The morphological basis of anaphora[1]

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1. CLASSICAL BINDING THEORY
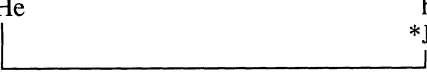
Chomsky (1981: 188, 220; 1986a: 166) formulates the Binding Theory essentially as in (1).
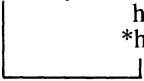
(1) (A) An anaphor must be LOCALLY BOUND
    (B) A pronoun must not be LOCALLY BOUND
    (C) An R-expression must not be bound

The notion 'bound' is defined as 'c-commanded by a co-referential element'. As for the notion 'locally', that of Chomsky (1986a) differs somewhat from that of Chomsky (1981), and much recent literature addresses the issue, especially in connection with the phenomenon of 'Long Distance Anaphora'. (For relevant discussion see Burzio (1989c and references therein) and also Levinson, this volume.) For most of our purposes, it will be sufficient to assume Chomsky's (1981: 188) 'within its [i.e. the anaphor's/pronoun's] governing category', or even the formally simpler (though empirically less adequate) 'within the same minimal clause'. The empirical effects of the Binding Theory in (1) can then be illustrated as in (2a, b, c) – instances of local binding, non-local binding, and no binding respectively. In each case the connecting line expresses intended co-reference, much as co-indexation in later examples. Each ungrammatical case is accounted for by the principle indicated in parentheses.

(2) (a) John is ashamed of himself
         He   *him   (B)
         |_____ *John   (C)
         |_____|
                 local binding

(b) John said [that Mary is ashamed of *himself]   (A)
     He   him
                                            *John   (C)

                    non-local binding

(c) The people [who know him] say that John is unhappy
                                     he
                                    *himself   (A)

                    no binding

The version of the Binding Theory in (1) has a significant degree of empirical adequacy for English and other languages, and succeeds at the explanatory level as well in reducing superficially complex sets of facts to few and relatively simple principles, built out of a small vocabulary of analytical notions such as 'locally' and 'bound'. Because of these successes, it has proved an extremely useful tool of analysis for nearly a decade. Yet the very facts it helped uncover have in turn brought to light its limitations – a pattern in a sense paradoxical, but characteristic of progress.

    In this article, we will consider a certain number of difficulties both empirical and conceptual that arise for the formulation in (1), and suggest ways to overcome them. Among the empirical difficulties is the fact that in many languages one finds locally bound pronouns – an apparent falsification of (1B), and that in some languages one finds bound R-expressions – an apparent falsification of (1C). As for the conceptual difficulties, one is the absence of explicit definitions for each of the three categories of anaphors, pronouns and R-expressions – an absence which tends to void the principles of their empirical content. To state this problem differently, once one presumes that the system of mental representation is endowed with the three principles in (1) or any similar system, one must also presume that it is provided with an algorithm or procedure that enables it to determine for each NP whether it is an anaphor, a pronoun or an R-expression. Given the crucial role that such a procedure or set of definitions plays in the theory, it is noteworthy that the issue has received little consideration in the past. The reason for this silence – we speculate – is the fact that English, which is characteristically privileged as an empirical basis, provides a straightforward way to identify anaphors by the presence of the morpheme *self* in reflexives and by the overtly reciprocal character of the expression *each other*.[2] Discussions of principle (1A) have thus avoided vacuity when applied to

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[2] Our discussion here will not be concerned with the exact status of NP-traces, traditionally also regarded as anaphors. In Chomsky (1986b: 744 ff.), however, it is suggested that local binding of traces is to be derived from the ECP, hence no longer attributed to the Binding Theory.

English because theoreticians have implicitly agreed on a certain definition of anaphor, based on the overt presence of certain elements. While this implicit agreement may do for English, we will see that it will not do for other languages, in which the distinction between anaphors and pronouns is far from transparent. In contrast, we will assume, for present purposes, that R(eferential)-expressions can always be straightforwardly identified, thus leaving only the distinction between pronouns and anaphors as problematic.[3]

A second difficulty of a conceptual nature arises from the apparently arbitrary association between categories of NPs and conditions. That is, putting aside the important question of the nature of, and ultimate explanation for conditions such as locality and binding; granting that they may combine to yield: locally-bound, not-locally-bound, and not-bound; and granting furthermore that there are three different categories of NPs: anaphors, pronouns, and R-expressions, the question is why the former should be paired with the latter exactly as in (1). These are the issues we will address in the ensuing sections, summarized as in (3).

(3) (a) Empirical issues:
    (i) Locally bound pronouns
    (ii) Bound R-expressions
  (b) Conceptual issues:
    (i) Definitions of anaphor/pronoun
    (ii) Unexplained association of each condition with each class of NPs

2. ROMANCE PRONOUNS

2.1. *First and second person elements*

We begin by considering the first of the conceptual issues, raised by sentences like (4a, b) in the Romance languages.

(4) *Italian*
  (a) Io *mi* vedo
    I me see
    'I see myself'
  (b) Tu pensi solo a *te*
    you think only to you
    'You only think about yourself'

The italicized elements in (4a, b) correspond to reflexives in their English

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[3] The point, however, is not to be taken for granted. For instance, it is well known that 'epithets' behave differently from R-expressions (see, e.g. Lasnik (1989: 149 ff.), yet to our knowledge, no explicit procedure is available to make the distinction on independent grounds.

translations, and yet are homophonous, respectively, with the elements in (5a, b) which are most probably pronouns, like their English counterparts.

(5) *Italian*
    (a) Gianni *mi* vede
          Gianni me sees
          'Gianni sees me'
    (b) Maria pensa solo a *te*
          Maria thinks only to you
          'Maria only thinks about you'

Here, the traditional view, entering into much of generative work as well, has been that the italicized elements in (4), and more generally all first and second person elements in the Romance languages are ambiguous, being either pronouns, as in (5), or reflexives, as in (4).[4] Yet such a claim is based on little more than classificatory convenience: the elements in (4) have been classified as reflexive because their occurrence is parallel to that of the reflexives of (6).

(6) *Italian*
    (a) Gianni *si* vede
          Gianni self sees
          'Gianni sees himself'
    (b) Gianni pensa solo a *sé*
          Gianni thinks only to self'
          'Gianni only thinks about himself'

While this kind of classification is legitimate for the purposes of traditional grammar, it will not do for the purposes of modern linguistics. That is, unlike descriptive accounts of language, theoretical accounts incorporating (1) may not use the parallelism between (4) and (6) to draw the conclusion that *mi*, *te* of the former are reflexives (= anaphors), like *si*, *sé* of the latter. The reason is that doing so would be equivalent to defining anaphors as 'elements that occur locally bound'. But that definition, conjoined with principle (1A), would yield a tautology rather than a theory, for if an anaphor is DEFINED as an element that occurs locally bound, then of course it will always be true that it is.[5] What (1A) requires, rather, is a definition of anaphor which is

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[4] An equivalent way of putting it, suggested by a *JL* reviewer, would be that the difference between reflexives and pronouns is neutralized in the first and second person.

[5] As Samuel Epstein (personal communication) points out, the hypothesis rejected in the text must be distinguished from a hypothesis that defined an anaphor as a NP which 'is' locally bound, which would not be tautological but false, given (i).
    (i)   *John$_i$ saw him$_i$
In (i), *him* is locally bound, hence meeting the hypothetical definition of anaphor, and in turn satisfying principle A, which would then falsely predict grammaticality. The text hypothesis differs, since it envisages a definition of anaphor as an element which does IN FACT occur locally bound, as implicit in the traditional view of Romance reflexives. *Him* of (i) does not meet the latter definition since it DOES NOT occur locally bound ((i) not being a sentence), so that the text hypothesis is indeed tautological rather than false.

independent of the element's behaviour under binding, such as the morphologically-based one we suggested was operative for English, which however is not applicable to (4).

The elements in (4) have been regarded as reflexives presumably also because, when they are clitics, they select the auxiliary *essere* 'be', like reflexives, and unlike pronouns, as shown by (7).

(7) *Italian*
    (a) Gianni *si* è visto
           Gianni self is seen
           'Gianni has seen himself'
    (b) Io *mi* sono visto
           I me am   seen
           'I have seen myself'
    (c) Gianni *mi* ha visto
           Gianni me has seen
           'Gianni has seen me'

But just like the parallelism of (4)–(6), the one of (7a, b) also fails to support the conclusion that the elements of (4) are reflexives. The reason here is that it is not at all necessary to suppose that the auxiliary *essere* is determined by the presence of a reflexive. One may simply suppose, in line with Burzio (1986: 1.7), that the factor determining the selection of *essere* is the presence of a certain co-reference relation. On that view, it is immaterial whether the element involved in that relation is a pronoun or a reflexive.

Beside lacking proper motivation, the traditional view of first and second person elements is also insufficient to bring the Romance facts into compliance with (1) above. For in cases like (8), it is a third, rather than a first or second person element that occurs locally bound.

(8) (a) *French* (Zribi-Hertz, 1980)
          Victor$_i$ a   honte de *lui*$_i$
          Victor has shame of him
          'Victor is ashamed of himself'
(8) (b) *Italian* (Kuno & Tonfoni, 1987)
          (?) Ho   parlato a Maria$_i$ di lei$_i$
              (I)-have spoken to Maria of her
              'I spoke to Maria about herself'
(8) (c) *Piedmontese*
          Giuanin$_i$ a parla   sempre d' *chiel*$_i$
          Giuanin CL-speak always of him
          'Giuanin always talks about himself'

In order to preserve (1 B) in the light of (8), one would have to extend the traditional view to third person pronouns, regarding them too as potentially

reflexive, as in fact proposed in Ronat (1982).[6] We will take a rather different position, however, and argue that, besides being unsupported, the traditional view is in fact incorrect, since the elements in (4) (and (7b)), as well as those in (8), are indeed pronouns, following on this point Pica (1984).

2.2. *The feature content of reflexives*

To search for a criterion that may distinguish anaphors from pronouns, we consider, as a representative of the Romance languages, the system of Italian, as in (9). The table distinguishes (accusative) objects (= 9 a) from possessives (= 9 b). The horizontal lines give a classification based on person, gender and number of the referent. The 'yes' and 'no' columns distinguish the elements that may occur locally bound (yes) from those that may occur not locally bound (no). Lower case indicates clitic status, and upper case non-clitics. The curly brackets will be discussed below.

(9) *Italian*

Locally bound	(a) OBJECTS				(b) POSSESSIVES	
	No		Yes		No	Yes
Singular						
1	ME	mi	ME	mi	MIO	MIO
2	TE	ti	TE	ti	TUO	TUO
3m	LUI	lo	{SÉ} LUI	{si}	SUO	{PROPRIO} SUO
3f	LEI	la	{SÉ} LEI	{si}	SUO	{PROPRIO} SUO
Plural						
1	NOI	ci	NOI	ci	NOSTRO	NOSTRO
2	VOI	vi	VOI	vi	VOSTRO	VOSTRO
3m	LORO	li	{SÉ} LORO	{si}	LORO	{PROPRIO} LORO
3f	LORO	le	{SÉ} LORO	{si}	LORO	{PROPRIO} LORO

Given the facts of (9), partially illustrated in (4)–(8), it is obvious that if the formulation in (1) (B in particular) is to be maintained, it should turn out that all and only the elements under 'yes' are anaphors. But our claim is that

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[6] A *JL* reviewer suggests the hypothesis that PPs may constitute binding domains in the cases in (8). This would indeed exclude the anaphor and allow the pronoun given the BT in (1). However, it is clear that this is not the correct generalization, since the phenomenon in (8) extends to cases in which no PP is involved, like (i), from Zribi-Hertz (1980) (and (i) of fn. 8).

(i) Victor$_i$ n'aime   que lui$_i$
     Victor not-loves but him
     'Victor only loves himself'

Furthermore, the phenomenon does not extend to all cases in which a PP is involved, such as (18 b) below. The correct generalization is expressed, rather, by the thesis of Section 3 below.

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this is not true, for, while there is no plausible definition to that effect, there is one which has the rather different effect of selecting all and only the elements in curly brackets in (9). That definition is given in (10).

(10) An NP with no features is an Anaphor

The definition in (10) is *a priori* plausible because it explains the referentially dependent character of anaphors. That is, it succeeds in linking morphological properties to binding properties. So, assuming that the ability to refer depends on morphological content, lack of such content will imply lack of independent reference and hence – naturally – referential dependence. We now consider the reasons for supposing that all and only the elements in curly brackets in (10) are featureless.

We first note that all and only those elements are uninflected, that is to say, are invariant, for both gender and number. We take this to mean that they actually lack those features, as seems natural.[7] But in contrast to gender and number, these elements seem to be specified as third person in (9). This classification is motivated by occurrence of these elements as in (11a), parallel to (11b).

(11) *Italian*
    (a) Gianni$_i$ parla sempre di sé$_i$
           Gianni talks always of self
           'Gianni always talks about himself'
    (b) Gianni$_i$ dice che Maria parla sempre di lui$_i$
           Gianni says that Maria talks always of him
           'Gianni$_i$ says that Maria always talks about him'

In (11a) the element *sé* occurs with a third person antecedent, just like third person pronoun *lui* in (11b), suggesting that indeed, like the latter, it too must be third person. The assumption implicit in this conclusion is that co-referential elements, or at least elements that enter into a binding relation, agree, in the sense of having the same morphological features. That assumption and the relevant notion of agreement, are given in (12).

(12) (a) If α binds β, then α agrees with β
      (b) Agreement $=_{\text{def}}$ α agrees with β iff α and β have identical Φ-features

But we note now that (12) cannot be quite correct, at least with respect to gender and number, if we are right in supposing that *sé* of (11a) is unlike *Gianni* in lacking those features. We will argue further that it cannot be correct for person either. The reason is that the elements in curly brackets in (10) do NOT mirror the behaviour of third person pronouns under all circumstances. Thus, consider the contrast between (13) and (14).

[7] It is not clear, however, what predictions this approach may make for empty categories. See Burzio (1989a, Appendix 6).

(13) (a)   Qui si$_i$ parla sempre di sé$_i$
       here SI talks always of self
       'Here one always talks about oneself'
  (b)   Sarebbe   presuntuoso [PRO$_i$ parlare sempre di sé$_i$]
       (it)-would-be presumptuous   to-talk always of self
       'It would be presumptuous to always talk about oneself'

(14) (a)   *Qui si$_i$ dice che Maria parla sempre di lui$_i$/loro$_i$
       here SI says that Maria talks always of him them
       'Here one says that Maria always talks about him /them'
  (b)   *É   presuntuoso [PRO$_i$ dire   che Maria parla di lui$_i$/loro$_i$]
       (it)-is presumptuous   to say that Maria talks of him them
       'It is presumptuous to say that M. talks about him/them'

In (13a, b), sé has an 'impersonal' element as its antecedent: impersonal si
and 'arbitrary' PRO respectively. This possibility is an exclusive charac-
teristic of the elements in curly brackets in (9). The other elements on the
'third person' lines in (9) cannot so occur, as shown in (14). The same
divergence is illustrated for possessives in (15).

(15)   Qui si$_i$ parla sempre dei   propri$_i$/*suoi$_i$/*loro$_i$ figli
      here SI talks always of-the own   his   their children
      'Here one always talks about one's own children'

The facts we have just reviewed can be abstractly summarized as in
(16a, b, c), where {self} stands for one of the elements in curly brackets in (9),
and binding obtains from left to right in each case.

(16) (a)   3rd... {self}   (cf. (11a))
  (b)   imp....{self}   (cf. (13), (15))
  (c)   *imp....3rd   (cf. (14), (15))

We can now see that (12) cannot be true, given (16). For, if it were, {self}
would indeed be third person in (16a); in turn the impersonal would have to
be third person too in (16b). But then (16c) ought to be grammatical,
contrary to fact. To resolve this paradox, (12) must therefore be relaxed. We
propose that the proper relaxation consists of adding a clause to (12b), so as
to allow pairings of 'any gender, any number' with 'no gender, no number',
as seems to be required by cases like (11a), as well as pairings of 'third
person' with 'no person'. We will refer to these 'odd' cases of agreement as
PSEUDO-AGREEMENT. The conditions thus defining agreement are now given in
(17), which supersedes (12b).

(17)   Agreement =$_{def}$ α agrees with β if:
  (a)   (Strict Agreement) α and β have identical Φ-features, or
  (b)   (Pseudo-Agreement, Italian)
     (i) β has no gender, no number, no person, and
    (ii) α is third person

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The intuitive content of (17b) is that third person is 'closer' to no person than either first or second (cf. Benveniste, 1966), and also that person markings have a higher relative weight than either gender or number, since a featureless β pseudo-agrees with an α of any number and any gender, but not with one which is first or second person.

The facts of (16) can now be accounted for by assuming that {*self*} is not only genderless and numberless, but personless as well, hence featureless. For (16a) would now be a case of pseudo-agreement; (16b) would also be well-formed under (17), and would in fact instantiate STRICT agreement, at least for person, if we take 'impersonals' to lack person, just as their name suggests.[8] As for (16c), under the personless characterisation of both reflexives and impersonals, it would appear to be just the symmetrical counterpart to (16a), hence not excluded by (17), unless further conditions were added to it, making it asymmetrical. The needed asymmetry turns out to be provided by the notion of binding, when naturally understood as 'referential dependence'. So, we suppose that whenever binding obtains, the bound element inherits its reference from the one that binds it. Then, the personless element in (16a) will inherit third person reference, while the one in (16c) will not, as it has no antecedent. Nonetheless, despite the lack of antecedents, impersonals are generally interpreted, and hence have some reference. As discussed in greater detail in Burzio (1989d), such reference however is not congruous with third person, being rather first person (see also Cinque (1988)). Thus, (16c) is ruled out – in a sense – still as a violation of (17).

We have argued then that the elements in curly brackets in (9) lack all three features of person, gender and number. They will therefore meet the definition of anaphor in (10). Since we anticipate no alternative definition of anaphor, we take (10) to be true, from which it will follow that all the cases in (4) and (8) are counterexamples to principle B of (1).

3. REFORMULATING THE BINDING THEORY

In order to attempt a reformulation of the Binding Theory, we must first examine the exact distribution of anaphors and pronouns in the languages under consideration. The first point to note is that the distribution is complementary. This is illustrated in (18).

(18) (a) *French*
$\qquad$ Victor$_i$ a $\quad$ honte de *soi_i/lui$_i$
$\qquad$ Victor has shame of $\;$ self him
$\qquad$ 'Victor is ashamed of himself'

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[8] This abstract morphological identity of reflexives and impersonals explains their frequent lexical identity. See Burzio (1989d).

    (b) *Italian*

Gianni$_i$ ha vergogna di *lui$_i$/sé$_i$

Gianni has shame   of himself

'Gianni is ashamed of himself'

    (c) *Italian*

Ho   parlato a Maria$_i$ di ?*sé$_i$/(?)lei$_i$

(I) have spoken to Maria of   self   her

'I have spoken to Maria about herself'

    (d) *Piedmontese*

Giuanin$_i$ a parla sempre d' *chiel$_i$*

Giuanin CL-talks always of him

'Giuanin always talks about him(self)'

In (18a), the anaphor *soi* is disallowed, and correspondingly the pronoun *lui* is allowed. In contrast to (18a), its Italian counterpart (18b) allows the anaphor, correspondingly disallowing the pronoun. In further contrast, the pronoun is semi-grammatical in (18c), which once again corresponds to the opposite status of the anaphor. As for (18d), as in many other Italian dialects, in Piedmontese the stressed form of the reflexive (corresponding to Italian *sé*) does not exist, and this corresponds to the stressed pronoun being possible without restriction.[9] Thus, despite significant differences among the languages under consideration, complementarity holds throughout, just as it does in English.

Given the complementarity, we obviously need only capture the distribution of either the pronouns or the anaphors – whichever is amenable to the more economical characterization, and can then regard the other set as the residue or 'elsewhere' case. As it turns out, it is the distribution of anaphors that yields the simpler characterization. For the cross-linguistic variation noted seems to be controlled by exactly two factors. One is the 'subject-orientation' of the anaphors in (18), that is to say the fact that such anaphors require a subject as their antecedent (unlike English-type reflexives). This will account for the contrast between (18b) and (18c). The other factor is the conditions on agreement, or 'pseudo-agreement. Thus, French differs from Italian in not allowing the reflexive to pseudo-agree with a third person antecedent, constraining it to impersonal antecedents, whence the contrast between (18a) and (19).[10]

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[9] With objects that can be cliticized, a reflexive clitic 'double' will obligatorily co-occur with
    a co-referential pronoun, as in (i).

    (i) Giuanin$_i$ a s$_i$ guarda mac chiel$_i$

        Giuanin CL self watches only him

        'Giuanin only looks at himself'

[10] Of course the pronoun (*lui*) is excluded in (19), just as in (14) above.

(19) *French*
    On_i a   honte de soi_i
    One has shame of self
    'One is ashamed of oneself'

Hence, agreement with third person implies agreement with impersonals as well, as in Italian (11a) vs. (13a), but not vice versa, as shown by French. This follows from the fact that, as we argued, impersonals are 'closer' in feature content to the featureless anaphors than third person elements are. The case of Piedmontese in (18d) can also be described in terms of pseudo-agreement. Taking this notion now a bit more abstractly for the sake of formalization, we may suppose that in this language agreement requirements are MOST restrictive, so that they are actually never met when a featureless anaphor is involved, not even when its antecedent is impersonal. The anaphor will then always be excluded, which is equivalent to non-existence. This characterization allows us to view French as intermediate between Italian and Piedmontese, apparently moving towards the latter, since – as noted in Ronat (1982), Pica (1984) – French *soi* behaved like Italian *sé* up to the sixteenth century.

    We must note that the foregoing discussion concerns stressed reflexives in particular, and that the unstressed (clitic) counterparts behave somewhat differently, allowing third person antecedents (but still to the exclusion of first and second) in all three languages considered (and fairly generally in all of Romance). The different choices for pseudo-agreement that we have discussed earlier must therefore be seen as operating in conjunction with a second factor, which we may describe as the marginalization of the stressed reflexives (in Romance). This process, which manifests itself in restricting pseudo-agreement to less and less 'costly' options, has had no effect in Italian; has been completed in Piedmontese and other dialects; and has reached an intermediate stage in modern French. For the clitics, which are not subject to the same 'marginalization', the more permissive options for pseudo-agreement are kept consistently available. The question of the exact reasons for the marginalization of stressed reflexives is an important one, but is beyond our goals here.[11]

    If one now considers a wider number of languages, and especially if one examines not only object reflexives, but possessives as well (though putting aside Italian *proprio*, for the moment), one finds that the range of possibilities for pseudo-agreement is even larger than our earlier discussion suggests. Thus, in Russian, one finds that the reflexives, which meet the morphological criterion of (10) above, can occur with all persons, though still excluding object antecedents. The difference between Romance and Russian with

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[11] Our intuition is in the sense of a systematic interdependence between referentiality and prosodic characteristics such as stress, which would cause referentially dependent elements to tend to be unstressed.

respect to use of the reflexives with first and second person antecedents appears to reflect a more general split between Eastern and Western Indo-European – old Indo-European having been like Russian and the Eastern languages (Meillet, 1973, 337 ff).[12] An intermediate case between Italian *sé* and French *soi* is that of Danish possessive reflexives, which are constrained to third person singular only (Pica, 1984). The case of total absence of reflexives, instantiated by Piedmontese non-clitics, finds many more attestations. So, languages like West Flemish and Old English lack reflexive objects (Everaert, 1986), while many languages including English and the Romance languages lack reflexive possessives. This wider spectrum of possibilities for pseudo-agreement is given in (20).

(20) [Zero features], pseudo-agrees with:
      (a) all
      (b) 3rd
      (c) 3rd sing
      (d) impersonals
      (e) nothing

In conjunction with the subject orientation of the anaphors in question, the possibilities in (20a–e) will give rise to the spectrum of cases in (21), in which the empty boxes indicate when the anaphor is possible. Since it appears that the complementarity of anaphors and pronouns continues to hold over this wider range of cases as it did over those in (18), the P's of (21) will represent the pattern of locally bound pronouns.

(21)

Local antecedent:	obj.	1st 2nd	3rd pl	3rd sg	imp.
(a) Russian, IE objects	P				
(b) Romance (= most of Western Indo-European) objects	P	P			
(c) Danish possessives	P	P	P		
(d) French stressed object *soi*	P	P	P	P	
(e) *NO REFLEXIVES*: West Flemish, OE objects; Piedmontese stressed objects; Mod. English possessives	P	P	P	P	P

The distribution of anaphors is thus controlled by three factors (beside binding): (i) subject orientation; (ii) range of possible pseudo-agreement; (iii)

[12] I am indebted to John Smith and Giuseppe Longobardi for some of these observations.

appropriate locality conditions. Note that the first two are not invoked by English reflexives (which we consider in 4.1 below): subject orientation for reasons which we will not examine here; pseudo-agreement because English reflexives overtly agree, rather than PSEUDO-agree. The complementarity of anaphors and pronouns will now follow if we suppose that, for a bound NP, an anaphor must be used if it can be (as determined by (i)–(iii) above) and that no further conditions exist on pronouns. The obligatoriness of anaphors up to availability will yield the 'principle B' effect. An analogous assumption that (bound) pronouns are obligatory up to availability will yield the 'principle C' effect. We are therefore proposing that the binding theory consists of the hierarchy of obligatory choices in (22), with (22a) at the top.

(22) *Hierarchy of choice for bound NPs*:
      (a)   anaphor (locality and other conditions required)
      (b)   pronoun
      (c)   R-expression

The system in (22) will yield the correct results for the cases in (4)–(8), (18)–(19), those schematically represented in (21), as well as for English, as is easy to verify for (2) above. Furthermore, it will predict that, just as unavailability of the anaphors licenses locally-bound pronouns, so unavailability of pronouns should license bound R-expressions. The latter prediction appears to be fulfilled for example by Japanese, which allows structures like (23).[13]

(23) *Japanese* (Kuno, 1988)
      Hanako$_i$ ga   Makiko ni   Hanako$_i$ no
      Hanako NOM Makiko DAT Hanako GEN
               atarasii kateikyoosi o   syookaisite kureta
               new   tutor   ACC introducing gave
      'Hanako$_i$ introduced Hanako$_i$'s new tutor to Makiko'

According to Kuno (1988: 32), 'Japanese lacks authentic personal pronouns'. We find it plausible to interpret the system of Japanese as being in effect ambiguous for availability of pronouns. Under (22), the negative side of the ambiguity will yield the bound R-expression of (23), whereas the positive side will require use of the pronoun, as in (24).[14]

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[13] Partially similar facts in Thai and Vietnamese are cited in Lasnik (1989: 9).

[14] A *JL* reviewer suggests there may not be any difference between the text proposal that Japanese 'pronouns' may or may not count as pronouns, and the alternative assumption that Japanese 'R-expressions' may or may not count as R-expressions, which would be compatible with (1). This would be quite true if one did not take the cited remarks of Kuno's seriously. However, we do. The proposed alternative would also not accommodate (25) below.

(24) *Japanese* (Kuno, 1988)

Hanako$_i$ ga   Makiko ni   kanozyo$_i$ no

Hanako NOM Makiko DAT her   GEN

            atarasii kateikyoosi o   syookaisite kureta

            new   tutor   ACC introducing gave

'Hanako$_i$ introduced her$_i$ new tutor to Makiko'

It is well known that, in contrast to (23) and (24), cases in which a pronoun binds an R-expression as in (25) are ungrammatical.

(25) *Japanese* (Kuno, 1988)

*Kare$_i$ ga   Hanako ni   Taroo$_i$ no

he   NOM Hanako DAT Taroo GEN

            atarasii kateikyoosi o   syookaisita

            new   tutor   ACC introduced

'He$_i$ introduced Taroo's$_i$ new tutor to Makiko'

Within the proposed system, this will follow simply from the fact that use of the pronoun eliminates the possibility – available in general – of taking the system of Japanese to be pronounless. (25) will thus violate (23), just like its English counterpart.

It is useful at this point to return to the formerly problematic issues in (3) above in the light of our discussion so far. It is clear that the two empirical problems, namely locally bound pronouns and bound R-expressions are adequately handled by (23). As for the conceptual problems, the first one, namely lack of definitions for 'anaphor' and 'pronoun', is also essentially resolved by (10) above, although a discussion of English reflexives is pending. It remains to provide a definition of pronoun. Note that, since we assumed at the outset that the definition of R-expression was sufficiently transparent, the class of pronouns will be automatically defined as the class of elements which are neither anaphors nor R-expressions. However, we can also define pronouns non-derivatively, regarding them as matrices of features, that is as items whose informational content is exhausted by some – non-null – set of morphological features, presumably those for which the element is overtly inflected. This will provide a derivative definition of R-expression as neither a pronoun nor an anaphor (modulo footnote 2). We are thus left with the second of the conceptual problems in (3 b), namely the apparent arbitrariness of the pattern of association between classes of NPs and conditions of occurrence. That problem seems to persist in a slightly different form under the formulation in (23). That is, here it is the hierarchical arrangement of (22) that seems arbitrary.[15] The arbitrariness disappears if we consider the

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[15] Furthermore, the restrictions on occurrence affect only anaphors. But, in a sense, this is implicit in the hierarchy. That is, the lower levels of the hierarchy can only be accessed if there are circumstances under which the top ones are excluded. Since a non-vacuous hierarchy of choice will necessarily have the restrictions at the top, the question of why anaphors should be associated, for example, with locality conditions is subsumed by the question in the text of why anaphors should be at the top of the hierarchy.

morphological or informational content of each class of elements. We have argued then that anaphors contain no morphological information, that pronouns contain only morphological features, whereas it seems obvious that R-expressions contain both features and further information, as schematically indicated in (26).

(26) (a) Anaphors: ——
    (b) Pronouns: features
    (c) R-expressions: features +

What (26) reveals is that the hierarchy of (22) is one of morphological specification, or rather UNDERspecification. In contrast to the arbitrariness of the formulation in (1), the formulation in (23) can thus be taken to reflect a single and rather natural principle of economy, as in (27).

(27) *Binding Theory = Morphological Economy*:
    A bound NP must be maximally underspecified

To summarize, we have argued that there is a certain type of reflexive, extensively attested across languages, which is not inflected for any of the morphological features of person, gender and number. This type of reflexive is instantiated by Italian *sé/si* and their counterparts in other Romance languages – all descendants of Latin *se*, which in turn traces its ancestry back to Indo-European *sw* (Meillet, 1973), along with analogous elements in Slavic and Germanic languages, though not in Modern English. Although reflexives of the English type are also rather common across languages, our discussion has concentrated on the former type so as to pursue the intuition that the lack of morphological information must be an essential characteristic of anaphors, since it in fact explains their 'dependent' behaviour, formerly only described.

We have further argued that the three principles of (1) must be abandoned, both because of their limited degree of explanatory power, and because of their lack of empirical adequacy. In particular, we have argued that, while two independent principles A and B will predict independently ranging distributions, the distribution of pronouns and anaphors is fundamentally complementary under widely different circumstances. We have analogously argued that, contrary to the predictions of two independent principles B and C, in the domain in which anaphors are excluded, there is also a fundamental complementarity between pronouns and R-expressions, the latter being allowed under binding to the exact extent that the former is not. This distribution calls for a hierarchy such as (22), which, unlike the three principles of (1) yields to further conceptual simplification, as in (27), hence overcoming both empirical and conceptual weaknesses at the same time.

The foregoing discussion has, however, ignored three obvious and potentially problematic questions: English-type reflexives; certain well-known overlaps in the distribution of anaphors and pronouns; and the 'loss'

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of the PRO-theorem entailed by (27). We address each of these in turn in the next section.

4. RESIDUAL QUESTIONS

4.1. *English reflexives*

Anaphoric forms like English *myself, himself,* etc. are apparently problematic for the above discussion because they do not seem to be morphologically more 'economical' than their pronominal counterparts *me, him,* etc. If anything, they seem to be morphologically richer and hence presumably more costly, since they systematically include a pronominal element, in addition to the morpheme *self.* The existence of this type of reflexives suggests the following partial reinterpretation of our proposal. We take the hierarchy in (26) to express REFERENTIAL rather than MORPHOLOGICAL underspecification. Correspondingly, we take the definition of anaphor in (10) to specify referential rather than morphological emptiness. Since English reflexives are uncontroversially unreferential, i.e. they appear to have no independent reference, they will meet such a definition. Analogously, the principle underlying the Binding Theory will be taken to be one of referential, rather than morphological economy, that is: 'A bound NP must be maximally underspecified REFERENTIALLY'. This reinterpretation does not imply rejection of our earlier discussion, but is in fact quite compatible with it. We can still maintain that a featureless NP is an anaphor, by maintaining a one-way implication relation between morphology and referentiality, in the sense that a NP which is morphologically empty is also empty referentially. This reestablishes the link between morphology and anaphoric status for the reflexives discussed in Section 2.2, but still fails to establish one for English-type reflexives. To overcome this problem, we consider that there is at least one other case in which – as with English reflexives – pronominal morphology associates with anaphoric rather than with pronominal behaviour. This is the case of Italian 'emphatic pronouns' (discussed in Burzio, 1986: 2.3), exemplified in (28).

(28) Gianni$_i$ ha detto che [Maria$_j$ l' ha fatto lei$_j$/*lui$_i$]
      Gianni has said that Maria it has done her/ him
      'Gianni$_i$ said that Maria$_j$ did it herself$_j$/*himself$_i$'

We propose to attribute their anaphoric behaviour to the fact that emphatic pronouns do not have independent reference, which in turn we attribute to their non-argumental status. The generalization now holding for anaphors is therefore lack of independent reference, which however can arise in two different ways: morphological underspecification, or lack of θ-role. The anaphoric behaviour of English reflexives would now follow from their morphology if we could suppose – as seems rather plausible – that the

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morpheme *self* rather than the pronominal element is the head of the NP, bearing the θ-role. The pronominal portion of *himself*, for example, would thus fail to have the independent reference of ordinary pronouns for the same reasons as Italian emphatic pronouns, namely lack of a θ-role. Both subparts of an English reflexive would then be predicted to be anaphoric: one because of lack of θ-role; the other, *self*, because of invariant morphology, whence the anaphoric character of the whole. Of course this view is still faced with the residual problem, which we must leave aside here, that anaphoric *self* is not completely uninflected, given plural *selves*.[16]

4.2 Distributional overlaps

In contrast to the cases we have discussed in Section 2 above, the literature provides a certain number of cases in which pronouns and anaphors overlap in distribution. Thus, consider for example (29), which involves a case of 'Long distance Anaphora' (LDA).

(29) *Icelandic* (Anderson, 1986)
Jón$_i$ segir [að María elski sig$_i$/hann$_j$]
Jón says that María loves (SUBJ) self/him
'Jón$_i$ says that María loves him$_i$'

It is obvious that, given independent principles A and B of (1), one could account for the overlap in (29) – or in fact for any overlap – by giving *ad-hoc* definitions of the two notions of locality. Thus, one could suppose that the local domain for the anaphor in (29) is the minimal indicative clause (indicatives block anaphora in Icelandic, unlike subjunctives), whereas the local domain for pronouns is, let us say, the same as in English. The real question, however, is not whether overlaps can be DESCRIBED under (1), as they obviously can, but rather whether they can also be EXPLAINED. For abolishing independent principles did not only describe the complementarity in another domain, but explained it as well. Plainly, it would not do to trade explanation in one domain for mere description in another. Yet, explanation is characteristically lacking in existing accounts of overlaps. Furthermore, an account of LDA based on manipulation of principle A, while maintaining a 'standard' principle B would be unsatisfactory even empirically. For consider that, in contrast to (29), the pronoun is excluded in (30).

(30) *Icelandic* (Anderson, 1986)
Jón$_i$ skipaði mér að raka sig$_i$/*hann$_i$
Jón ordered me that shave (INF) self/him
'Jón$_i$ ordered me to shave him$_i$'

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[16] Other languages have anaphors which are inflected only for number (e.g. Japanese *zibun*). Our characterization of anaphors as featureless must perhaps be relaxed to accommodate this case.

While a cursory inspection may suggest that LDA does not affect the distribution of pronouns (a view implicit in much of the literature), a more systematic one reveals the opposite: the phenomenon of LDA maintains the basic complementarity of anaphors and pronouns, EXCEPT for a small overlap. Thus, as argued in more detail in Burzio (1989c), the case in (29) appears to be at the edge of the spectrum of possible LDA, which makes the 'cost' of the anaphor sufficiently close to that of the generally less 'economical' pronoun. In contrast to the subjunctive of (29), the infinitival of (30) is more 'transparent' to the anaphoric relation, resulting in the exclusion of the pronoun as in the usual 'local' cases. If this interpretation is correct, the phenomenon of LDA illustrated in (29) actually lends support to our claim of non-independence of the principles for pronouns and anaphors, rather than being problematic.

Another well-known case of overlap is that of (31).[17]

(31) *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'

Both Huang (1983) and Chomsky (1986a) account for such cases by giving different notions of locality for principles A and B, in this case in a rather principled way, hence potentially achieving explanatory power. However, the phenomenon in (31) turns out not to be of sufficient cross-linguistic generality to warrant such a formulation of the Binding Theory, since a great many languages pattern rather as in (32), in which the pronoun is excluded.

(32) *Russian* (Timberlake, 1979)
On$_i$ uže   rasskazal mne o   svoei$_i$/*ego$_i$žizni
He already tell   me about self's/*his life
'He$_i$ had already told me about his$_i$ life'

In Burzio (1989c) I propose a different interpretation of (31), and argue that the anaphoric relations of (31), (32) are somewhat intermediate between local and long distance anaphora, so that the overlap in (31) is actually akin to that of (29). The difference between (31) and (32), systematic between two large groups of languages, I trace to a difference in the 'perspicuity' of the respective antecedents, related in turn to a difference in the system of verb inflection in the two groups of languages. Under the proposed account, the parallelism between English (33) below and (31), cited by both Huang and Chomsky, is only apparent, and simply due to the lack of reflexive possessives in English, which will allow the pronoun *they* in (33) by the usual default principle (of (22)).

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[17] In languages like Chinese, the same overlap that obtains with subjects of NPs, as in (31), obtains also with subjects of tensed clauses. See Burzio (1989c and references therein).

(33) They$_i$ read [their$_i$/each other's$_i$ books]

Yet a further type of overlap is given in (34), in which the element *lui-même* (according to Zribi-Hertz, 1980, and others) seems to mirror anaphors in requiring a local antecedent.

(34) Victor$_i$ a   honte de *lui$_i$/lui-même$_i$*
      Victor has shame of him him-same
      'Victor is ashamed of himself'

We take this case to be a language specific instance of the rather general phenomenon whereby a pronominal form in the wider sense of the term, namely either a pronoun or a reflexive, can appear with an adjunct or modifier that has the meaning of 'self' or 'same', or – for possess- ives – 'own'. In general, the choice of argument (pronoun or anaphor) coincides with the choice made in analogous configurations in the absence of the adjunct, whence consistency of *lui* in both variants of (34), versus *soi* in both variants of (35) (recall discussion of (18)–(19) above).

(35) *French* (Ronat, 1982)
      Personne$_i$ ne doit avoir honte de *soi$_i$/soi-même$_î$*
      no one   not must have shame of self self-same
      'No one must be ashamed of oneself'

The latter generalization would be predicted by supposing that the Binding Theory does not apply to the complex form, but rather separately to pronominal and adjunct. The anaphor-like behaviour of the complex will follow from supposing the adjunct is an anaphor, requiring a local antecedent. In turn this could plausibly follow from its non-argument status, along the lines suggested for Italian emphatic pronouns, and for *him* of English *himself* in Section 4.1 above.[18] As for the choice between simple and complex form, it seems to be determined by certain interpretive factors, to our knowledge originally identified in Zribi-Hertz (1980) (see also Kuno, 1988: 2.5). Roughly speaking, the complex form, unlike the simple or 'weaker' one, has the function of emphasizing or 'forcing' the co-referential relation. These effects are highlighted by the pattern in (36).

(36) *French* (Zribi-Hertz, 1980)

	lui	lui-même
(a) Victor$_i$ a toute l'équipe avec ____$_i$ Victor has all the team with him 'Victor$_i$ has the whole team with him$_i$'	ok	*
(b) Victor$_i$ a honte de ____$_i$ 'Victor has shame of himself'	ok	ok
(c) Victor$_i$ bavarde avec ____$_i$ 'Victor chatters with himself'	??	ok

[18] We are thus suggesting that in English *himself* pronominal *him* is in a (determiner like) non-

In (36a), it is obvious that the semantics of 'x has z with y' implies, or favours, a co-referential reading of x and y. We presume this undercuts the role of the adjunct, excluding it. In (36c), on the other hand the semantics of 'x chatters with y' favours a non-co-referential reading, thus requiring the adjunct. Semantically intermediate predicates, as in 'x is ashamed of y' of (36b) allow either choice, as one might expect. Exactly the same considerations apply to alternations between English *his* and *his own*, such as the one in (37), with (38) duplicating (36).[19]

(37)   John$_i$ read his$_i$/his own$_i$ book

(38)

			his	*his-own*
(a)	John$_i$ lost ___$_i$ cool		ok	*
(b)	John$_i$ read ___$_i$ book		ok	ok
(c)	John$_i$ was getting on ___$_i$ nerves		??	ok

We therefore conclude that alternations as in (34) and (37) do not provide evidence for the existence of independent principles for anaphors and pronouns, but rather reflect different semantics associated with simplex and complex forms. Whenever a complex form is chosen, the adjunct it incorporates will be an anaphor essentially by definition, while the element in argument position will be chosen by the usual principles, namely (22) above, and will possibly be a pronoun in languages in which locally bound pronouns may occur in general.

We note in passing that the overlap of (37) is mirrored by that of Italian (39).

(39)   *Italian*
     Gianni$_i$ legge il   suo$_i$/il (suo) proprio$_i$ libro
     Gianni$_i$ reads the his   the his own   book
     'Gianni$_i$ reads his (own)$_i$ book'

The only difference between English and Italian is that *proprio*, unlike *own*, can occur without an overt pronoun. We find it plausible to analyze this occurrence as in (40).

(40)   [e] proprio

That is, we presume that *proprio* is consistently an adjunct, and that the possessive pronoun can be null. The analysis of *proprio* as a complex form

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argument position, whereas in superficially similar *lui-même*, it is the 'self' element which is in non-argument position. A full justification of this view would exceed the limits of this note. It seems clear that English reflexives have their historical origins in structures of the *lui-même* type and – if the above is correct – were later reanalyzed. Similar reanalyses are attested in other languages. For instance Eck (1988) reports that in Papiamentu (Spanish Creole, Antilles) Spanish *si-mismo* 'self-self/same' has given way to *su-mismo* 'his self'.

[19] On the anaphoric status of *his-own*, see Higginbotham (1985).

is supported by the fact that it behaves like one with respect to facts like (38), and analogously, in *Gianni$_i$ è il ??suo$_i$/proprio$_i$ medico*, exactly parallel to its English translation *Gianni$_i$ is ??his$_i$/his own$_i$ doctor*, in which we presume the complex form is required by the semantic oddity of 'x is x's doctor'. The latter interpretation provides an alternative to the analysis of some of these facts in Giorgi (1987).

4.3. *The PRO-theorem*

The condition that it be ungoverned appears to describe with some accuracy the distribution of PRO, an empty category with an independent θ-role. Chomsky (1981) derives this condition from the Binding Theory in (1) above by supposing that PRO is simultaneously both an anaphor and a pronominal. So, if the notion 'locally' of (1) is expressed as 'within its governing category', the existence of a unique governing category α for PRO will result in principles A and B yielding the contradictory requirements of both bound and not bound within α. PRO will therefore be allowed only when no governing category exists, which in turn requires that there be no governor for PRO (for details, see Chomsky, 1981: 188). Thus, the PRO-theorem relies on the independent existence of two principles A and B, which our formulation denies. While it is beyond our goals here to provide an alternative theory of PRO, we will nonetheless consider a number of difficulties that the PRO-theorem faces, which make it independently desirable to seek an alternative formulation.

First, it is not obvious that, once one adequately defines the notions of 'anaphor' and 'pronoun', one can really maintain the existence of a category that satisfies both notions at the same time. For instance, neither of the two sets of definitions proposed above would permit such a category. Thus, an element could not simultaneously have and not have Φ-features (cf. (10) above and discussion), nor could it have and not have the ability to refer (cf. Section 4.1. above). The view of Chomsky (1982) through (1986b) that classification of NPs is based on the two features of [$\pm$pronominal], [$\pm$anaphoric] does indeed allow for a [+pronominal, +anaphoric] element, but sidesteps the issue of definitions.

Secondly, while the PRO-theorem requires stipulating that infinitival I(nflection) is quite unlike tensed I in failing to govern the subject, the more natural alternative assumption turns out not to be unenlightening for some of the basic properties of PRO. For instance, a feature analysis along the lines of Section 2.2 (and footnote 8) would predict that, while the null subject linked to tensed (inflected) I should be pronominal, as is true for the 'Null Subject' languages, the one linked to infinitival (uninflected) I should be anaphoric or impersonal, precisely as in 'control' versus 'arbitrary' PRO, respectively. This view would of course predict that, just like null subjects of tensed clauses, PRO should obtain only language-specifically. But in fact we

find that this is true as well, for the inability of infinitival I to license PRO provides a natural interpretation for the lack of infinitives in Romanian (Kempchinsky, 1989), certain Italian dialects (Calabrese, 1984, 1989), modern Greek and other languages (Joseph, 1983).

A connection between PRO and inflection would also enable us to maintain that PRO is Case-marked, as is in fact suggested by a certain body of cross-linguistic evidence, of which we take the following Italian case to be somewhat representative:

(41) *Italian*
    (a) Mario riteneva che fossi più   qualificato (io)
           Mario believed that I-was more qualified   I
           'Mario thought that I was more qualified (myself)'
    (b) Mario mi riteneva   più   qualificato (*io)
           Mario me considered more qualified   I
           'Mario considered me more qualified (*myself)'
    (c) Per   essere più   qualificato (io)
           in order to-be more qualified   I
                    dovrei   prendere una seconda laurea
                    I-should get   a   second   degree
           'In order to be more qualified myself I should get a second degree'

The contrast between (41a) and (41b) above shows that Italian 'emphatic pronouns' (Burzio, 1986: 2.3), which are nominative, can only appear when the antecedent is also nominative. The grammaticality of *io* in (41c) then suggests that PRO is indeed nominative.

Thirdly, the empirical adequacy of a characterization of PRO based on lack of government is unsatisfactory in the domain of small clauses. Thus, if one considers clauses with PRO subjects, one finds the following complementarity of infinitivals and small clauses in both argument and adjunct positions:

(42) *PRO clauses*

	Infinitive	Small clause	
(a) Arguments	ok	*	We want [PRO *(to be) happy]
(b) Adjuncts	*	ok	John never drives when [PRO (*to be) drunk]

Attempts made in the literature to account for (42a) (Chomsky, 1981: 105ff., 167ff.: Stowell, 1983; Chomsky, 1986b: 20ff.) see PRO in the small clause variant as excluded because governed, relying on the assumption (derived or stipulated) that small clauses cannot have COMP(lementizer) positions (which would block government, as with other clauses). However, the

hypothesis that small clauses are intrinsically incapable of having COMP positions cannot be true, given precisely cases like the one in (42b), best analyzed as (adverbial) free relatives, and thus with the *wh*-element in COMP. That small clauses can indeed have complementizers in general is also made abundantly clear by Chung and McCloskey (1987). Given the availability of COMP with small clauses as in (42b), lack of government for PRO is therefore insufficient to exclude them in (42a). It is obviously also insufficient to exclude the infinitival in (42b). That is, if PRO succeeds in being ungoverned in the small clause [PRO *drunk*], why does it not in the corresponding infinitival?

To our way of thinking, rather than lack of government, the complementarity of (42) suggests two mutually exclusive strategies for licensing of PRO – perhaps government by I, versus government by an element in COMP, the mutual exclusiveness plausibly resulting from some 'minimality' of government (Chomsky, 1986b; Rizzi, 1990). However, we are unable at this point to carry the proposal beyond this speculative level. Note in particular that the element in COMP is clearly neither necessary to license a PRO in a small clause given *John never drives* (*when*) *drunk*, nor sufficient, given *John wondered when* *(*to be*) *ready*. Further questions for our proposed approach will obviously also be raised by phenomena that lack of government seems to describe correctly, such as the complementary distribution of PRO on the one hand and trace and lexical subjects on the other. (For a succinct description of these well-known generalizations, see, among others, Burzio 1986: 218–221.) Still the lack of empirical adequacy of the 'PRO-theorem' seems quite clear.

5. CONCLUSION

The characteristically invariant form of anaphors in many languages provides a crucial link between morphology and binding. We have argued that invariance reflects lack of those specifications for gender, number and person which enable pronouns to have (partially) independent reference. Unlike pronouns, anaphors must therefore always be bound because binding represents the conditions under which reference is inherited. This criterion for distinguishing anaphors from pronouns has enabled us to establish the existence of a pervasive pattern of locally bound pronouns in many languages, which is in each case co-extensive with the pattern of restrictions on the corresponding anaphors. We have taken this to show that the true cross-linguistic generalization for pronouns is complementarity with anaphors, and not 'not locally bound' as prescribed by principle B. The latter principle turns out to capture only language specific generalizations, which are true when anaphors are subject only to locality, but false when they are subject to further restrictions. We have therefore proposed replacing principles A, B, C with a hierarchy by which anaphors, pronouns, and R-

expressions are selected in that order of preference, thus accounting also for certain cases of bound R-expressions. We have then shown that the latter hierarchy, unlike the three independent principles, yields further dividends, since it can be reduced to a single principle of 'morphological' or, perhaps, 'referential' economy.

Finally, we have considered a number of potential problems, arguing that, on closer scrutiny, none of them poses a serious threat to our proposal.

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