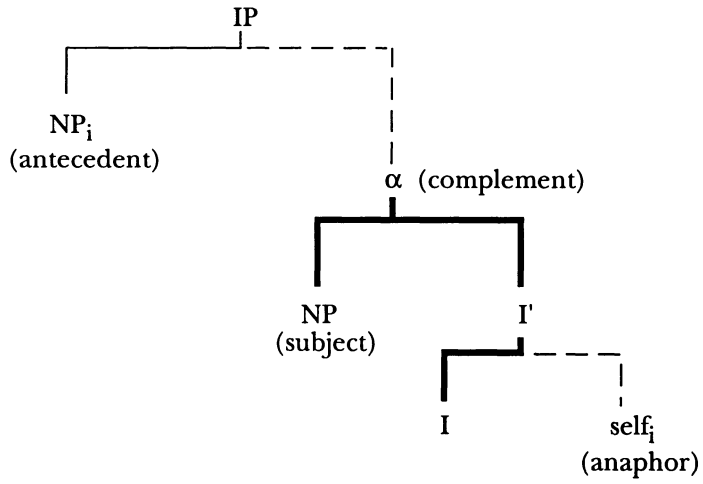
(8) *Icelandic* (Maling (1984)
Jón$_i$ segir [$_\alpha$ að María elski sig$_i$]
Jón says that María loves (subj.) self
'Jón$_i$ says that María loves him$_i$'

Such attempts have characteristically aimed to define the class of complements like "a" of (8) with which this phenomenon is possible. The factors most often cited as defining such a class of permissive complements in various languages are: lack of tense or agreement (Harbert (1982), Pica (1984), Everaert (1986), Freidin (1986), Timberlake (1979), Rappaport (1986), Vikner (1985)); and lack of an independent tense or mood (Anderson (1986), Giorgi (1984)). The former factor would draw a distinction between tensed and infinitival clauses; the latter, a distinction roughly between indicatives and subjunctive clauses, placing infinitives with subjunctives. Languages, however, differ considerably in this regard. For instance, Dutch permits LDA out of some non-finite clauses but not others (Everaert (1986), (1991)), while Faroese permits it even out of indicatives (Anderson (1986)). Characterizations focusing on the definition of the class of complements that behave as in (8) are therefore bound to remain language-specific. There is, however, one fact that seems invariant across languages, which we will attempt to focus on here. That is that LDA ranks complement types in a consistent fashion. Roughly speaking, uninflected structures like small clauses rank at the bottom of the scale, in the sense that they inhibit LDA the least compared with other complements, while indicative clauses rank at the top, inhibiting it the most. Subjunctives and infinitives come in between, with the latter closer to small clauses. This cross linguistically consistent ranking manifests itself by way of the implicational relations that hold among complement types, the possibility of LDA with a higher ranked

complement (e.g. a subjunctive) always implying the same possibility with a lower ranked one (e.g. an infinitive). As a result of this, lower ranked complements will also permit LDA with greater cross linguistic frequency than higher ranked ones. This state of affairs would follow if we supposed that LDA was in fact *not* immune to the "Specified Subject Condition" (SSC) as assumed in most accounts, but only less sensitive to it than local anaphora, and furthermore if the SSC was not just one blocking effect, but a family of similar effects of different strengths, each obtaining with one specific type of complement. Then, the noted implicational relations would simply follow from the fact that a weaker blocking effect can be overcome any time a stronger one can.

The question then is how to go about multiplying the traditional SSC effect into several, spread over an appropriate scale of strength. The answer is clearly to assign a role to the inflection. For the "strength" of the SSC, and hence the ranking of complements seems to depend on the morpho-semantic content of the inflection, which plausibly goes from null in the case of some small clauses to a maximum in indicatives.[1] In essence, we are thus proposing to reinterpret the intervention effect known as the Specified Subject Condition, first identified in Chomsky (1973), as due not to the subject alone, but rather to a larger substructure that includes the subject and its related inflection, when this intervenes between the anaphor and its antecedent in the manner illustrated in (9).

(9) Long Distance Anaphora/ SSC:



Several questions arise at this point. One remains of course the difference among languages, now cast in terms of the maximum blocking effect that each language can overcome (e.g. up to indicatives in Faroese, but limited to certain non-finite clauses in Dutch), which we will put aside, for the moment. A second question is why should the subject-I connection interfere with the anaphoric relation at all—a variant of the question that arises for any version of the SSC, which is why should a subject, rather than some other constituent, interfere with anaphora. We return to this question shortly below. A third question is why should the interference be tolerated only with some anaphors—the so-called "long-distance" ones, and not others. To answer this third question we first need to identify the distinguishing characteristic of "long-distance" anaphors like Icelandic *sig* of (8) above. Pica (1991), following Faltz (1977, 153ff) has suggested that long distance (LD) anaphors are systematically monomorphemic, in contrast to local ones, like English *himself*, which are *bi*-morphemic. Here, we will partially diverge from that characterization, which has gained wide acceptance, and suppose instead that LD anaphors are systematically uninflected, or morphological invariant in the sense discussed above, while the local ones are inflected, varying for some of the features of gender, person, number, as with English *MYself, YOURself*, etc. The different behavior of the two classes of anaphors in the structure (9) will now be expressed by the account that follows.

We suppose, as we will argue further below, that anaphora is essentially a relation of agreement, hence of the same kind as the subject-I relation in (9). We suppose further that all agreement utilizes the phrase-structure connections as paths. This view has the effect of (essentially) reducing the "SSC" to the prohibition in (10), that states that agreement paths connecting pairs of constituents cannot overlap.

(10) Avoid path overlap

The reason is that a path connecting antecedent and anaphor in (9) will always overlap with the path marked by the double line, connecting subject and inflection, thus generally rendering the structure ill-formed. This then answers the question of why should the subject-I connection (and not, say, an object) interfere with a more remote antecedent. The reason is that only subjects are related to inflection.[4] Note too that taking anaphora to be an agreement relation also accounts for the well-known fact that anaphors (unlike pronouns) require unique (and reject "split") antecedents. For it is independently clear that agreement mechanisms function only between *two* positions, in the sense that there is no agreement morpheme, in any language, which agrees with two different NPs simultaneously, as for instance with the conjunction of a subject and an object.

Thus, the prohibition against path overlap in (10) is our specific account of the "SSC". Just like SSC, that prohibition must now obviously be relaxed, however, given precisely LDA. But the relaxation must affect only "LD", i.e. uninflected anaphors, and not others, which must remain strictly local. In addition, even for LD anaphors, the relaxation must be made proportional to the "weakness" of the inflection I in (9), so as to appropriately "rank" the different types of complements. Both of these goals can be achieved by supposing that the computation of agreement relations is done by projecting the inherent features of the participants up the syntactic structure, rather than proceeding from one participant to the other by going up and down the tree. Then, in (9), subject and I will project their features up to a, while antecedent and anaphor will project theirs up to IP. We now only need to suppose further that path overlap is not excluded categorically, but only in a way commensurate to the amount of morpho-semantic information carried by the overlapping paths. That is, we treat phrase-structure links as being communication lines of sorts, which may "saturate" beyond capacity. Uninflected anaphors can now function long distance because they are inherently featureless, and as such project a null set of features (to IP in (9)), hence maximally satisfying the conditions for path overlap. At the same time, a "weak" I in (9) will also facilitate path overlap and hence LDA by projecting a lesser content, although we will not be able to characterize each inflection type beyond the intuitive level, in this regard. In contrast to uninflected anaphors, inflected ones will project a non-null set of I-features, hence more sharply violating the path overlap prohibition (10) ("saturating" the path), resulting in their exclusion from LD relations. This analysis correctly accounts for such minimal pairs as Turkish inflected reflexive *kendim* (/ *kendin/ kendi/*...), which is strictly local, versus its invariant counterpart *kendisi*, which can function long-distance (Faltz (1977, 133ff), while Pica's monomorphemic/ bimorphemic criterion would seem unable to make the distinction.[5] This advantage for our analysis seems offset by the fact that some (bimorphemic) anaphors like Norwegian *seg-selv* are not (obviously) inflected, and yet are confined to local relations (Hellan (1986)). There are two possibilities to bring this fact into line with our approach. One is to suppose that elements like Norwegian *-selv* do in fact have adjectival inflection, sometimes overtly realized (e.g. Icelandic *sjalfur*, Old English *self*), and sometimes not, as in Norwegian, and that even a non-overt inflectional element projects a (non-null) feature matrix. The other possibility is to suppose that, in complex forms, each subconstituent is independently linked with the antecedent, hence doubling the blocking effect due to path overlap (pace fn.5). We must leave this question open at this point, noting that

the second approach would in effect partially subscribe to Pica's generalization, by taking bimorphemic structure as one of the factors behind strict locality.[6]

Note that the features of the anaphor and those of its antecedent meeting at IP in (9) (like those meeting at a) are required to agree, but recall also that agreement includes "pseudo"-agreement, parametrically set, as discussed above. Hence, the example in (8) above is well-formed because the combination of [3rd person, singular, masculine] and [no-person, no number, no gender] (as in *Jón...sig*) is an acceptable case of pseudo-agreement in Icelandic, as in many other languages.

On this analysis, the essential difference between anaphors and pronouns is that anaphors are linked by an agreement mechanism with their antecedents, while pronouns are not (although they may still agree, for independent reasons). In turn this difference follows from supposing that inherent reference is contingent on morphological content. Pronouns, which are systematically inflected for some of the I-features, "have" those I-features, and hence have (some) inherent reference. Uninflected elements correspondingly "lack" features, hence lack independent reference, and for this reason they are always "anaphoric", i.e. they need to be linked with an antecedent in order to refer. Inflected anaphors like English reflexives can be made consistent with this general view by supposing that the inflected element *my/your/him* is not in argument (/head) position and is for this reason irrelevant to the determination of reference. Rather, we take it to be in some peripheral, specifier-like position, which nonetheless plays a role in projecting its features up for linkage with an antecedent.[7] We must still note that the head itself also bears some inflection, as in *-self/ -selves*, but we may suppose that inflection for number alone is insufficient to provide referential content. Similar considerations apply to reflexives like Norwegian *seg selv*, Italian *se-stesso* and others, where the first morpheme is uninflected and in argument position, while the second, sometimes overtly inflected, is an adjunct. Again, the element with the I-features is here in a non-argument position and hence unable to determine referentiality.

The above characterization of the SSC is still inadequate in one respect, however, and that is that, unlike LDA, local anaphora is blocked by an intervening subject regardless of the presence of a corresponding inflection, as shown by (11) (from Faltz (1977: 2), structure ours).[8]

(11) John$_i$ saw [$_\alpha$ a snake near {him$_i$ /?*himself}]

We must thus extend the scope of the path-overlap prohibition (10) by supposing that subjects *always* project their features up the tree, regardless of an attendant inflection, and furthermore that overlap even at a single

point (like a of (9)) suffices to pose a block for anaphoric relations. This is plainly stipulatory, but in fact just parallel to the stipulation that other theories need more generally to identify subjects as blocks, while excluding objects.

In sum, we have argued that the SSC effect obtains with variable strength, which depends on two factors: the strength of the inflection associated with the intervening subject, and the inflected versus uninflected character of the anaphor. We have proposed to account for both dimensions of variation by supposing that antecedent-anaphor relations are agreement relations, like subject-I relations, both established by using phrase structure links as paths, which must in general not overlap. We have then taken path overlap to be nonetheless permitted to the extent that the morphological (/semantic) content of each path is weak, hence only with morphologically featureless anaphors, and only with the weaker types of intervening inflections.

3.2 LDA AND PRONOUNS

In the light of the above discussion, we may now consider the data summarized in (12), relative to both LD reflexives and the corresponding pronouns in various languages, where a is the "complement" in (9). For ease of exposition we collect the relevant examples in the Appendix at the end.[9]

(12)

α	Icelandic	Italian	Russian	Danish	Dutch
a. Indicative	*refl pron	*refl pron	*refl pron	*refl pron	*refl pron
b. Subjunctive	refl pron	??refl pron	*refl pron	N/A	N/A
c. AP-sc Infin.	refl *pron	refl pron	refl pron	refl pron	*refl pron
d. PP-sc NP/PVC		refl ??pron	refl *pron	refl *pron	refl pron

(see Appendix)

Still aside from the differences among the various languages, the distribution of the reflexives in (12) will follow from attributing the appropriate role to the inflection in each case. In particular, we will suppose that the cases grouped in (12d), namely small clauses with PP predicates, NP's, and

perception-verb complements (PVCs), are all inflectionless, taking the lack of *to* in e.g. *I saw* [*John (*to) leave*] to be indicative of this, and representative of the other languages as well.[10] The cases grouped in (12c), namely adjectival small clauses and infinitivals, are then taken to be cases with some inflection of a weak sort, while the inflection of the subjunctives of (12b) is stronger, perhaps because it involves person agreement, in contrast to the APs of (12c), which agree only in gender and number. Finally, we take the inflection of the indicatives of (12a) to be stronger still, plausibly for containing independent tense specifications (as generally argued in the literature), in contrast with the tense-dependency of subjunctives. This ranking thus accounts for the fact that, for each language, there is a point in (12) above which the reflexive is consistently possible, while being consistently impossible below it.

Turning now to the pronouns in (12), we note that their distribution stands in a fundamental complementarity to that of reflexives, just as it does in general, except for a small area of overlap in each language—the one enclosed by the double line, to which we return shortly.[11] This complementarity in LDA configurations is an important fact, which further confirms the correctness of the approach based on the "anaphor-first" condition of (5) above. For if pronouns were controlled by an independent principle "B", alongside of the mystery of why they can be locally bound exactly when the anaphors cannot as in (6) above, we would now also have the mystery of why they cannot be LD bound precisely when the anaphors can be, as in (12). As for the overlaps in (12), they also follow from our analysis, and in particular from the proposed interpretation of the relevant conditions as having a graded effect on overall well-formedness. Thus, if the blocking effect increases going from (12d to a), then, for each language, there will come a point at which the resulting inhibitory effect on the reflexive equals the (fixed) inhibitory effect on the pronoun imposed by the anaphor-first principle (5). That point, at the boundary between the "reflexive only" and "pronoun only" portions of the scale, should naturally allow both reflexive and pronoun to occur, indeed as in (12). Note here that, since we understand ungrammaticality to result from existence of a better-formed alternative, both anaphor and pronoun are correctly predicted grammatical when equally well-formed, and *not* equally marginal to reflect the respective partial violations of conditions. The non-existence of comparable overlaps with local anaphora follows from the fact that in that case there is no factor inhibiting the anaphor, which is thus directly imposed by the "anaphor-first" principle.

The correctness of this general perspective is confirmed by the fact that the anaphor-first principle does not only interact with the graded SSC effect

to yield the facts of (12), but also with "pseudo-agreement", which itself has internal rankings, expressed by the implicational relations in (13).

(13) Pseudo-agreement Hierarchy
1st-2nd -> 3rd -> impersonal

The hierarchy in (13) states that if a language allows pseudo-agreement with first and second person antecedents (like Russian), then it will also allow it with third person and impersonal antecedents, while if a language allows pseudo-agreement with third person (like Italian), it will allow it with impersonals (like "PRO-arbitrary", or elements like "one"), but not necessarily with first and second person. The hierarchy in (13) can naturally be interpreted as one of increasing interpretive "cost", with first-second person being the most costly to use in pseudo-agreement, we presume because interpretively more distant from "zero features" than third person. This sheds light on the contrast between (14) and (15).[12]

(14) Russian (Timberlake (1979: 124))
a. Starik$_i$ ozivilsja i prosil [na kurort {ego$_i$/sebja$_i$} pokuda ne otpravljat']
old man enliven and ask [to resort him / self now not send off]
'The old man$_i$ came to life and asked (one) not to send him$_i$ off to a health resort just now'
b. On$_i$ dal [ej umyt' {sebja$_i$ / *ego$_i$} i vypil kruzku moloka]
he let [her wash self / him and drank mug milk]
'He$_i$ let her wash him$_i$ and drank down a mug of milk'

(15) Russian (Timberlake (1979: 127,fn.8))
a. Tetja Frosja, vy$_i$ razresite u {?(?)sebja$_i$ / vas$_i$} perenocevat'?
Aunt Frosja you allow by self / you stay overnight
'Aunt Frosja, will you$_i$ allow (us) to stay overnight with you$_i$?'
b. Tetja Frosja, vy$_i$ dadite u {sebja$_i$ / vas$_i$} perenocevat'?
Aunt Frosja you let by self / you stay overnight
'Aunt Frosja, will you$_i$ let (us) stay overnight with you$_i$?'

The facts in (14) are those reported in (12) above (and the Appendix). In (14a) the complement is a normal infinitival—the case of (12c), while in (14b) it is the complement of "causative" *let*, which we place in the same category as the PVC of (12d). The examples in (15a,b) are parallel to the ones in (14a,b) respectively, except for the fact that the antecedent to the reflexive is here second person singular "you", rather than third person. The differences are summarized in (16), where we can see that second-person pseudo-agreement consistently shifts relative well-formedness towards the pronoun, we presume by adding to the bias against the reflexive.

(16)

	Pseudo-agreement with:	
LDA into:	3rd	2nd
a. Infinitive	refl pron	(?)? refl pron
b. PVC	refl *pron	refl pron

There are thus (at least) three contending forces in the choice between a reflexive and a pronoun: the anaphor-first principle, the SSC, and pseudo-agreement. The chart in (12) above plots the interaction of the first two: anaphor first, which contributes a fixed bias in favor of the reflexive, and the SSC, which contributes a variable bias against the reflexive. The chart in (16) reveals a further dimension of variation due to the third factor, pseudo-agreement, which also contributes a variable bias against the reflexive. The choice between reflexive and pronoun is then determined by computing the overall bias, with ungrammaticality resulting when the alternative choice is better formed. We can see from both (12) and (16), however, that "worse-formedness" maps into ungrammaticality gradually, rather than sharply.

At this point it remains to account for the differences among languages illustrated by (12). On this we will not have much to say, comparing with past analyses in this respect. We will suggest, however, that the differences are not in the proposed system of conditions, which we regard as invariant, but rather in the reflexives themselves as individual lexical items. Note in this connection that it is clear that knowledge of the lexicon is not uniform, but somewhat stratified, some items being more prominent than others, in being more easily remembered or somehow more "accessible" than others. We then find it conceivable that LD reflexives in different languages may have different degrees of lexical prominence in some such sense, and furthermore that this latter factor may in fact constitute a further, fixed, bias for or against the reflexive, which will interact with the rest of the system accordingly. Different languages would then simply have different biases, resulting in different ranges of viability for the reflexive on the scale of (12). This proposal, locating the relevant "parameter" in the lexicon, while maintaining the syntax invariant, has at least the advantage of being maximally simple. Independent evidence for it, however, is admittedly limited at this point, and yet not totally lacking. Consider in particular that, as is well known (Everaert (1986), (1991)), Dutch reflexive *zich* is possible in the LD contexts described by (12), as well as in contexts of inherent reflexivity like

(17a), but not in other local contexts, which require the form *zichzelf* instead, as in (17b).

(17) Dutch (Everaert (1991))

a. Jan_i schaamde {zich_i / *zichzelf_i}
Jan shamed self / self
'Jan was ashamed'

b. Jan_i verraste {*zich_i / zichzelf_i}
Jan surprised self / self
'Jan_i surprised himself_i'

This state of affairs would follow if the item *zich* were assigned a certain negative bias in the sense just proposed, compared with *zichzelf*. Then, *zich* would be correctly expected to show up only in the contexts that exclude *zichzelf*. These are precisely the contexts of inherent reflexivity, where *zich* is plausibly required by the same principle that excludes the complex form in *John lost his/ *his own cool* and other such inherently coreferential contexts discussed earlier (see discussion of (7)), as well as the contexts of LDA of (12). However, in the latter contexts, we now correctly predict a lower cut-off point for the Dutch LD reflexive compared with that of other languages, such as for instance Icelandic, in which the contrast in (17b) does not obtain, hence implying that the LD reflexive in that language does *not* carry the same negative bias.

Beside thus possibly shedding light on the cross-linguistic variation in (12), this approach also leads to the welcome conclusion that there is no need to recognize, as a primitive class, a class of anaphors which may be bound only long-distance, like Dutch *zich*. For us, this is parallel to the fact that there is no need to recognize a class of pronouns which are only *subject* free (like Russian *nem* of (6b) above). In both cases the observed distribution follows as the "residue" of the distribution of some other element which lends itself to a straightforward characterization.[13]

This concludes our discussion of the Specified Subject Condition, accounting for the behavior of elements which are "in the domain of" a subject. To complete our discussion of locality conditions, we now need to turn to subjects themselves, which will take us closer to our initial concern—subjects of NPs.

3.3 THE NIC AND AGREEMENT

The ungrammaticality of anaphors in structures like (18), in which they occurs as the subject of a tensed clause, has received several accounts in the brief history of the theory of anaphora.

(18) John$_i$ believes [that {*himself$_i$ / he$_i$} is intelligent]

In particular, the analysis of Chomsky (1980) proposed an inherent incompatibility between anaphoric status and nominative Case—the "Nominative Island Condition" (NIC), while that of Chomsky (1981) proposed that the agreement element (AGR) was itself capable of producing an SSC-type blocking effect. The analysis of Chomsky (1986a) relied instead on the "ECP", by supposing that anaphors move at LF to join their antecedents, leaving a trace. Such a trace would then not be properly governed being the subject of a tensed clause, just as in the **that*-trace configurations produced by wh-movement.

In this work we will take the crucial factor in the ungrammaticality of (18) to be verb-agreement, though not in the same sense as Chomsky (1981). Rather, we will follow Rizzi (1989) in taking the relevant generalization to be that anaphors are ungrammatical in positions that trigger verb agreement, as stated in (19)—a condition which, however, must be independent of the "SSC".

(19) *anaphor-agreement

That the effects of agreement on a subject anaphor are not interpretable as a generalized SSC in the manner of Chomsky (1981) (where AGR was itself just another "SUBJECT"), is shown by asymmetries such as that of (20).

(20) Icelandic (Maling (1984), Everaert (1986))

a. Jón$_i$ segir [að María elski sig$_i$]
Jón says [that Maria loves self]
'Jón$_i$ says that Maria loves him$_i$'

b. *Jón$_i$ segir að sig$_i$ elski María
Jón says that self loves Maria

The facts in (20) show that, in languages that have verb-agreement, the "relaxation" of the SSC observed for LDA in (20a) is not paralleled by a corresponding relaxation of (19), as shown by (20b), leading to the conclusion that the two must be independent.[14] The condition in (19)-so far only a descriptive statement- correctly accounts for the fact that languages that do not have verb agreement, such as Chinese, Japanese and Korean, permit anaphors as subjects of tensed clauses, as we will see below. This is a clear advantage over the former "NIC" since, unlike agreement, nominative Case is found in both groups of languages. The condition in (19) also has important advantages over the ECP account of Chomsky (1986a), as shown by certain evidence discussed in Rizzi (1989), and other given in Kornfilt (1989), which we now consider.

It was argued in Rizzi (1982, IV), and has since been generally accepted, that in "null subject/ free inversion" languages like Italian, wh-movement of the subject involves not the pre-verbal, but rather the post-verbal/ "inverted" position of subjects. Assuming the ECP, this must mean that, unlike pre-verbal subjects, post verbal ones are "properly" governed. Yet post-verbal, agreement-triggering, subjects are just as ungrammatical as pre-verbal ones when they are anaphors, as shown by the minimal pairs in (21), (22) noted in Rizzi (1989).

(21) Italian (Rizzi (1989))

a. A loro$_i$ importa solo di se-stessi$_i$
to them matters only of self-same
'They$_i$ are only concerned about themselves$_i$'

b.*A loro$_i$ interessano solo se-stessi$_i$
to them matter only self-same
'They$_i$ are only interested in themselves$_i$'

(22) a. Quando si$_i$ critica se-stessi$_i$ ...
when one criticizes self-same
'When we$_i$ criticize ourselves$_i$...'

b.*Quando si$_i$ criticano se-stessi$_i$...
when one criticize self-same

In (21), the dative *a loro* functions as a proper antecedent for the anaphor in (a), so that it ought to do the same in (b). Hence the only relevant difference is that in (21b) the anaphor *se-stessi* is linked with verb inflection, triggering verb agreement and receiving nominative Case, while in (21a) it is not. The same is true for the two variants of the impersonal-*si* construction in (22), the post verbal element triggering verb agreement in (b), but not in (a) (See also (25a) below, and for general discussion of this construction, Burzio (1986, 1.6)). Hence, provided that we take (19) not to refer to linear order, the latter condition will draw the right distinctions in (21)-(22), excluding all anaphors that trigger verb agreement. In contrast, the ECP would exclude only anaphors that occur pre-verbally, given the facts of wh-movement, hence permitting (21b), (22b) incorrectly.[15]

The discussion of Turkish nominals in Kornfilt (1989) further corroborates the above conclusion. Kornfilt notes that Turkish nominals permit two forms of agreement: a stronger one, exhibiting a full range of variation, and a weaker one, with fixed third person singular morphology. She then notes further that reciprocals are possible in subject position only in conjunction with the weaker agreement, as shown in (23) (agreement capitalized).

(23) Turkish (Kornfilt (1989), caps. ours)

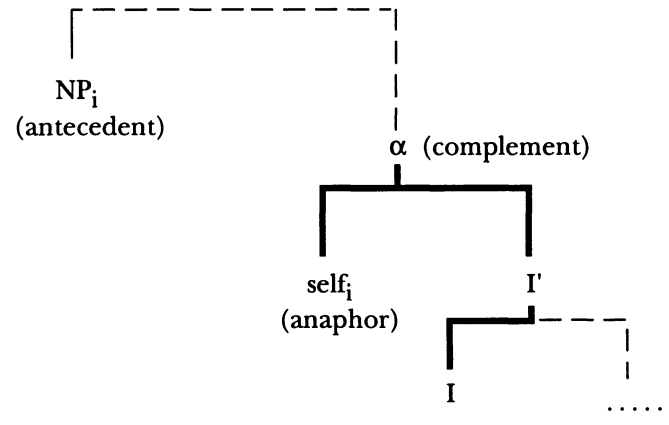
a. ?Asker-ler$_i$ [birbir-lerin-in$_i$ öl-eceg-IN]-e inan-iyor-du
soldiers-pl each-other-3pl-gen die-fut-3sg-dat believe-progr-past
'The soldiers believed each other to be going to die'

b. *Asker-ler$_i$ [birbir-lerin-in$_i$ ölüm-den kork-tuk-LARIN]-a inan-iyor-du
soldiers-pl each-other-3pl-gen death-abl fear-ger-3pl-dat believe-progr-past
'The soldiers believed each other to be afraid of death'

In the main dialect of Turkish Kornfilt considers, there is no comparable difference with reflexives, which are uniformly excluded, even with weak agreement. However, another dialect she cites does exhibit the same distinction as (23) with reflexives, though no longer with reciprocals, now uniformly allowed. Hence, abstracting away from the noted difference between reflexives and reciprocals, as well as the one between the two dialects, we can say that both reflexive and reciprocal subjects are more strongly inhibited by a stronger agreement than by a weaker one. Abstracting away further from the residual extent to which (reflexive/ reciprocal) anaphors might be allowed even with weaker agreement in either dialect, which we will not attempt to account for, it is clear that the general effect observed by Kornfilt is of the type described by (19) and linked to agreement, and not one reducible to the ECP. For an ECP account would entail that stronger agreement (as in (23a)) is a weaker governor, and vice versa (as in (23b))—not an expected correlation under any circumstance.[16] We thus conclude that the "*anaphor-agreement" condition in (19) is indeed the correct cross-linguistic generalization, and now turn to ways to express it in our system.[17]

Note first that the very existence of the condition in (19) confirms our hypothesis that anaphora is a subcase of agreement. For, if it was a relation of some unrelated kind, there would be little reason why it should interfere with subject-verb agreement. Our system of agreement paths in fact provides a rather natural way to express that interference. Thus consider the configuration in question, as given in

(24)



Following in part Rizzi and Roberts (1989, fn.3), Sportiche (1988), we will suppose that Case is never assigned under "m-command" (departing from Chomsky (1986b)), and that assignment of nominative Case to a subject by I in the structure of (24), is rather a form of agreement, which includes also agreement of I, specifically "AGR", with the subject. The "*anaphor agreement" effect of (19)/ (24) will now simply follow by supposing that these two aspects of subject-I agreement—Case agreement, and I-features agreement, must necessarily cluster, in the sense that neither one is permitted to proceed onto any path independent of the other. Then, if anaphora is agreement (in I-features) as we are supposing, a subject-anaphor in (24) would have to be linked for I-features with the antecedent while being linked for nominative Case to I –precisely what the clustering requirement excludes. This predicament has no escape, since it is clear that failing to link the subject to I so as to link it with the antecedent would leave the subject without Case in violation of Case requirements, while extending the subject's Case connection to the antecedent so as to provide the I-feature connection would also violate some fundamental principle of Case theory, which clearly must exclude assignment of the same Case (here by I) to two different arguments. As for the post-verbal subjects of (21b), (22b), we assume that the same account carries over, although some questions will remain. In particular, departing from Chomsky (1981), Burzio (1986) and others, we suppose that such post verbal subjects receive nominative Case directly from I via an agreement path, and that Case and I-features must cluster much as in the preverbal case, whence the identical results. Note, however, that the modalities of assignment of nominative Case post-verbally raise a number of theoretical questions (e.g., concerning the role of government, see fn.18) which we cannot fully address here (see, for example, Harbert and Toribio (1990), Sigurðsson (1991) for some discussion)). What is crucial to our account, however, is only that, with post-verbal nominatives, features and Case continue to cluster, as with pre-verbal ones, and this is independently established by the facts in (25).

(25) Italian

a. si legge / leggono molti libri
one reads / read many books
'One reads many books'

b. li si legge / *leggono
them one reads / read
'One reads them'

As discussed in Burzio (1986, 1.6), in the Italian impersonal *si* construction, the verb may or may not agree with an object NP, as in (25a), but

agreement is excluded if the object is an accusative pronoun, as in (25b), showing that agreement and nominative Case must indeed cluster, targeting the same NP. While agreement with the underscored accusative pronoun in (25b) thus violates the clustering, both variants of (25a) are well-formed, simply because the underscored NP is ambiguously either nominative (yielding agreement), or accusative (yielding no agreement), unlike the pronoun of (25b).

Note that the system we are thus proposing in some sense reverses that of Chomsky (1981), which took the antecedent-anaphor relation and the anaphor-I relation in (24) to interfere with one-another because AGR (in I) is a closer antecedent. This view is near paradoxical, however, (as Chomsky (1986a:176) notes), since AGR is in fact not a viable antecedent, having no reference. Within our system, the antecedent-anaphor and the anaphor-AGR relations are also taken to be of the same kind, but not because they are both relations of antecedence, rather, because they are both relations of agreement. Unlike the approach of Chomsky (1981), this results in no paradox.

The case in (18)/ (24) above in which the anaphor is the subject of a tensed clause now contrasts with the one in (26), in which it is the subject of a small clause (equivalent to the case of ECM complements).

(26) John$_i$ considers [{himself$_i$ / *him$_i$} intelligent]

What for us makes the crucial difference in (26) is that the embedded subject is assigned Case by the verb under government, and not by an agreement mechanism. Because of this, there is no clustering requirement, so that Case and agreement (with the antecedent) will be free to operate independently.[18] Since the anaphor thus violates no constraints, the pronoun is categorically excluded (via "anaphor-first").

Let us now turn to subjects of tensed clauses in languages like Chinese, which seem "intermediate" between English tensed clauses and small clauses, in permitting *both* anaphor and bound pronoun in subject position, as in (27).

(27) a. Chinese
Zhangsan$_i$ shuo [{ziji$_i$ / ta$_i$} hui lai]
Zhangsan said [self / he will come]
'Zhangsan$_i$ said that he$_i$ will come'

b. Malayalam (Mohanan (1982))
kutti$_i$ ammayoot [{taan$_i$/ awan$_i$} aanaye nulli enn] paraññu
child mother [self / he elephant pinched that] said
'The child$_i$ told the mother that he$_i$ pinched the elephant'

In these cases, even though the verb exhibits no agreement morphology, we take the (nominative) Case to still be assigned by an agreement mechanism, much as in English, as seems natural. This enables us to suppose that the clustering of Case and I-features is still in force. However, we will also suppose that such clustering is required more weakly here, since the I-features of the anaphor subject will remain "unmatched" by those of the nominative-assigning inflection, which has none (no AGR). In sum, we are suggesting that, in relation to spec-head agreement, Case and I-features strongly cluster if the head morphology has I-features, but cluster more weakly otherwise. On this view, verb agreement thus plays parallel roles with respect to two different conditions, as its absence yields weaker versions of both the above clustering principle, and the SSC, as shown by the pattern in (12) above, and also by the fact that languages without verb agreement, like those of (27), permit LD binding of objects out of tensed clauses quite generally. In (27a,b), then, the anaphor will be associated with a weak violation of the clustering principle, while the pronoun violates the anaphor-first principle (5) as always. The free variation/ overlap of (27a,b) can then be interpreted to mean that the two violations are of comparable degree. This account is quite parallel to the one we proposed for the overlaps in the LDA cases. Just as the latter involved a "weak" violation of the SSC on the part of the anaphor, so the former involve a weak violation of the clustering principle.[19]

The case of subjects of NPs in Chinese-type languages, exemplified in (28), is now correctly expected to be quite parallel to the case just discussed, allowing both anaphor and pronoun.

(28) a. Chinese (Huang (1983))
Zhangsan$_i$ kanjian-le [{ziji$_i$ / ta$_i$} de shu]
Zhangsan see-aspect [self / him of book]
'Zhangsan$_i$ saw his$_i$ book'

b. Malayalam (Mohanan (1982))
moohan$_i$ [{tante$_i$ / awante$_i$} bhaaryaye] *n*ulli
Mohan [self's / he's wife] pinched
'Mohan$_i$ pinched his$_i$ wife'

The reason is the exact structural parallelism of the two cases, both instantiating the abstract schema of (29), in which the head X assigns Case to the subject NP under spec-head agreement.

(29) [$_{XP}$ NP X ...]

With the clausal complements in (27), the head X is I, assigning nominative Case, while with the NPs of (28) it is the head noun, assigning genitive.

In both cases the head is equally uninflected for I-features, whence the identical behavior with respect to anaphora.[20]

The foregoing discussion of subjects has in a sense answered half of the original question of the difference in the behavior of subjects of NPs in two groups of languages, by characterizing subjects of NPs in the "Chinese" group. As mentioned in the introduction, we find the key to understanding that difference to be in the role played by the antecedent, which we thus consider in the next section.

4. ANTECEDENTS AS BLOCKS

4.1 Experiencers

In the previous section, we examined the two major blocking effects on anaphoric relations: the "SSC" effect on objects, and the "*anaphor-AGR" effect on subjects. We now consider the relation between blocks to anaphora and antecedents. We will argue that the two notions are very closely related, and in particular that, while blocks are not always antecedents, since AGR has a blocking effect on subject anaphors without being a possible antecedent as we saw, antecedents are generally also blocks, that is elements capable of excluding or inhibiting the use of a more remote antecedent. Aside from anaphors which are not subject-oriented, to which we return, this means that the "SSC" and the subject "orientation" of anaphors are in fact the same phenomenon.

There are two pieces of evidence that tie antecedents and blocks together in the above sense. The first is the identity of the two classes. Roughly speaking, each class includes subjects and excludes objects, whence the SSC on the one hand, and subject orientation on the other, as just noted. But what is more striking is that the two classes continue to be identical with respect to the "exceptions" to this classification. Thus, it is well-known that "subject oriented" anaphors, like all LD anaphors, can also take experiencers as antecedents (Bhat (1978), Timberlake (1979, fn.5), Bertocchi and Casadio (1980: 26), Giorgi (1984), Cole et.al. (1990), Huang and Tang (1991) among others). Less well-known is the fact demonstrated by Huang and Tang (1991) that experiencers also function as blocks. Huang and Tang note that, in Chinese, LD anaphora is blocked if an intervening subject differs in person from the intended antecedent, as shown in (30).

(30) <u>*Chinese*</u> (Huang and Tang (1991))
a. Zhangsan$_i$ renwei [Lisi$_j$ hai-le ziji$_{i/j}$]
Zhangsan think Lisi hurt-ASP self
'Zhangsan$_i$ thought that Lisi$_j$ hurt him$_i$ / himself$_j$'

b. Zhangsan$_i$ renwei [wo$_j$ hai-le ziji$_{*i/j}$]
Zhangsan think I hurt-ASP self
'Zhangsan$_i$ thought that I$_j$ hurt *him$_i$ / myself$_j$'

They note further that experiencers, which are possible antecedents as we know and as shown in (31a), give rise to the same blocking effect, as shown in (31b) (experiencers underscored).

(31) Chinese (Huang and Tang (1991))

a. [ziji$_i$ de xiaohai mei de jiang de xiaoxi] shi *Lisi*$_i$ hen nanguo
[self's child not get prize DE news] make Lisi very sad
'The news that his own$_i$ child did not get a prize made Lisi$_i$ very sad'

b. [[[Zhangsan$_i$ dui ziji$_{i/*j/*k}$ mei xinxin de shi] shi *wo*$_j$ hen nanguo de xiaoxi] shi Lisi$_k$ hen yiwai]
[[[Zhangsan to self no confidence's fact make] I very sad DE news] make Lisi very surprised]
'The news that I was saddened by the fact that Zhangsan$_i$ had no confidence in himself$_i$/$_{*j}$/*me surprised Lisi'

While various questions now arise to which we return directly, the above evidence shows that, as noted by Huang and Tang, the classes of antecedents and blocks coincide in the manner illustrated by (32).[21]

(32)

	Antecedent	block
a. subject	yes	yes
b. experiencer	yes	yes
c. object	no	no

One obvious question will be how to capture the parallelism in (32). Another is how to express the "different person" blocking effect of (30)-(31). Beginning with the first, recall that, within our system, subjects are blocks because they project their features up to the nearest XP, thus inducing path overlap. For those subjects which are not associated with any inflection which would require upward projection independently, feature projection was stipulated. We now simply extend that stipulation and suppose that experiencers do the same, also projecting their features up, speculating that this may be a property of certain "semantically prominent" elements.[22] While the latter stipulation is obviously problematic, we note that other analyses fare no better on this point. In particular, accounts of subject orientation in terms of LF movement of the anaphor to inflection (Cole et al. (1990), Pica (1991)

and others) face a more serious problem still. Since experiencers are not connected with inflection in any way, movement to I does not only not predict that experiencers may be antecedents, but in fact falsely predicts that they should not be (as also noted by Huang and Tang). Hence our stipulation has no viable alternative.

In order to account for the fact that certain kinds of anaphors are *not* subject oriented, we will now suppose that non-experiencer objects may also project their features up the syntactic structure. However, we suppose further that this optional step (not triggered by "semantic prominence") adds to the overall interpretive "cost". With uninflected anaphors like the LD ones, this cost will then compound with that of pseudo-agreement, correctly resulting in the exclusion of (non-experiencer) object antecedents. In contrast, with inflected anaphors like English reflexives, there is pseudo-agreement to deal with (since there is overt agreement), resulting in object antecedents as a viable option. Note here that the subject-orientation of anaphors is a relatively weak effect, as seems consistent with the above (cost-based) account (see Maling's (1986, ex. (1)), given in part below as (38a)), while a movement-to-I account would entail a sharper effect.[23]

Turning to the question of the identity of antecedents and blocks in (32), the latter follows directly from our system of feature-projection. That is, if anaphors merely project their features up the syntactic structure, they will only be able to link up with elements that, independently, also project their features, and which -by doing so- necessarily also act as blocks, inhibiting relations with more remote antecedents. Non-experiencer objects continue not to be blocks on this account, despite their being antecedents (to certain anaphors), because, while they may project their features, they are not required to do so.

Turning now to the "different person" blocking effect of (30)-(31) observed by Huang and Tang, it can be expresses within our system by simply supposing that overlapping paths must agree in person. Intuitively, this has a certain plausibility (Huang and Tang's solution is partially similar). Since we think of overlapping paths as different communications riding on the same line, it makes sense to suppose that partial sameness of the "signal" should be a precondition for sharing the line, with "person" being perhaps the most salient feature. There is one problem that we must leave unsolved, however, which is that—to our knowledge—this effect has not been reported for any of the (Indo-European) languages of (12) above.[24] This notwithstanding, the conclusion that, in anaphoric relations, antecedents and blocks are one and the same category, and our account of it, seem to stand.

4.2 WEAK ANTECEDENTS

A second piece of evidence for the identity of the notions of antecedent and of block is that the two categories are internally ranked in similar fashion. Thus, recall that blocks rank in strength as in (33), which repeats and slightly simplifies the ranking of (12) above.

(33) SSC effect ranked by complement type:
a. Tensed (strongest block)
b. Infinitival (AP-sc)
c. PVC (NPs, PP-sc) (weakest block)

Consider now that some of Timberlake's (1979) discussion of Russian reflexives reveals that antecedents rank quite analogously. As Timberlake notes, LDA discriminates among different antecedents in the manner illustrated in (34).

(34) Russian (Timberlake (1979))
a. I on$_i$ ne prosil nikogo iz nix [provesti {sebja$_i$/ego$_i$} v nuznoe mesto...]
and he not ask any of them lead self / him to needed place...
'and he$_i$ did not ask any of them to lead him$_i$ to the necessary place...'

b. I on$_i$ stydilsja poprosit' kogo-libo iz nix [provesti ?(?)sebja$_i$ / ego$_i$ v nuznoe mesto]
and he embarassed ask any of them lead self / him to needed place
'and he$_i$ was embarassed to ask any of them to lead him$_i$ to the necessary place'

In (34a) the antecedent is the subject of a tensed clause, and the anaphor/pronoun overlap is as discussed in 3.2 above. In contrast, in (34b) the antecedent is the subject of an infinitival.[25] As the judgments indicate, the latter antecedent appears to favor the reflexive less than the subject of a tensed clause, and is thus a "weaker" antecedent in that sense. However, in contrast to LDA, local anaphora appears totally insensitive to differences among antecedents, always requiring the reflexive to the full exclusion of the pronoun, as shown by (35).

(35) Russian (Timberlake (1979))
a ...menja$_i$ poprosjat xotja v dvuk slovax rasskazat' o {sebe$_i$/*obo mne$_i$}
me ask if only in two words tell about self / about me
'...(they) would ask me$_i$ to talk about myself$_i$ if only in two words'

b. Tixon Zaxarovic zastavil rabocix$_i$ ne scadit sebja$_i$ / *ix$_i$...
Tixon Zaxarovic make workers not spare self them
'Tixon Zaxarovic made the workers$_i$ not spare themselves$_i$...'

Let us then summarize the above facts as in (36).

(36)

Antecedent, subject of:	LDA into infinitival	local anaphora
a. Tensed	refl pron	refl *pron
b. Infinitival	?(?)refl pron	refl *pron
c. PVC		refl *pron

We can see that the hierarchy of antecedents in (36), ranking antecedents in LDA, mirrors the hierarchy of blocks of (33) except for the lack of evidence on subjects of PVCs in (36c) (not given in Timberlake's discussion). This, however, will be shown to fit the same pattern later on (see (44) below). This further parallelism of antecedents and blocks continues to follow from our system. For if anaphors can only link up with elements that intervene on the upward path and hence act as blocks, it seems natural that they should find stronger blocks to be more viable antecedents than weaker ones. The remaining question is of course why should the discriminating effect be present only in LDA and not in local anaphora. What this difference between the two cases suggests is that anaphoric relations simply treat blocks in a consistent fashion, in the sense that overcoming a block of a certain strength automatically makes all weaker blocks undetectable. We may state this as in (37).

(37) Blocking consistency: Once not a block, never a block

Such a principle seems natural. Its effects can be visualized by imagining a projectile traveling in a horizontal line, which will never be able to hit any obstacle lower than one it has already passed. The facts in (36) now follow from the principle in (37) since, in LDA out of infinitival complements, that principle will require that the antecedent be a stronger block than the subject of an infinitival, namely that it be the subject of a tensed clause, whence (36a). Subjects of other infinitivals will not be detectable, or -assuming a somewhat graded effect as for some of the other principles- only marginally detectable, whence (36b). In contrast, in local anaphora no block is being overcome, thus (37) is irrelevant, any block will be a viable antecedent, and the reflexive will be fully well-formed to the full exclusion of the pronoun.[26]

The principle in (37) accounts not only for the type of contrasts noted by Timberlake, but also for other striking ones never accounted for unitarily before. One, noted by Thráinsson (1979), and Maling (1986), is given in (38).

(38) Icelandic (Maling (1986))

a. Jón syndi Haraldi$_i$ föt á sig$_i$ / hann$_i$
Jón showed Harald clothes for self / him
'Jón showed Harald$_i$ clothes for himself$_i$'

b. Ég lofaði Haraldi$_i$ [að raka *sig$_i$ / hann$_i$]
I promised Harald to shave self / him
'I promised Harald$_i$ to shave him$_i$'

As Maling observes, LD reflexive *sig* can for many speakers also take an object antecedent, in partial consistency with our above account of subject orientation. This, however, is only possible when *sig* is locally bound as in (38a), and not in LD relations like that of (38b). This follows from our (37) since, to the extent that an object can be an antecedent and hence a block, it will surely be a block of the weakest kind (not being related to any inflection), and as such it will systematically be undetectable in any LD relation.

Another relevant contrast is the one in (39) noted by Maling (1984), as well as Giorgi (1984), and others.

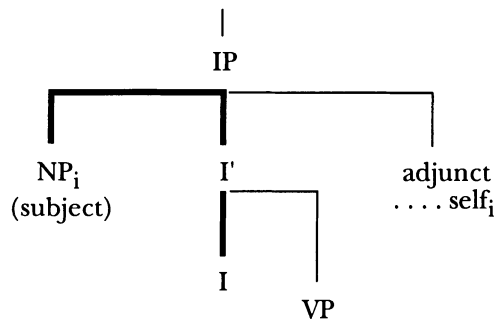
(39) Icelandic (Maling (1984))

a. *Jón$_i$ kemur ekki [nema Sigga bjóði sér$_i$]
Jón comes not unless Sigga invites self
'Jón$_i$ does not come unless Sigga invites him$_i$'

b. Jón$_i$ segir að hann komi ekki [nema Sigga bjóði sér$_i$]
Jón says that he comes not unless Sigga invites self
'Jón$_i$ says that he will not come unless Sigga invites him$_i$'

The relevant generalization here is that LD anaphors contained in sentential adjuncts cannot take the subject of the most immediately dominating clause as their antecedent, as shown by (39a), while they can take the (more remote) subject of a higher clause, as in (39b). This follows from the principle in (37) if we take adjuncts like the one in (39) to be attached to IP (as Maling in fact argues), as in

(40)



For then the path overlap relative to the nearest subject (the one in (40)) will be a "point" overlap (at IP), not implicating any path from inflection, and hence comparable to that due to subjects of *un*inflected clauses or objects. The resulting block, due to the subject alone, will thus again be one of the weaker variety and hence not detectable in (39a), where a stronger block—the subject-and-I in the adjunct, is being overcome.[27] In contrast, in (39b) the adjunct is *internal* to the VP of which the antecedent is the subject, so that path overlap will again implicate the connection between the subject and its inflection in full (as if the anaphor was within VP in (40)). In this case the subject will be a stronger block, and hence a viable antecedent under (37).

A third contrast accommodated under the principle in (37), albeit only to some approximation, is the one in (41), noted by Giorgi (1984), (1991).

(41) Italian (Giorgi (1984), (1991))

a. *Ho visto [$_{sc}$ il professore$_i$ accanto agli studenti [che seguivano il proprio$_i$ corso]]
I have seen the professor next to the students who were following the own course
'I saw the professor$_i$ next to the students who were following his$_i$ course'

b. ?Ho visto [$_{sc}$ il professore$_i$ contento del rendimento degli studenti [che seguono il proprio$_i$ corso]]
I have seen the professor pleased with the performance of the students who follow the own course
'I saw the professor$_i$ pleased with the performance of the students who follow his$_i$ course'

In (41a), the LD anaphor *proprio* is embedded in a tensed (relative) clause, and fails to take the subject of a PP small clause as its antecedent. This follows from (37), since PP small clauses rank lower than tensed clauses (and approximately like PVCs, as in (12) above).[28] The case in (41b) differs minimally, in that the antecedent is here the subject of an AP, rather than a PP, small clause. This configuration still violates (37), but now to a lesser degree, since AP small clauses rank higher than their PP counterparts (as in (12) above), because adjectives (at least in Italian), have an inflection. Hence at least the direction of the contrast is correctly predicted.

In conclusion, the principle in (37) will correctly draw the distinction between local and LD anaphora charted in (36), as well as account for a number of other significant facts.[29]

Once the role of the antecedent is thus defined in terms of (37), the solution of the original problem is close at hand, as we can now see by finally turning to the possessives.

5. POSSESSIVE ANAPHORA

The problem we began with is that languages like Chinese, that do not have verb-agreement, and Indo-European languages, that do, differ in the structure of (42) in the manner indicated.

(42)

	They$_i$ read [their$_i$ books$_i$]
a. Chinese type	refl pron
b. Indo-European type	refl *pron

In 3.3 above, we analyzed the pronoun/anaphor overlap of Chinese-type languages by arguing that possessive anaphora is not truly local, due to the weak interference of the spec-head relation with the antecedent-anaphor relation. If this is true, then possessive anaphora ought to exhibit a discriminatory effect with respect to antecedents similar to that of LDA, and unlike local anaphora. Indeed, this is the case, as shown in (43), again due to Timberlake (1979).

(43) Russian (Timberlake (1979))

a. ...on$_i$ ne mog najti [{svoju$_i$ / *ego$_i$} xatu]
he not able find [own / his hut]
'...he$_i$ was unable to find his$_i$ house'

b. Roditeli proposili Serezu$_i$ ne slusat' [{svoju$_i$ / ?ego$_i$} rakovinu]...
parents ask Sereza not listen [own / his shell]
'His parents asked Sereza$_i$ not to listen to his sea-shell...'

c. Roditeli zastavljali Serezu$_i$ ne slusat' [{?(?)svoju$_i$ / ego$_i$} rakovinu]...
parents make Sereza not listen [own / his shell]
'His parents tried to make Sereza$_i$ not to listen to his$_i$ sea-shell...'

The facts in (43) summarize as in (44), which thus complements the antecedent hierarchy of (36) above.[30]

(44)

Antecedent, subject of:	local anaphora
a. Tensed	refl *pron
b. Infinitival	refl ? pron
c. PVC	?(?) refl pron

We can now see that the "Chinese" facts in (42a) are virtually identical to the "Russian" ones in (44b), and in fact intermediate between (44b and c). Our original problem given in (42), is thus solved by simply assuming that subjects of Chinese tensed clauses rank on a par with Indo-European subjects of infinitivals/ PVCs as blocks, an assumption entirely consistent with our hypothesis that strength of block/antecedence is commensurate with the strength of the implicated inflection. Given the lack of verb-agreement, the inflection of Chinese-type tensed clauses will surely be "weaker" than that of Indo-European tensed clauses, in the same sense that the inflection of Indo-European infinitives is.[31]

Hence, no difference need be postulated with regards the internal structure of NPs, as the difference between the two groups of languages follows from the different roles of the respective antecedents, which we can independently predict.

Notice that, crucial to the above account, was the hypothesis that possessive anaphora is not strictly local. The latter assumption is in fact supported by several independent considerations beside the variation in (44). One of these is that, cross-linguistically, possessive anaphors are overwhelming of the LD rather than of the local variety (i.e. they are uninflected with respect to the features of the antecedent, although they may -irrelevantly- inflect for the features of the head. See below). This generalization in fact directly accounts for the non-existence of the series of English possessives like *himself's*, given the local character of *himself* series of reflexives. Another consideration that seems relevant is that, while some languages lack reflexive objects (like West Flemish, Frisian, Old English), many more (like Modern English and the Romance languages) lack reflexive possessives. This supports the view that reflexive possessives are more "costly", because systematically "long distance". Another relevant piece of evidence is provided by pseudo-agreement. Recall that in languages with a sufficiently broad range of pseudo-agreement, like Russian, LDA tends to exclude the more costly cases of pseudo-agreement, i.e. first-and-second person, as summarized in (16) above. The same is true of possessive anaphora, which contrasts with local anaphora in the manner of (45). For relevant examples see Timberlake (1979: 113).

(45) Russian

	Pseudo-agreement with:	
	3rd	1st–2nd
a. Local anaphora *(sebja)*	refl *pron	refl *pron
b. Possessive anaphora *(svoj)*	refl *pron	refl pron

That is, while local anaphora requires the reflexive *sebja* in all persons, possessive anaphora requires the reflexive *svoj* only in the third (a less costly case of pseudo-agreement), allowing both reflexive and pronoun in the first and second, hence roughly like LDA out of PVCs, as shown in (16b) above.[32] The conclusion that possessive anaphora is not strictly local, needed for our proposed solution to the contrast in (42), thus seems firmly established.

Our discussion has so far glossed over the fact that, in the Indo-European languages, reflexive possessives are generally adjectives, and not genitive NPs as in Chinese. Consider for example Latin *suus*, which we may plausibly analyze as having a nominal stem *su*, or perhaps the very same reflexive object *se*, and an adjectival morpheme *-us* (/-a/-um; -i/-æ/-a) agreeing in gender and number with the head. Our earlier discussion, which only considered genitive possessives, will plausibly carry over to this case as well, once we consider the parallelism illustrated by (46).

(46) a. se-us
b. NP-gen

If the genitive Case of (46b) (and, in general Case assigned to a specifier by a head) is a form of agreement, then it will be analogous to the agreement of the adjectival morpheme *-us* in (46a). As a result, in both (46a,b) there will be two agreements: one with the head (either in Case, or in I-features), and one with the antecedent (in I-features). In both cases the latter agreement is not overt, hence only a case of pseudo-agreement. For the case of genitives (46b), we supposed that the two relations, with the head and with the antecedent, partially interfered with one-another because of a clustering requirement peculiar to spec-head agreement. The exact nature of this clustering requirement, not completely clear for the earlier case, becomes admittedly even less clear in the case of adjectival possessives (46a), in which both relations involve I-features. Perhaps in the case of (46a) the interference in question is simply due to path overlap (analogous to that of fn.19), but we must leave this issue to further study. Recall in any event that the relative opacity of possessive anaphors including the adjectival ones is not in question, given the evidence discussed. Thus only the exact nature of it remains somewhat uncertain. Note in addition that the Chinese/Indo-European contrast would fail to reduce to the difference between genitive and adjectival possessives just discussed, given for example the facts of Basque, illustrated in (47) below.

(47) Basque (Rebuschi (1987))
Peiok$_i$ [{bere$_i$ / *haren$_i$} txakurra] ikusi du
Peio-k [self's / his] dog seen Aux
'Peio$_i$ has seen his$_i$ dog'

According to Rebuschi (1987), reflexive *bere* in (47) is a genitive form (as is pronominal *haren*), yet the binding facts mirror those of Indo-European, not those of Chinese. From our point of view, this follow from the fact that Basque has a system of verb agreement (see Rebuschi (1986), (1987)) like the Indo-European languages, and unlike Chinese.[33]

6. CONCLUSION

This article has pursued two related goals. One, more specific, was to account for a certain cross-linguistic difference with respect to possessive anaphora. The other, more general, was to sketch out a general theory of anaphora. In essence, the connection between the two goals is provided by the two propositions in (48).

(48) a. In "long distance" anaphoric relations, antecedents which are subjects of inflected clauses provide a greater degree of well-formedness for the reflexive than antecedents that are subjects of uninflected clauses, while having the opposite effect on the pronoun.

b. Possessive anaphora is a subcase of long distance anaphora.

Most of our discussion was in fact aimed to showing that each of (48a,b) is true, and to providing a general framework that would account for them—our more general goal. Our more specific goal was then automatically achieved as the conjunction of the respective accounts of (48a,b), given the simple observation that, in languages like Chinese, tensed clauses are "uninflected", exhibiting no subject-verb agreement, unlike those of Indo-European.

We hope to have also shown in our discussion that anaphora is subject to a number of constraints related to the functioning of "agreement" or inflection, a fact which supports our general approach to anaphora as agreement. We list the relevant effects in (49) (where (49e) partially restates (48a)).

(49) a. The inflected versus uninflected morphology of the anaphor determines whether or not the anaphor may function "long distance".

b. The inflected versus uninflected character of a head determines whether or not an anaphor is allowed in "spec" (subject) position (the "* anaphor-AGR" effect).

c. In complement clauses, the character of the inflection that the subject is associated with determines the extent to which object anaphors may be bound long-distance (the variable "SSC" effect).

d. The character of the inflection that a subject is associated with determines the subject's viability as an antecedent in long-distance relations (the "blocking-consistency" effect).

e. The type of pseudo-agreement at work between antecedent and anaphor is a well-formedness of (long-distance) anaphoric relations.

APPENDIX (CHART (12))[34]

I. Icelandic

a. (Maling (1984)) (Ind)
Jón$_i$ upplysti hver hafði barið {*sig$_i$ / hann$_i$}
Jón revealed who had hit self / him
'Jón$_i$ revealed who had hit him$_i$'

b. (Maling (1984)) (Subj)
Jón$_i$ upplysti hver hefði barið {sig$_i$ / hann$_i$}
Jón revealed who had hit self / him
'Jón$_i$ revealed who had hit him$_i$'

c. (Anderson (1986)) (Inf)
Jón$_i$ skipaði mér að raka {sig$_i$ / *hann$_i$}
Jón ordered me that to-shave self / him
'Jón$_i$ ordered me to shave him$_i$'

c'. (Everaert (1986,301f)) (AP-sc)
Sálfræðingurinn$_i$ gerði Harald stoltan af {sér$_i$ / *honum$_i$}
psychiatrist made Harald proud of self/ him
'The psychiatrist$_i$ made Harald proud of him$_i$'

II. Italian

a. (Ind)
Gianni$_i$ diceva [che i giornali parlavano di {*sé$_i$ / lui$_i$}]
Gianni said [that the newspapers talked about self / him]
'Gianni$_i$ said that the newspapers talked about him$_i$'

b. (Subj)
Gianni$_i$ sperava [che i giornali parlassero di {??sé$_i$ / lui$_i$}]
Gianni hoped [that the newspapers would talk about self / him]
'Gianni$_i$ hoped that the newspapers would talk about him$_i$'

c. (Inf)
L'oratore$_i$ persuase la folla [a venire verso di {sé$_i$ / lui$_i$}]
the speaker persuaded the crowd to come towards of self / him
'The speaker$_i$ persuaded the crowd to come towards him$_i$'

c'. (AP-sc)
Maria$_i$ riteneva [ognuno innamorato di {sé$_i$ / lei$_i$}]
Maria believed each enamoured of self / her
'Maria$_i$ believed everyone in love with her$_i$'

d. (Giorgi (1991)) (PP-sc)
Gianni$_i$ ha aizzato [Maria contro di {sé$_i$ / ?lui$_i$}]
Gianni has incited Maria against of self / him
'Gianni$_i$ has turned Maria against him$_i$'

d'. (PP-sc)
Manuel$_i$ vide [il toro sopra di {sé$_i$ / ?*lui$_i$}]
Manuel saw the bull upon of self / him
'Manuel saw the bull upon him'

d". (PVC)
Maria$_i$ vide l'auto venire contro di {sé$_i$ / ?lei$_i$}
Maria saw the car come against of self / her
'Maria$_i$ saw the car come against her$_i$'

III. Russian

b. (Rappaport (1986)) (Subj)
Vanja$_i$ xocet, ctoby [vse ljiubili {ego$_i$ / *sebja$_i$}]
Vanja wants that [everybody love him / self]
'Vanja$_i$ wants that everybody love him$_i$'

c. (Timberlake (1979)) (Inf)
Starik$_i$ ozivilsja i prosil [na kurort ego$_i$/sebja$_i$}] pokuda ne otpravljat']
old man enliven and ask [to resort him / self] now not send off
'The old man$_i$ came to life and asked (one) not to send him$_i$ off to a health resort just now'

d. (Timberlake (1979)) (PVC)
On$_i$ dal [ej umyt' {sebja$_i$ / *ego$_i$} i vypil kruzku moloka]
he let [her wash self / him and drank mug milk]
'He$_i$ let her wash him$_i$ and drank down a mug of milk'

IV Danish

c. (Vikner (1985)) (Inf)
at Susan$_i$ overtalte Anne til [at hore på {sig$_i$ / ende$_i$}]
that Susan persuaded Anne to [that listen to self /her]
'that Susan$_i$ persuaded Anne to listen to her$_i$'

c'. (Pica (1986)) (AP-sc)
Larsen$_i$ betragter Jorgen some farlig for {sig$_i$ / ham$_i$}
Larsen considers Jorgen as dangerous for self / him
'Larsen$_i$ considers Jorgen dangerous for him$_i$'

d. (Jakubowicz and Olsen (1988), analysis ours) (PP-sc)
John bad Peter$_i$ [PRO$_i$ anbringe [bogerne bagved {sig$_i$ / *ham$_i$}]
John asked Peter [to put the books behind self / him]
'John asked Peter$_i$ to put the books behind him$_i$'

V. Dutch

c. (Everaert (1986)) (AP-sc)
Marie$_i$ maakte [mij jaloers op {*zich$_i$ / haar$_i$}]
Marie made me jealous of self / her
'Marie$_i$ made me jealous of her$_i$'

c'. (Everaert (1986)) (Inf)
Ria$_i$ vroeg ons [voor {*zich$_i$ / haar$_i$} te zorgen]
Ria asked us [for self / her to take care]
'Ria$_i$ asked us to take care of her$_i$'

d. (Everaert (1986)) (PVC)
Hij$_i$ hoorde [mij over {zich$_i$ / hem$_i$} praten]
he heard [me about self / him talk]
'He$_i$ heard me talk about him$_i$'

NOTES

[1] The cross-linguistic pattern of locally bound pronouns illustrated in (6) is very pervasive, and yet rarely noted in the literature. Locally bound pronouns were first drawn attention to in Zribi-Hertz' (1980) discussion of French.

[2] Additional arguments against principle B are given in Burzio (1989). The "asymmetry" in the acquisition of principles A and B often noted in the relevant literature is in fact a further argument against principle B. Everaert (1991: 113) summarizes the relevant observation as in (i), while the same children generally interpret anaphors correctly.

(i) ".. a sentence like *John washes him* is often interpreted by young children as meaning *John washes himself*"

From the point of view of two principles A and B with the same status, this asymmetry is extremely surprising. The facts are much less remarkable from our point of view: children to whom (i) applies have simply not yet acquired the "anaphor-first" principle in (5), while they may well be fully equipped to interpret anaphors —two rather different devices.

[3] In fact (5) is still relevant to the cases in (7) in selecting the first element of the complex. This is a pronoun only when there is no corresponding anaphor, just as in (6).

[4] This will raise obvious questions, which we are not in a position to answer at this point, about languages that have object agreement.

[5] There is also reason to believe that LD anaphor *proprio* "own", uninflected (for the features of the antecedent) is structurally complex, having the structure [e]-*proprio*, analogous to that of *suo-proprio* "his own", whence a further potential difficulty for Pica's criterion. Part of the evidence leading to that conclusion is the fact that *proprio* behaves like the complex anaphors in (7) with respect to the relevant semantic criteria, whence its ability to overlap with the pronoun in (i), contrasting with the complementarity in (2) above.

(i) Gianni$_i$ legge {il suo$_i$ / il proprio$_i$} libro
Gianni reads the his the own book
'Gianni reads his$_i$ / his own$_i$ book'

[6] There are other apparent exceptions to this generalization, for which we have no account, at the moment. One is the "long distance" use of English reflexives studied by Zribi-Hertz (1989) and others. We note that the latter phenomenon does *not*, to our knowledge, extend to inflected/ morphologically complex anaphors of other languages, and in this sense does not seriously challenge the proposed generalization. Another is represented by reciprocals, which are systematically local, cross linguistically, despite the fact that in some languages they are not obviously inflected (e.g. English *each other*). A third case is that of reflexive clitics, which are strictly local, cross-linguistically, regardless of their morphology.

[7] This is plausibly due to the fact that specifier, e.g. *my* and head, i.e. *self* are themselves linked by way of spec-head agreement, so that connecting a head to the antecedent implies connecting its spec as well.

[8] For ease of exposition, we take this and other complements to perception verbs to be clauses, rather than complex NPs as argued in Burzio (1986, 4.7), which would analyze a in (11) as in (i). The difference does not affect the issues at hand.

(i) [$_{NP}$ snakes$_i$ [$_{IP}$ e$_i$ near ....]]

[9] As indicated in (12), there is no subjunctive in Danish or Dutch.

[10] Despite the fact that in many languages (e.g. Romance) there is no overt difference between normal infinitivals and PVCs.

[11] The impression is rather widespread in the literature that LDA does not affect the distribution of pronouns, which is thought to remain constant, and as in English. The following quote from Koster and Reuland (1991: 2f) is indicative of that impression.

(i) "It is presently quite unclear why the opacity factor for pronominals does not vary, and why the complementarity between pronominals and anaphors, which is generally quite striking, breaks down in some constructions, especially in languages with long-distance anaphors."

On the other hand, the exclusion of pronouns in LDA contexts is attested by a variety of sources, like the ones listed in (ii).

(ii)	a.	Icelandic infin.:	Anderson (1986, ex.13)
			Maling (1986, ex.14b)
	b.	Icelandic AP-scs:	Maling (1986, ex.2)
			Everaert (1986, ex.128, p302)
	c.	Russian PVCs:	Timberlake (1979, ex.40-41)
	d.	Gothic infin.:	Harbert (1982, ex.12 and discuss. p7, top)
	e.	Latin infin.:	Bertocchi and Casadio (1980, p35)
	f.	German PP-scs:	Faltz (1977, ex.12, p2)
	g.	Yoruba tnsd claus.:	Mohanan (1982, ex.57-58 and discuss. p182f)

[12] Throughout the text and in the Appendix, Timberlake's diacritics ", ?, *" have been rendered as "?, ?(?), *", respectively.

[13] We thus differ here from Everaert (1991), who does postulate elements which are bound, but locally free, as a primitive category. Other languages which have been reported to analogously exclude the LD reflexive from local contexts and which we presume are also amenable to the text account are: Kannada (Bhat (1978)), Marathi, and Malayalam (Thráinsson (1991 and refs)).

[14] Anderson (1986) argues that the absence of nominative reflexives in Icelandic is a "morphological" gap. While Anderson's point seems quite correct, the gap cannot be accidental, since it is found systematically in language after language, calling for a syntactic account. For some related discussion see also Everaert (1991b).

[15] There are two important considerations that further bear on the issue. One is that (19) predicts that languages that have verb agreement with the object should exclude object reflexives. On this point we lack any direct evidence, except for that cited in fn. 33 below, relative to Basque. The second consideration is that, unlike the ECP-based account, an account based on (19) fails to relate the ability of languages like Chinese to have subject reflexives, to their known immunity to the "*that-trace" effect. To put it differently, an account of the anaphora facts based on verb-agreement would imply -given the correlation- that "**that*-trace" effects are also related to verb-agreement, a possibility that we leave to further study.

[16] Kornfilt's discussion also makes it abundantly clear that the blocking effect is in not related to nominative Case (as under the NIC), or any specific Case.

Her proposal for making agreement the relevant blocking element is essentially to reintroduce the notion of "SUBJECT" of Chomsky (1981), which, however, we have rejected on the basis of (20).

[17] Our account of (19) will be different from Rizzi's (1989) own, which is framed within a generally more conservative set of underlying assumptions than ours, and to which the reader is referred.

[18] Note that the distinction between post-verbal accusatives and post-verbal nominatives is then rather subtle. In particular, to the extent that post-verbal nominative may also be assigned under government (by I), we may expect clustering of

Case and I-features to no longer obtain, resulting in a nominative NP which does not trigger verb-agreement. This expectation is in fact fulfilled, at least in part, since there are languages in which post verbal nominatives can fail to trigger verb-agreement. Italian, however, is not one of them, raising the question of why clustering should obtain.

[19] Note that this approach predicts one further difference between the two groups of languages, and in particular that subject-internal anaphors should be blocked by path overlap in languages that have verb agreement, but not in those that do not, as in fact seems to be the case in (i).

(i) a. Danish (Vikner (1985))
* at [Peter$_i$ troede at [[billederne af sig (selv)$_i$] aldrig ville blive til noget]]]
that [Peter thought that pictures of refl (self)] never would become to anything
'that Peter$_i$ thought that the pictures of him$_i$ would never come out'

b. Chinese (Cole et al. (1990))
Zhangsan$_i$ shuo [Lisi$_j$ zhidao [ziji$_{i/j}$ de mama zai Taibei]]
Zhangsan says Lisi knows self of mother at Taipei
'Zhangsan$_i$ says that Lisij knows self's$_{i/j}$ mother is at Taipei'

In (ia) the subject "pictures of self" is connected with verb agreement, resulting in an overlap with the antecedent-anaphor connection. In contrast, in (ib) the subject "self's mother" is not connected with verb agreement since there is none, and hence there is no overlap. Note that while marginal English examples like (iia) are often reported as grammatical in the literature, the pattern of (ia) seems nonetheless general for the Indo-European languages, being attested also for those of (iib) as indicated. See also Freidin (1986: 157 and refs).

(ii) a. ??They$_i$ thought that pictures of each other$_i$ were on sale
b. Norwegian: Everaert (1986, 253 fn.3)
Russian: Rappaport (1986)
Hindi: Harbert (1982)

[20] The parallelism would be maintained as well under the "DP hypothesis" (Abney (1987) and others), which would take the nominal structures in (28) to be "Determiner Phrases", their head X in (29) now being the genitive marker itself, assigning Case to the subject.

[21] Graffi (1987), (1988) also finds experiencers to act as blocks in the following kinds of English and Italian examples (experiencer underscored).

(i) a. ?I think it pleased them$_i$ that pictures of each other$_i$ are hanging on the wall
b. ?*They$_i$ think it pleased me that pictures of each other$_i$ are hanging on the wall

(ii) a. ? Pietro$_i$ dice che sembra che i propri$_i$ antenati non siano stati degli eroi
Pietro says that (it) seems that the own ancestors not have been some heroes
'Pietro$_i$ says that it seems that his$_i$ ancestors may not have been heroes'
b. ?*Pietro$_i$ dice che a Paolo sembra che i propri$_i$ antenati non siano stati degli eroi

Pietro says that to Paolo (it) seems that the own ancestors not have been some heroes
'Pietro$_i$ says that it seems to Paolo that his$_i$ ancestors may not have been heroes'

[22] However, the question will remain as how experiencer antecedents are to satisfy the C-command requirement. We will leave this question open, simply noting that two kinds of answers are possible in principle. One is that the C-command requirement, which is in any event not well understood, is simply relaxed with a certain class of prominent elements (see in this connection Huang and Tang's (1991) discussion of "subcommanders"). The other is that that requirement is in fact fulfilled, via the more abstract kind of D-structure and derivation proposed in Belletti and Rizzi (1988).

[23] Romance reflexive clitics, which *are* plausibly attached to inflection, do exhibit a strong subject-orientation, to the point of being quite uninterpretable with object antecedents.

[24] Note, however, that in the Western Indo-European languages this phenomenon may in fact not arise in quite the same fashion simply because first-and-second person NPs are *not* possible antecedents, due to the more restrictive pseudo-agreement. We note further that the French contrast in (i), from Pica (1986), may in fact fall within the same pattern as the Chinese facts, in that the intervening subject seems also required to agree with the antecedent, here in being (at least semantically) impersonal.

(i) a. *On$_i$ souhaterait toujours [que Paul dise du bien de soi$_i$]
one$_i$ would wish always [that Paul speak of well of self$_i$]
'One$_i$ would always wish that Paul speak well of oneself$_i$'

b. On$_i$ souhaterait toujours [que les gens disent du bien de soi$_i$]
one$_i$ would wish always that people speak of well of self$_i$
'One$_i$ would always wish that people speak well of oneself$_i$'

[25] Note that only in the English translation is there also a subject of a tensed clause "was embarassed". The corresponding Russian structure is an adjectival small clause. Its subject *on* "he" is therefore not a more viable antecedent for the reflexive than the "PRO" subject of the infinitival, and is thus irrelevant to the text discussion.

[26] Note that the effect of (37) is additional to that of the SSC, so that any block which is being overcome still introduces a cost for the reflexive, even if (37) is satisfied. This is why, in (36a), the LD reflexive is only possible and not obligatory.

[27] This, correctly predicts that the reflexive should be able to occur with the nearest subject as the antecedent when the adjunct is not sentential, as in (ia), contrasting with (ib), which is like (39a).

(i) <u>*Icelandic*</u> (Maling (1984))
a. Jón kemur ekki [án konu {sinnar / *hans}]
Jón comes not [without wife own / his]
'John$_i$ will not come without his$_i$ wife'

b. Jón kemur ekki [án pess að konan {*sinnar / hans} komi líka]
Jón comes not without it that wife own his comes too
'John$_i$ will not come unless his$_i$ wife comes too'

[28] Predictably, the result is grammatical when the anaphor is not contained in a tensed clause, as in (i).

(i) Ho visto [$_{sc}$ il professore$_i$ accanto ai propri$_i$ studenti]
I have seen the professor next to the own students
'I have seen the professor$_i$ next to his own$_i$ students'

[29] The same principle could perhaps shed light on the fact that Huang and Tang's (1991) "subcommanders" are proper antecedents for local relations, but not for LDA, and possibly also on the fact that intermediate subjects are not possible antecedents in Chinese LDA (Tang (1989, 109)).

[30] Where we may again note in passing how complementarity of anaphors and pronouns continues to be the primary generalization.

[31] Although of course Chinese tensed clauses cannot be fully equated with Indo-European infinitivals, with respect to phenomena like control and Exceptional Case Marking.

[32] This parallelism with PVCs is also consistent with the facts in (44), which show reversal of acceptability just around the "PVC" point. Sharp reversal is the indication that principle (37) is kicking in, and therefore that the chosen antecedent and the intervening block are approximately of the same strength.

[33] Rebuschi (1986, fn.6) observes that while *bere* is morphologically *be* plus genitive marker *re*, there is no object reflexive *be*. This is not problematic for our analysis, but would rather simply follow from (19) above and the fact that Basque has verb agreement with both subject and objects.

[34] The letters of the examples correspond to the letters in (12). We give no examples of LDA into NP's, which we have placed into (12d) somewhat tentatively. For relevant examples, see Manzini and Wexler (1986), Pica (1986), Vikner (1985), Hellan (1986), Rappaport (1986). The ungrammaticality of LDA into indicative complements in Russian, Danish and Dutch, for which we give no examples, is well known. Note that not all examples give both reflexive and pronominal variants in the original text. We have added the occasionally missing variant by relying for grammaticality judgments mostly on other relevant examples, and discussion, within the same source.

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