On the Anaphor-Agreement Effect

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Anaphors do not occur in syntactic positions construed with agreement. This generalization holds quite systematically in natural languages. It is illustrated by the impossibility of Italian examples like **A loro piacciono se stessi* ('To them please themselves'), in which the postverbal theme, construed with agreement, cannot be an anaphor bound by the preverbal experiencer; the same constraint is illustrated by a systematic gap in the distribution of long distance anaphors in Icelandic and other languages with long distance anaphors. After a presentation of the theoretical background (section 1) and an illustration of the anaphor-agreement effect (sections 2 and 3), this article proposes an interpretation of the effect based on an analogy with the PRO Theorem: if agreement features are intrinsically pronominal, the local construal of an anaphor with agreement involves two elements whose binding requirements are incompatible, whence the ill-formedness of the configuration. The technical adjustments of the Theory of Binding that are needed to achieve this result are shown to provide an immediate account of the well-known disjoint reference effect with subjunctive (in *Mario vuole che Ø venga* 'Mario wants that Ø come', *Mario* and Ø are referentially disjoint).*

The following examples illustrate the well-known fact that a reflexive or reciprocal (henceforth an anaphor) must have its antecedent in the same simple clause. If the antecedent is in a higher clause, the structure is ill-formed:

(1) Bill thinks that *they* like *each other*
(2) a. * *They* think that Bill likes *each other*
b. * *They* think that *each other* please Bill

Does the ungrammaticality of (2a) and (2b) represent a genuine linguistic generalization? Different versions of the Binding Theory (or of its antecedents) give different answers. For instance, the classical transformational approach (cf. Lees & Klima (1963) and subsequent work), a *Conditions* type framework and the standard approach to Binding within the Government

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Binding Theory (cf. Chomsky 1981) give a positive answer: there is a particular principle that is violated in both cases (respectively, the Clause Mate Condition, the Tensed S Condition, and Binding Principle A). On the other hand, the approaches to Binding in Chomsky (1980) and Chomsky (1986) give a negative answer, and claim that the two ill-formed examples violate two distinct conditions: (2a) violates the fundamental binding principle (the Specified Subject Condition, subsumed under Principle A), whereas (2b) violates a different condition (the Nominative Island Condition, subsumed under the Empty Category Principle).

In spite of the natural intuitive appeal of the first trend, English already offers rather straightforward empirical evidence favoring the second trend. If we slightly manipulate the structures in (2) by embedding the reciprocal within a NP, an asymmetry emerges: the structure in which the anaphor is embedded within the subject is notably more acceptable:

(3) a. * *They* think that Bill likes *each other*'s pictures
b. *They* think that *each other*'s pictures please Bill

The literature on Binding of the last decade shows that it still is formally possible to give a uniform treatment of (2) and (3) through a unique principle, but this result requires a rather artificial definition of the opacity creating factor (the Accesible SUBJECT of Chomsky's *Lectures*). A more promising tack seems to be the one followed in Chomsky (1980, 1986): (3) is the representative paradigm of the operation of the Binding Theory; things are blurred in (2) by the intervention of a disturbing factor which rules out (2b).

This article adopts the latter approach, and tries to give a contribution to the identification of the disturbing factor involved in (2b) and similar examples. After a presentation of the theory of Chomsky (1986) in section 1, we will claim in section 2 that there is a fundamental incompatibility between the property of being an anaphor and the property of being construed with agreement: the anaphor-agreement effect.The third section will deal with the peculiar binding properties of the subject position of subjunctive clauses in Romance, and the fourth section will be devoted to the theoretical interpretation of the anaphor-agreement effect.

1. *An ECP based account.*

The fundamental empirical fact that all the versions of the theory of Binding have tried to capture is the near complementarity between anaphors and coreferential pronouns. In general, an anaphor is possible in environments in which a pronoun cannot be coreferential and, reciprocally, a pronoun cannot be coreferential in environments in which an anaphor is allowed to occur:

(4) a. Bill thinks that [they$_i$ like each other$_i$]
b. * Bill thinks that [they$_i$ like them$_i$]
(5) a. * They$_i$ think that [Bill likes each other$_i$]
b. They$_i$ think that [Bill likes them$_i$]

Still, in some environments the complementarity disappears; the possessive position on a NP in English can host both an anaphor and a coreferential pronoun:

(6) a. They$_i$ like [their$_i$ books]
b. [They$_i$ like each other$_i$'s books]

Conversely, the subject position of a subjunctive clause in Romance disallows both anaphors and coreferential pronominals: there is no way to express coreference between this position and the superordinate subject (the examples illustrate the effect in Italian):

(7) a. * Gianni$_i$ vuole che se stesso$_i$ vinca
'Gianni wants that himself win'
b. * Gianni$_i$ vuole che (lui$_i$) vinca
'Gianni wants that he win'

Let us postpone the discussion of the Romance case. The approach to Binding proposed in Chomsky (1986) is specifically designed to account for the selective lack of complementarity illustrated in (6). We will now present a simplified version of this approach.

The general complementarity is captured by the fact that anaphors and pronominals have opposite binding requirements within the same local domain, their Governing Category (GC):[1]

(8) Binding Principles:
A. An anaphor must be bound in its GC
B. A pronominal must be free in its GC

So, in general, wherever an anaphor can survive (hence it can be bound), a pronoun must be free, non coreferential. The partial lack of complementarity in such environments as (6) is accounted for through a proper definition of what counts as the Governing Category for a given element:

(8bis) Governing Category: Z is the Governing Category for X iff Z is the minimal category with a subject containing X, a governor G for X, and where the binding requirements of X are satisfiable.

This system gives the correct result in the cases of (4), (5) and (6) (the governing categories are indicated by the brackets). In (4a), (5a) the GC of the anaphor is the lower clause, the minimal category with a subject containing the anaphor, a governor for the anaphor (the verb) and where the binding requirements of the anaphor are satisfiable in principle, under some indexation (the clause contains a position, the subject position, which can function as a binder for the anaphor in object position). In this system, assignment of the GC is done in part on the basis of the *virtual* binding properties (presence or absence of a position that could, under some indexation, function as a bin-

[1] An element X is bound in a given domain iff there is another element Y in the same domain which c-commands X and is coindexed with X. Y c-commands X iff neither Y dominates X nor vice versa, and the first branching node dominating Y dominates X as well. An element is free in a given domain when there is no other element in the same domain which binds it.

der). Once this operation is performed, the *actual* binding properties are checked. The anaphor is in fact bound in its GC in (4a) but not in (5a), which is then ruled out by the Binding Principle. In (4b), (5b), the GC of the pronominal is again the embedded clause, the minimal category with a subject containing the pronominal, its governor and where the binding requirements of the pronominal can be fulfilled in principle.The actual binding properties are then checked: by Binding Principle B the pronominal must be free in its GC, as is the case in (5b), but not in (4b). Consider now(6a-b). In (6b) the minimal category with a subject containing the anaphor and its governor is the NP *each other's books*; still, the anaphor couldn't possibly have its binding requirements fulfilled within the NP: *qua* anaphor it should be bound, but there is no possible binder for it within the NP. So the binding properties of the anaphor are not satisfiable within the NP, the NP does not meet the definition of GC, and we have to move to the next higher category with a subject, the whole clause. Here the binding requirements of the anaphor are satisfiable, as there is a potential binder for it, the subject of the clause. The definition of GC is thus met. As the anaphor is in fact bound in its GC, the Binding Principle is satisfied. Consider now (6a). If we try to compute the GC of the possessive pronominal, the first candidate is the NP *their books*, the smallest category with a subject (the pronominal itself) containing the pronominal and its governor (the noun). Moreover, the binding requirements of the pronominal are satisfiable within the NP; as pronominals must be free, this condition will always be trivially fulfilled in a structure in which there is no possible antecedent. So, the NP qualifies as the GC for the pronominal: as the pronominal is free in its GC, Binding Principle B is met, and the structure is well formed even if the pronominal is bound outside its GC, as is the case in (6a). The theory of Chomsky (1986) thus achieves the result of accounting for the non-complementary distribution shown in (6) through a unique definition of GC for anaphors and pronominals, which correctly predicts the complementarity manifested in the other cases.[2]

This system also correctly accounts for the contrast between (3a) and (3b):

(3) a. * They$_i$ think that [Bill likes each other$_i$'s pictures]
b. [They$_i$ think that each other$_i$'s pictures please Bill]

[2] A problem for this approach is raised by the fact that in (some) languages with a reflexive possessive the pronominal possessive is disjoint in reference. Danish is a case in point (examples adapted from Vikner 1985) :

(i) Peter$_i$ laeste sin$_i$ artikel
'Peter read SELF's article'
(ii) * Peter$_i$ laeste hans$_i$ artikel
'Peter read his article'

On the other hand in Italian the existence of the anaphoric possessive form *proprio* (Giorgi 1984) does not affect the possibility of a coreferential pronominal possessive:

(ii) a Gianni ama la propria casa
'Gianni loves self's house'
b Gianni ama la sua casa
'Gianni loves his hause'

We will leave this question open here. Cf. Burzio (1988) for important discussion.

In (3a) the GC of the anaphor is the embedded clause, the anaphor is not bound in it, hence the structure is ill-formed. In (3b) the embedded clause does not qualify as a GC for the anaphor (there is no possible antecedent for it), therefore we must move to the main clause, which meets the definition of GC. The anaphor is in fact bound in the main clause, hence the structure is well-formed.

But this system appears to make the wrong prediction on paradigm (2):

(2) a * They$_i$ think that [Bill likes each other$_i$]
b * [They$_i$ think that each other$_i$ please Bill]

The ill-formedness of (2a) is accounted for, but (2b) is not: the embedded clause does not qualify as the GC for the anaphor because there is no possible binder for it. The main clause qualifies as the GC, and the anaphor is bound in it. So, the structure should be well-formed, contrary to fact. Chomsky (1986) is thus lead to the conclusion that (2b) is not ruled out by the Binding Theory. He must then resort to an indipendent principle for this case. The proposal sketched out by Chomsky is the following. Suppose that anaphors move in the syntax of Logical Form to a position adjacent to (governed by) their antecedent; i.e., at LF sentence (9a) has a representation like (9b), resembling the S-structure order of elements in the corresponding Romance examples:[3]

(9) a They saw each other
b They each other saw t
c Loro si videro t

Under this assumption, the LF representation of (2b) would be the following:

(10) * They each other think that t please Bill

This representation is ruled out by the Empty Category Principle, the principle that limits possible occurrences of traces to properly governed positions.[4]

The impossibility of (2a) is thus traced back to the fact that an embedded subject is not extractable, neither by syntactic nor LF movement:

(11) a * Who do you think that t likes Bill
b * Mary seems that t likes Bill
c * Gianni la ritiene che t ami Piero
'Gianni her believes that likes Piero'
d * Je n'exige que personne soit arrêté
'I neg demand that nobody be arrested'
e * Personne [je n'exige que t soit arrêté]

[3] The hypothesis of anaphor movement in LF was originally made by Belletti (1982) for the case of Romance non-clitic reciprocals, and by Lebeaux (1983) for various cases in English. See also Heim,Lasnik & May (1988).

[4] According to the standard definition of Chomsky (1981), proper government is either government by a lexical category or government by an antecedent. Neither case of proper government is met in (10). Various more recent refinements of the ECP (e.g. Rizzi 1990 and references cited there) are compatible with this interpretation.

(11a) is a case of wh movement, (11b) a case of NP movement (raising), (11c) a case of clitic movement, (11d) a case of LF movement of the negative quantifier, with LF representation (11e) (cf. Kayne 1984: ch.2 for discussion). According to Chomsky's proposal, the disturbing factor determining the asymmetry of paradigms (2)-(3) then is the ECP (cf. also an earlier proposal by Kayne (1984: ch. 8) in terms of his Connectedness condition). This principle rules out (2b), a structure which would otherwise be ruled in by the Binding Theory.

2. *On the incompatibility between anaphors and agreement.*

In this section we will discuss cases somewhat analogous to (2b), but such that neither the ECP nor the Binding Principle can draw the appropriate distinction to deal with them. The alternative we would like to explore originates form the observation that in (2b), but not in (3b) or (6b) is the anaphor directly construed with verbal agreement. It could then be that there is an intrinsic incompatibility between the property of being an anaphor and the property of being construed with agreement, an incompatibility which could turn out to be more fundamental than current approaches would suggest.

The first case to be considered involves different classes of psychological verbs in Italian.

(12) a Loro amano lei
'They love her'
b A loro piace lei
'To them pleases her'

The verb agrees with the preverbal experiencer in (12a) and with the postverbal theme in (12b), which receives nominative case.

There are reasons to believe that the dative experiencer in (12b) can be in subject position: it has subject-like properties with respect to the theory of bounding, the theory of control, etc. (cf. Belletti & Rizzi 1988, Perlmutter 1983). Now, the experiencer can bind an anaphoric theme in the first case, but not in the second:

(13) a Loro amano se stessi
'They love themselves'
b * A loro piacciono se stessi
'To them please thenselves'

An even more minimal pair is offered by the following cases:

(14) a A me importa solo di loro
'To me matters only of them'
b A me interessano solo loro
'To me matter only they'

Importare takes a dative experiencer and a genitive theme, and *interessare* takes a dative experiencer and a nominative theme construed with agreement, like *piacere*. Again, the theme can be an anaphor in the first case, but not in the second:

(15) a A loro importa solo di se stessi
'To them matters only of themselves'
b * A loro interessano solo se stessi
'To them interest only themselves'

The well-formedness of (15a) is important, in that it shows that the dative experiencer can function as the binder of an anaphor. What rules out (13b)-(15b)? Not the Binding Principle, as there is a binder available in the same simple clause. ECP cannot be relevant either, as the postverbal position, lexically governed by the verb, is a possible extraction site:

(14) I libri che a Gianni sono piaciuti di più...
'The books that to Gianni pleased most ...'

Of course, the property singling out (13b)-(15b) is that only in these examples is the anaphor construed with ageement. We thus have a case of anaphor-agreement effect not (immediately) reducible to the Binding Principle or to the ECP.

This is the clause-internal equivalent of a well-known case involving long-distance anaphors in Icelandic (Anderson 1981, Maling 1982). Icelandic allows an anaphor in object position of a subjunctive clause to be bound by a superordinate subject; this option does not exist if the anaphor is the nominative subject construed with agreement in the subjuctive clause (examples from Maling 1982):

(15) a Jón$_i$ segir að Maria elski sig$_i$
'Jon says that Maria love+SUB SELF'
b * Jón segir að sig$_i$ elski Maria
'Jon says that SELF love+SUB Maria'

That the crucial discriminating factor is not the subject/non-subiect status, but the presence or lack of construal with agreement is shown by the following: if the verb selects a quirky (non nominative) case for the subject and the latter does not trigger agreement , then a long distance anaphor in subject position becomes possible:

(16) Hún$_i$ sagdi að sig$_i$ vantadi peninga
'She said that SELF+ACC lacked+SUB money'

Moreover, verbs with a quirky subject and a nominative object construed with agreement do not allow the long distance anaphor to appear in object position; if the object is prepositional and not construed with agreement, the long distance anaphor can appear:

(17) a *Sigga$_i$ telur að mér líki sig$_i$
'Sigga thinks that to me likes+SUB SELF+NOM'
b Sigga$_i$ telur að mér líki vel vid sig$_i$
'Sigga thinks that to me likes+SUB with SELF'

Why are (15a)-(17a) ill-formed? An ECP based approach to (15a) would not generalize to (17a), and would not seem to be able to distinguish (15a) and (16).Anderson and Maling both suggest that these structures may be

simply excluded by assuming that the morphological paradigm of the long distance reflexive lacks a nominative form. But why should exactly the same gap exist in Italian (as well as in many other languages, no doubt)? Moreover, Italian provides clear evidence against the gap in the paradigm hypothesis: the same facts discussed before arise when first or second person reflexives are involved:

(18) a A voi importa solo di voi stessi
'To you+PLUR matters only of yourselves'
b * A voi interessate solo voi stessi
'To you+PLUR interest only yourselves'

But first and second person stressed reflexives are formed by simply combining pronouns with the intensifier *stesso*.

As nominative pronouns exist, there is no doubt that nominative reflexives of second and third person are morphologically possible, and the gap in the paradigm approach cannot be appealed to for these cases. The anaphor agreement effect thus seems to involve a deeper syntactic incompatibility than just the lack of a form in the case paradigm.[5]

3. *Disjoint reference in subjunctive clauses.*

A well-known property of subjunctive clauses in Romance is the fact that an overt or null pronominal subject cannot be coreferential to the immediately superordinate subjects:

(19) * Gianni$_i$ vuole che (lui$_i$) scriva un libro
'Gianni wants that he write a book'

We will now sketch out an approach to this fact and show its relevance for the anaphor agreement effect. A natural analysis is the one proposed by Picallo (1985) and further elaborated by many other linguists:[6] if the governing category of the subject of a subjunctive clause extends to the main clause, the disjoint reference effect simply is a case of application of principle B of the Binding Theory. This approach is made plausible by the observation that the effect is limited to adjacent clauses: if the antecedent is not subjacent to the pronominal subject, coreference is possible:

(20) Gianni$_i$ spera che Maria voglia che (lui$_i$) scriva un libro
'Gianni hopes that Maria want that he write a book'

This is exactly what is expected if the extension of the governing category of the subject solely involves the immediately superordinate clause. So, in (20) the GC of *lui* would be the intermediate clause *Maria voglia...*, in which

[5] The same conclusion is reached, on the basis of different considerations, in Everaert (1988). This paper proposes a different approach to the whole problem, based on an extension of Kayne's Connectedness Condition, an approach that we will not attempt to assess here.

[6] There is now an extensive literature on the topic. For different approaches cf. Jakubowicz (1985), Johnson (1985), Kempchinsky (1985), Raposo (1985), Ruwet (1984), Suñer & Padilla-Rivera (1984).

the pronoun would be free, as demanded by principle B. Nothing would exclude coreference with the main subject.

The technical question now arises of how this extension of governing category is to be achieved. Many current approaches try to relate the disjoint reference effect to the dependent, anaphoric nature of subjunctive. It is a fact that subjunctive subordinates manifest stricter «sequence of tense» restrictions than indicative subordinates. For instance, in standard Italian the sequence past - present is allowed with indicative, but not with subjunctive:

(21) a Gianni sapeva/diceva che io lavoravo/lavoro con voi
'Gianni knew/said that I worked/work with you'
b Gianni voleva/credeva che io lavorassi/*lavori con voi
'Gianni wanted/believed that I worked/work with you'

The idea that subjunctive is an anaphoric tense is elaborated by Picallo (*op. cit.*), Raposo (1985) and others. I will assume that this approach is basically correct. But why should the anaphoric nature of the tense determine an extension of the governing category of the subject? The approach to Binding of Chomsky (1986) offers a simple solution. Suppose that we revise the definition of Governing Category given in (8) by adding the underscored part:

(22) Governing Category: Z is the governing category for X iff Z is the minimal category with a subject containing X, a governor G for X, and where the binding requirements of X *and G* are satisfiable

i.e., we are now demanding that not only the binding requirements of the element to which a GC is to be assigned, but also the binding requirements of its governor be satisfiable in principle in the domain under consideration. If this condition is not met, the domain in question does not qualify as a governing category. This modification is inconsequential in most cases: ordinary governors are lexical heads or referential tenses, entities which are assimilated to referential expressions as far as the theory of binding is concerned. As the binding requirement of a referential expression is that it must be free, this requirement is trivially satisfiable in any domain, hence the added requirement never affects the assignment of GC in such cases. Things change radically if the governor is anaphoric. To illustrate, consider the assignment of GC to the pronominal subject of an indicative and a subjunctive embedded clause:

(23) a Gianni dice che (lui) T+REF scriverà un libro
'Gianni says that he will write a book'
b Gianni vuole che (lui) T+ANAPH scriva un libro
'Gianni wants that he write a book'

Recall that coreference is possible in (a) and excluded in (b). In (a) the GC of the pronominal subject is the embedded clause, the minimal category with a subject which contains the pronoun, its governor, the (Infl containing the) referential tense and where the binding requirements of the pronoun and of the referential tense are satisfiable (both must be free, and this requirement is obviously satisfiable in the embedded clause). On the contrary, the embed-

ded clause does not qualify as the GC of the pronominal subject in (23 b) under definition (22): it is the minimal category with a subject containing the pronoun and its governor, the (Infl containing the) anaphoric subjunctive tense, but the binding requirements of the latter cannot be satisfied within the embedded clause: as an anaphoric tense, its binding requirements are only satisfiable in the next higher clause, which contains the required binder, a tense. We thus simply obtain the result that the GC of the pronominal subject in (23a) is the main clause, whence the disjoint reference effect.

Under these assumptions, the familiar problem arises, as Picallo pointed out. If the governing category of the subject is always extended to the next higher clause, an anaphoric subject should be permissible. This is not the case:

(24) * Gianni vuole che se stesso scriva un libro
'Gianni wants that himself write a book'

We thus have a new instance of the anaphor agreement effect.

4. *On the theoretical status of the effect.*

Why should anaphors be intrinsically incompatible with agreement?

Picallo (*op. cit.*) notices the problem raised by (24) and proposes the following: if agreement is a kind of pronominal element, as is often assumed (cf. Chomsky 1981), and if it forms a chain with the element it is construed with, the construal of an anaphor with agreement could be barred by a clash in the specification of the two elements belonging to the same chain with respect to the features *anaphoric* and *pronominal*. If we try to implement Picallo's suggestion, we should be careful not to formulate the relevant consistency condition in too strict a manner, as the following chains must be ruled in:

(25) a *There* came a *man*
b Pourquoi *Jean* est-*il* parti?
c Pourquoi *lui* est-*il* parti?
d *John* was fired *t*
e *He* was fired *t*
f John expected *himself* to be fired *t*

(25a) and (25b) illustrate a chain involving a pronominal and an R-expression (25b is a case of Complex Inversion in French, on which see Kayne 1984: ch. 10, Rizzi & Roberts 1989); the chain in (c) involves two pronominals, the ones in (d,e,f) involve, respectively, an R-expression and an anaphor, a pronominal and an anaphor, an anaphor and another anaphor (under the standard assumption that an NP trace is an anaphor). How could one bar the anaphor agreement configuration while allowing all these other combinations? One could procede along the following lines. It is clear that R-expressions, pronominals and anaphors are ranked along a dimension of referential autonomy: R-expressions always are referentially autonomous, pronouns can be referentially autonomous, anaphors never are referentially autonomous. One

could then imagine that the argument, the contentive element of a chain, must be the most referentially autonomous element in the chain (or, more precisely, there cannot be a non argument in the chain which is higher in the referential autonomy hierarchy than the argument). If agreement is pronominal, this principle would suffice to rule out the anaphor agreement construal: in structures like (15b), (24), etc. the anaphor, an argument, should be in chain with a non argumental pronominal, the Agr specification, thus violating the proposed constraint. All the cases of (25) would still be ruled in, as in the relevant chains the argument never is lower than the non-argument with respect to the referential autonomy hierarchy. It is easy to verify that this approach covers all the cases that have been considered so far.

While the proposed condition on chains is not implausible and may have desirable empirical consequences in other domains, there is another, more sophisticated way of deriving the anaphor agreement effect that is worth exploring. If agreement has pronoun-like properties, anaphor-agreement configurations would manifest in a local construal two elements having opposite binding requirements: the anaphor should be bound, but the pronominal should be free; such contradictory requirements could not be simultaneously met in the same structure. So, the anaphor-agreement effect could have a theoretical status analogous to the PRO Theorem, barring the pronominal anaphor PRO from governed contexts. To implement this idea, we must first of all notice that the chain-internal binding relations must be irrelevant, i.e., the ill-formedness of (2b) etc. cannot be due to the fact that the pronominal agreement is locally bound by the subject. No subject agreement construal would be possible if the local binding of the pronominal agreement by the subject sufficed to trigger a principle B violation. In fact, it is reasonable to assume that the binding principles solely concern genuine referential dependencies between different arguments. As a chain is a discontinuous manifestation of a single argument, and the only conceivable referential dependency between elements of the same chain is identity, it is natural to assume that the binding principles do not apply chain internally (possibly, with the exception of principle A), and only affect chain external relations. With this in mind, let us reconsider cases like the following:

(26) * A loro$_i$ Agr$_i$ piacciono se stessi$_i$
'To them please themselves'

Here the anaphor must be bound, but the pronominal agreement must be free. So, there is no possible indexation of the structure that can simultaneously meet these contradictory requirements: if *loro* is coindexed with *se stessi*, the anaphor is bound, but also the pronominal agreement, necessarily coindexed with *se stessi*, is locally bound by *loro*, and Principle B is violated; if *loro* and *se stessi* are contraindexed, principle B is met but principle A is violated. So, this case is straightforwardly ruled out by the Binding Principle.

A more complex case is the following:

(27) * They$_i$ think that each other$_i$ Agr$_i$ will win

To exclude (27), we must resort to our extension of Chomsky's binding theory motivated in section 3, and interpret the assignment of the governing category (22) as an algorithm proceeding as follows: we first try the lowest maximal projection with a subject (Z) containing the element to be checked (X) and its governor (G) and we ask: if Z were the GC of X and G, would their binding requirements be virtually satisfiable? or, more precisely, following Chomsky (1986), is there a virtual indexation of the different elements which simultaneously satisfies the binding requirements of X and G with Z as their governing category? If the answer is yes, we assing Z as the GC of X and we check whether its binding requirements are actually satisfield. If the answer is no, we move to the next maximal projection with a subject and we repeat the procedure. If at some point a governing category is assigned to X, we proceed to check whether its binding requirements are actually satisfied. If no governing category is assigned to X and X is governed, the structure is ruled out: as Chomsky (1986) notices, the Binding Theory must require that a governed element be assigned a GC, in order to rule out the folloving:

(28) a * Pictures of each other are here
b * Pictures of PRO are here

In these structures there is no possible antecedent for *each other* or PRO, hence their binding conditions *qua* anaphors are not satisfiable, and no GC is assigned. If it was licit to leave a governed element whithout a GC, these structures could not be excluded as Binding Theory violations. So, the assigment of a GC to a governed element must be compulsory.

Under the algorithmic interpretation of the assignment of GC that we have sketched out, the situation is similar in (27): The lower clause does not qualify as a GC for the anaphor because its binding requirements are not satisfiable, there being no virtual antecedent; the higher clause does not qualify either: there is no virtual indexation simultaneously satisfying the contradictory binding requirements of the anaphor and of its (coindexed) pronominal governing Agr if the main clause is taken as their GC.

So, no GC is assigned to the governed anaphor, and the structure is ruled out on a par with (28). The subjunctive case can be treated in the same manner: the presence of the anaphoric tense with the pronominal agreement within Infl does not affect things, and (24) can be excluded on a par with (28). On the other hand, the presence of the anaphoric tense within the complex governor of the subject remains crucial to account for the disjoint reference effect of (23b), as before.[7]

[7] Whether Agr and T are base generated under the same node Infl or whether they are separate projections that are derivationally merged under head to head movement, as in many recent proposals, is immaterial in the present context.

The Icelandic case can be made to follow if we assume that also the marked assignment of a larger governing category to long distance anaphors follows the same procedure: a given domain Z qualifies as the GC of an element X only if there is a virtual indexation which satisfies the binding requirements of X and its governor G for Z = GC of X and G. Whatever device we choose to characterize the enlarged GC of long distance anaphors (cf. for instance the discussion of Manzini & Wexler 1987), it is clear that neither the embedded clause nor the main clause will qualify as the GC of the anaphor in the ungrammatical examples: in the embedded clause of (15b) there is no virtual indexation satisfying the requirement of the anaphor, in the embedded clause of (17a) and in the main clause in all the cases all indexations satisfying the requirement of the anaphor will violate the requirement of the pronominal, and vice-versa. If no GC can be assigned to the governed anaphor, the structure is ruled out as before.

5. *Conclusion.*

Anaphors manifest a fundamental incompatibility with the local construal with agreement. This incompatibility is stronger than current accounts in terms of principle A or the ECP would lead one to expect. Analyses postulating a (semi-)accidental gap in the morphological paradigm of the anaphor are conceptually and empirically too weak. We have proposed two possible interpretations of the effect (not necessarily incompatible), which both depend on the assumption that clausal agreement has a pronominal nature. The first attributes the effect to a well-formedness condition on chains which requires the argument to be the most referentially autonomous element in the chain. The second, inspired by the PRO Theorem, looks at the anaphor agreement construal as a kind of discontinuous pronominal anaphor. This configuration is ruled out through a minor extension of the definition of governing category of Chomsky (1986), an extension independently motivated in part by the analysis of the surprising disjoint reference effects manifested by the subject position in subjunctive clauses.

Appendix.

Comparative evidence brought to light in recent work bears on the issues addressed in this paper in important ways. Huang (1982) shows that the sentential paradigm and the NP paradigm are fully parallel in Mandarine Chinese. In object position, the anaphor *ziji* and the (coreferential) pronominal *ta* are in complementary distribution, as in English:

(29) a Zhangsan$_i$ kanjian-le ziji$_i$
'Z. see+ASP SELF'
b * Zhangsan$_i$ kanjian-le ta$_i$
'Z. see+ASP him'
(30) a * Zhangsan$_i$ shuo [ni kanjian-le ziji$_i$]
'Z. said you see+ASP SELF'

b Zhangsan$_i$ shuo [ni kanjian-le ta$_i$]
'Z. said you see+ASP him'

The specifier position of the NP allows both the anaphor and the coreferential pronoun:

(31) a Zhangsan$_i$ kanjian-le [ziji$_i$ de shu]
'Z. see+ASP SELF's books'
b Zhangsan$_i$ kanjian-le [ta$_i$ de shu]
'Z. see+ASP his book'

Also the subject position of an embedded clause allows both the anaphor and the coreferential pronoun in sharp contrast with English:

(32) a Zangsan$_i$ shuo [ziji$_i$ hui lai]
'Z. said SELF will come'
b Zangsan shuo [ta$_i$ hui lai]
'Z. said he will come'

In fact, the fully parallel behavior of (31) and (32) is straightforwardly predicted by the approach to binding of Chomsky (1986): in (31a)-(32a) the lower clause or NP cannot qualify as the GC of the anaphor, as there is no possible binder for it, hence the GC is the main clause, in which the anaphor is properly bound. In (31b)-(32b) the binding requirement of the pronominal (being free) is of course satisfiable within the lower clause or NP, which therefore qualifies as its GC. The pronoun is thus allowed to corefer to the main subject, outside its GC. But why is the equivalent of (32a) excluded in English? We have proposed that this structure is not directly excluded by principle A of the binding theory, but by the interference of a disturbing factor, the anaphor-agreement effect (which is in turn amenable to deeper theoretical reasons, as we have seen). We therefore expect that the disturbing factor will not be found in Chinese, which lacks the Agr specification completely. Due to the absence of agreement, the Chinese paradigm reflects the effect of the Binding Theory more transparently than English and other inflected languages.[8]

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[8] Cf. Aoun (1985), Chomsky (1986) for different approaches to the difference between English and Chinese with respect to the binding properties of embedded subjects.

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