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Italian Compounds of the *Accendigas* Type: a Case of Endocentric Formation ? *

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1. *Introduction*

Italian, like the other Romance languages (except Rumanian, according to Stefanescu (1990)), has a type of compounds, such as *accendigas* (gas-lighter) and *portalettere* (postman) which are semantically parallel to the ones of the Germanic languages but are different from them in that they lack an overt head constituent. Such Germanic words, the so-called verbal or synthetic compounds [1] such as English *time-saver* and *house cleaning* (cf. Selkirk 1982), German *Herzensbrecher* (heart-breaker) and *Plänemacher* (plans maker) (cf. Becker (1992)) and Dutch *autohandelaar* (car dealer) (cf. Booij (1992)), are made up of two nouns: the righthand one is a deverbal noun and is the head element, while the lefthand one (the non-head constituent) corresponds to the direct internal argument (namely the direct object) of the verb from which the head constituent is derived.

Italian compounds of the accendigas-type are not NN but VN formations; in fact, the first constituent, the one on the lefthand side, is considered a verb and the second, the one on the right side is the noun corresponding to the direct object of the verb (though the English translation of *accendigas*, for example, is "gas-lighter", and the semantic correspondence with the Italian form can be immediately captured).

As productively formed Italian compounds are normally left-headed, forms such as accendigas are considered to be exocentric formations. [2]

In what follows I will try to show, within a generative framework, that this type of Italian words can be analyzed as synthetic compounds, therefore as endocentric, left-headed forms and that a unique word formation process can account for Romance and non-Romance compounds of this type. The peculiarity of Romance such forms is that the suffix (in Italian mainly *-tore* (-er), see fn.5) that nominalizes the verb and is the head of the lefthand constituent and, ultimately, of the whole word, is deleted to avoid problems of syntactic visibility of the nominal righthand non-head constituent. Nouns are not case assigners and nominal complements of nouns must be preceded by a preposition to get case, but prepositions cannot be inserted in the morphological component (nor prepositions can be inserted inside a compound in syntax). Unlike Germanic and other

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1. The two different expressions are adopted by linguists to refer to a unique type of forms. Verbal, for example, is the word used in Roeper and Siegel's (1978) article and in Selkirk's (1982) book while synthetic is the expression adopted by Allen (1978) following Marchand (1969).

2. Tests of headedness in Italian compounds are discussed in Scalise (1992:179ff).

non-Romance languages (e.g. Greek and Hungarian), moreover, Italian cannot host, at least in word formation, nominal modifiers in pre-nominal position, so, suffix deletion seems to be the only remedy to allow for their occurrence.

2. *The data*

The idea that the lefthand constituent of the Italian VN compounds is not a verb but a deverbal noun whose suffix is a zero form comes from three 'morphological' observations.

The major one concerns the presence of an **-i-** instead of an **-e-** in the first constituent of those compounds displaying a verb of the II° conjugation. Verbs of this class are characterized by the thematic vowel *e* attaching to the root and appearing in the infinitive form of the verb (cf. 1a), but in compounding such **-e-** becomes **-i-**, as (1b) shows:

(1)	a. accend**e**re	b. accend**i**sigari
	to light	*cigarette-lighter*
	chiud**e**re	chiud**i**porta
	to close	*door-closer*
	sprem**e**re	sprem**i**agrumi
	to squeeze	*lemon-squeezer*
	perd**e**re	perd**i**tempo
	to lose	lit. "time-loser"

as is the case in derivational processes:

(2)	a. god**e**re	b. god**i**mento/god**i**bile
	to enjoy	*enjoyment/enjoyable*
	sprem**e**re	sprem**i**tura/sprem**i**bile
	to squeeze	*squeezing/* lit. "squeezable"
	chiud**e**re	chiud**i**mento/chiud**i**bile
	to close	*closing/lit.closable*
	intend**e**re	intend**i**mento
	to intend	*intention*
	avvolg**e**re	avvolg**i**mento/avvolg**i**bile
	to wind	*winding/* lit. "windable"

The change of the **-e-** into an **-i-** [3] is not easily attributable to the presence of either a bound morpheme (a suffix) or a free one (a word); in fact, while the first hypothesis is supported by manifestation of the same phenomenon in overt derivational processes like those in (2b) above, the second does not find evidence from other compound words [4],

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3. Different proposals have been made to justify the form of this constituent under the generalized assumption that it is a verb. They are the following three:
the verb is: a) an imperative form; b) a form of the 3rd person singular of the present indicative; c) a stem (root plus thematic vowel); (cf. Tekavcic (1980) and Scalise (1992)).
Scalise (1992:192) points out that the (c) solution seems to be preferred to the other two and the change is the result of the operation of an Adjustment Rule acting both in compounding and derivation.

4. To tell the truth, there is an Italian compound word of similar type concerned by this phenomenon. It is the coordinated compound *saliscendi*, analyzed as a [VV]N form, which has either a result interpretation meaning 'latch' and a process interpretation meaning 'to go up and down'. Whatever account *saliscendi* could be given (words like that do not represent a productive pattern in Italian), the compound seems to support the hypothesis that a derivational process is involved in the formation of the two

this being the only type of compounds showing such a change.

The second observation has to do with the fact that compounds hosting in the first member position a verbal form which is not also the base stem of a *-tore* derivative are unattested. [5] *-tore* derivatives are productively obtained from verbal stems (*analizzatore* (analyzer) from *analizza(re)* (analyze), *corridore* (runner) from *corre(re)* (run), *scopritore* (discoverer) from *scopri(re)* (discover), cf. Bisetto (1994)), though several forms can be analyzed as having as base the past participle (*impressore* (printer), *seduttore* (seducer)).

If the first member of these compounds were simply a verbal stem, not a *-tore* derivative, nothing should prevent the stems of verbs like *imprimere* (to impress) and *sedurre* (to seduce) to occupy that position; but forms like *imprimiorme* (lit. leave footsteps) or *seduciragazze* '(lit. seducegirls) are unattested, contrary to verbs with an irregular past participle but a regular *-tore* derivative (that is a *-tore* derivative constructed on the stem) which do show themselves as first members of such compounds (cf. *chiudere* (to close) → *chiuso* (closed) → *chiuditore* (closer) **chiusitore* → *chiudiporta* (lit. door closer); *avvolgere* (to wrap) → *avvolto* (wrapped) → *avvolgitore* (lap machine) **avvoltore* → *avvolgifilo* (lit. wrap-yarn).

The third observation has to do with the absence, from this subclass of Italian compounds, of another kind of verbal stems: those of the III° conjugation, characterized by an unstressed root which take the infix *-isc* when the inflectional morpheme is, in its turn, unstressed (cf. *asserire* (to affirm) *asserisco* (I affirm), *asserisci* (you affirm), *asserisce* (he/she affirm), *asseriscono* (they affirm) but *asseriamo* (we affirm), *asserite* (you affirm)).

Verbs of this type have *-tore* derivatives that do not contain the thematic vowel:

(3)	asserire	asserØtore
	to affirm	*assertor*
	distribuire	distribuØtore
	to distribute	*distributor*
	retribuire	retribuØtore
	to remunerate	*rewarder*

and are thus, in some sense, irregular formations. This seems to be, then, the reason why such verbs do not appear in compounds: were the first element of such compounds a stem, one should find in the language words containing such verbs. Once again, yet, **asser(isc)iverità* or **retribu- (isc)ioperai* are unattested and seem to be odd formations. [6]

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constituents, in particular in the second one: the presence of an -i in the second element *scendi*, which is followed by no morpheme, finds justification only if a derivation process, followed by a (suffix) deletion one, is supposed to have worked.

5. The majority of the compounds of the *accendigas* type have an agentive or instrumental meaning which in Italian is generally obtained derivationally by means of the attachment of *-tore* suffix to verbs. The few words with a different interpretation (process interpretation like *ammainabandiera* (flag lowering) and locative interpretation like *marciapiedi* (pavement)) obey the same pattern though implication of a different suffix is to be supposed.

6. Parentheses around *-isc* point out the fact that the presence of the infix in compounding is not sure. While in derivation it does not show since derivational suffixes are generally stressed, the only two instances of compounds containing verbs requesting the infix show the double situation: *pulisciscarpe* (shoe-scraper) from the verb *pulire* (to clean) but *spartineve* (snow-plough) from the verb *spartire* (to separate) both taking *-isc-* in unstressed environment.

3. *The compound formation rule*

If the discussed signals are enough to support the hypothesis that the first element in *accendigas* compounds is a covert nominal, Italian (and Romance) compounds of that form can be viewed as endocentric NN formations like the semantically parallel synthetic compounds of other languages, apart from order of constituents and lack of a suffix in Italian ones, facts that will be discussed below.

As a consequence, the process forming the former is also responsible for the formation of the latter. But, of what kind is a process in which attachment of a derivational suffix to a verbal base triggers the realization of its internal argument ?

Consider Italian word formation processes. As the examples in (4) show, attachment of a (nominal) derivational suffix to a (verbal) base produces one of two results: a)it changes the lexical category and the argument structure of its base (cf. (4a) or (4b)) it changes the lexical category only, leaving the argument structure information of the base unchanged (cf. (4b)):

(4)	a.	calzatura N(Ø) [7] *footwear*	from	calzare V(x,y) *to put on*
	b.	abitazione N(Ø) *house*	"	abitare V(x,z) *to inhabit*
	c.	distaccamento N(Ø) *detachment*	"	distaccare V(x,y,z) *to detach*
	d.	raschiatura N(x,y) *scraping*	"	raschiare V(x,y) *to scrape*
	e.	clonazione N(x,y) *cloning*	"	clonare V(x,y) *to clone*
	f.	accavallamento N(x,y) *crossing*	"	accavallare V(x,y) *to cross*

-tore suffix must be considered to pertain to the (b) class since *-tore* derivatives can project (non-obligatorily) a *di* (of) complement or a *per* (for) complement corresponding to the internal argument of the (transitive) base verb, the difference between the two kinds of complements lying in the agentive versus the instrumental interpretation of the derivative, when such distinction is possible:

(5) a. Gianni e' un bravo analizzatore (di/*per prodotti chimici)
*Gianni is an experienced analist (of/*for chemicals)*
b. Questo e' un buon analizzatore (per sostanze chimiche)
This is a good analist (for chemicals)

Realization of a *di* complement, moreover, allows for the eventive interpretation of the derivatives, while realization of a *per* complement allows for a non-eventive one: [8]

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7. I leave aside, in this representation, the presence of an **e** position in nominals (cf., among others, Higginbotham (1985), Grimshaw (1990), Rappaport Hovav and Levin (1992) for discussion of the topic). Different variables in argument structure point to the difference in the status of arguments, viz y = direct, z = indirect.

8. The distinction between eventive and non-eventive interpretation which is demonstrated to be at work in English *-er* nouns (cf. Rappaport Hovav and Levin (1992)) is also operative in Italian, as Bisetto (1994) has shown. Under the eventive interpretation, a *-tore* derivative is viewed while accomplishing the action indicated by the verb; under a non-eventive interpretation, it is viewed as 'the person/thing devoted to a function'.

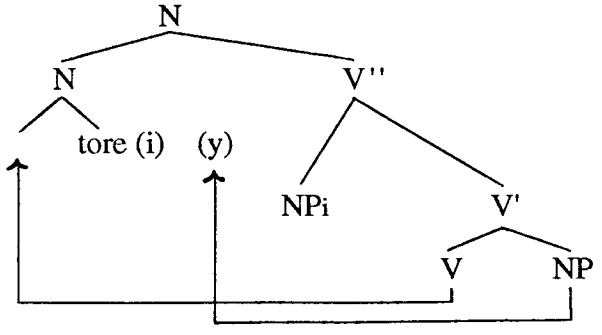
(6) a. contenitore di rifiuti
"container of waste"
a'. contenitore per rifiuti
"container for waste"
b. il coordinatore delle attivita' culturali del Comune
"the coordinator of cultural activities of the municipality"
b'. E' necessario assumere un coordinatore per le attivita' culturali e sportive del Comune
"It is necessary to engage a coordinator for cultural and sporting activities of the municipality"

If attachment of the derivational suffix *-tore* has the effects just seen, the formation of *-tore* nouns involved in compounding cannot be considered to be identical to that giving rise to derivatives. That is to say, if in compounding the argument structure of *-tore* nouns is satisfied 'internally' and thus does not project in syntax as usually happens in derivation, the two suffixation processes must be somehow different. Compounds headed by *-tore* nouns could, therefore, be viewed as the result of a special Affix Rule (*à la* Roeper and Siegel (1978)) either attaching the suffix to a verbal stem (and thus forming a derived noun) and triggering argument satisfaction (cf. Di Sciullo and Williams (1987)) 'internally', satisfaction that is obtained through (lexical) incorporation of the internal argument of the base verb to the derived noun.

This special rule, which could be called 'incorporating derivational rule', is thus a third case [9] of derivational rule besides the (a) and (b) rules above which can be called 'substituting' and 'adjoining' (derivational) rules respectively. In the (a) cases of (6) above, in fact, the (empty) argument structure of a derivational suffix substitutes for the (full) argument structure of the base verb; in the (b) cases, the attachment of a suffix can be viewed as the 'adjunction' of the argument information present in the argument structure of the suffix to that of the base verb, in the sense that the argument structures of the two constituents join in a new argument structure (where one or more arguments can match).

The process can be represented as follows:

(7)



and, of course, must be accompanied by a process of *-tore* deletion. Such deletion seems to find justification in the impossibility for a noun to assign case. The incorporated noun, which has not the status of a complement (cf. Rapport Hovav and Levin (1992:132)) but of a modifier, would trigger a syntactic violation of the 'Visibility Condition' which asserts that 'an element is visible for theta-marking only if it is assigned Case' (Chomsky

9. Actually the process could be viewed as nothing but a special case of a (b) process in that it acts like an 'adjoining derivational rule' (see after in the text) though having a further effect. But such a word formation process seems to deserve a different name.

(1985:94)). Insertion of a Case assigner would thus be needed, but this operation seems to be impossible in syntax since insertion cannot enter a compound word. [10] Suffix deletion, thus, is the device to which Italian and Romance languages in general resort to avoid violation of the condition. Without the suffix, in fact, the left constituent of such compounds looks like a verb form.

If compounds of the *accendigas* type, in spite of the absence of an overt nominalizing suffix, are thus synthetic NN compounds, the only difference between Romance and non-Romance formations lies in the order of constituents. Romance compounds are, as already said, left headed while non-Romance ones are right headed.

Word order in compounds is generally attributed to the SOV or SVO nature of a language, but a closer look at synthetic compounds of some European languages shows that this is not the correct account.

Word order in compounds seems more likely to depend on the relative order between a noun and its (adjectival) modifier when this order is fixed, at least. Consider the following examples from some languages:

(8)	a. der löslicher Kaffee *the soluble coffee*	German = SOV
	a' * der Kaffee löslicher	
	b. zöld mezö *green field*	Hungarian = SOV
	b' * mezö zöld	
	c. white sweater	English = SVO
	c' * sweater white	
	d. to omorfo pedi *he nice boy*	Greek = VSO
	d' *to pedi omorfo	

As can be seen, the wellformed expressions do not always agree with basic word order in that the head element of the nominal expressions does not occupy the same position as the verbal head in basic word order of the respective language. Also, word order in compounds does not agree with basic word order when the latter differs from adjective /noun order; look at the following examples:

(9)	a. Plänemacher *plansmaker*	German → SOV, Adj/Noun
	b. falfestés *wall painting*	Hungarian → SOV, Adj/Noun (Kiefer (1992):69)
	c. car driver	English → SVO, Adj/Noun

10. Italian NN compounds not violating Case-Filter seem actually to be possible, given that words like: a) *raccolta funghi* (mush-rooms harvesting) and *trasporto merci* (goods carriage), b) *ufficio trasporti* (forwarding office) and *nave cisterna* (tanker), c) *disegnatore-progettista* (drafts-man-planner) and *panetteria-pasticceria* (bakery-pastry) are possible.
The reason why the above forms, contrary to synthetic compounds, are admitted without the presence of a Case assigner is to be found in the different relations tying the two constituents. In the (a) cases the head noun (*raccolta, trasporto*) is a process nominalization and the non-head constituent is its complement; in the (b) cases the two constituents are tied by an R-relation (in the sense of Allen (1978) but see also Scalise (1983) and successive work for extension to Italian compounds) which is a 'complementation' relation; in the (c) cases constituents are bound by a coordination relation. It seems, thus, that only a relation of modification triggers the violation.

d. organopéktis Greek → VSO, Adj/Noun
lit. instrument player = musician (Ralli (1992):145)

It is clear, from the examples above, that synthetic compounds display the order modifier/modifiee as modified nominal expressions do, in spite of the basic word order.

The latter seems to be the order when the relation noun / adjective is not fixed, as happens to be in Italian and Romance languages in general:

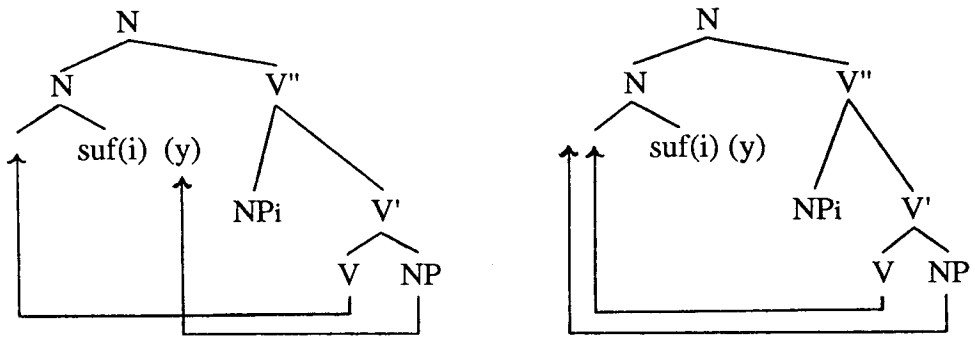
(10) a. Italian: un bel bambino / una persona affettuosa
a nice boy / a person tender(a tender person)

b. Spanish: un famoso pintor / un pintor famoso
a famous painter

c. French: une jolie fille / un vin vert
a nice girl / a wine sour (sour wine)

It is, thus, the relative order of a noun and its adjective, when fixed, that determines to which side of a head the argument of a verb incorporates (becoming a modifier) when an incorporating derivational rule applies and gives rise to a compound word, as can be seen in the following examples reflecting Romance and non-Romance synthetic compound formation rules respectively:

(11)

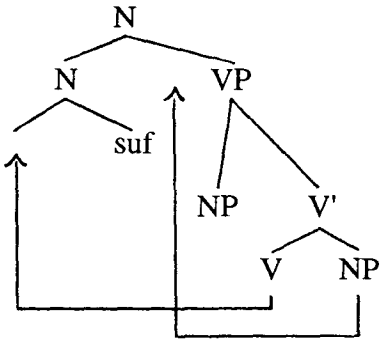


4. *A consequence*

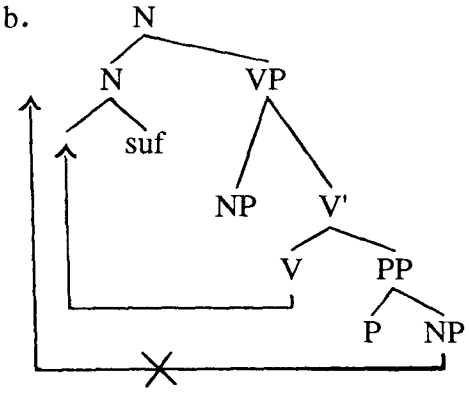
An interesting consequence of the proposed (lexical) rule to account for synthetic compound formation is that it has no need to state specific restrictions on incorporating nouns. That is to say, the First Sister Principle of Roeper & Siegel (1978) [11] seems to be unnecessary: incorporation is limited to a noun immediately on the right of a verb and not preceded by a case assigner (a preposition) because of the ECP that states that traces (of moved elements) must be governed, and that is independently justified in grammar. Since in structures like the one in (12a) only the NP sister of V is (properly) governed by the verb, while in those like (12b) the indirect NP is not, only direct objects of verbs can incorporate:

11. The First Sister Principle states that only a word sister of a verb (i.e. a noun immediately on the right of a verb) can incorporate.

(12) a.



b.



The same, of course, is true of subject NPs. Compounds whose meaning is not agentive/instrumental have a (covert, in Italian) nominal suffix (like *-mento/-zione* (ment/ion) as, for example, in *ammainabandiera* (the lowering of the flag) and *battimano* (clapping)) which does not absorb the external argument of the verb; incorporation of subject NP of the verb must then be excluded. This exclusion was explicitly stated by Selkirk (1982), for example, in her First Order Projection Condition (FOPC) [12] but if an incorporating suffixation rule of the kind suggested above is adopted, the impossibility for subjects to incorporate is accounted for by ECP (cf. Baker (1988)).

Furthermore, if a rule having the structure presented in (7) above is adopted, also the restriction on verbs entering synthetic compounding is accounted for. It is well known, in fact, that ditransitive verbs cannot form the base of these compounds. This generalization, explicitly stated (for English) by Selkirk's FOPC (cf. fn.12) is captured naturally if derivational suffixes are viewed as selecting not simply a lexical category and its argument structure but a specific configuration of a lexical category characterized by a particular argument structure (cf. Di Sciullo (1993)).

The incorporating derivational rule proposed in the present work as the rule involved in synthetic compound formation does not seem to be an 'ad hoc' rule in that it can also account for the formation of another kind of complex words, those often cited in the literature as giving rise to 'bracketing paradoxes', two English examples are listed below (from Spencer (1991:398)) whereas Italian instances of which are illustrated by complexes like *scienziato atomico* (atomic scientist) and *flautista barocco* (baroque flautist):

(13) a. transformational grammarian
[transformational [grammar ian]]
[[transformational grammar] ian]

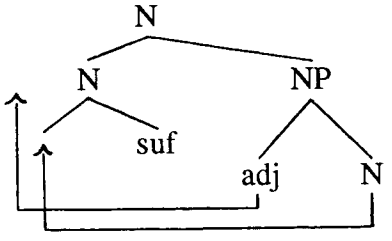
b. atomic scientist
[atomic [scient ist]]
[[atomic science] ist]

The peculiarity of such forms is that attachment of derivational suffixes (English *-ian, -ist* and Italian *-ista, -(i)ato*) concerns the nominal elements (*grammar, science, flauto* and

12. The FOPC says:
"*all non-subject argument* of a lexical category Xi must be satisfied within the first order projection Xi" (Selkirk 1982:37).
FOPC contains two generalizations: the one concerned with the discussion in the text is the underlined one; the other has to do with the fact that only verbs with a sole internal direct argument can enter these compounds.

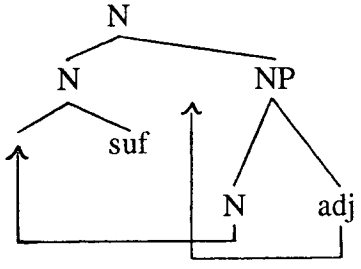
scienza respectively) but adjectives refer to the base noun, not to the derived one. In other words, as brackets point out, a *transformational grammarian* (or a *scienziato atomico*) is not a *grammarian* (a *scienziato*) who is *transformational* (*atomico*), rather he or she is someone dealing with transformational grammar (scienza atomica). If an incorporating rule like that proposed for compound formation is allowed to form the expressions in (13) above, bracketing paradoxes are accounted for: in fact, the presence of a modifier having scope only over the base noun can be explained as deriving from the operation of the special Affix Rule (see above) triggering incorporation of an element somehow related to the base noun (cf. Spencer (1991) and (1988) who calls the nouns undergoing such process 'personal nouns'): [13]

(14)



In this case, there is no need to tie the order of constituents to a specific pattern since the modifier is already in the correct position. Modifiers will remain, with respect to the derived word, on the same side they are when modifying the base word. Italian expressions, thus, will have the following structure (irrelevant parts omitted):

(15)



5. *Conclusions*

In the preceding sections I have tried to show that Italian compounds generally considered as having the structure VN are instead NN constructions where the first constituent is a covert deverbal nominal; such compounds can, consequently, be paralleled to so-called synthetic (or verbal) compounds of other (non-Romance) languages. The rule forming both of them is nothing but a special affixation rule triggering incorporation of an argument of the base verb. This incorporating rule is also capable of accounting in a simple way for the formation of the expressions often called 'bracketing paradoxes' and dispenses with the statement of specific restrictions on the kind of arguments allowed to incorporate. In examining synthetic compounding of several European languages, I could observe that order of constituents in compounds is not tied to (or not always tied to) basic word order, rather it is to the ordering of adjectival modifiers with respect to nouns. Basic word order is reflected in (synthetic) compounding when adjectives can either follow and precede nouns.

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13. Not only personal nouns undergo such a process, though personal nouns are the greater part of them. They could also be called 'natural class nouns'.

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Movement at LF triggered by Mood and Tense *

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1. *Introduction*

In this paper we discuss the Logical Form of mood (section 2) and tense (section 3) and the semantic position of sentential negation (section 4). We show that movement of constituents at Logical Form can be triggered by mood and tense. We consider the distribution and the interpretation of both indefinites and complement clauses in different contexts. In section 2, we analyze Italian indicative mood as an *Anti-Intensional-Operator Polarity Item*, i.e., in Logical Form it cannot remain in the scope of an intensional operator introduced by a predicate such as *credere* (believe) or *desiderare* (want). Subjunctive mood is an *Intensional-Operator Polarity Item* (sections 2.1, 2.2, 2.3). Moreover, discussing the different kinds of distributive interpretation of indefinites w.r.t. universal quantifiers, we assume that indefinite nominal expressions are ambiguous: they can be construed as quantificational or referential expressions. A special case of referential indefinites constitutes the *function interpretation* discussed in section 2.4. We further discuss *che*-deletion (section 2.5.) and disjoint reference effects (section 2.6). In section 3, we analyze Italian present tense as an *Anti-Past Polarity item*, i.e., in Logical Form it cannot remain in the scope of a tense projection bearing the feature PAST. In section 4, we show that there are just two LF landing sites outside the scope of the semantically relevant position of negation and the scope of the intensional operator: one, LFP1, dominates TP1; the other, LFP2, is dominated by TP1. As a consequence of our analysis, the semantic position of negation and the position of intensional operators have to be assumed to be very low in the structure: below TP1 and LFP2 (section 4.1). Moreover, we propose that Italian indicative mood is an *Anti-Negative Polarity Item*, i.e., in Logical Form it cannot be interpreted in the scope of negation. Subjunctive mood is a *Negative Polarity Item* (section 4.2.). Finally, we show that LF-movement of n-words such as *nessuno* (nobody) in order to license negative concord has no impact on the position of interpretation.

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2. *Subjunctive and Indicative at Logical Form*

2.1. *Mood and Polarity*

In this section we will discuss how mood can determine the location of nominal expressions and embedded sentences at LF. Consider first the sentence in (1a), which is ambiguous. In one reading (1a) asserts the existence of a rich man: there is a rich man and Gina wants to marry him. In the other reading (1a) does not assert the existence of a rich man. It expresses that Gina wants there to be a man, whoever he is, provided that he is rich, and that she marries him. Following Russell (1905,1919), Kripke (1979), Neale (1990), a.o., we assume that the two interpretations are determined by different scope relations of the indefinite object and the intensional predicate *desiderare* (want) (1b,c). [1]

(1) a. Gina desidera sposare un uomo ricco
"Gina wants (to) marry a man rich"
b. ∃(x) [rich-man](x) Gina wants [Gina marries x]
c. Gina wants [∃(x) [rich-man](x) & Gina marries x]

The ambiguity of (1a) is resolved in (2), where the adjectival modification is substituted by a relative clause in the indicative mood, (2a), and in the subjunctive, (2b). The indefinite in (2a) is interpreted only with wide scope w.r.t. the intensional predicate, i.e., (2a) has only the first reading of (1a). The indefinite in (2b) is interpreted only with narrow scope, i.e., (2b) has only the second reading of (1a). [2]

(2) a. Gina desidera sposare un uomo che è ricco
"Gina wants (to) marry a man who is (Ind.) rich"
b. Gina desidera sposare un uomo che sia ricco
"Gina wants (to) marry a man who is (Subj.) rich"

We assume that intensional predicates which select subjunctive mood such as *desiderare* (want), *credere* (believe), *volere* (want), *sperare* (hope), etc., introduce an intensional operator into LF. [3] As we will see in section 4.1, the position of this operator is very low in the structure of the clause. For the sake of simplicity we assume that it is located in V°, i.e., the base position of the intensional verb. [4] Indicative mood and subjunctive mood have

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1. As pointed out by e.g. Kripke (1979), the notion of scope cannot be replaced by any twofold distinction such as *de re - de dicto, transparent - opaque, specific - non specific*, etc.

2. Some native speakers of Italian also allow the narrow scope interpretation of the indefinite object in (2a). Others allow this interpretation only at a more colloquial level but exclude it at a more formal stylistic level.

3. Mental attitude verbs such as *credere, desiderare, volere, sperare*, etc., are intensional predicates, because, as stated in philosophical literature, the meaning of attitude sentences cannot be analyzed in purely extensional terms (cf: e.g., Bonomi (1983), Chierchia & Mac Connell-Ginet (1990), Casalegno & Marconi (1992), Santambrogio (1992), Chierchia (1992), Mariani (1992)).

4. Note that the surface position of the intensional verb and the position where the intensional operator is interpreted are not identical. The subjunctive in the relative clause in (2b) is licensed by the intensional operator in V° of the intensional predicate *desiderare* which in Italian raises to AGRS° at S-Structure:

complementary distribution with respect to these operators at the level of Logical Form:

(3) a. Italian indicative mood is an *Anti-Intensional-Operator Polarity Item* (AIOPI).
b. Subjunctive mood is an *Intensional-Operator Polarity Item* (IOPI). [5]

According to (3a) the indefinite object in (2a) has to raise at LF to a position outside the scope of the intensional operator, taking wide scope over it. Because of (3b), the indefinite object in (2b) remains in the scope of the intensional operator at LF. [6]

2.2. *Mood and Quantification*

In the following examples the effects of (3) are illustrated in the light of the scope of indefinites relative to a quantifier. Just as in (2a), the indefinite object in (4a), which is modified by a relative clause in the indicative, raises to a position outside the scope of the intensional operator of the main predicate. In this configuration, however, it also takes wide scope over the universally quantified subject of the complement clause. The indefinite in (4b), on the other hand, which is modified by a relative clause in the subjunctive, must be interpreted in the scope of the intensional operator of the main predicate, and can therefore be interpreted with narrow scope with respect to the embedded subject.

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i. $[_{AGRSP}$ Gina $[_{AGRS'}$ desidera$_i$ $[_{TP}$ $[_{T'}$ t_i ...$[_{VP}$ t_i $[_{CP}$ sposare $[_{DP}$ un uomo che sia ricco]]]]
op

In section 4.1 we will show that the intensional operator is located in a position which is dominated by the inflectional projections AGRS and TP, i.e., the traditional IP. This is in contrast with Manzini (1994), who assumes that subjunctive is licensed by a relation which involves the I° of the superordinated clause and the I° of the subordinated clause.

5. Subjunctive can be licensed not only by intensional predicates, but also by negation (cf: section 4.2), the question operator and wh-operators, verbs of doubt, conditionals, rational *perché* (in order that), and necessity and possibility operators (see Manzini (1994) for a more extensive discussion). Manzini (1994) argues that the licensing mechanisms of subjunctive and negative polarity items are parallel and that the syntactic dependency between the operator that licenses subjunctive and the subjunctive is sensitive to islands.

6. Manzini (1994) argues that the distribution of subjunctive and indicative is not accounted for by scope at LF but exclusively by syntactic dependency relations between an (intensional) operator and the verb form in the subjunctive. This syntactic dependency can be blocked by definiteness/specificity island: a subjunctive relative clause cannot modify specific nominal expressions. In this view, (2a) receives the interpretation (1b) not via LF-movement of the indefinite object, but by the fact that the indefinite is specific. In section 2.4, we will argue that this in fact is a possible analysis of (2a). We will argue that (2a) is ambiguous: the indefinite can either be construed as referential (as indicated by the referential index *a* in (i)) or as quantificational (ii). In the first case it does not raise at LF and the subjunctive is excluded because of a referentiality island. In the second case no referentiality island intervenes between the intensional operator and the indicative in the relative clause, and consequently, because of (3a), the indefinite has to scope out.

i. Gina desidera sposare [un uomo che è ricco]$_a$
ii. Un uomo che è ricco]$_i$ [Gina desidera sposare t_i]

(4) a. Gina desidera che ogni studente incontri una ragazza che è alta
"Gina wants that every student meets (Subj.) a girl who is (Ind.) tall"
b. Gina desidera che ogni studente incontri una ragazza che sia alta
"Gina wants that every student meets (Subj.) a girl who is (Subj.) tall"

In fact, only in (4b), but not in (4a), the indefinite can have a distributive interpretation with respect to the universally quantified subject (but see footnote 7). (4b) can be paraphrased with (5b). (4a), on the contrary, lacks this interpretation. The indefinite is interpreted only with wide scope with respect to *ogni studente* (5a). [7]

(5) a. There is a tall girl y and Gina wants every student to meet y
b. Gina wants that for every student x there is a tall girl y such that x meets y
c. Gina wants that there is a tall girl y and that every student meets y

Note first that the indefinite object in (4b) can be interpreted with wide scope with respect to *ogni studente*. This reading, which is paraphrased in (5c) arises when the indefinite raises at LF to a position which is outside the scope of the universal quantifier but still inside the scope of the intensional operator which licenses the subjunctive in the relative clause. Second, the argumentation is based on the assumption that quantifiers like *ogni* (every) differ from indefinite nominal expressions in that the first but not the latter are *clause bound*: in (4a) the universal quantifier cannot take scope over the indefinite since in this case it would leave its own clause. Ludlow & Neale (1991) criticize this assumption. They note that it cannot be true that universally quantified expressions cannot escape scope islands introduced by intensional predicates because the nominal expression *every Gila monster in New Mexico* in (6a) can take wide scope with respect to the predicate *think* (6b).

(6) a. A man in Arizona thinks that every Gila monster in New Mexico won the lottery
b. $\exists$(x)[man](x) $\forall$(y)[Gila monster](y) [x thinks that y won the lottery]
c. $\forall$(y)[Gila monster](y) $\exists$(x)[man](x) [x thinks that y won the lottery]

However, although the embedded subject in (6a) can take scope over the main predicate, it cannot take scope over the indefinite subject of the main clause: (6c) is not an appropriate paraphrase of (6a). Therefore, although it is not clear how this interesting property of universal quantifiers can be accounted for, Ludlow & Neale's observation does not constitute a problem for our analysis of (4a). In contrast to universal quantifiers, embedded indefinites can take scope over nominal expressions in superordinated clauses. (7a) can be paraphrased with (7b).

(7) a. Every professor thinks that a tall student kissed Lori
b. there is a tall student x such that every professor thinks that x kissed Lori

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7. Speakers of Italian who allow indicative mood in the scope of intensional predicates (cf: fn. 2) can interpret the indefinite object in (4a) with narrow scope with respect to *ogni studente*. However, also speakers who do not accept indicative mood in the scope of intensional operators can get a special kind of distributive interpretation of the indefinite in (4a), which we will refer to as *function interpretation* (Hintikka 1986). Crucially, this interpretation is possible only in particular contexts where the indefinite can be used as a referential expression (cf: section 2.4).

Fodor & Sag (1982) assume that indefinite nominal expressions are ambiguous. They can be construed as referential or as quantificational nominal expressions. They maintain that the ability of indefinites to escape scope islands constitutes evidence for the referential evidence rather than the quantificational one. According to their view the indefinite in (7a) with the interpretation in (7b) qualifies therefore as a referential expression. Consequently, the interpretation (7b) is not obtained by LF-raising of the indefinite but by the fact that referential expressions are insensitive to scope. Although, as we will discuss more in detail in section 2.4, the indefinite can be construed as referential, this is, contrary to Fodor & Sag, not necessarily the case (cf. Kripke (1979) and especially Ludlow & Neale (1991) for a more extensive discussion). This can be seen easily in (8a), where the indefinite, just as in (7a), can be interpreted with wide scope with respect to the universal quantifier but still in the scope of the intensional predicate of the main clause (8b). In Italian, in accordance with the generalization in (3b), (8c) can have this interpretation only if the relative clause which modifies the indefinite is in the subjunctive.

(8) a. Peter believes that every professor thinks that a tall student kissed Lori
b. Peter believes that there is a tall student x such that every professor thinks that x kissed Lori
c. Peter pensa che ogni professore creda che uno studente che sia / #è alto abbia baciato Lori

2.3. *Complement clauses*

In Italian there are two kinds of intensional predicates which select subjunctive mood. Complement clauses of verbs of volition, such as *desiderare* (desire), *sperare* (hope), *volere* (want), etc., (9) must be in the subjunctive. [8] Complement clauses of weak assertive

8. The predicate *sperare* differs from *volere* and *desiderare* in that it allows future tense in the complement clause (i) (cf. e.g. Vanelli 1991). This difference can be related to the fact that one can hope, but not want or desire events in the past (ii) or simultaneous events (iii). Similarly, the sentences in (iv) and (v) differ with respect to the temporal relations: while the present tense in the complement clause in (iv) can be interpreted as simultaneous and as future shifted, the one in the complement clause in (v) has only a future shifted interpretation. It seems to be reasonable to assume that in (i) the complement clause of *volere* and *desiderare*, in contrast to the complement clause of *sperare*, is interpreted as future shifted by default and therefore morphological future tense is excluded.

i. Gina spera/* vuole/* desidera che Gino andrà al cinema
"Gina hopes/* wants/* desires that Gino will go to the cinema"
ii. Gina spera/* vuole/* desidera che Gino andasse al cinema
"Gina hopes/* wants/* desires that Gino went (Subj.) to the cinema"
iii. Gina spera/* vuole/* desidera che Gino sia intelligente
"Gina hopes/* wants/* desires that Gino is (Subj.) intelligent"
iv. Gina spera che Gino vada al cinema
"Gina hopes that Gino goes (Subj.) to the cinema"
v. Gina vuole/desidera che Gino vada al cinema
"Gina wants/desires that Gino goes (Subj.) to the cinema"

The possibility of future tense in the complement of *sperare*, as in (i), does not constitute an exception to the generalization that this verb necessarily selects for subjunctive mood since Italian does not overtly distinguish between indicative and subjunctive in the future.

predicates like *credere* (believe), *pensare* (think), *ritenere* (maintain), etc., (10) can be either in the subjunctive or in the indicative. [9]

(9) a. * Gino desidera che Pina va al cinema
"Gino wants that Pina goes (Ind.) to the cinema"
b. Gino desidera che Pina vada al cinema
"Gino wants that Pina goes (Subj.) to the cinema"

(10) a. Gino crede che Pina è incinta
"Gino believes that Pina is (Ind.) pregnant"
b. Gino crede che Pina sia incinta
"Gino believes that Pina is (Subj.) pregnant"

According to (3) we predict that the complement clauses in (10), depending on the mood of the complement clause, occupy different positions in LF. The complement clause in the indicative in (10a) moves to a position outside the scope of the intensional predicate *credere*. The complement clause in the subjunctive in (10b) has to remain in the scope of *credere*. Before we discuss the consequences of these predictions in the light of scope relations, note that (10a) and (10b) differ in meaning. Using the indicative mood the speaker not only reports Gino's belief but he also asserts the content of the complement clause to be true. With the subjunctive the speaker does not take any attitude towards the content of the complement clause. [10] Consequently, if the complement clause is unlikely to be true the use of the indicative is excluded (11). We assume that this interpretational contrast in (10) is related to the different LF-positions of the complement clauses. [11, 12, 13]

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9. See Wandruszka (1991) for a phenomenology of the difference in distribution and interpretation between Subjunctive and Indicative in complement clauses in Italian.

10. This is not necessarily the case for native speakers who allow indicative mood in the scope of intensional operators (cf: fn 3). Interestingly, although these speakers in general allow indicative mood in configurations where other speakers would use the subjunctive, they have to use subjunctive in complement clauses of verbs of volition (cf. (9)).

11. More precisely, we assume that the complement clause in the indicative in (10a) is interpreted in two positions: its LF-position, i.e., a position outside the scope of the intensional operator, and the copy left behind in its base position (i). In this way, using Fouconnier's (1985) terminology, the complement clause is interpreted in the *space* of the speaker as well as in the *space* of Gino's beliefs.

i. [*che Pina è incinta*] Gino crede [*che Pina è incinta*]

This assumption reminds Stowell's (1993) analysis of the temporal interpretation of complement clauses in the present tense under superordinated clauses in the past. As discussed for instance by Comrie (1985), Enç (1987), a.o., (ii) not only expresses that Mary was pregnant at the time John said *Mary is pregnant* but also that she still is. In other words, the period of Mary's pregnancy includes the time point of John's saying as well as utterance time. Stowell (1993) assumes that the complement clause is temporally interpreted in two positions at LF: in a position outside the scope of the past in the main clause, where it is interpreted as simultaneous to utterance time, and in its base position, where it is interpreted as simultaneous to the past saying event.

ii. John said that Mary is pregnant
iii. [*that Mary is pregnant*] John said [*that Mary is pregnant*]

(11) Gino crede che la luna sia /* è quadrata

The sentences in (12) exemplify LF-raising of complement clauses triggered by mood. Only the indefinite *un ragazzo diverso* (a different boy) in (12b), but not the one in (12a), can be interpreted with narrow scope with respect to the quantified subject *ogni studente*. Being in the indicative, the most embedded complement clause in (12a), which contains the indefinite,

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12. Our assumptions on LF-movement of complement clauses do not force us to choose any particular theory about the *substitutivity puzzle*. According to a classical view in Analytic Philosophy (Frege (1893), Quine (1960), but see Leonardi (1988) and D'Angelo (1994) for an alternative approach to the substitutivity puzzle) indirect discourse and attitude contexts like *belief*-sentences are *opaque* constructions in which *failure of substitutivity* arises. Consider the sentences (i) and (ii). Even if Gino believes that Cicero is the greatest Roman orator, he might not believe that the author of *De Amicitia* is the greatest Roman orator, for example if Gino does not know that Cicero wrote *De Amicitia*. Hence, (i) might be true and (ii) false, although *Cicerone* and *l'autore del De Amicitia* are codesignative expressions. According to this view in Analytic Philosophy, contexts like (i) are considered as opaque and therefore do not allow free substitution of codesignative expressions.

i. Gino crede che Cicerone sia/è il massimo oratore romano
"Gino believes that Cicero is (Subj.)/is (Ind.) the greatest Roman orator"

ii. Gino crede che l'autore del *De Amicitia* sia/è il massimo oratore romano
"Gino believes that the author of *De Amicitia* is (Subj.)/is (Ind.) the greatest Roman orator"

Note that the complement clause in (i) can be in the subjunctive or in the indicative. Since we assume that indicative mood causes raising of the complement clause to a position outside the scope of *credere*, one could suppose that this movement effects the possibility of substitution. In particular, one might expect, first, that the complement clause constitutes an opaque domain if it is in the subjunctive and therefore in the scope of *credere* and, second, that it is *transparent* if it is in the indicative, i.e., outside the scope of *credere*. Hence, one might expect substitution to be disallowed in the first case and to be freely possible in the second case. However, contrary to this supposition, the choice of the mood depends on the speaker's attitude towards the truth of the complement clause and it does not have anything to do with the substitution problem, especially since LF-movement of a complement clause in the indicative to a position outside the intensional operator leaves a copy in the base position inside the scope of the intensional operator (cf: fn 12). Using the indicative mood the speaker asserts the truth of the complement clause of (i). Using the subjunctive, the speaker does not take any attitude towards it. Similarly, in (iii) and (iv) the choice of the mood in the relative clause depends on the speaker's attitude towards the object wanted by Gina and it does not have anything to do with the substitution problem. Using the indicative mood the speaker asserts the existence of an unmarried lawyer who Gina wants to marry ; using the subjunctive, he doesn't.

iii. Gina desidera sposare un avvocato che sia/è uno scapolo
"Gina desires (to) marry a lawyer who is (Sub.)/is (Ind.) a bachelor"

iv. Gina desidera un avvocato che sia/è non sposato
"Gina desires (to) marry a lawyer who is (Subj.)/is (Ind.) unmarried"

13. Interestingly, if the weak assertive predicate in the main clause appears in the first person, as in (i), the complement clause must be in the subjunctive. Verbs like *credere, pensare, ritenere*, etc., as opposed to verbs of saying, such as *dire* (say), *asserire* (assert), *affermare* (affirm), are weak assertive predicates because using them in the first person the speaker *weakly* asserts the content of the complement clause: asserting *I believe p*, I do not assert the truth of *p* (cf: D'Angelo 1994). But using the indicative in the complement clause *p* of *x believes p*, the speaker asserts the truth of *p*. Since in (i) the speaker simultaneously asserts and does not assert the truth of the complement clause, (i) is unacceptable.

i. Credo che Pina sia/*è incinta
"(I) believe that Pina is (Subj.)/* is (Ind.) pregnant"

has to raise at Logical Form to a position outside the scope of the intensional operator of *credere*, but also outside the scope of the intensional operator of *desiderare*. Consequently, the indefinite occupies a position outside the scope of the universal quantifier, hence the distributive interpretation is not available. In (12b), on the other hand, the most embedded complement clause is in the subjunctive, hence it can remain in the scope of the universal quantifier allowing the distributive interpretation of the indefinite. [14]

(12) a. Gina desidera che ogni studente creda che Pina ha baciato un ragazzo diverso
"Gina wants that every student believes (Subj.) that Pina has (Ind.) kissed a boy different"
Gina wants that every student believes that Pina kissed a different boy
b. Gina desidera che ogni studente creda che Pina abbia baciato un ragazzo diverso
"Gina wants that every student believes (Subj.) that Pina has (Subj.) kissed a boy different"

The sentences in (13) only differ regarding the mood of the complement clause. This difference affects the possible scope relations of the embedded subject *ogni studente* and the indefinite object: only in (13b), but not in (13a), the indefinite can be interpreted with narrow scope with respect to *ogni studente*. Just as it was the case in (4a), the indefinite in the indicative in (13a) cannot be interpreted in the scope of the quantified subject. But it can if the complement clause is in the indicative (13b). In this case the complement clause raises with the indefinite object to a position outside the scope of the intensional operator. In this configuration the indefinite is outside the scope of the operator and can therefore remain in the scope of the quantified subject.

(13) a. Gina crede che ogni studente incontri una ragazza che è alta
"Gina believes that every student meets (Subj.) a girl who is (Ind.) tall"
b. Gina crede che ogni studente incontra una ragazza che è alta
"Gina believes that every student meets (Ind.) a girl who is (Ind.) tall"

(14) constitutes further evidence for the analysis proposed for (13a). Since the complement clause including the indefinite object scopes out, the indefinite cannot be modified by a relative clause in the subjunctive. [15]

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14. Similarly, the direct object *due ragazzi* (two boys) in (i) can be interpreted with narrow scope with respect to *ogni studente* only if the most embedded clause is in the subjunctive.

i. Gina desidera che ogni studente creda che Pina ha/abbia baciato due ragazzi
"Gina wants that every student believes(Subj.) that Pina has(Ind.)/has(Subj.) kissed two boys"
Gina wants that every student believes that Pina kissed two boys

15. Manzini (1994, p. 21) assumes that indicatives create islands for polarity items, while subjunctives do not. In her view, the complement clause in (14) does not scope out at LF, and the subjunctive in the relative clause is not licensed because of the intervening indicative island in the complement clause. Although an analysis in these lines accounts for the ungrammaticality of (14), it does not seem to be clear how it can account for the scope differences in (13).

(14) * Gina crede che ogni studente incontra una ragazza che sia alta
"Gino believes that every student meets (Ind.) a girl who is (Subj.) tall"

2.4. *Function Interpretation*

In section 2.2, we claimed that the indefinite object modified by a relative clause in the indicative in (4a), repeated below in (15), cannot be interpreted with narrow scope with respect to the embedded quantified subject. There is however a special kind of distributive interpretation of the indefinite, which we will refer to as *function interpretation* (Hintikka 1986).

(15) Gina desidera che ogni studente incontri una ragazza che è alta
"Gina wants that every student meets (Subj.) a girl who is (Ind.) tall"

Let's first consider the examples in (16), where the wide scope interpretation of the indefinite is excluded for pragmatical reasons. In both sentences the indefinite has the distributive interpretation w.r.t. to the universally quantified subject. But there is still a difference in interpretation. The distributive reading of (16a) differs from the distributive reading of (16b). In order to interpret (16b) with the distributive reading a contextually recoverable function from students to chairs must be available: for every student there is a *certain, particular* chair which, e.g., he has been assigned to by the teacher. According to Hintikka (1986), a sentence like (16b) can be represented as in (16c). The function *f* assigns a value to f(x) according to some pragmatically recoverable relation between x and f(x): in the example (16b) every student is related to a particular chair by the function *f*; there is a function *f* from students to chairs, salient in the context, which associates each student with one particular chair. (16b) means that every student is sitting on the chair which is related to by the function *f*. This reading is obligatory in (16b), but it is not excluded in (16a), where the indefinite is not modified by *certain*.

(16) a. Every student is sitting on a chair
b. Every student is sitting on a certain chair
c. E(f) A(x) (x is a student & x is sitting on f(x))

The same happens in (15). The distributive interpretation of the indefinite is possible only if there is such a contextually recoverable function between students and tall girls. We assume that indefinite nominal expressions, just like definite ones are ambiguous (cf: Donnellan (1966, 1978), Chastain (1975), Kripke (1979), Ludlow and Neale (1991): they can be construed as quantificational or as referential expressions. We further assume that the indefinite in (15a) in the function interpretation is used as a referential expression: for each student x the indefinite directly *refers* to that particular girl the function picks up for x. Being referential the indefinite does not undergo QR, it therefore remains in the scope of the intensional operator at LF. Nevertheless the relative clause cannot appear in the subjunctive in this interpretation, since, adapting Manzini (1994), referentiality creates an island for the licensing of subjunctive mood.

Donnellan (1966) argues that definite nominal expressions are ambiguous between a referential and an attributive use (cf: also Napoli (1992)). Only in the second case, but not in the first one, the definite can be analyzed in a Russellian way as an existential quantifier with a uniqueness condition. Expressions like *chiunque sia* (whoever he/she is) function as a

device for excluding the referential construal. For instance it is incompatible with intrinsically referential expressions like proper names (17). [16]

(17) a. L'assassino di Smith è pazzo, chiunque sia
"The murderer of Smith is insane, whoever (he) is"
b. * Gino è pazzo, chiunque sia
"Gino is insane, whoever (he) is"

If the function interpretation, as we assume, involves referential expressions, we expect it to be incompatible with expressions like *chiunque sia*. Since a pronoun bound by a quantifier must be in that quantifier's scope, the definite object in (18a) cannot be construed as quantificational, because in this case it would have to scope out and be interpreted outside the scope of the embedded quantified subject. Hence the possible distributive interpretation in (18a) can only be an instance of the function interpretation. In fact adding *chiunque sia* (18a) becomes ungrammatical. [17] The definite object in (18b), on the other hand, which cannot be construed as referential because of the subjunctive, is perfectly compatible with *chiunque sia*.

(18) a. Gina desidera che *ogni studente*$_i$ baci la ragazza che *gli*$_i$ fa da mamma (*chiunque essa sia)
"Gina desires that every student kisses (Subj.) the girl who to him acts (Ind.) as mother whoever she is"
b. Gina desidera che *ogni studente*$_i$ baci la ragazza che *gli*$_i$ faccia da mamma, chiunque essa sia
"Gina desires that every student kisses (Subj.) the girl who to him acts (Subj.) as mother whoever she is"

The same argument holds for the contrast in (19). The indefinite in (19a) can only be interpreted as distributive, an interpretation which is forced by the coindexing relation, if it has the function interpretation. In this case it is referential and excludes the presence of *chiunque sia*. [18, 19]

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16. Note that *chiunque sia* is ambiguous. It can either qualify the identity or the properties of an individual. With the second use of this expression (17b) is grammatical: Gino whatever kind of man he is is crazy.

17. Obviously, (18a) in presence of *chiunque sia* is perfectly acceptable if the pronoun is not coindexed with *ogni studente*: in this case the definite object is interpreted as a quantificational expression with wide scope over the intensional predicate and consequently also over the embedded subject.

18. Indefinites introduced by *un certo* (a certain), *un particolare* (a particular) or *uno specifico* (a specific) are necessarily referential. For this reason they cannot be modified by relative clauses in the subjunctive (i) nor are they compatible with *chiunque sia* (i).

i. Gina desidera sposare un(o) certo/particolare/specifico uomo che è/* sia ricco
"Gina desires (to) marry a certain/particular/specific man who is (Ind.)/*is (Subj.) rich"
ii. Un(o) certo/particolare/specifico avvocato uccise Gino (* chiunque egli sia)
"A certain/particular/specific lawyer killed Gino whoever he is"

Note first that *certo* and *particolare*, and *specifico*, are ambiguous: they can either qualify the identity or the properties of the object designated by the indefinite. In the first case these elements necessarily give rise to a referential interpretation. However, this does not mean that the relative clause in (i) is necessarily appositive, since these elements allow "stacked" relative clauses (McCawley (1988)) also in their first use. In the second case, in which *un certo/particolare uomo* can be paraphrased with: a certain/particular kind of man, the

(19) a. Gina desidera che *ogni studente*$_i$ incontri una ragazza che *gli*$_i$ vuole bene (*chiunque essa sia)
"Gina wants that every student meets (Subj.) a girl who loves (Ind.) him whoever she is"
b. Gina desidera che *ogni studente*$_i$ incontri una ragazza che *gli*$_i$ voglia bene
"Gina wants that every student meets (Subj.) a girl who loves (Subj.) him"

The following kinds of expressions do not allow the function interpretation: bare plurals,

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indefinite can be construed as quantificational and is therefore compatible with relative clauses in the subjunctive and with *chiunque sia*. Second, Manzini (1994) claims that overt partitives of the form *one/two/etc. of NP* are specific, i.e. referential in our terms, and therefore constitute an island for the licensing of subjunctive mood. However this does not seem to be the case since they are compatible with relative clauses in the subjunctive and with *chiunque sia*:

iii. Gino desidera incontrare una delle ragazze, chiunque siano, che possano risolvere questo problema
"Gino desires (to) meet of the girls whoever they are who can (Subj.) solve this problem"

19. Note that (i) contrasts with (18a) and (19a) in that the direct object is compatible with *chiunque sia*. It has to be construed as quantificational and interpreted outside the scope of the intensional operator at LF: the coindexing relation in (i) is therefore an instance of backward pronominalization at LF.

i. Gina desidera che Nino$_i$ incontri la/una ragazza che gli$_i$ vuole bene, chiunque sia
"Gina wants that Nino meets (Subj.) a girl who loves (Ind.) him whoever she is"

As discussed in Wasow (1972) and Vergnaud & Zubizarreta (1990), backward pronominalization is possible with referential expressions, such as proper names (ii) and indefinites introduced by un *certo/particolare/specifico* (cf: fn.18) (iii), but not with non-referential expressions like *ogni studente* (iv) nor with indefinites modified by *chiunque sia* (v) or introduced by *qualsiasi/qualunque/qualche* (vi) (cf: example (20)).

ii. Una/La ragazza che gli$_i$ fa da mamma desidera che Nino$_i$ incontri Gina
"A/The girl who to him acts as mother desires that Nino meets (Subj.) Gina"
iii. Siccome Gina gli$_i$ piace un certo ragazzo$_i$ è uscito con lei
"Since Gina loves him a certain boy went out with her"
iv. * Una/La ragazza che gli$_i$ fa da mamma desidera che ogni studente$_i$ incontri Gina
"A/The girl who to him acts as mother desires that every student meets (Subj.) Gina"
v. * Una/La ragazza che gli$_i$ fa da mamma desidera che un ragazzo$_i$, chiunque sia, incontri Gina
"A/The girl who to him acts as mother desires that a boy whoever he is meets (Subj.) Gina"
vi. * Siccome Gina gli$_i$ piace un qualsiasi/qualunque/qualche ragazzo$_i$ è uscito con lei
"Since Gina to him pleases an arbitrary boy went out with her"

Note further that, as predicted, adding *chiunque sia* to (15), the direct object cannot be interpreted as referential, hence the function interpretation is not available: the direct object is interpreted as a quantificational expression with wide scope (vii). Distributivity requires c-command even if it is obtained by the function interpretation.

vii. Gina desidera che ogni studente incontri una ragazza che è alta, chiunque essa sia.
"Gina desires that every student meets (Subj.) a girl who is (Ind.) tall whoever she is"

Therefore, if the direct objects in (18a) and (19a) are construed as wide scope quantificational expressions they violate, in contrast to the one in (i), (a) Koopman & Sportiche's (1982) Bijection Principle , (b) the conditions on backward pronominalization and (c) the c-command requirement for distributive interpretations.

negative polarity items, nominal expressions introduced by *un qualsiasi /qualunque /qualche* (20a), and *almeno uno/due/etc.* (at least one/two/etc.) (20b). Therefore the distributive interpretation in (20), which is forced by the coindexing relation, can only be obtained if the indefinites are interpreted as quantificational expressions in the scope of *ogni studente*, and consequently in the scope of the intensional predicate in the main clauses. Hence, in contrast to (18a) and (19a), the relative clauses must be in the subjunctive.

(20) a. Gina desidera che *ogni studente*$_i$ incontri una qualsiasi / qualunque /qualche ragazza che *gli*$_i$ voglia / * vuole bene.
"Gina wants that every student meets (Subj.) an arbitrary girl who loves (Subj.) /* loves (Ind.) him"

b. Gina desidera che *ogni studente*$_i$ incontri almeno una ragazza che *gli*$_i$ voglia / *vuole bene
"Gina wants that every student meets (Subj.) at least one girl who loves (Subj.) /* loves (Ind.) him"

Similarly, while it is possible to recover a function between two sets of individuals, it seems to be impossible to recover a function between individuals and propositions. In other words, complement clauses do not act as referential expressions and can therefore not constitute an island for the licensing of subjunctive mood. Hence, the coindexing relation in (21) is only possible if the most embedded complement clause is in the subjunctive.

(21) Gina desidera che *ogni studente*$_i$ creda che Pina *gli*$_i$ voglia/* vuole bene
"Gina wants that every student believes (Subj.) that Pina loves (Subj.)/ *loves (Ind.) him"

As shown in (22), extraction from nominal expressions is possible if they are interpreted with narrow scope (22b) but also if they are interpreted with wide scope with respect to intensional operators (22a). (22a) expresses that there is a picture Gino is looking for and the speaker asks who is the owner (or painter) of the picture. [20]

(22) a. Di chi Gino sta cercando un quadro che lo mostra bello?
"Of whom Gino is looking for a picture that him shows (Ind.) nice"

b. Di chi Gino sta cercando un quadro che lo mostri bello?
"Of whom Gino is looking for a picture that him shows (Subj.) nice"

It is a well known fact that referential nominal expressions block extraction. [21] Hence, the

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20. In the same way the indefinites below can be interpreted with wide scope over negation (i) and the quantified subject (ii) despite extraction. Note further that the indefinite in the German example in (iii) can only have wide scope over negation, nonetheless extraction is perfectly possible.

i. Di chi non hai visto due fotografie?
"Of whom (you) not have seen two pictures"

ii. Di chi nessun studente ha visto una fotografia?
"Of whom no student has seen a picture"

iii. Von wem hast du zwei Bilder nicht gesehen?
"Of whom have you two picture not seen"

21. Fiengo & Higginbotham (1981) claim that extraction form nominal expressions is subject to a *Specificity Condition*: extraction from specific nominal expressions is not allowed. This condition applies to

indefinite object in (22a) can only be construed as a wide scope quantificational indefinite but not as a referential expression. If, as we assume, the function interpretation involves referential expressions, extraction should be impossible. As shown by the contrast in (23), this is the case. Remember that the indefinite in (23a) with the indicative and the pronoun which is coindexed with the non-referential expression *ogni studente* cannot be construed as a quantificational expression; the only possible interpretation is the function interpretation (cf: example (19a)). As such it excludes extraction. The narrow scope quantificational indefinite in (23b), on the other hand, allows extraction. [22]

(23) a. * Di chi desideri che *ogni studente*$_i$ cerchi una fotografia che *lo*$_i$ mostra bello?
"Of whom (you) desire that every student looks for (Subj.) a picture that him shows (Ind.) nice"
b. Di chi desideri che *ogni studente*$_i$ cerchi una fotografia che *lo*$_i$ mostri bello?
"Of whom (you) desire that every student looks for (Subj.) a picture that him shows (Subj.) nice"

2.5. *'che'- deletion*

Differently from English *that*, the Italian complementizer *che* (that) can only be deleted if a constituent has been extracted or topicalized out of the complement clause: [23]

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referential expressions, such as *a certain picture, this picture over there*, etc., which are considered to be specific. However, as shown by (22a) (cf: also fn. 18) the concept of specificity involved must be distinguished from wide scope. Note that we do not claim referentiality to be the only property to block extraction. For instance, as has long been noticed (cf: e.g., Chomsky (1973, 1977)), extraction cannot take place from definite nominal expressions, which can be construed as non-referential (i). This seems to be a special property, independent of referentiality, of the English (singular) definite determiner *the* since (a) this construction is possible in languages like Italian (ii) and (b), as noted by Diesing (1992), English definite plurals marginally allow extraction (iii).

i. * Who did you see the picture of?
ii. Di chi hai visto la fotografia?
iii. ??Who did you see the pictures of?

In addition, strong quantifiers, such as *every, most, each*, etc., which are non-referential as well as overt partitives which can be non-referential (cf: fn. 18) allow extraction. See Diesing (1992), who relates this fact to the notion of *Presuppositionality*.

22. (i) contrasts with (23b) in that the direct object can be construed as a quantificational indefinite with intermediate scope between the main subject and the intensional predicate. Extraction is therefore perfectly possible.

i. Di chi ogni studente$_i$ desidera cercare una fotografia che lo$_i$ mostra bello?
"Of whom every student desires (to) look for a picture that him shows nice"

23. Note that in contexts without extraction or topicalization *che*-deletion is possible if the main verb is in the first person:

i. Penso/Credo (che) Pina sia incinta
"(I) think that Pina is (Subj.) pregnant"

(24) a. Gino pensa/crede *(che) Pina sia/è incinta
"Gino thinks that Pina is (Subj.)/is (Ind.) pregnant"
b. Chi Gino pensa/crede (che) sia incinta?
"Who Gino thinks that is (Subj.) pregnant"
c. Nina Gino pensa/crede (che) sia incinta
"Nina Gino thinks that is (Subj.) pregnant"

Interestingly, while the complement clause of verbs like *credere* and *pensare* can be in the indicative, they must be in the subjunctive if the complementizer is deleted:

(25) a. Chi Gino pensa/crede *(che) è incinta?
"Who Gino thinks that is (Ind.) pregnant"
b. Nina Gino pensa/crede *(che) è incinta?
"Nina Gino thinks that is (Ind.) pregnant"

Assuming that *che*-deletion is possible only if the complement clause occupies a governed position, [24] the ungrammaticality of (25) constitutes a further argument for our hypotheses that complement clauses in the indicative of verbs like *pensare* and *credere* undergo movement at LF.

2.6. *Disjoint Reference Effects*

Raposo (1985) observes for Portuguese, French and Spanish that the pronoun *ele* (he) can be coreferent with the subject of the main clause in (26a) but not in (26b). In order to account for the *Disjoint Reference Effect* in (26b), he assumes that the binding domain of the pronominal subject in (26b), but not in (26a), is the main clause. In this view the pronoun in (26b) cannot be coreferent with the main subject without violating *Principle B* of the Binding Theory.

(26) a. O Manel pensa que (ele) lê bastantes livros
"Manel thinks that he reads (Ind.) enough books"
b. O Manel deseja que (ele) leia mais livros
"Manel wishes that he reads (Subj.) more books"

Raposo assumes that predicates like *pensar* are characterized by the presence of a [+TENSE] operator in the COMP position of the subcategorized complement clause. This operator creates an opaque domain for the pronoun in subject position. Subcategorized complement clauses to predicates like *desejar*, on the other hand, are characterized by the feature [-TENSE] in their COMP position, extending the binding domain of the pronoun to the main clause. Crucially, he concludes that "the choice of mood is not directly involved in the different readings the complement subject pronouns have" in (26) (Raposo (1985), p. 103). The same observation can be made for Italian. Just as in Portuguese (26), the pronoun *lui*$_i$ (he) can be coindexed with the main subject in (27a), but not in (27b).

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24. This condition has to apply at S-structure and at LF, as shown by the impossibility of *che*-deletion with topicalized complement clauses:

i. * (che) la terra si muova penso/credo
"that the earth moves (Subj.) (I) think"

(27) a. *Gino*$_i$ crede che *lui*$_i$ legge abbastanza libri
"Gino thinks that he reads (Ind.) enough books"
b. * *Gino*$_i$ desidera che *lui*$_i$ legga più libri
"Gino wishes that he reads (Subj.) more books"

Note however that Italian differs from Portuguese, French and Spanish in that the complement clause of predicates like *credere* and *pensare* can be in the subjunctive. In this case, just as in (27b), the disjoint reference effect shows up (28).

(28) * *Gino*$_i$ crede che *lui*$_i$ legga abbastanza libri
"Gino thinks that he reads (Subj.) enough books"

Raposo's approach does not account for the contrast between (27a) and (28). Since the complement clause of *credere* is characterized by the feature [+TENSE] no disjoint reference effect should arise, independently of mood. We suppose that the contrast between (27a) and (28) is related to the different positions the complement clauses occupy at LF. In contrast to Raposo we assume that predicates like *desiderare*, on the one hand, and *credere* and *pensare*, on the other hand, behave alike with respect to the extension of the binding domain to the main clause. However, the binding domain can be extended to the main clause only if the complement clause is interpreted in its base position. In (26a) and (27a) the complement clauses in the indicative raise to a position outside the scope of the intensional operator of *credere* at LF. In this position it creates an opaque domain in which the pronoun is free. In (26b), (27b) and (28), on the other hand, the complement clause in the subjunctive does not move at LF. It remains in its base position, hence the binding domain of the pronoun is extended to the main clause. According to this view, (28) shows the disjoint reference effect because the complement clause *cannot* move at LF without leaving the scope of the intensional operator which licenses the subjunctive mood. Hence the binding domain is necessarily extended to the main clause. Consider now (29a). (29a) differs from (28) in that the most embedded complement clause in the subjunctive *can* move to an intermediate position outside the scope of the intensional operator of *credere* in which the subjunctive is licensed by the intensional operator of *desidera*. If it moves, it constitutes an opaque binding domain in which the pronoun is free: hence, in contrast to (28), no disjoint reference effect shows up.

(29) a. Gina desidera che *Gino*$_i$ creda che *lui*$_i$ legga abbastanza libri
"Gina desires that Gino believes (Subj.) that he reads (Subj.) enough books"
b. Gina desidera che *Gino*$_i$ creda che *lui*$_i$ legge abbastanza libri
"Gina desires that Gino believes (Subj.) that he reads (Ind.) enough books'

Regarding the absence of the disjoint reference effect (29a) and (29b) behave in the same way. In both sentences the most embedded clause can move at LF creating an opaque binding domain. They only differ with respect to the fact that the most embedded complement clause in (29b) must raise at LF, because of the indicative mood. [25]

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25. Note that (i), in contrast to (29a), shows the disjoint reference effect. We assume that *desiderare* differs from *credere* in that it does not allow its complement clause to raise at LF, hence the binding domain is necessarily extended.

i. * Gina vuole che *Gino*$_i$ desideri che *lui*$_i$ legga più libri
"Gina wants that Gino desires (Subj.) that he reads (Subj.) more books"

(30) differs from (29) in that the most embedded clause contains a negative polarity item which is licensed by the negative marker in front of *creda*. As we will see in section 4.2, the most embedded clause in such contexts cannot move outside the scope of *non credere*. Hence, in this case, the binding domain of the pronoun will be extended just as in (28). Consequently the subject pronoun cannot be interpreted as coindexed with the subject of *credere*.

(30) *Gina desidera che *Gino*$_i$ non creda che *lui*$_i$ legga niente/ alcun libro
"Gina desires that Gino not believes (Subj.) that he reads (Subj.) nothing/ any book"

3. *Tense at Logical Form*

Consider the contrast in (31). In (31b) the indefinite direct object, which is modified by a relative clause in the imperfect, can have a narrow scope interpretation with respect to the quantified subject of the embedded clause. This interpretation is not available for the indefinite in (31a), which is modified by a relative clause in the present tense.

(31) a. Gino vide che ogni uomo baciava una donna che è molto ricca
"Gino saw that every man kissed a woman who is very rich"
b. Gino vide che ogni uomo baciava una donna che era molto ricca
"Gino saw that every man kissed a woman who was very rich"

Adopting Stowell (1993), [26] we assume that Italian present tense is an *Anti-Past Polarity Item* (32). As such, the indefinite in (31a) has to raise at Logical Form to a position outside the scope of the temporal feature PAST in TP1 of the simple past of the main clause, and consequently outside the scope of the quantified subject of the embedded clause. [27]

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26. We assume that the sentences in (31) have the (surface) structure (i). According to Stowell (1993) the temporal feature in TP1 in (i) establishes a temporal ordering between two time denoting arguments. The ZP (Zeit Phrase) which functions as the external argument of TP1 denotes the Reference Time, the internal argument ZP the Event Time. When a past tense occurs in a main clause, the Reference Time ZP lacks a c-commanding ZP to serve as its controller; in this case the Reference Time ZP denotes the utterance time. Since the feature in TP1 in (ii) is PAST, the event time precedes utterance time. In the following, however, we will disregard the internal structure of tense projections.

i. $[_{AGRSP}$ Gino $[_{AGRS'}$ vide$_i$ $[_{TP1}$ ZP $[_{T1'}$ T1 ..... $[_{ZP}$ ... [VP t_i [che ogni uomo baciava
[PAST]
una donna ...]]]]]

27. (32) accounts for the fact that in (31a) the present tense in the relative clause is interpreted independently of the past of the main clause, i.e. directly with respect to utterance time: (31a) only means that the event of being rich is simultaneous to utterance time but not necessarily to the event of seeing. Stowell (1993) assumes that complement clauses in the present tense under a past differ from relative clauses in that they give rise to *Double Access* constructions: not also their LF-position but also their copy in the base position in the scope of the main past is temporally interpreted. Therefore the complement clause in (i) is interpreted as simultaneous to utterance time but also necessarily as simultaneous with respect to the event expressed in the main clause. Note that in (northern) Italian Double Access constructions are not available (ii). See Brugger &

(32) Italian present tense is an *Anti-Past Polarity Item* (APPI)

Imperfect differs from present tense in that it can be interpreted in the scope of another past. Hence the indefinite in (31b) can be interpreted in the scope of the feature PAST in the main TP1 and consequently also in the scope of the quantified subject. [28]

Note that in (31a), in contrast to (31b), the indefinite object can have a distributive interpretation only if it has the function interpretation, as shown by the contrast in (33).

(33) a. * Di chi Gina disse che *ogni studente*$_i$ stava guardando un ritratto che *gli*$_i$ sta a cuore?
"Of whom Gina said that every student was looking at a picture that to him is at his heart"
b. Di chi Gina disse che *ogni studente*$_i$ stava guardando un ritratto che *gli*$_i$ stava a cuore?
"Of whom Gina said that every student was looking at a picture that to him was at heart"

As shown in section 2.4, a nominal expression that has the function interpretation is construed as referential, hence it does not move at LF. Just as it was the case regarding the licensing of subjunctive, also referentiality constitutes an island for tense, i.e., in (31a) the referential indefinite creates a barrier between the present tense in the relative clause and the superordinated past tenses and therefore it is not forced to move by (32). This assumption is confirmed by the fact that the indefinite in (34b), but not the one in (34a), is compatible with words like *qualunque/qualche/etc.*, which exclude referentiality (cf: section 2.4, example (20)): [29]

(34) a. * Gino vide che *ogni professore*$_i$ salutava una qualunque ragazza che *gli*$_i$ fa da mamma
"Gino saw that every professor greeted a any girl that to him acts as his mother"
b. Gino vide che *ogni professore*$_i$ salutava una qualunque ragazza che *gli*$_i$ faceva da mamma
"Gino saw that every professor greeted a any girl that to him acted as his mother"

D'Angelo (1994b) for an account for this special property of Italian complement clauses.

i. John said that Mary is pregnant
ii. * Gino disse che Maria è incinta
Gino said that Mary is pregnant

28. In this case the imperfect is interpreted not independently of the main past, i.e., not directly with respect to utterance time: the event of being rich is simultaneous to the event of seeing (and, indirectly, past-shifted w.r.t. utterance time).

29. Consequently, as in the wide scope interpretation of the indefinite in (31a), also in the function interpretation the present tense in the relative clause is interpreted independently of the c-commanding past tenses, i.e., directly w.r.t. utterance time.

We conclude that non-referential nominal expressions in the scope of a past tense have to scope out at LF if they contain a present tense. However, in (31a), when the indefinite does not move, i.e., in the function interpretation, the referentiality of the indefinite allows for the presence of the present tense in the c-command domain of the main past.

The assumptions in (3) and (32) account for the following contrasts. The indefinite in (35a) has to raise outside the scope of the main PAST in TP1 since it is modified by a relative clause in the present subjunctive, an APPI. But at the same time, subjunctive being an IOPI, it has to remain in the scope of the intensional operator in V°. Because of these contradictory requirements (35a) is ungrammatical. [30]

(35) a. * Gino desiderava sposare una ragazza che sia ricca
"Gino wanted to marry a girl who is (Subj.) rich"

b. $[_{AGRSP}\ [_{TP1}$ ..... $[_{VP}\ V°$ .....]]]]]]
[PAST] op

c. Gino desiderava sposare una ragazza che è/ era/ fosse ricca
"Gino wanted to marry a girl who is (Ind.)/ was (Ind.)/ was (Subj.) rich"

(35a) becomes grammatical if the relative clause is in the present or past indicative or in the imperfect subjunctive (35c). In the first case, the indefinite moves to take scope over both the intensional operator and the past feature of the main predicate; in the second case it is interpreted inside the scope of both elements.

The contrast in (36) shows that a constituent containing subjunctive mood can raise at Logical Form, as long it remains in the scope of an intensional operator which licenses the subjunctive. Because of the present subjunctive in the relative clause, the indefinite direct object in (36a) cannot be interpreted in the scope of the past feature of *desiderasse*, nor can it be interpreted outside the scope of the intensional operator of the main predicate *spera*. However, if the indefinite raises at Logical Form to a position between those elements, the requirements for the present subjunctive can be satisfied. In fact, the only possible interpretation of (36a) is the one represented in (36b): the indefinite is interpreted between the two intensional predicates.

(36) a. ? Gina spera che Gino desiderasse sposare una ragazza che sia ancora ricca
"Gina hopes that Gino wanted (Subj.) to marry a girl who is (Subj.) still rich"

b. Gina hopes that $\exists(x)$[girl who is still rich](x) $\wedge$ [Gino desired to marry(x)]

c. * Gina sperava che Gino desiderasse sposare una ragazza che sia ancora ricca
"Gina hoped that Gino wanted (Subj.) to marry a girl who is (Subj.) still rich"

(36c) contrasts with (36a), since, because of the imperfect in the main clause, the intermediate position between the two intensional predicates is no longer available for the indefinite object. Hence the indefinite cannot be interpreted in any position in (36c).

In Italian as in English (cf: Carlson (1977)) bare plurals with existential interpretation

30. Note that this argumentation is based on the assumption that the intensional operator is located in the scope of the feature PAST, as in (35b). In section 4.1, we will discuss some empirical arguments in favor of this assumption.

typically have narrowest scope. [31, 32] The bare plural objects in (37) cannot be interpreted

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31. In Italian unmodified bare plurals cannot surface in the preverbal subject position, but must follow the verb (cf. e.g. Benincà (1980)). Longobardi (1991) assumes that they are introduced by an empty D° which is subject to the ECP; hence bare plurals can only occupy governed position (cf. also Delfitto & Schroten (1991)).

i. Oggi, sono arrivati marrochini in paese
"Today have arrived Moroccans in town"

ii. * Oggi, marocchini sono arrivati in paese
"Today Moroccans have arrived in town"

Modified bare plurals, such as the ones in (iii) and (iv), differ from simple bare plurals in that they can surface in the preverbal subject position at a particularly narrative stylistic level (Longobardi (1991), Delfitto & Schroten (1991)).

iii. Foreste meravigliose si aprivano davanti ai nostri occhi
"Beautiful forests opened in front of our eyes"

iv. Ragazze che Gianni non aveva mai visto affollavano i marciapiedi tra Rue St. Denis e Boulevard Sébastopole (Longobardi (1991))

Although modified bare plurals can move at S-structure, they cannot take wide scope (cf. (37)), even if they occupy the preverbal subject position (v).

v. Politici corrotti hanno bloccato due leggi (* ciascuno) (Brugger (1993))
"Corrupt politicians blocked two laws each"

Brugger (1993) assumes that modified bare plurals which surface in the preverbal subject position are not interpreted in that position at LF but interpreted in their base position inside VP. If this is correct, we expect that preverbal bare plurals whose base position is in the scope of an intensional operator cannot be modified by a relative clause in the indicative mood, which is an AIOPI. As shown by the contrast in (vi), this prediction is fulfilled. The relative clause of the subject of (vi), which is interpreted in the scope of the intensional operator of *potere* (can), is incompatible with indicative mood (vi). The same contrast is shown by topicalized bare plurals (vii):

vi. Foreste che fossero/* erano meravigliose potevano aprirsi davanti ai nostri occhi da un momento all'altro
"Forests that were (Subj.)/* were (Ind.) beautiful could open in front of our eyes from one moment to the other"

vii. Ragazze che Nino conoscesse/* conosceva bene Gino desiderava incontrare
"Girls that Nino knew (Subj.)/* knew (Ind.) well Gino desired (to) meet"

32. Bare plurals with generic interpretation differ from the ones with existential interpretation in that they can have wide scope (cf. e.g., Carlson (1977)). The bare plural subject in (i) can be interpreted with wide scope with respect to negation, the one in (ii) with wide scope over the direct object.

i. Ragazze che sappiano/* sanno l'inglese non leggono le traduzioni di Joyce
"Girls who know (Subj.)/* know (Ind.) English do not read the translations of Joyce"

ii. Politici che siano/* sono corrotti hanno sempre almeno due avvisi di garanzia
"Politicians who are (Subj.)/* are (Ind.) corrupt always have at least two warrants"

Note that the relative clauses in (i) and (ii) must be in the subjunctive, although there is no intensional predicate in these examples. Heim (1982) assumes that bare plurals with generic interpretation are bound by an unpronounced generic operator or by adverbial quantifiers. We assume that these operators can license subjunctive mood in Italian. This possibility is not limited to bare plurals but can also be found with e.g., indefinites in the singular (iii). The indefinite in (iii) can have generic interpretation only if the relative clause is in the subjunctive, otherwise it is interpreted as a wide scope or referential indefinite. In contexts of specific time reference, which are incompatible with the generic operator, subjunctive mood is not licensed (iv).

with wide scope with respect to the universally quantified subject in (37a), to negation in (37b), or to the intensional operator in (37c).

(37) a. Ogni pittore dipinge paesaggi campestri
"Every painter paints settings rural"
b. Gina non dipinge paesaggi campestri
"Gina not paints settings rural"
c. Gina desidera uomini forti
"Gina desires men strong"

In addition, contrary to Carlson (1977), existential bare plurals cannot be construed as referential (cf: Brugger (1993)) and therefore disallow the function interpretation. Consequently, since existential bare plurals do not raise at LF, the impossibility of the indicative in (38a) is correctly predicted.

(38) a. * Gina vuole baciare studenti che si lavano
"Gina wants kiss students who themselves wash (Ind.)"
b. Gina vuole baciare studenti che si lavino
"Gina wants kiss students who themselves wash (Subj.)"

4. *Mood and Negation*

4.1. *Two LF landing sites and the semantic position of Negation*

In both sentences in (39) the indefinite object must move outside the scope of the intensional operator of *desiderava* in the main clause, because of the indicative in the relative clause. The different tenses in the relative clauses determine different scope relations of the indefinite objects with respect to the quantified subject *ogni studente*. Only the indefinite in (39b), but not the one in (39a), can be interpreted in the scope of the universal quantifier. [33]

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iii. Un politico che sia/è corrotto ha sempre almeno due conti correnti all'estero
"A politician who is (Subj.)/is (Ind.) corrupt has always at least two bank accounts abroad"
iv. Un politico che *sia/è corrotto ha ricevuto due conti correnti all'estero
"A politician who *is (Subj.)/is (Ind.) corrupt has got two bank accounts abroad"

33. Again, in (39a) the indefinite object can only be interpreted as distributive with respect to *ogni studente* by the function interpretation. This is confirmed by the fact that first, (i) and (ii) differ with respect to extraction, and second, that only (iv), but not (iii), is compatible with *chiunque sia*.

i. * Di chi *ogni studente*$_i$ desiderava vedere una fotografia che *lo*$_i$ mostra bello?
"Of whom every student desired (to) see a picture that him shows (Ind.) nice"
ii. Di chi *ogni studente*$_i$ desiderava vedere una fotografia che *lo*$_i$ mostrava bello?
"Of whom every student desired (to) see a picture that him showed (Ind.) nice"
iii. *Ogni studente*$_i$ desiderava sposare la ragazza che *gli*$_i$ fa da mamma (* chiunque essa sia)
"Every student desired (to) marry a girl who to him acts (Ind.) as mother whoever she is"
vi. *Ogni studente*$_i$ desiderava sposare la ragazza che *gli*$_i$ faceva da mamma (chiunque essa fosse)
"Every student desired (to) marry a girl who to him acted (Ind.) as mother whoever she was"

(39) a. Ogni studente desiderava sposare una ragazza che è molto alta
"Every student wanted marry a girl who is very tall"
b. Ogni studente desiderava sposare una ragazza che era molto alta
"Every student wanted marry a girl who was very tall"

We assume that there are two landing sites for movement in Logical Form (40). There is one landing site, LFP1, outside the scope of the subject and therefore to the left of TP, whose head contains the temporal feature of the main clause; there is another landing site, LFP2, in the scope of the subject between TP and the intensional operator in V°. [34, 35]

(40) $[_{LFP1}\ (DP_i)\ [_{AGRSP}\ [_{TP1}\ _{[PAST]}\ [_{LFP2}\ (DP_i)\ [_{VP}\ V^{\circ}_{op}\ [\ldots t_i \ldots]]]]]]$

The intermediate landing site, i.e., the specifier of LFP2, is outside the scope of the intensional operator but inside the scope of the feature PAST of *desiderava* in TP1. Therefore it is not a possible landing site for the indefinite in (39a), because in this position the present tense in the relative clause would still be in the scope of the PAST feature. The only possible landing site of the indefinite is the specifier of LFP1, which is also outside the scope of the quantified subject. The indefinite object in (39b), on the other hand, can be interpreted in the specifier of LFP2, because the imperfect in the relative clause is not necessarily an APPI, and, consequently, is in the scope of the quantified subject. [36]

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34. Note that the argument only requires the intensional operator to be located in a position below LFP2. It might therefore be the case that the it is located in a functional projection between LFP2 and VP rather than in V°. In any way, however, it cannot be the case that the AGRS° and T°, i.e., the old I°, are involved in the licensing of subjunctive as proposed by Manzini (1994).

35. The heads of these positions might contain a scope feature the indefinite has to check at LF.

36. In other words, LFP1 is located outside the highest position available for the universal quantifier at LF: QR of *ogni studente* in (39a) can only create an LF representation like (i), the one in (ii) is excluded. In other words, the scope of quantifiers like *every*, which are clause bound, always excludes LFP1. Note that this view differs from the classical analysis proposed by May (1977, 1985), according to which LF-representations similar to (ii) are allowed. A further necessary assumption is that there are no LFPs between the highest scope position of the universally quantified subject and TP.

i. $[_{LFP1}$ [una ragazza che è molto alta] [[ogni studente]$_i$ $[_{AGRSP}$ t_i $[_{TP}$ ....
ii. * [[ogni studente]$_i$ $[_{LFP1}$ [una ragazza che è molto alta] $[_{AGRSP}$ t_i $[_{TP}$ ....

The same observations hold in embedded clauses. The indefinite in (iii) can only be interpreted in LFP1 of the complement clause. In any other position it would be interpreted either in the scope of the embedded PAST, or outside the scope of the intensional operator in the main clause. In both cases the present subjunctive in the relative clause would not be licensed. Consequently, since the scope of the clause bound quantifier *ogni* excludes the embedded LFP1-projection, it can only be interpreted with narrow scope with respect to the indefinite object. Furthermore, since the subjunctive in the relative clause excludes the function interpretation, the coindexing relation in (iv) is excluded.

iii. Gina spera che ogni studente desiderasse incontrare una ragazza che sia ancora ricca
"Gina hopes that every student wanted (Subj.) meet a girl who is (Subj.) still rich"
iv. * Gina spera che *ogni studente*$_i$ desiderasse incontrare una ragazza che *gli*$_i$ piaccia ancora
"Gina hopes that every student wanted (Subj.) meet a girl who to him pleases (Subj.) still"

Now we can establish the position of sentential negation which is relevant for the semantic interpretation. Consider the sentence in (41a). [37] As with the one in (39b), the indefinite in (41a) must raise to a position outside the intensional operator. Since it is modified by a relative clause in the imperfect, it can occupy the specifier of LFP2 at LF. In fact, it can be interpreted in the scope of the quantified subject of the main clause. Crucially, in this position the indefinite is interpreted with wide scope with respect to negation. (41a) can be paraphrased with (41b). [38]

(41) a. Ogni professore non sperava che Gino sposasse una studentessa che era alta
"Every professor not hoped that Gino married (Subj.) a student who was (Ind.) tall"
b. For every professor x there was a tall girl y such that x did not hope that Gino married y.

We conclude that the position in which sentential negation is interpreted is lower than the intermediate landing site LFP2. Since TP1 is higher than LFP2 (cf. (40)) this position is also lower than TP1. In the structure in (42) we refer to this position as NEGP2. [39,40]

(42) $[_{LFP1}\ (DP_i)\ [_{AGRSP}\ [_{TP1}\ [_{LFP2}\ (DP_i)\ [_{NEGP2}\ [_{VP}\ V^\circ\ [_{CP}...t_i...]]]]]]$

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37. In order to avoid confusion with respect to the scope of the negation and the main predicate we use a predicate which does not allow Neg-Raising.

38. The distributive interpretation of the indefinite in (41a) is not necessarily an instance of the function interpretation as shown by the grammaticality of the following examples. This fact is crucial for the structure assumed in (42).

i. Di chi *ogni professore*$_i$ non sperava che Gina vedesse una fotografia che *lo*$_i$ mostrava bello?
"Of whom every professor not desired that Gina saw (Subj.) a picture that him showed (Ind.) nice"

ii. Ogni professore non sperava che Gino sposasse una studentessa che era alta chiunque essa fosse
"Every professor not hoped that Gino married (Subj.) a student who was (Ind.) tall whoever she was"

39. The syntactic and the interpretative position of sentential negation do not coincide in Italian: while the negative force is located in NEGP2, perhaps by an empty negative operator (Ouhalla (1990)) in its specifier, the negative morpheme *non* precedes the inflected verb at s-structure. German, as argued in Brugger & Poletto (1994), seems to show the mirror image: the negative marker *nicht* (not) surfaces in a position which is structurally lower than the interpretative position of negation.

40. We refer to this position as NEGP2 in order to distinguish it from Zanuttini's (1991) NEGP which is located to the left of TP1 (cf: also Haegemann & Zanuttini (1990)). The examples discussed in this section (and in the following section) show that if there is a negative projection higher than TP1, this position cannot be the position that is relevant for semantic interpretation. According to Cinque (p.c), there are at least six negative projections in the structure of a simple clause: some of them are to the left and the others are to the right of TP. The semantically relevant one must therefore be one of the second group.

4.2. *Mood, Negation and Negative Polarity Items*

As noted in footnote 5, subjunctive mood can be licensed not only by intensional operators, but also by negation. Note first that a verb like *salutare* (greet), which is not an intensional operator, does not license subjunctive mood, as shown by the contrast in (43). [41]

(43) Gino saluta una donna che è/* sia ambiziosa
"Gino greets a woman who is (Ind.)/* is (Subj.) ambitious"
Gino is greeting a woman who is ambitious

As shown in (44), in the presence of negation the relative clause can be in the subjunctive (44b). The sentences in (44) differ in meaning. The indefinite in (44b) is interpreted inside the scope of the negation. (44b) can be paraphrased with: it is not the case that there is a woman who is ambitious and who Gino is greeting. The indefinite in (44a), on the other hand, can only be interpreted outside the scope of the negation: there is a woman who is ambitious and it is not the case that Gino is greeting her. [42]

(44) a. Gino non saluta una donna che è ambiziosa
"Gino not greets a woman who is (Ind.) ambitious"
b. Gino non saluta una donna che sia ambiziosa
"Gino not greets a woman who is (Subj.) ambitious"
Gino is not greeting a woman who is ambitious

We assume that the subjunctive mood is a *Negative Polarity Item*, i.e., it can be licensed by negation at Logical Form. Indicative mood, on the other hand, behaves as an *Anti-Negative Polarity Item*, i.e., it cannot be interpreted in the scope of the negation and has to take wide scope over negation:

(45) Subjunctive mood is a *Negative Polarity Item* (NPI), Indicative mood is an *Anti Negative Polarity Item* (ANPI)

It is often assumed that in languages like Italian postverbal n-words such as *nessuno* (nobody) raise to the specifier of a negative projection at Logical Form in order to license negative concord (cf: e.g., Haegemann & Zanuttini (1990), Zanuttini (1991)). However, if there is such movement in natural language, this movement cannot be considered to have any

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41. The subjunctive in the relative clause is grammatical if it is read with a marked intonational pattern: 'Gino SALUTA una donna che sia ambiziosa'. In this case the indefinite is dislocated to the right and has a generic interpretation: for a woman who is ambitious Gino in general greets her. We assume that in this case the indefinite is bound by an unpronounced generic quantifier (Heim (1982)), which in Italian can license subjunctive mood (cf. 32). Since generic quantification is incompatible with contexts of specific time reference, we expect subjunctive mood to be ungrammatical in such contexts. This is shown by (i), which is ungrammatical even if read with a marked intonational pattern.

i. * Gino sta salutando una donna che sia/fosse ambiziosa
"Gino is greeting a woman who is (Subj.)/was (Subj.) ambitious"

42. Of course, the indefinite in (44a) can also be construed as referential. Note furthermore that for some native speakers the indicative in the scope of negation is not completely excluded, at least at a more colloquial level. The same holds for the example in (48) below (cf: e.g., the judgements given by Manzini (1994)).

impact on the position of interpretation, and consequently on the scope of n-words. Otherwise one would wrongly predict that the n-word in (46), raising to a negative projection in the main clause, would necessarily have scope over the indefinite subject of the embedded clause. [43] This is not the case as shown by the fact that pronoun binding is possible. [44,45,46]

(46) Pina non ordinò che *un qualche ragazzo*$_i$ invitasse nessuna ragazza che *gli*$_i$ piacesse
"Pina not ordered that a some boy invited (Subj.) no girl who to him pleased (Subj.)"
Pina did not order that a boy invite any girl who he likes

Hence, even if the negative indefinite object moves to the specifier of a negative projection at LF for the licensing of negative concord, this movement must be considered to be irrelevant for its interpretation (47a). [47] (46) further suggests that n-words are existential quantifiers without negative force rather than negative quantifiers (47b). Consequently, as Negative Polarity Items, they have to be interpreted at Logical Form in the scope of an (abstract) element that carries negative force, i.e., in the scope of NEGP2 (47c):

(47) a. Negative concord in the specifier of a negative projection has no impact on the position of interpretation of n-words
b. Italian n-words are existential quantifiers without negative force
c. Italian n-words are interpreted in the scope of NEGP2

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43. Again, we use a predicate like *ordinare* which does not allow Neg-Raising, in order to avoid possible complications regarding the scope of negation.

44. Since nominal expressions introduced by *un qualche* (*qualsiasi, qualunque*) cannot be construed as referential indefinites (cf: section 2.4, example (20)) they do not license backward pronominalization (i).

i. * Una ragazza che *gli*$_i$ piace desidera *un qualche ragazzo*$_i$
"A girl who he likes desires a some boy"

45. (46) constitutes an exception to the *Intermediate Scope Constraint* proposed by Linebarger (1980). She points out that simply requiring that NPIs be in the scope of some negation in Logical Form is too liberal a license: if some operator intervenes between the negation and the polarity item, the item will not be licensed. In (46) the indefinite subject obviously intervenes. As pointed out to us by P. Aquaviva (p.c.), this has to be considered a special property of *un qualche*, since all other operators obey this constraint.

46. Similarly, if the scope of n-words were determined by the position in which negative concord takes place, only (ii), in which the n-word takes scope over the matrix predicate *ordinare* at LF, but not (iii), would represent the interpretation of (i).

i. Pina non ordinò che Gino invitasse nessuno
"Pina not ordered that Gino invited nobody"
ii. $\forall(x)\ \neg$ [Pina ordered [that Gino invited x]]
iii. $\neg$ [Pina ordered [that $\exists(x)$ Gino invited x]]

47. Note that our analysis is neutral with respect to the position of the negative projection in which negative concord takes place, i.e., our NEGP2 or e.g., Zanuttini's (1991) NEGP to the left of TP1 (cf.: fn. 40), as long as the movement involved is considered to be irrelevant regarding scope relations.

The assumptions in (47) are in contrast to Zanuttini (1991). First, in contrast to (47b), Zanuttini (1991) treats n-words as negative universal quantifiers of the form $\forall(x)\neg$. [48] Negative concord is obtained by some kind of negative absorption in the specifier of NEGP at Logical Form. In other words, in languages that show negative concord, when two (or more) negative quantifiers raise they undergo the following process: instead of creating two (or more) consecutive instances of a universal quantifier each followed by an instance of negation of the form $[\ \forall(x)\neg]\ [\ \forall(y)\neg]$ ..., negation is factored out and the two (or more) universal quantifiers become one binary (or n-ary) quantifier of the form $[\ \forall(x)\ \forall(y)...]\neg$. Crucially, in contrast to (47a), in this analysis the scope of n-words is determined by the c-command domain of the negative projection in which negative concord takes place. An analysis in these lines predicts incorrect scope relations for the n-word in (46). In addition, since she assumes that negative concord takes place in a negative projection which is located higher than TP, the present subjunctive in (48) should be grammatical. [49]

(48) Gino non vedeva nessuna ragazza che gli mandasse/* mandi un bacio
"Gino not saw no girl who to him sent (Subj.)/* sends (Subj.) a kiss"

According to our analysis, on the other hand, the n-word in (48) must be interpreted in the scope of NEGP2 and consequently also in the scope of the PAST feature of the main clause, a configuration which correctly excludes the present subjunctive in the relative clause. [50, 51]

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48. Zanuttini argues that n-words cannot be analyzed as existential quantifiers since they can be modified by *quasi* (nearly) (i) just like universal quantifiers (ii), but unlike existential quantifiers (iii). However, this argument does not go through, since plural numerals are compatible with *quasi* (iv) (P. Acquaviva p.c.).

i. Gino non salutava quasi nessuno
"Gino not greeted nearly nobody"
ii. Gino salutava quasi ogni studente/quasi tutti gli studenti
"Gino greeted nearly every student/nearly all the students"
iii. * Gino salutava quasi uno studente
"Gino greeted nearly a student"
iv. Gino salutava quasi mille soldati
"Gino greeted nearly thousand students"

49. In addition, she assumes (cf. in the lines of Ouhalla (1990)) that languages may parametrically vary with respect to the relative order of TP1 and NEGP. Only in languages in which NEGP dominates TP1, such as Standard Italian, but not in languages in which TP1 dominates NEGP, such as colloquial French and some Italian dialects, a postverbal n-word must cooccur with a preverbal negative element. If this claim were correct we would expect the present subjunctive in sentences like (48) to be grammatical in standard French but ungrammatical in colloquial French, for example. But no such contrast can be observed.

50. Indicative mood is excluded because of (47c) in interaction with (45).

i. * Gino non vedeva nessuna ragazza che gli mandava un bacio
"Gino not saw no girl who to him sent (Ind.) a kiss"
ii. Gino non vede nessuna ragazza che gli mandi/* manda un bacio
"Gino not sees a girl who to him sends (Subj.)/* sends (Ind.) a kiss"

51. Obviously, the same holds for non-negative indefinites in the scope of negation: the indefinite object in (i) is necessarily sensitive to the temporal feature in the TP-projection of the main clause.

i. Gino non salutò una donna che fosse/* sia ambiziosa

An analogous analysis holds for complement clauses. Since the n-word in (49) must be interpreted in the scope of NEGP2, the complement clause cannot raise to LFP1 or LFP2. Hence the indicative is excluded. [52]

(49) Gino non crede che venga/* viene nessuno
"Gino not believes that comes (Subj.)/* comes (Ind.) nobody"
Gino does not believe that anybody comes

5. *Conclusions*

In this paper we argued that the location at LF of nominal expressions and embedded sentences is determined by mood and tense. We individuated two landing sites for LF-movement: the specifiers of LFP1 and LFP2, which are separated by the tense projection TP. In addition we showed that the semantic position of sentential negation, i.e. our NEGP2, has to be located below LFP2 and consequently below TP. We showed that we have to assume the following ordering: LFP1-TP1-LFP2-NEGP2-intensional operator. We analyzed indicative mood as an *Anti-Intensional-Operator Polarity Item* (AIOPI) and as an *Anti-Negative Polarity Item* (ANPI). Indicative mood inside a relative clause modifying a non-referential indefinite triggers LF movement of the indefinite outside the scope of intensional operators and sentential negation. An analogous analysis holds for indicative mood in complement clauses. In the same way, present tense triggers LF movement of the same type of constituents to a position outside the scope of the feature PAST: present tense is an *Anti-Past Polarity Item* (APPI). From our hypotheses we have derived not only empirical consequences, such as the distribution and the interpretation of indefinites, bare plurals and complement clauses, but also theoretical implications. For instance, contrary to Raposo's approach, we have shown that, first, mood is involved in the disjoint reference effects, and second, that in particular contexts no disjoint reference effect shows up in complement clauses in the subjunctive. Moreover, we have proposed that in Italian the semantically relevant position of sentential negation is NEGP2, and not the overt position of the negation marker *non*, nor Zanuttini's NEGP.

"Gino not greeted a woman who was (Subj.)/* is (Subj.) ambitious"

52. If *non* is in the complement clause, no contrast arises: both subjunctive mood and indicative mood are possible (i). The indicative is licensed if the complement clause raises to LFP1 or LFP2 at Logical Form; the n-word is licensed in the scope of the NEGP2 projection in the raised complement clause.

i. Gino crede che non viene/venga nessuno
"Gino believes that not comes (Ind.)/comes (Subj.) nobody"
Gino believes that nobody comes

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The Typology of Structural Deficiency On the Three Grammatical Classes *

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1. *On the Study of Pronouns*

1.1. *The Notion of "Classes of Pronouns"*

It is a general property of language that words fall into classes. Among the many relevant oppositions (verbs/adjectives, transitives/ergatives, etc.), one distinguishes itself from all others: that instantiated by the opposition between different classes of pronouns.

This opposition is unique in regularly contrasting *synonymous pairs*; in cutting across all components of grammar; in having no systematic correlation with any interpretive characteristic (semantic or phonetic); in determining a large set of (apparently) absolute universals; and in cutting across lexical classes, §1.1.1-5.

The fundamental goal of the present inquiry is to uncover the primitive underlying these exceptional classes.

1.1.1. Unmarkedly, one and the same pronoun (semantically / functionally defined) falls into distinct classes. The third person plural feminine nominative Italian pronouns, for instance, divide into two distinct classes with respect to coordination and reference:

			<+human>	<-human>
(1)	a. **Esse**	(*e quelle accanto) sono troppo alte.	√	√
	b. **Loro**	(e quelle accanto) sono troppo alte.	√	*
	3.pl.fm.nom	(and those besides) are too tall/high		

One class of pronouns ("class 1") may be coordinated, but it is limited to human referents, while the other ("class 2") cannot be coordinated and may refer to both human and non-human entities. In many cases, the two classes are not only functionally but also phonetically non-distinct: the French translation of (1), for instance, reproduces exactly the

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Finally, none of this would have been possible without previous studies, such as those of: R. Kayne, for the syntactic placement of clitic personal pronouns, CL-PL (1975, 1991), A. Holmberg, for first bringing to light clitic-like non clitics, (1986), and E. Berendsen/ J. Schroten for the new emphasis on the old observation concerning the interaction between deficiency and ability to refer to non-human entities, (1986/ 1992).

same pattern without morphological variation.

(2)	a. **Elles**		sont trop grandes.	√	√
	b. **Elles**	et celles d'à côté	sont trop grandes.	√	*

In (2), the non-human reading vanishes in coordination. The mystery of this correlation between coordination and interpretation reduces if the formal parallelism between (1) and (2) is taken into account: despite phonetic identity, (2) features both classes of pronouns: as before, the class which may be coordinated can only refer to human entities.

(3)			occurs in coordination	only human referents
	class 1	*loro, elles*$_1$	+	+
	class 2	*esse, elles*$_2$	–	–

One and the same semantically / functionally defined pronoun (third person plural feminine nominative unstressed) is the surface reflex of two distinct underlying grammatical elements. The existence of regular synonymous (and often homophonous) pairs, is a rare, if not unique, characteristic of the class 1 / class 2 distinction.

1.1.2. Not only is the class 1 / class 2 distinction exceptional in triggering homonymy and homophony, but it also triggers a large array of surface asymmetries, distributed across syntax, morphology, semantics and prosody. Again, it is a virtually unique characteristic in grammar that asymmetries of such different components, often considered strictly disjoint, all cluster around the same class-opposition, §2.

1.1.3. Although the class 1 / class 2 distinction is linked to several interpretive properties, both phonetic and semantic, none of these links is systematic. As seen above, there is for instance no strict covariation between class membership and human reference, only asymmetric (and overlapping) possibilities. The class 1 / class 2 distinction is purely grammatical, i.e. abstract, again an unusual state of affairs.

1.1.4. This unique abstract and pervasive distinction also seems to be an absolute universal. It is for example always true that a coordinated personal pronoun cannot refer to a non-human entity. As an example of the cross-linguistic invariance of class 1 and class 2, the following languages all have an asymmetry identical to that in (1)-(2). [1]

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1. Hungarian, Hebrew and Gun data courtesy of, respectively, Gabriella Toth, Ur Shlonsky and Enoch Aboh.
Some remarks, however: Hungarian speakers divide into two groups w.r.t. *öket*, those who use it as in (6) (the majority of our informants), and a second group who treats it as a pure class 1 pronoun on a par with Italian nominative *loro*, i.e. only referring to animate entities (the second group is irrelevant to this paradigm). The difference between the two groups is somewhat unclear, although the second is sometimes deemed "conservative".
Examples (5) and (6) also show the invariance of this paradigm w.r.t. the subject/object asymmetry. Somewhat more trivially, the same paradigm applies to English, where *it* patterns with Italian *esse*, and *he* patterns with Italian *loro*:

			<+human>	<- human>
[i]	a.	It is big	n.a.	√
	b.	*It and the other one are nice.	n.a.	*
[ii]	a.	He is big.	√	n.a.
	b.	He and the other one are nice.	√	n.a.

The relevant fact being that exactly the pronoun which refers to a [- human] entity cannot be coordinated, whereas its human counterpart can. *It* is a class 2 pronoun restricted to [- human] referents, whereas *he* may act as a class 1 pronoun, though it is highly plausible that a class 2 counterpart exists. Due to the lack of

			<+human>	<- human>
(4)	German (∈ Germanic)			
	a. **Sie**	sind groß	√	√
	b. **Sie und die daneben**	sind groß	√	*
	they and those besides	are tall/big		
(5)	Slovak (∈ Slavic)			
	a. Vidiel som **ich**		√	√
	b. Vidiel som **ich a tých druhých**		√	*
	seen I.am them and these others			
(6)	Hungarian (∈ Finno-Ugric)			
	a. Láttam **öket**		√	√
	b. Láttam **öket és a mellettük levöket**		√	*
	I.saw them and those besides			
(7)	Hebrew (∈ Semitic)			
	a. **Hi**	gvoha	√	√
	b. **Hi ve-zot le-yad-a**	gvohot	√	*
	she and-that.one to-side-her	tall/big		
(8)	Gun (∈ Kwa)			
	a. **Yélè**	yon wankpè	√	√
	b. **Yélè kpo yélè kpo**	yon wankpè	√	*
	she and she and	know beauty		

1.1.5. Finally, not only personal pronouns, but also quantifiers, adverbs, adjectives, etc. divide into class 1 / class 2, here Greek adverbs and French bare quantifiers (§9): [2]

(9) a. To **sigo** (*ke **kalo**) évrasa.
it slowly and well I.boiled
b. Jean a **tout** (*et encore plus) vu.
Jean has all (and even more) seen

1.1.6. The conjunction of such exceptional properties (regular synonymy, (homophony,)

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morphological distinction and the absence of grammatical/semantic gender distinction a. o., English will not be discussed here in any depth. Cf. Cardinaletti & Starke (1994a) for more details.
Let us note however, that, somewhat paradoxically, English provides the only example, to our knowledge, going against the putative absolute universal that coordinated personal pronouns cannot refer to non-human entities: for a majority of speakers, with some variation both across speakers and constructions, coordinated *they, them* may still refer to non-human entities. This fact may however be irrelevant: the above generalisation holds only of personal pronouns. Demonstratives, for instance, may refer to non-human entities when coordinated. But the apparent exceptions involve exactly those pronouns which have an initial demonstrative morpheme, *th-*. English plural might thus be similar to Scandinavian languages, in which third person personal pronouns have demonstrative morphology, and no counterexample arises. Given the wealth of indications provided by morphology (§4-7), this path seems very plausible.

2. There is no intrinsic impossibility in (9b), the class 1 version of the quantifier is perfectly acceptable in the same sentence: *Jean a vu tout et encore plus* "John has seen all and even more". The same holds of the Greek adverbs, where the counterpart is *To évrasa sigá ke kalà.*

link between all components of grammar, no link to any interpretive characteristic, absolute universal) makes this distinction one of the most profound and mysterious properties of human grammar.

The goal of this study is to uncover the source of these asymmetries, that which makes a pronoun be a class 1 / class 2 pronoun:

- What is γ, the underlying (universal) trigger of (1) which provokes a wide array of distributional, semantic, prosodic and morphological asymmetries between two forms of one and the same pronoun?

1.2. *Methodology: On Generalising and Idealising*

1.2.1. In doing systematic research axed towards the formulation of an abstract model, facts (or asymmetries) are not interesting in and by themselves. What is to be explained by the model are (genuine) generalisations. In such research, it is usual that some facts resist generalisation, and some generalisation resist integration into the model. In these cases, idealisation is necessary: resisting facts are consciously evacuated, in hope of subsequent reintegration.

Although these two guidelines are contradictory (generalisation dictates integration, idealisation provokes elimination), no contradiction results: idealisation is valid only as a 'last resort', when generalisation cannot be reasonably pursued further. [3]

1.2.2. In studies of pronouns this basic point is rarely respected: many a model seeks to derive a generalisation which eliminates an unnecessarily vast amount of facts. For this reason, a large part of what follows is devoted to a preliminary step: establishing what there is to be explained, i.e. what the surface reflexes of γ are (§2-3).

1.2.3. Extending a generalisation can mean one of three things. Generalisations being of the form "all elements of the set λ fall into N non-overlapping sets μ_1 .. μ_N with respect to the set of properties π", either the *basis* of the generalisation, λ, the *classes*, μ, or the *contrasts* of the generalisation, π, can be extended.

The simple generalisation (3) can be extended in all three directions:

(a) w.r.t. π : the contrasting properties are not limited to coordination and human referents (§2)

(b) w.r.t. μ : the πs divide the λs into three, not two, classes (§3)

(c) w.r.t. λ : the elements submitted to the generalisation are not limited to personal pronouns (§9).

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3. This is a somewhat simplified version of facts. In practice, the 'last resort' nature of idealisation is blurred by an additional factor: tolerance to uncertainty. Since it is rarely clear whether a generalisation is valid or spurious, a limit to reasonable doubt/uncertainty has to be fixed. This limit is ideally relatively low, so as not to work with potentially spurious generalisations. On the surface, this may give the impression that idealisation takes precedence over generalisation. A more correct statement is that idealisation is a last resort when a generalisation cannot be extended, where 'cannot' is understood as incorporating the accepted limit to uncertainty.

Part I. What is there to be accounted for?

2. *On Being Deficient*

2.1. *Morphology*

When (2) is transposed to a masculine subject two morphologically distinct, though related, pronouns appear. The same obtains with objects, here illustrated for Italian and Slovak:

				<+human>	<- human>
(10)	a.	**Il**	est beau	√	√
	b.	* **Il** et celui de Jean	sont beau	*	*
	c.	**Lui**	est beau	√	*
	d.	**Lui** et celui de Jean	sont beaux	√	*
		he and the.one of John	is/ are pretty		
(11)	a.	Non metterò mai **loro**	il cappuccio	√	√
	b.	* Non metterò mai **loro** e loro	il cappuccio	*	*
	c.	Non metterò mai	il cappuccio **a loro**	√	*
	d.	Non metterò mai	il cappuccio **a loro** e a quelle altre	√	*
		not I.will.put never the cap/pen-top (to) them (and to those others)			
(12)	a.	Vidím	**ho**	√	√
	b.	*Vidím	**ho** a tých druhých	*	*
	c.	Vidím	**jeho**	√	*
	d.	Vidím	**jeho** a tých druhých	√	*
		I.see it/ him (and these others)			

Minimally, the fact that the morphological differences exactly correlate with coordination possibilities and with possibilities w.r.t. human reference, confirms the correctness of the class 1 / class 2 distinction. But morphology not only confirms the existence of an abstract γ, it also reveals another property associated to it: the morphological difference is asymmetric. If transparently distinct, class 2 personal pronouns are systematically reduced with respect to class 1 personal pronouns: [4]

(13) *Morphological asymmetry*
morphology (class 2) ≤ morphology (class 1)

Terminology The abstractness of the two classes is no impediment to more intuitive

4. The proviso to *transparent* distinctness is necessary due to the existence of the third case of the three possible morphological relations: (a) the two lexemes are identical <elles ; elles>, (b) the two lexemes are different, one is a proper subset of the other, transparent morphology, <jeho ; ho>, <a loro ; loro>); and (c) the two lexemes are different, no (proper) subset relations obtains, opaque morphology, <lui ; il>.
If opaque class 1/ class 2 relationships are due to the class 1 element being a porte-manteau morpheme for the distinct morphemes of a transparent class 1 pronoun, then the text generalisation is correct underlyingly but will be statistical at the surface: some surface counterexamples should exist due to the surface impredictibility of portemanteau morphemes.

terminology. Drawing on the clear orientation of the morphological asymmetry, class 2 elements will be called "deficient", and class 1 elements "strong".

2.2. *Distribution*

When the initial paradigm, (2), is embedded under *trouver* 'find', strong and deficient personal pronouns surface in different positions: [5]

			<+human>	<- human>
(14)	a. Jean **les**	trouve belles	√	√
	b. * Jean **les** et celles d'à côté	trouve belles	*	*
	c. Jean	trouve **elles** belles	√	*
	d. Jean	trouve **elles** et celles d'à côté belles	√	*

John them.fem (and those besides) finds them.fem (and those besides) pretty

Again, this asymmetry strictly correlates with those discussed above (coordination, human referents, morphology) and such a perfect correspondance of four properties legitimates the postulation of two abstract classes.

But again, not only is there a *difference* between the two classes, but there is an *asymmetric* difference: one class has an impoverished distribution w.r.t. the other. While strong pronouns have the distributional liberty of a corresponding noun-phrase (a full noun-phrase must occur in post-verbal position in (14)), there are three types of positions a deficient pronoun cannot occupy (cf. Kayne (1975) for an early systematization of the distributional properties of pairs such as *les / elles* in French).

2.2.1. *θ-Positions.*

Differently from strong personal pronouns and noun-phrases, deficient pronouns cannot occur in what might be taken to be the base, or θ-position. The following examples illustrate the base position of subjects, indirect objects and direct objects, respectively, in Italian: [6, 7]

(15) a. {essa$_D$; lei$_S$; Maria} forse l'ha fatto {*essa$_D$; lei$_S$; Maria} da sola
{it$_D$; she$_S$; Mary} maybe it-has done DA alone

b. Non dirò mai {loro$_D$; *a loro$_S$; *a Gianni} tutto {*loro$_D$; a loro$_S$; a Gianni}
not I.will.say never {them$_D$; to them$_S$; to Gianni} everything

c. Gianni {li$_D$; *loro$_S$; *questi studenti} stima {*li$_D$; loro$_S$; questi studenti}
Gianni {them$_D$; them$_S$; these students} estimates

---

5. The c-example is not acceptable as it is. It becomes natural if *elle* is understood as contrastive, cf. §2.3.

6. D- and S- indices correspond to 'deficient' and 'strong'. The restrictions on the placement on *essa* (or equivalently *egli* "he", *essi* "they") and dative *loro* "to.them" are particularly interesting due to absence of any adjacency effect with the verb, contrary to other Italian deficient pronouns.

7. There are so many interesting interactions between "being deficient" and "being complement of a preposition", that we reserve this topic for a different article. No mention of the interaction between pronouns and prepositional phrases will be made here (modulo "dummy prepositions, §5).

2.2.2. *Peripheral Positions.*

Differently from strong personal pronouns and noun-phrases, deficient pronouns cannot occur in a series of peripheral positions (counting isolation as peripheral, maybe as a subcase of dislocation). Literally, the same constraint holds of any other deficient pronoun, be it Dutch *het* "it", Slovak *mi* "to me" or English *it*: [8]

(16) a. E'{*essa$_D$; lei$_S$;Maria} che è bella. *(cleft)*
It is {*3.sg.fm$_D$; 3.sg.fm$_S$; Mary } that is pretty

b. {*essa$_D$; lei$_S$;Maria}, lei è bella. *(left dislocation)*
{*3.sg.fm$_D$; 3.sg.fm$_S$;Mary }, she/it is pretty

c. *pro* arriverà presto, {*essa$_D$; lei$_S$;Maria} *(right dislocation)*
She/it will arrive soon, {*3.sg.fm$_D$; 3.sg.fm$_S$;Mary}

d. Chi è bella? {*essa$_D$; lei$_S$; Maria} *(isolation)*
Who is pretty? {*3.sg.fm$_D$; 3.sg.fm$_S$;Mary }

2.2.3. *C-Modification / Coordination*

Noun-phrase internal modifiers cannot modify strong personal pronouns, (17a). Adverbs that modify the whole noun-phrase (c-modifiers) may however do so, (17b,c). But even c-modifiers cannot modify deficient pronouns, (17b',c').

(17) a. * {beau; rapide; ...} lui a'. * {beau; rapide; ... } il
b. √ {vraiment; seulement; ...} lui b'. * {vraiment; seulement; ...} il
c. √ lui {seul; aussi; ...} c'. * il {seul; aussi; ...}

The ban on c-modification and coordination holds even if the complex occupies an otherwise licit position:

(18) a. Anche/Solo {*essa$_D$; lei$_S$; Maria } è bella *(c-modification)*
b. Lei e(d) {*essa$_D$; lei$_S$; Maria } sono belle *(coordination)*
She and / Also / Only {*3.sg.fm$_D$; 3.sg.fm$_S$; Mary } is/ are pretty

2.2.4. *Overview*

(19) *Syntactic Asymmetry.*
A deficient, but not a strong, personal pronoun cannot occur at surface structure in:
a. θ-/ base positions
b. peripheral positions
c. {c-modification, coordination}

As a generalisation on distributional asymmetries between the deficient and strong pronouns, (19) is redundant. The first two clauses are reformulable as special cases of a more general positive constraint which forces deficient pronouns to occur in a given (functional) projection:

8. As expected, in all these constructions, the French *elle* "she" may only refer to human entities.

(20) *Syntactic Asymmetry.*
A deficient, but not a strong, personal pronoun:
a. must occur in a special derived position
b. is incompatible with {c-modification, coordination}

2.3. *Choice*

As noted in fn. 5, (14c) is strongly idealised. The relevant paradigm is ("⇒" denotes ostension): [9]

(21)	a.	Je	√ **l'**	ai aidé	* **elle**
	b.	J(e)	* **LA**	ai aidé	√ **ELLE**
	c.	J(e)	* ⇒ **la**	ai aidé	√ ⇒ **elle**
	d.	J(e)	* **la** et l'autre	ai aidé	√ **elle** et l'autre
	e.	J(e)	* seulement **la**	ai aidé	√ seulement **elle**
		I		have helped	her / her and the other / only her

That the post-participial variant of (21a) is impossible is *a priori* unexpected since the postverbal position is adequate for a strong pronoun. The comparison with (21b-e) brings a clear generalisation: the strong form is impossible where the deficient form is possible, and the strong form is possible where the deficient form is independently excluded: by contrastive stress (§2.4.1.), by an accompanying pointing gesture (§2.4.1.) or by coordination or c-modification (§2.2.3). Descriptively (cf. §7 for a more formal version):

(22) *Choice of a pronoun*
Choose the most deficient possible form.

2.4. *Semantics: Description*

2.4.1. *Prominent Discourse Referents*

In turn, (21b-c) is somewhat idealised. It is not the case that deficient pronouns can never be contrastively focussed. (23a) for instance, severly contrasts with (23b-c):

(23) a. * Jean **LA** voit.
√ Jean voit **ELLE**.
John sees her

b. A: On a dit que **je** mangerai ce gateau demain.
A: we have said that I will.eat this cake tomorrow
√ B: Non, que **JE** mangerai ce gateau demain.
B: no, that I will.eat this cake tomorrow
√ A: Mais, non, que **JE** mangerai ... (etc.)
A: but, no, that I will.eat

c. A: Je **te** casserai la gueule!
A: I you will.break the face

---

9. (21b) is more marked than the corresponding Italian (15c). Such variation is independent of the theory of pronouns: the same preferences obtain with contrasted full DPs. Cf. also fn. 35.

√ B: Ah ouais? tu veux dire que je **TE** casserai la gueule! (ad lib.)
B: oh yeah? you want to.say that I YOU will.break the face!

This state of affairs is not particular to prosody: the same holds with ostension, under "flat" intonation. In a limited range of contexts, a deficient pronoun may accompany ostension: [10]

(24) a. * J'ai vu Marie puis je ⇒**l'** ai vu.
√ J'ai vu Marie puis j' ai vu ⇒**elle.**
I have seen Mary then I her have seen her

b. √ Mets-toi içi et regardes cette maison. Tu ⇒**la** vois bien maintenant?
come here and look at this house. You it see well now?

c. √ Mais, tu ne vois donc pas ce livre? Bien sûr que je ⇒**le** vois
But, you don't see this book? Of course that I it see

In both cases the generalisation is the same: *the deficient elements are permissible with {contrastive stress; ostension} only if they refer to an entity which is "already prominent in the discourse".* [11, 12]

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10. The same holds of third person pronouns w.r.t. focus:

A: Jean a dit que Pierre arrivera en premier. J. has said that P. will.arrive as first
B: Non, Jean a dit qu' IL arrivera en premier No, J. has said that HE will.arrive as first

When the contrast is realised however a deficient pronoun becomes impossible:

B: * Non, Jean a dit qu' IL (, pas son frère,) arrivera en premier (, pas son frère)....
HE (,not his brother) ...

We hypothesize that overt contrast is a case of c-modification: the contrastive phrase modifies the pronoun and thus systematically excludes deficient pronouns. The apparently discontinuous constituent, i.e. extraposed contrasted phrase, is then similar to the English contrast [i]-[ii] (with *only* modifying the pronoun):

[i] John has only seen [t him] [ii] * John has only seen [t it]

11. "Discourse" should not be restricted to linguistic events. It is possible to introduce an entity by gesture (ostension) and then refer to it by a deficient indexical.
For the dicussion of the recoverability conditions on the antecedent, cf. Tasmowski-De Ryck & Verluyten (1982), who arrive at the same conclusion that "true pronouns [i.e. deficient pronouns, in our terminology, A.C. & M.S.] can only refer to something that is already familiar" (p. 341). It is however clear that much remains to be done to define what the conditions on "prominence" are.

12. Several recent studies capitalise on a similar generalisation: deficient personal pronouns are "specific" (e.g. Sportiche (1992), Uriagereka (1992)). There is unfortunately a lot of terminological confusion around this term. On the one hand, proponent of this view seem to understand "specificity" as Enç (1991), i.e. a term closely related to "old information" (among others, Uriagereka (op. cit.) explicitly relates it to notions such as "information already introduced in the discourse" (p. 8), "familiarity" (p. 14), "being anaphoric on [...] in the discourse" (p. 13), the "subject's point of view" (p. 22), etc.; Diesing (1991) undestands specificity in terms of "presuppositionality"). On the other hand, "specificity" has widely been understood *literally* (i.e. x is specific iff x is unique and x is "well-defined"), maybe due to the semantics of personal pronouns *per se*, which tend to be definite, irrespectively of their strong / deficient status.
The latter (literal) understanding brings a wrong generalisation about deficient personal pronouns: it is not the case that deficient pronouns always refer to an entity which is both unique and well-defined, i.e. literally specific. Counterexamples abound, among which non-referential pronouns (i.e: *les Siciliens a peine **ils** te voient **ils** t'embrassent*, "the Sicilians, as soon as they see you, they kiss you" and other cases discussed in

(25) *Semantic Asymmetry #1*
Deficient personal pronouns must have an antecedent prominent in the discourse.

The a-example of (23) and (24) are impossible to the extent that contrastive stress and ostension usually refer to an entity non-prominent in the discourse, while the c-examples are constructed such that the referent of the deficient pronoun is the prominent topic of discourse.

It is thus not the case that strong pronouns have any special ability to be stressed or used in ostension. Both deficient and strong pronouns are identically stressable and usable in ostension. Strong pronouns are more frequent than deficient pronouns in these constructions only because they are able to introduce refer to a non-prominent discourse referent. [13]

2.4.2. *Expletives*

Expletive and quasi-expletive constructions always require personal pronoun subjects to be deficient. Strong pronouns are uninterpretable in these non-referential positions. [14]

(26)	a.	√ Il	est arrivé un grand malheur.
		** Lui (il)	est arrivé un grand malheur.
		he (he)	is arrived a big disaster
	b.	√ Il	pleut.
		** Lui (il)	pleut.
		he (he)	rains

2.4.3. *Impersonal Constructions*

The same holds of impersonal interpretation both with the deficient *on* in (27) (which has no strong counterpart), and with third person plural pronouns, (28). Again, only the deficient form is possible in a non-referential context, and strong forms are uninterpretable, either as doublers of the deficient subject or by themselves: [15]

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§2.4.3., §2.5.), and non-definite pronouns (*des touristes, à Venise, j'**en** ai vu plein* "tourists, in Venice, I have seen plenty", *intelligent? Pierre l'est sans aucun doute* "intelligent? Pierre it is without doubt", *la bière, s'y digère-t-elle mal?* "the beer, *se* there digests badly?", etc.).
On the other hand, when understood correctly (i.e. non-literally), "specificity" of deficient pronouns is identical to the text generalisation, (25).

13. This is strikingly shown by the fact that when the referent of the focalised pronoun is prominent in the discourse, the strong form is NOT possible, in accordance with the choice-principle (22): only [ia] is a possible continuation in the "dialogue" below.

[i]		Je te casserai la gueule.		
	a.	Tu parles, je	√ TE	casserai la gueule.
	b.	Tu parles, je		casserai la gueule *A TOI.
		You bet, I	YOU	will.break the face

This rather clearly illustrates that there is no preference to stress strong forms, but rather that two independent factors intervene: (a) deficient pronouns are limited w.r.t. their referent, (b) whenever possible, a deficient pronoun is chosen over a strong one.

14. The same holds of deficient subjects in Northern Italian dialects (P. Benincà (p.c.)), cf. §3.1.

15. This is one of the many cases in which deficient pronouns are restricted to [+human] reference (see fn. 59 for an account of this particular case).

			impersonal int.	referential int.
(27)	**On**	t'a vendu un livre pas cher	√	√
	they$_{non\text{-}ref}$ / we$_{ref}$	you have sold a book not expensive		
(28) a.	**Ils**	m'ont vendu un livre pas cher.	√	√
b.	**Eux** ils	m'ont vendu un livre pas cher.	*	√
c.	**Eux**	m'ont vendu un livre pas cher.	*	√
	they	me have sold a book not expensive		

2.4.4. *Non-Referential Datives*

Contrary to other pronominal objects, non-argumental datives such as the boldfaced French and Slovak pronouns in (29):

(29) a. Je vais **te** lui foutre une de ces claque !
b. Ja **ti** mu dám takú facku !
I will you him give such a smack ! = "By Joves, I'll give him a blow he'll remember !"

do not have any referent. They are rather similar to "discourse-particles". Such an interpretation is totally impossible with strong pronouns: [16]

(30) a. * Je vais lui foutre une de ces claque **à toi** !
b. * Ja mu dám takú facku **tebe** !
I will him give such a smack to you!

2.4.5. *[± Human]*

The differing behaviour of deficient and strong pronouns w.r.t. human referents is amply illustrated in the introductory examples (§1): strong forms, contrary to deficient forms may not refer to non-human entities (the reverse is not true, cf. also fn. 15). [17]

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16. The non-referential datives are to be kept apart from benefactive (/ethical) datives, which are equally non-argumental but which are referential to the same extent as other deficient pronouns. They always refer to a "benefactor". The two constructions are often found in minimal pairs such as:

[i] a. Je vais me manger un pomme. (benefactive)
I will me eat an apple = "I will eat myself an apple"
b. Je vais te manger une (de ces) pommes! (either benefactive or non-referential)
I will you eat an apple = "I will eat one of your apples" (benef.) / "I tell ya, I'm gonna eat an apple like..." (non-ref.)

The gloss of the non-referential examples is misleading: in the non-referential reading, these examples involve no second-person addressee. There is no referent to these pronouns, even derivatively.

17. The asymmetry between some pronouns being able to refer only to human entities and other being able to refer to non-humans is noted from the earliest stages of grammatical research. Cf. for instance the *Grammaire Générale et Raisonnée de Port-Royal*, Arnauld & Lancelot (1846:319) quoting Reignier "*lui, elle, eux , elles...* , avec des prépositions, ne se disent guère que de personnes. Car quoiqu'un homme dise fort bien d'un autre *qu'il se repose sur lui de cette affaire*, ... on ne dira pas cela d'un lit ou d'un baton".
This asymmetry has then repeatedly been noted 'in passing', Damourette & Pichon (1911/1952), Perlmutter & Oresnik (1973:439), Kayne (1975), Jaeggli (1982:41), Rizzi (1982), Zwart (1992), Haegeman (1994) and has only recently received closer attention: cf. Berendsen (1986), Schroten (1992), Corver & Delfitto (1993).

2.4.6. *Summary*

The surface interpretive asymmetries involving deficient pronouns are: [18]

(31)

		semantics				
		must have D-antecedent (i.e. ostension, contrast, etc.)	expletive	impersonal	non-referential dative	possibly non-human
personal pronouns	strong	−	−	−	−	−
	deficient	+	+	+	+	+

2.5. *Semantics: Range*

Although descriptively correct (to the best of our knowledge), the preceding generalisation (31) is redundant.

2.5.1. The ban on strong pronouns as expletives and as arbitrary subjects of impersonals repeats twice the same fact: a strong element is incapable of being a semantically vacuous subject, it must be referential. Deficient elements on the other hand do not need to be referential and can be semantic dummies.

2.5.2. Similarly, strong pronouns are capable of being referential without being associated to an antecedent prominent in the discourse. Deficient pronouns cannot refer unless they are associated to such an antecedent. Again, strong pronouns are referential in a way in which deficient pronouns are not.

To capture the uniform asymmetrical behaviour of the two classes of pronouns with respect to "referentiality", unifying expletives, impersonals, and the need for a prominent discourse antecedent, some notion of "referential deficiency" is needed. Deficient pronouns are, in some sense to be defined, "less" referential than strong pronouns. They do not need to refer, and upon doing so, are dependent on the presence of an antecedent. [19]

2.5.3. Non-referential datives are one more instance of the same pattern: only deficient pronouns can be non-referential. Strong pronouns, as with expletives and impersonals, are incapable of occurring in referentially vacuous contexts.

2.5.4. The notion of "referential deficiency", or "being less referential than" is obviously far too vague as such. The comparison of impersonal and generic pronominal subjects however allows a much more precise characterisation of the semantic difference between deficient and strong pronouns.

Impersonal and generic pronominal subjects are similar in not being strictly referential

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18. As a further semantic property, idioms often distinguish two series of pronouns (i.e. the two series are not interchangeable in idioms). This does not add anything beyond (re-) making the point that the distinction between the two classes is valid. Cf. Berendsen (1986), quoted in Zwart (1992), for Dutch.

19. Specificity has often been attributed to the *presence* of a feature (cf. Sportiche (1992), Uriagereka (1992) among others). The fact that there should be one common explanation to the possibility of deficient (as opposed to strong) pronouns as expletives and to their need of a discourse antecedent, renders it improbable that these properties be due to the presence of some feature. It is not very likely that the capacity to occur as an expletive subject is rendered possible by the presence of a feature. It thus follows that specificity, *viz* needing a discourse antecedent (cf. fn. 12), should be rather attributed to the *absence* of some feature / property in deficient pronouns. If there is some feature / property in strong pronouns which forces referentiality, it is its *absence* in deficient elements that allows them to be non-referential and forces them to seek an antecedent in order to be referential.

(without being expletives), but minimally differ in that generic subject pronouns contrary to impersonal ones, may be strong:

(32) a. (***eux**) ils m'ont vendu des livres écornés (impersonal 3.pl.pron)
they they me have sold some books rotten

b. *les temporaires*, (**eux**) ils me vendent toujours des livres écornés. (generic 3.pl.pron)
the temporaries they they me sell always books rotten

c. *à NY*, **toi** t'es / **vous vous** êtes à peine arrivé(s), que les autres y sont d'ja tous à la sortie. (generic 2.sg/pl.pron)
in NY you(impersonal) are just arrived, that the others are already all in the exit

d. **les carottes** sont bonnes pour tes yeux (lexical generic)
carrots are good for your eyes

2.5.5. Since there is no clear sense in which the boldfaced pronouns of (32b-c) are more referential than that of (32a), non-referentiality as such cannot be the reason for the inacceptability of (32a). The impossibility of strong pronouns as impersonals must be linked to some other property distinguishing generic from impersonal constructions. There are (at least) five such differences: [20]

(i) impersonal subjects are existentially quantified, generic subjects universally
(ii) impersonal reading requires specific time-reference while genericity forbids it
(iii) impersonal but not generic subjects must be underlying subjects (non-ergatives)
(iv) impersonal but not generic subjects forbid inclusion of the speaker in their reference
(v) impersonals forbid but generics requires a range-restriction on the subject (either by a dislocated noun-phrase, (32b), an adverbial, (32c), or from the lexical content of the generic itself, (32d))

The exclusion of strong pronouns as impersonal but not generic subjects cannot be due to one of the first four properties of impersonals. Strong pronouns may have existential import, are not incompatible with specific time-reference, are not restricted to underlying subjects, and may refer to the speaker.

2.5.6. The fifth property describes the fact that a generic sentence is acceptable only if some property / range (other than that contained in the predicate) is associated to its subject: (32b-c) are not acceptable as generics if the italicised phrases are absent (lexical generics of the type (32d) trivially always have a range). On the other hand, impersonals do not require any such range restriction: no other property than that of having sold a cheap book is associated to the subject of (32a).

Not only *can* impersonal subjects be rangeless, but they *always* are so:

(33) a. They have cleaned a cow today in Switzerland.
b. They usually clean cows in Switzerland.

In its impersonal reading, starting a discourse with (33a), or its French, Italian or Slovak counterparts, does not imply anything about the cleaners: anybody could have done the cleaning, i.e. "somebody, whoever, cleaned a cow today and this event of cow-cleaning-today took place in Switzerland"). But (33b) requires the cleaners to be inhabitants of

20. Cinque (1988) notes the first four differences. The fifth difference is discussed for lexical generics and for 2nd person singular generic pronouns by Brugger (1990).

Switzerland (in a broad sense of the term). In other words, the generic subject but not the impersonal subject is associated to the range-restriction in Switzerland. *No restriction is ever associated to the subject of impersonal constructions*, even if adverbials are present. [21]

2.5.7. Since no range-restriction is associated to (quasi-)expletives either, the property *having a range* correctly draws the line between those constructions which exclude strong pronouns (expletives and impersonals) and those which allow them (generics and referential contexts).

(34) subjects of impersonal and expletive constructions are never associated to a range-restriction
subjects of generics and referential subjects are always associated to a range-restriction.

2.5.8. Thus, *not being associated to range* seems to be the appropriate formulation of *being referentially deficient.* Strong pronouns, since they cannot be expletive or impersonal, must always be associated to some range. Deficient pronouns, since they cannot be interpreted without a (non-deficient) antecedent, never have their own range-restriction, but rather associate to that of their antecedent. [22]

The following generalisation now correctly brings together the four initial asymmetries (regarding prominent antecedents in discourse, expletives, impersonals, non-referential datives), without overgenerating:

(35) *Semantic Asymmetry #2*
a. Deficient pronouns are incapable of bearing their own range restriction (and are therefore either rangeless (expletives, impersonals, non-referential datives), or associated to the range-restriction of an element prominent in the discourse))
b. Strong pronouns always bear their own range-restriction.

2.5.9. More speculatively, the fact that strong pronouns always require a range could be extended to the last semantic property distinguishing the two series, ±human reference, thus extending the generalisation fully. If strong pronouns must always have a range, independently of that of an antecedent, they are faced with a contradiction: having no nominal head including a range, they must contain a range but do not contain one. In this case, +human may simply be the default-range of human language. Again, the meaning of "having a range independently of that of an antecedent" can only be clarified within a formal proposal, §5.4.

In sum, all semantic properties distinguishing strong from deficient pronouns reduce to a

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21. Existential bare plurals are an intermediate object between impersonal pronouns and generics: they share with impersonals all above properties except that of (a) not being restricted to deep subject position, (b) always having a restrictor (the lexical element itself). Under a broader view of "strong" elements not restricted to pronouns (§9), they are strong elements. From the minimal pair formed by impersonals and existential bare plurals, only two properties qualify for the ban on strong pronouns: deep subjecthood and restrictors. Again, only the latter is plausible.
Past tense cannot be the restrictor in (32a) since it is incapable of being the restrictor of a generic (while being compatible with genericity): **(in NY), you couldn't walk alone.*

22. A formulation in terms of "range" is also empirically much superior to one in terms of "reference": the former but not the latter correctly subsumes all non-referential deficient elements which nevertheless require a discourse antecedent, such as the partitive pronoun *en / ne* of Romance, or predicative deficient pronouns (cf. fn. 12).

single primitive: having a range or not. The precise grammatical representation of these generalisations is taken up in §5.

2.6. *Phonology and Prosody*

Phonological processes such as sandhi rules distinguish strong from deficient elements. French liaison seems to apply only with deficient elements. It is grammatical in the simple sentence (36a), where the pronoun *elles* may be analysed as deficient, but ungrammatical in the preverbal position of complex inversion, which requires strong pronouns (cf. *Lui/ *Il a-t-il dit la verité?* 'he has-he said the truth?') (underlining in (36) indicates that the final consonant is pronounced):

(36) a. √ **Elles** ont dit la verité.
b. * Quand **elles** ont-elles dit la verité?
they have-they said the truth?

Contrary to strong pronouns and nouns, deficient pronouns are able to form a single prosodic unit with an adjacent lexical element. This is independent of the prosodic weight of the (pro)nominal: the proper name *Al* contrasts with the pronoun *il*. The relevant prosodic domains are taken to be as indicated by underlining: [23]

(37) a. Al mange beaucoup. a'. Jean voit Anna
b. ⇒Lui mange beaucoup. b'. Jean voit ⇒elle
c. Il mange beaucoup. c'. Jean la voit.
Al/he eats a lot John her sees Anne/her

Finally, reduction phenomena are only found with deficient pronouns; in English, for instance, strong pronouns (e.g. in a coordination) cannot undergo reduction: [24]

(38) a. √ I saw **'y a** in the garden.
b. * I saw **'ya** and John in the garden.
c. √ I saw **you** and John in the garden.

These asymmetries may be subsumed under (again a general notion to be clarified by the theory, cf. §5.5 for a tentative proposal): [25]

(39) *Prosodic asymmetry*
Deficient but not strong pronouns may prosodically restructure.

This is, to our knowledge, the only prosodic asymmetry between strong and deficient

23. The link between the (syntactic) property of being strong/deficient and the (prosodic) property of destressing and of contraction, seem to be one of the rare very robust syntax-prosody correspondance. It is all the more interesting that this correspondance seems to be generally valid across languages.

24. If only deficient pronouns may be destressed and contracted, then this is the strongest evidence for the existence of an otherwise quasi-untestable systematic homonymy of strong and deficient pronouns in English: pronouns such as *him* may both be coordinated (and are therefore strong) and may form a unique prosodic domain with a left-adjacent verb (and are therefore deficient), cf. fn. 1.

25. We are here borrowing and slightly changing a term from Nespor & Vogel (1986). A more precise version of this constraint would require data about prosody which do not seem to be available.

pronouns (cf. §2.8).

2.7. *Summary*

The asymmetry between those pronouns which can, and those which cannot, be coordinated is perfectly correlated to a large number of other asymmetries, both syntactic, semantic, prosodic and morphological, uniform across widely different languages. These asymmetries divide into two types: relational properties, which link the two series, (40), and monadic properties, holding of one series but not of the other series, (41):

(40) a. deficient pronouns *are reduced w.r.t.* strong ones, if a difference obtains (morphology)
b. where possible, deficient pronoun *are preferred over* strong ones (choice)

(41) a. only deficient pronouns must occur at S-structure in a special derived position (syntax)
→ cannot occur in base position, dislocation, cleft, etc.
b. only deficient pronouns cannot be coordinated and c-modified (syntax)
c. only deficient pronouns may prosodically restructure (prosody)
→ liaison, reduction processes, prosodic domains
d. only strong pronouns bear their own range-restriction (semantics)
→ prominent discourse-antecedents (ostension, contrastive focus), expletives, impersonals, non-referential datives, reference to human entities only

The trigger of these asymmetries is exceptional not only in having such wideranging and crosslinguistically uniform consequences, but also in being a purely grammatical, i.e. abstract, property not correlated to any interpretational feature. This last point is illustrated both (i) by the fact that none of the surface interpretational asymmetries of (41) strictly covary with the class distinction (possibilities of the two classes overlap), and (ii) by the fact that both semantic and phonological features are present: given the strict disjointness of semantics and phonology, a trigger which is purely internal to one of the two would not explain the properties of the other (cf. also fn. 26).

2.8. *Annexe: Against "Focus"*

2.8.1. Due to what is probably a historical accident, the (inaccurate) generalisation that deficient pronouns cannot be stressed has come to be viewed as a fundamental property of deficient elements. Informally, the fact that deficient pronouns do not occur coordinated, modified or with ostension, has been linked with the fact that deficient elements mostly occur unstressed, resulting in the claim that deficient pronouns do not occur in these cases *because* deficient pronouns cannot be (contrastively) stressed. Given the historical importance of this view, some space is devoted here to show that under none of its instantiations can this view be sustained. [26]

26. In its more radical versions, this proposal seeks to derive all asymmetries linked to deficient pronouns from the unstressed nature of the latter. (This is most prominent in languages in which deficient elements are limited to roughly the second position of the clause, as in many Slavic languages. On the empirical inadequacy of this approach, cf. *inter alia* Toman (1993)). Such an account is inadequate *in principle*: if prosody and semantics are not directly linked, postulating a unique prosodic trigger would leave semantic properties unexplainable, and postulating a semantic trigger would leave prosodic properties without a possible explanation.

2.8.2. Once explicited, the reasoning seems to be:

(i) deficient pronouns (contrary to strong pronouns) cannot bear contrastive stress.

Together with the implicit assumption that

(ii) strong pronouns occur only where the deficient form is impossible (= (22)),

(i) would unify all cases, provided that

(iii) all contexts excluding deficient pronouns assign/require contrastive stress (overt in (21b)).

2.8.3. Since the assumptions (ii-iii) imply that strong pronouns are always contrastively stressed, the entailed surface generalisations are that:

(42) a. deficient pronouns are never contrastively stressed.
b. strong pronouns are always contrastively stressed.

Because contrastive stress involves both prosody (*prosodic focus*) and semantics (*semantic focus*), (42) can be taken to be a generalisation either about semantics, or about prosody:

(43) a. deficient pronouns are never {semantically / prosodically} focussed.
b. strong pronouns are always {semantically / prosodically} focussed.

2.8.4. Prosodic judgments (§2.8.5), semantic judgments (§2.8.6), and distributional facts (§2.8.7), all invalidate (43). None of the four generalisations involved are correct statements about the prosody and semantics of personal pronouns. Ultimately, both the hypotheses (i) and (iii) above are too strong. [27]

2.8.5. ***Against Prosodic Focus***

a) *Unstressed Strong*. The version of (43) which chooses prosodic focus as the primitive for (21) is the less defensible of the two.

It entails that all coordinated pronouns, modified pronouns, post-prepositional pronouns, clitic-left dislocated pronouns, pronouns with ostension, etc. are always prosodically focussed. But this does not seem the case. The most minimal pair is given by ostension and contrastive stress (i.e. 21b-c)): in *d'abord j'ai vu Jacques et ensuite j'ai vu ⇒lui* "first I saw J. and then I saw him" the two objects may have similar flat prosodies, while still excluding deficient pronouns. Simpler examples making the same point include most modified pronouns such as *Jean a vu seulement lui* "John has seen only him". The (absence of) prosodic accentuation on such modified pronouns contrasts very clearly with the strong prosodic accentuation in constructions such as (21b). To unify the fact that both prosody-neutral ostension and contrastive stress legitimate a strong pronoun, a primitive different from prosodic focus is needed. (Prosodically unstressed strong pronouns are also clearly found in Italian left dislocation, cf. (47) below.)

b) *Stressed Deficients*. Deficient pronouns are not always prosodically inert. They may bear both word-stress, and phrasal stress.

(44) a. **Essi** vanno in chiesa. (word-stress)
they go to church

27. The simplest (and weakest) argument of all against both the semantic and the prosodic version of the claim that deficient forms are non-focussed stems from the observation that the strong contrastive stress present in (21b) is uncontroversially not required in the other contexts excluding deficient pronouns. One is then forced to invoke the existence of a lighter form of focus which excludes deficient elements and is present in all other cases.

b. Non parlerò mai **loro**. (phrasal stress)
non I.will.speak never to.them
c. Mais regarde-**le** ! (phrasal stress)
but regarde-him

Examples discussed above (§2.4.1) show that deficient pronouns may also bear the strong prosodic focus associated to contrastive stress.

Since strong pronouns can be prosodically unaccented and deficient pronouns can be prosodically strongly accented, prosody cannot be the underlying factor guiding the distribution of deficient/ strong pronouns.

2.8.6. *Against Semantic Focus*

a) *Contrastive Deficients.* That deficient pronouns are never semantically focussed, is again incorrect. Examples (23) above show that deficient pronouns are perfectly compatible with contrastive focus, whenever the appropriate (independent) discourse conditions are satisfied. [28]

(45) a. √ B: Non, que **JE** mangerai ce gateau demain. (cf. (23b))
B: no, that I will.eat this cake tomorrow
b. √ B: .. je **TE** casserai la gueule ... (cf. (23c))
B: ... I YOU will.break the face

This alone falsifies the semantic version of (43).

b) *Non-contrastive Strong.* The claim that all strong pronouns are always semantically focussed, is slightly more difficult to disprove. This is due to the fact that it is always possible to construe a semantic contrast. In the absence of overt (observable) manifestations of such contrasts, the only possible direct argument against such claims is the equally untestable observation that many cases of coordination, clitic-left dislocation, etc. do not involve a greater dose of semantic focus than the usual use of a deficient element. The clearest case of all is that of prepositions. There is no sense in which a pronominal object of a preposition must always be semantically contrasted.

Under a flat intonation, the following example illustrates this point twice: the strong object of P, *eux*, and the strong coordinated subject, *lui*, receive no more semantic focus than the deficient, *le*.

(46) √ **Lui** et Marie l'avaient fait bien avant **eux**.
He and Mary it had done well before them

In Italian, left-dislocated strong pronouns may cooccur with a contrastively focussed constituent: given the generalisation that only one constituent per sentence may be contrasted through displacement to the left-periphery of its clause, the left-dislocated *lui* cannot be contrasted.

(47) √ **Lui**, QUESTO ha detto.
he, this has said

Again, semantic focus cannot be the primitive that excludes deficient pronouns from being objects of prepositions, occurring in coordination or in left-dislocation, since no semantic focus is involved. A primitive distinct from semantic focus is needed.

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28. Another example of stressed deficient pronouns is reported in Zwart (1992, fn. 9).

2.8.7. *Strong pronouns are not focussed: GUN*

A stronger argument to the effect that strong pronouns do not necessarily involve focus (semantic or prosodic) is provided by distributional facts from languages which overtly show both semantic and prosodic contrast through syntactic displacement of the contrasted element. In these languages, all focussed elements are displaced, but it is not the case that all strong pronouns are displaced. Strong pronouns therefore occur independently of focus (semantic or prosodic).

One such language is Gun, a rigid word-order African language of the Kwa family with a special focus-construction. In case an element is focussed, semantically or prosodically, a particle, *wè*, appears towards the front of the clause, and the focussed element must obligatorily precede it (the focussed argument is underlined). [29]

(48) a. √ N mon Mari
b. * N mon Mari
I saw Mary

c. √ Mari wè n mon
d. * Mari wè n mon
Mary FOC I saw

Constructions with coordination pattern exactly with those without coordination: an unstressed coordinated object, just as its non-coordinated counterpart, remains in situ (49a, c), while a stressed coordination must be placed in front of the focus-particle.

Now the vital fact is that focus on only ONE conjunct DOES trigger anteposition to the focus position, (49b, d). From this it follows that neither of the conjuncts of (49a) receives focus. Therefore coordination, in Gun, does not assign/require focus on the conjuncts, and the strong pronoun in (49a) is not focussed.

(49) a. √ N mon [Mari kpo éo kpo]
b. * N mon [Mari kpo éo kpo]
I saw Mary and him and

c. * [Mari kpo éo kpo] wè n mon
d. √ [Mari kpo éo kpo] wè n mon
Mary and him and FOC I saw

But, as a final stone to our demonstration, deficient elements in Gun still cannot be conjoined, cf. (50)-(51=8):

(50) a. √ N mon **éo**
b. √ N mo-**é**
I saw him

c. √ N mon [Mari kpo **éo** kpo]
d. * N mon [Mari kp(o)-**é** kpo]
I saw Mary and him and

(51) a. √ **Yélè** yon wankpè
b. * **Yélè kpo yélè kpo** yon wankpè
she[-human] and she and know beauty

In these two cases, the non-coordinable deficient elements cannot be excluded by semantic or prosodic focus, since the non-displacement overtly shows that no such focus exists. There must exist some γ distinct from semantic and prosodic focus which is capable of excluding deficient elements from coordination. [30]

2.8.8. The idea that deficient pronouns are somehow handicapped w.r.t. semantic or

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29. We owe these paradigms to the kindness of Enoch Aboh (who is not responsible of the use we make of them).

30. Exactly the same argument holds of modification: modifiying a strong pronoun by c-modifiers such as *also* does not provoke anteposition and appearance of the focus-particle. But deficient pronouns are still excluded from such contexts.

prosodic focus, popularised by the traditional account of the distribution of pronouns, is an artefact due the deficient pronoun's need of a prominent discourse antecedent, requirement mostly incompatible with the use of contrastive stress and ostension (cf. §2.4.1). As a result, both the premise and the conclusions of the traditional arguments are inaccurate. [31]

3. *Two Types of Deficiencies*

3.1. *Regular Tripartitions*

The partition of pronouns into two abstract classes, deficient and strong, is descriptively insufficient: regularly, pronominal systems divide into three distinct distributional patterns. The following are five among the numerous examples in which a language possesses three distributional paradigms. In each case, confronting the a- and the b-examples produces three patterns:

(52) OLANG TIROLESE (Oberleiter & Sfriso (1993))

a.		b.	
√**E:r** isch intelligent		√ **E:r und si:** sain intelligent.	
he is intelligent		he and she are intelligent	
√**Es** isch toire		* **Es und es** sain toire.	
***S** isch toire		* ..., daß **z und z** toire sain.	
it is expensive		... that it and it expensive are	

(53) ITALIAN (Cardinaletti (1991))

a.	Non	**a lui**	dirò mai	tutto	**a lui.**
	Non	**loro**	dirò mai	tutto	**loro.*
	Non	**gli**	dirò mai	tutto	**gli.*
	no	to.him/to.them	I.will.say never	everything	
b.	√ Non		dirò mai	tutto	**a lui e a lei**
	* Non		dirò mai	**loro** e loro	tutto.
	* Non	**gli** e le	dirò mai	tutto	
	no	to.him and to.her	I.will.say never	everything	

(54) SLOVAK

a.	√ **Jemu**	*to*	bude pomáhat'
	√ **Ono**	*mu to*	bude pomáhat'.
	* ***Mu***	*to*	bude pomáhat'
	to.him / it / to.him	it	will help
b.	√ **Jemu** a Milanovi	*to*	bude pomáhat'.
	* **Ono** a to druhe	*mu*	budu pomáhat'.
	* ***Mu*** a jej	*to*	bude pomáhat'.

to.him and to.M. / it and the other / to.him and to.her it will help

31. The Gun facts together with the French contrasted clitics (§2.4.1) lock up the back door which consists of postulating diverse types of focus and claiming that the above discussion is inconclusive because it fails to distinguish them. From the French facts it would follow that if there are two such types of focus, one of them, C, has the property of being compatible with deficient pronouns while being understood as contrastive. The other, F, is not contrastive but excludes deficient pronouns. Now in Gun, the C-type of stress would both trigger anteposition and be compatible with deficient pronouns. But this is a wrong conclusion: there is no stress which licences anteposition of deficient pronouns in Gun.

(55) ITALIAN vs. TRENTINO

a. √ **Lui** mangia della zuppa e -- beve del vino (Italian)
√ **Egli** mangia della zuppa e -- beve del vino (Italian)
he eats of.the soup and drinks of.the wine
* **La** canta e -- bala (Trentino)
she sings and dances

b. √ **Lui** e la ragazza del bar sono gli unici ad apprezzare tutto questo. (Italian)
He and the girl of.the bar are the only to appreciate all this
***Egli** e il cavalier Zampieri sono gli unici ad aver apprezzato quel nobile gesto. (Italian)
he and the *cavalier* Z. are the only to have appreciated this noble action
* **La** e la Maria è vegnude algeri. (Trentino)
she and the M. are come yesterday

(56) FRENCH

a. √ **Lui** aime les choux mais -- ne les mange que cuits?
√ **Il** aime les choux mais -- ne les mange que cuits?
* Aime-t-**il** les choux mais ne les mange que cuits?
he likes the cauliflowers but not them eats other than cooked

b. √ **Lui** et son frère ont accepté ?
* **Il** et son frère ont accepté ?
* Ont **il** et son frère accepté ?
he and his brother have agreed?

The tripartitions of pronominal systems are extremely regular across and within languages:

(i) out of all the possible combinations of strong and deficient (personal) pronouns inside a tripartite paradigm, only one is attested: two deficient and one strong. It is never the case that a tripartition stems from there being two strong and one deficient, etc. Similarly, it is never the case (to our knowledge) that there is more than three classes, with two types of strong and two deficients, etc.

(ii) out of all the possible relations between three pronouns, only one obtains, identical across all paradigms. It is not the case, as might be expected, that the two deficient pronouns are simply opposed to the strong series, as represented by $\{x_D, y_D\}$ *vs.* z_S. What systematically obtains is a hierarchy of the type $x_D < y_D < z_S$, where x_D is the pronoun in the third example of each paradigm, and z_S in the first. The second pronoun is systematically intermediate between the first, strong, pronoun and the third, sharing the properties characterising deficiency with the third against the first (here exemplified by lack of coordination), but sharing some distributional properties with the first, against the third. In other words, what systematically obtains is a ranking in deficiency: the third pronoun is systematically "more deficient" than the second.

(iii) by themselves, the preceding regularities strongly indicate that the tripartition reflects the existence of three abstract classes of pronouns (rather than being due to the existence of two abstract classes - deficient and strong - plus a series of idiosyncratic and irregular properties among deficient pronouns). The strongest evidence to this effect is however the fact that each series has uniform properties across paradigms: in each case above, the pronouns contained in the second sentence (y_D: *es, loro, ono, egli, il*) share properties which distinguish them from the pronouns contained in the third sentence (x_D: *s, gli, mu, la, il*). The properties opposing the two classes of deficient pronouns, properties differentiating so to speak "severely" deficient pronouns (i.e. x_D above) from "mildly" deficient pronouns (i.e. y_D above), are briefly summed up below, but are discussed in details in Cardinaletti & Starke (1994a) for Germanic paradigms, and in Cardinaletti & Starke (1994b) for Romance languages (cf. also Cardinaletti (1993)).

Terminology. To distinguish the two types of deficient elements, we will borrow two terms often used as designations for deficient elements: clitic elements and weak elements. Although these terms are usually understood as interchangeable, they here acquire two distinct meanings: weak pronoun refers to the set of mildly deficient pronouns illustrated in the second line of each above example (y_D), while clitic pronoun is reserved to the severely deficient pronouns in the third (x_D).

3.2. *{Clitic} vs. {weak; strong}: Severe Deficiency*

3.2.1. In each of the above cases the clitic heads an X°-chain. In Olang Tirolese, the head status of the clitic *s* is evidenced by its impossibility in XP-positions such as V2-initial position, (52a). For the Italian objects in (53), the same point is most clearly illustrated by the fact that the clitic is "transported" by the verb over the realised subject in conditional inversions, *gli avesse Gianni parlato in anticipo, niente sarebbe successo* "to.him had John spoken in advance, nothing would have happened", i.e. "had John spoken to him in advance, ...". In Slovak, the second-position clitics strongly amalgamate with the verb when enclitic, and pattern together with "clitic" verbs, particles, etc. themselves clear heads. Finally, the Trentino *la* and French postverbal *il* in (55) and (56) are standardly analysed as heads, cf. among others Brandi & Cordin (1981, 1989), Rizzi (1986b), Poletto (1993) for Northern Italian and Kayne (1983), Rizzi (1986b) for French.

On the other hand, weak pronouns uniformly occupy positions which seem to be those of maximal projections:

• the V2-initial position in Olang-Tirolese, (52a), where only full phrases can appear;

• the specifier position of an intermediate functional projection in Italian (cf. (53a) in which *loro* is both (i) not picked up by the verb (contrary to clitics), and thus not adjacent to the verb, and (ii) in complementary distribution with an object floated quantifier (a maximal projection containing a trace) (cf. ??*Dirà loro tutto Gianni* "will.tell to.them all Gianni"));

• the sentence-initial position in Slovak (*ono* being the only Slovak deficient pronoun to be able to appear there), a position which is only available to topicalised and subject XPs (except for the special case of verb-inversion).

Embedded contexts make this point even more clearly: in strings of the type ...$C°\ \alpha$ *clit...*, the element α must be either itself a clitic (clustering with the subsequent *clit*) or *one and only one* XP. Since the sequence ... *C° ono clit* ... is possible, while *... *C° XP ono clit* ... is impossible, *ono* can only be an XP.

• the shared subject of a predicate coordination in Italian and in formal French, (55a)-(56a), a position available to XPs but not to heads. [32]

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32. The recognition of a class of weak pronouns distinct from clitic pronouns, but also deficient, allows: (i) a principled approach to the traditional mystery of French object "enclitics" in imperatives: the first and second person pronouns are intermediate between usual French clitic pronouns (both are deficient, i.e. non-coordinable, etc.) and strong pronouns (the enclitics share their morphological form with the latter). In the present approach, such "enclitics" are really weak pronouns (the paradigm being *me* 'me' (clitic), *moi* 'me' (weak), *moi* 'me' (strong)), much like English or German, which have homophonous weak and strong object pronouns (*him-him, ihn-ihn*, cf. Cardinaletti & Starke (1994a)). The relevant difference between "proclisis" and "enclisis" must therefore be that imperatives, for some reason to be determined, render the clitic form impossible, and therefore the choice principle (22) forces the next stronger form, weak pronouns (see also Laenzlinger (forthcoming) for a treatment of these facts in terms of the clitic/ weak distinction);

3.2.2. The two series differ w.r.t doubling: doubling is always *clitic*-doubling, in the sense that doubling must always involve (at least) one clitic, no combination of weak and strong pronoun is possible. This is neatly illustrated with the Italian dative paradigm, in which the {*gli*; *loro*}, and the {*gli*; *a loro*} pairs are possible doubling pairs, but where {*loro*; *a loro*} is impossible:

(57) a. √ Glielo'ho dato loro.
him it I.have given to.them
b. √ Gliel'ho dato a loro / ai bambini.
him-it I.have given to them/to the children
c. * L'ho dato loro a loro / ai bambini.

A similar constraint holds of the Slovak *ono*, which is found doubled by the clitic *to*, as in the above example (54a), but is never doubled by a full phrase. Northern Italian dialects also (trivially) exemplify this: a subject strong pronoun occurs with a clitic as a doubler (cf. *Ela la canta* "she she sings"). [33]

3.2.3. In all cases above, a cooccurrence of clitics leads to the formation of a "clitic-cluster" with characteristic morpho-phonemic processes applying (e.g. in Italian, the vowel /i/ of a clitic is obligatorily lowered to [e] inside a clitic-cluster: *mi da un libro* → *me lo da* "[he] to.me gives a book" → "[he] to.me it gives"). On the other hand, no such process is attestesd in a combination of weak pronouns.

3.2.4. The cooccurrence of several pronouns leads to a sharper contrast with one combination: an accusative first or second person clitic can never cooccur with a dative third person clitic. The sharp ungrammaticality of such examples (***Il me lui présente* "he me to.him presents") is constant across Romance and Slavic languages, but also in many different language groups (cf. Laenzlinger (1993), Bonet (1994)). No ungrammaticality obtains when one of the two pronouns is a deficient weak pronoun, thus the following minimal pairs (both for proclitic and enclitic pronouns):

(58) a. ** Gianni **mi gli** ha presentato / ... di presentar**migli**.
b. √ Gianni **mi** ha presentato **loro** / ... di presentar**mi loro**.
c. √ Gianni **mi** ha presentato **a loro** / ... di presentar**mi a loro**.
Gianni me to.him has presented to.them / ... to present me to.him/ (to) them

3.2.5. The fact that the two deficient series of pronouns individuated by distributional properties consistently pattern asymmetrically (together with the systematic regularity of the tripartitions), is a clear evidence for the presence of an underlying pattern. The fact that

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(ii) a principled approach to the less-noted fact that Italian deficient pronouns split into those which must be adjacent to the verb, and those which are not (nominative *egli, essi*, dative *loro*, etc.), the former being clitics and the latter weak.
For more details on both these points, cf. Cardinaletti & Starke (1994b).

33. The doubling patterns could be taken as evidence for the fact that declarative deficient subject pronouns are clitics and not weak in French. Doubling of the type *Jean il mange* "John he eats", if a consistent analysis of doubling was put forward, would indicate that *il* is a clitic in that case, contradicting the claim in the text. Without paradox, it seems to us that this is a correct conclusion: the register / dialect of French which admits doubling with flat intonation also requires repetition in coordination, while the register / dialect which allows shared deficient pronouns in coordinations does not allow doubling with flat intonation. Cf. Cardinaletti & Starke (1994b) for more discussion.

clitics are uniformly best analysed as heads, while weak pronouns are uniformly best analysed as maximal projections, provide a simple distinction between the two series. Further, all other morpho-syntactic asymmetries above may be restated in X-bar terms: a doubled pronoun cannot be a maximal projection, only heads form clusters, and only heads are subject to the accusative-dative constraint, whatever the source of the latter is.

3.2.6. From now on, the terms *clitic* and *weak* pronouns will be used in this *strict technical sense*: clitic elements are deficient (underlying) phrases which are heads at surface structure, and weak elements are deficient (underlying) phrases occurring as maximal projections at surface structure:

(59)	strong pronouns:	strong, full phrases	(*jemu* (Slovak), *lui* (Italian), ...)
	weak pronouns:	deficient, full phrases	(*ono* (Slovak), *es* (Olang-Tirolese), ...)
	clitic pronouns:	deficient, heads	(*mu* (Slovak), *lo* (Italian), ...)

As a historical note, let us note that although the terminology of "clitic" and "weak" is taken from the tradition, the present syntactic tripartition of pronouns has, to our knowledge, never been proposed before. Earlier uses of the term *weak* are either synonymous to "clitic", or mean "Germanic counterparts to Romance clitics". Two proposals are closer to the present one, but both are suggested for and applicable to a constrained set of phenomena, neither proposes a syntactic tripartion and neither presents a global system covering all types of pronouns (cf. §4-§7): the PF-clitic system (Kayne (1983)), with two syntactic classes, clitic and strong, and a PF-class, a notion by definition limited to those (non-clitic) deficient pronouns which must be adjacent to their predicate (such as French *il* but not English *it*); and the N*-system (Holmberg (1991)) with two classes, strong and N* pronouns, the latter being an entity ambiguous between heads, and maximal projections (cf. Cardinaletti & Starke (1994a) for more discussion). [34]

3.2.7. Since both deficient series must occur at S-structure in some functional projection of their predicate, it follows from the X-bar distinction between them that clitics occur in a functional head, while deficient elements occur in some specFP.

It has been abundantly illustrated that subject deficient elements such as Italian *egli* "he", French *il* "he" are restricted to a preverbal subject position: they can only occur in specAgrsP at surface structure. A similar situation obtains for objects. The *loro* paradigm (53a) transparently shows that weak datives obligatorily occur in a high position, above the standard position of their strong counterpart.

That weak pronouns are limited to a derived position also transparently holds of weak direct objects. This is clear for instance in the English particle verb construction (Johnson (1991)). [35]

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34. Facts which do not fit neatly into the traditional bipartition have in fact often been noted, and "local patching" have sometimes been proposed. Three additional cases are: Cardinaletti (1991), whose discussion of the properties of the aprepositional dative *loro* prefigured much of the present work without formally distinguishing the three classes, Halpern & Fontana (1992), with their notion of X-max clitics, which are also maximal projections, but which cover essentially those deficient pronouns which appear towards the front of the clause; i.e. roughly Germanic and Slavic deficient pronouns, some of which are clitic, and some of which weak, in our terms, and Koopman (1993), discussing the complex Welsh pronominal system. Again, in all these cases the proposed system is similar in spirit to the present proposal but widely different both empirically, and theoretically.

35. The formal identity between the particle construction paradigm (*Mary took **him** in ***him/HIM***) and Romance paradigms such as *Marie **la** voit ***elle/ELLE*** or *Maria **la** vede ***lei/LEI*** 'Mary sees her' (the strong pronoun is impossible unless the deficient is ruled out by non-prominent referent focalisation) now shows the path to the solution to the puzzle observed in fn. 9: the amount of focus needed in French is much superior to that needed in Italian. Logically, this could be either because French transparently shows the

(60) a. He took **it** in ***it.** because of the rain.
b. He took **John** in **John** because of the rain.

Anticipating on non-pronominal weak elements, the same is visible in French with weak quantifiers thanks to the absence of past participle movement (Cinque 1994), and in Italian with weak adverb placement with respect to the weak demonstrative *ciò* (cf. also §9): [36]

(61) a. Il a **tout** vu ***tout.**
b. Il a ***l'ours** vu **l'ours.**
he has all/the bear seen all/ the bear

(62) a. Ha studiato **ciò** poco ***ciò.**
b. Ha studiato ***la storia** poco **la storia.**
he.has studied this/ the history little

Since none of the weak elements interferes with A'-chains, and all surface in the position where an AgrP would be postulated, subject and object weak elements may be subsumed under one general condition: [37]

(63) Weak pronouns must occur, *at S-structure*, in a case-assigning specAgrnP

or if case is limited to specifier-head configurations more simply:

(64) Weak pronouns must occur in a case-position *at S-structure*

(Rizzi (1986a) as reformulated by Chomsky (1992) arrives at the same conclusion (modulo the notion of weak elements) on the basis of one weak pronoun: the null personal pronoun *pro*, cf. §3.4)

3.2.8. An additional prosodic asymmetry seems to separate the two types of deficient pronouns: while both types of pronouns may receive phrasal and contrastive accent (cf. §2.4.1. and §2.8.5. above), weak pronouns but not clitic pronouns may have (lexical) word-stress. All of subject *egli*, dative *loro*, subject *ono*, V2 initial *es*, etc. are not obligatorily destressed morphemes, but may bear usual word-accent. On the other hand, the clitic-morphemes *lo*, *mu*, *s*, etc. are consistently destressed. In somewhat metaphorical terms: while both series can acquire accentuation, only one of the two has it from the start.

Unfortunately, the category of weak pronouns having been little studied, if at all, no extensive investigation is available on their prosodic properties. As a consequence, two types of interpretations are *a priori* plausible, the former focalizing on the lexical form of the

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effect of the choice preference, and an independent factor softens the effect in Italian, or that Italian is transparent w.r.t. the choice effect and an independent factor worstens French. Since the amount of stress needed in English to allow a post-particle *him* seems to pattern with the Italian case, and not with French, the second path is more plausible (all the more so given that a similar conclusion holds of German with post-adverbial pronouns, ... *daß Hans **ihn** gestern ***ihn/IHN** gesehen hat* 'that John yesterday seen has'). The additional effect observed in French may be due to the fact that French uses cleft sentences as the unmarked contrast-marking construction, whereas Italian focussed objects may freely stay postverbally.

36. *Ha studiato la storia poco* is acceptable if the adverb is stressed (or coordinated or c-modified, etc.), cf. §9.

37. By specAgrnp, we leave open the question of specAgr$_{acc}$P vs. the specAgr$_{dat}$P. Higher Agr projections should be assumed for languages such as German and West Flemish, displaying deficient object pronouns in positions higher than negation (cf. Haegeman (1994)).

pronoun, the latter on class-membership:

(i) the clitic / weak contrast is irrelevant, what matters is the monosyllabic / bisyllabic distinction. All monosyllabic deficient pronouns lack word-stress and restructure prosodically, while neither of those properties holds of bisyllabic deficient pronouns. Under this interpretation the only relevant prosodic asymmetry is that between deficient and non-deficient pronouns: deficient, but not strong, monosyllabic pronouns lack word-stress and restructure.

(ii) the monosyllabic / bisyllabic distinction is irrelevant, what matters is the clitic / weak contrast. All weak pronouns can bear word-stress, while no clitic-pronoun does so, i.e. clitic pronouns always restructure, while weak pronouns optionally do so.

What is at stake is the restructuring capacity of bisyllabic weak pronouns, such as Italian *loro*, *egli*, Slovak *ono*, on the one hand, and word-stress properties of monosyllabic weak pronouns, such as German *es*, French *il*, or English *him*, on the other.

In both cases, available indications point towards the second interpretation: Nespor & Vogel (1986) note that the bysillabic *loro* may optionally restructure with a preceding verb, invalidating the claim that only monosyllabic elements restructure. German V2-initial monosyllabic deficient subject *es* may occur both as a reduced *'s* and as a full prosodic word with its own accent, invalidating the claim that all monosyllabic deficient pronouns prosodically restructure.

This is most clearly indicated by the distribution of the German glottal stop which is only found before the initial vowel of a prosodic word. The glottal stop may be found either only in front of the sentence-initial deficient pronoun *es*, or both before the sentence-initial *es* and before the verb. In the latter case, *es* forms a prosodic word, and thus bears its own word-accent: [38]

(65) a. [?]Es ist schön.
b. [?]Es [?]ist schön.
it is nice

Both these facts indicate the relevance of the clitic/ weak distinction for prosody (as opposed to the monosyllabic/ bisyllabic opposition). The most plausible format for the generalisation concerning the prosodic asymmetries thus seems to be: [39]

(66) a. deficient, but not strong, pronouns may restructure (liaison, reduction, prosodic domains), §2.6
b. weak, but not clitic, pronouns bear lexical word-accent

3.3. *Relative Properties: Morphology and Choice*

All properties separating deficient from strong pronouns uniformly hold of both clitic and weak pronouns. This is trivial for monadic properties, (41) (with the above proviso about

38. French subject pronouns are apparently the strongest example of weak element which are systematically stressless (but cf. fn. 33). However, in a preliminary phonetic experiment, one author (Starke) found a harmonic break between a weak subject pronoun and the verb, which is usually taken to indicate a prosodic boundary (Vater (p.c.)). To the extent that this is a genuine phenomenon, the full generality of the above prosodic observation is supported.

39. A much more fine-grained analysis would be needed: the three discussed properties of restructuring sometimes seem to be dissociated while restructuring is sometimes obligatory, with no clear correlation with classes, number of syllables, etc.

prosody), but more interesting for relational properties, (40), which both extend identically to the third class of pronouns, transparently showing the ranking between the classes.

3.3.1. The morphological asymmetries between the three classes of pronouns give an explicit illustration of the relation between the three series, a representative sample of which is:

(67)	*clitic*		*weak*		*strong*	
a.	s	<	es			(Olang Tirolese)
	il	=	il			(French)
b.	ho			<	jeho	(Slovak)
c.			loro	<	a loro	(Italian)
			il	<	lui	(French)
			sie	=	sie	(German)

So that:

(68) clitic ≤ weak ≤ strong

The two deficient series are not simply opposed to the strong: weak elements enjoy an intermediate status.

3.3.2. Whenever the two forms are in principle possible, a deficient form takes precedence over a strong form, §2.3. This is true of both weak pronouns and clitics: descriptively, a strong form is impossible if a reduced form is at disposal. As soon as the reduced form is impossible (for independent reasons, here ostension introducing a non-prominent discourse referent and c-modification), the strong form is possible again.

(69) clitic < strong

a. √Je **le** vois.
b. * Je vois **lui**
c. √J e vois ⇒**lui.**
I him see him

(70) weak < strong

a. √ **Il** me voit.
b. * **Lui** me voit.
c. √ **Lui** aussi me voit.
he (also) me sees

Whenever a clitic and a weak form compete, as in Olang-Tirolese, it is the clitic that takes precedence. It is only when the clitic is a priori disqualified, as in (71c), that the weak form may surface.

(71) clitic < weak

a. √...daß **z** toire isch
b. *... daß **es** toire isch
... that it expensive is
c. √ **E s** isch toire
it is expensive

The complete precedence pattern thus mirrors the morphological pattern: weak pronouns are again intermediate between clitic and strong forms.

(72) clitic < weak < strong

3.4. *Null Pronominals*

To the extent that *pro* is pronominal, it is a deficient pronoun. [40]

3.4.1. It has the semantics of a deficient pronoun, not that of a full (strong) pronoun. It can be expletive, (73a), impersonal, (73b), can have non-human referents, (73c), but cannot occur with ostension to denote a non-prominent discourse referent, (73d) (while nothing rules this out in principle):

(73) a. √ ***pro*** piove molto qui. (*lui (strong))
[it] rains a lot here

b. √ ***pro*** mi hanno venduto un libro danneggiato. (*loro (strong))
[they] me have sold a book rotten

c. √ ***pro*** è molto costoso. (*lui (strong, non-human))
[it] is very expensive

d. * ⇒***pro*** è veramente bello. (√lui (strong))
[it] is very nice

3.4.2. Its distribution is that of a deficient pronoun, not that of a full argument: Rizzi (1986a), as rephrased by Chomsky (1992), concludes that *pro* can only occur in a case-marked specAgrP, exactly mirroring the distribution of weak elements (§3.2.7). This conclusion is thus supported by two distinct studies, based on two independent sets of facts (on the other hand, it also entails that the restrictions on *pro* are due to its being weak, and not to its being null).

3.4.3. Given the choice between a strong pronoun and a *pro* counterpart, *pro* is always chosen:

(74) a. Gianni ha telefonato quando ***pro*** è arrivato a casa.
b. * Gianni ha telefonato quando **lui** è arrivato a casa.
Gianni has called when he is arrived at home

This is sometimes referred to as the "Avoid Pronoun Principle" (cf. Chomsky 1981), which is a special case of a much broader preference for deficient elements over their strong counterparts, §7.

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40. Modern Greek seems to be an example of a language with tripartion including *pro*. Joseph (1993) writes "Greek provides an example of a language with a three-way distinction in pronominal realizations", referring to the strong (nominative) *aftos*, the deficient *tos*, and *pro*. From preliminary tests, *tos* qualifies as a clitic, thus reproducing the clitic (*tos*), weak (*pro*), strong (*aftos*) paradigm.

3.5. *Generalisations* [41]

(75)

	morphology	choice	distribution		interpretation	prosody		X-bar
	+reduced		in FP at SS	*coord, ...	no range	reduction rules	no word-stress	X°
clitic	1	1	+	+	+	+	+	+
weak	2	2	+	+	+	+	–	–
strong	3	3	–	–	–	–	–	–

Part II. ... and How to Account for it.

Preliminary: The A Priori Desired Result.

Given (75), the initial question:

- What is γ, the underlying (universal) trigger of (1) which provokes a wide array of distributional, semantic, prosodic and morphological asymmetries between two forms of one and the same pronoun?

can be meaningfully addressed. Since deficient elements divide into two coherent classes, two triggers are needed: one which causes weak deficiency, γ' (weak pronouns), one which causes severe deficiency, γ'' (clitic pronouns). [42]

Logically, these two triggers could be unrelated, or widely distinct. But facts indicate the contrary. Deficient characteristics (DC) of weak pronouns are a *proper subset* of the deficient characteristics of clitic pronouns (i.e. all characteristics that differentiate weak from strong elements are also shared by clitics):

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41. Descriptively, there is a progression from most deficient to totally free element: affix → clitic → weak → strong. In this work, we are concerned in solidly grounding and finding the primitive of the distinction (i) between strong and non-strong (deficient) elements, and to distinguish clitic deficient element from weak deficient elements. The distinction affix/ non-affix is irrelevant to these points and the fact that many properties that do distinguish deficient/strong elements (such as coordination, morphological reduction, etc.) would put affixes together with deficient elements is therefore irrelevant to the extent that there exist *some* clitic elements (in the technical sense), which are uncontroversially not affixes (which we take to be the case).

42. Two points made in the introduction also come out clearly from (75): (i) a trigger which explains only a subset of the asymmetries is inadequate, (ii) given both the range of properties involved (distributional, morphological, semantic and prosodic) and the fact that none of these properties systematically correlates with the class-distinction, it is unlikely that the primitive of the explanation be a purely prosodic property (which would make it impossible to address semantic properties), or a purely semantic property (which could not explain prosodic asymmetries). Syntax is the only component plausibly linked to all relevant types of asymmetries, and thus capable of addressing all facts.

(76) DC(strong) ⊂ DC(weak) ⊂ DC(clitic) (trivially DC(strong)=Ø)

What is needed in order to *explain* this state of affairs is that the trigger which causes mild deficiency, γ' be *shared* by clitic and weak pronouns. The second trigger, γ'', is an exclusive property of clitics and adds itself to γ' to cause severe deficiency. Two unrelated triggers could only accidently produce the pattern (76).

Pattern (76) repeats itself with the two relational properties linking the three classes:

(77) a. clitic ≤ weak ≤ strong (morphology)
b. clitic < weak < strong (choice)

Again, their general format (x<y<z) is explained only if x contains the same trigger as y, plus its own additional trigger. Two distinct triggers leave as a mystery both the nature of this format and its recurrence across the three generalisations ((76), (77a), (77b)).

The generalisations (77a-b) require that both γ' and γ'' trigger the same property. By (77a) both γ' and γ'' trigger the property of being morphologically reduced with respect to an element which does not possess the trigger. By (77b) both γ' and γ'' trigger the property of being preferred over an element which does not possess the trigger. The similarity of effects of γ' and γ'' would be most elegantly explained if the latter are two formally identical triggers.

A priori then, the format of the solution to the puzzle of deficiency should be (i) clitic pronouns are deficient in two respects, γ' and γ'', while weak pronouns are only deficient in one of these two respects, γ', (ii) the two aspects of deficiency, γ' and γ'', are two (formally identical) instances of a more general underlying phenomenon, γ, the unique cause of (75) and the scope of this paper.

4. *Derivation: Morphology*

4.1. The most direct manifestations of γ are the two relational properties: contrary to all other characteristics, they are uniformly valid across all three abstract classes, across widely different languages, and, to anticipate, across grammatical categories (cf. §9). Further, given the hypothesis that inflectional morphology is relevant to syntax (a conception recently popularised by the work of Baker (1988) and Pollock (1989)) the morphological asymmetry is by far the most telling of the two.

4.2. We contend in fact that the simple observation that some deficient pronouns are morphologically a proper subset of the corresponding strong pronouns (and that the reverse never obtains), is all that is needed to explain everything concerning the three classes of pronouns, and this without changing anything to grammatical theory.

4.3. How are the following morphological relations betwen pronouns of distinct classes formally represented?

(78)	strong:	je-**ho**	je-**mu**	a **loro**
	deficient:	**ho**	**mu**	**loro**
		him, Slovak	to.him, Slovak	to.them, Italian

Minimally, the deficient element must be taken to contain less morphemes than its strong counterpart. Under the hypothesis that morphemes are heads of discrete syntactic projections, it follows that the number of syntactic heads *realised* by the strong form is bigger than that realised by the deficient element. (The Italian pair, in which it is not controversial that the dummy preposition is syntactically represented, is particularly clear in that respect).

4.4. This simple, and unavoidable, conclusion provides the explanation of the systematic morphological reduction of deficient pronouns, (79a). A more deficient pronoun is morphologically lighter than stronger pronouns *because* it contains less (underlying) morphemes, (79a-b), and it contains less morphemes *because* it realises less syntactic heads (79b-c).

(79) a. clitic ≤ weak ≤ strong
b. morph(clitic) < morph(weak) < morph(strong)
c. struct (clitic) < struct (weak) < struct (strong)

The existence of opaque morphology is the only reason that this relationship is not always visible at the surface, as it is in the preceding cases (cf. fn. 4). Unless similar morphological pairs are to receive distinct explanations, the conclusion reached on the basis of (78) must extend to pairs such as <lo ; lui> in Italian or <me ; moi> in French, and (79b) is literaly entailed.

4.5. Why is it that "the more a pronoun is deficient, the less syntactic heads it *realises*"? It cannot be a simple matter of spelling out fewer heads, if the systematic nature of the asymmetry is to be explained. It must rather be that the syntactic representation of deficient pronouns contains less elements to be realised: the more a pronoun is deficient, the less features / projections it contains. The syntactic structure of deficient pronouns is itself deficient, (79c). [43]

4.6. Generalising, this reasoning yields that weak pronouns realise less structure than their strong counterpart, and similarly, clitics are structurally impoverished w.r.t. their weak counterpart.

In other words, taken seriously, simple morphological observations virtually entail "that what makes a clitic pronoun be a clitic" is that the latter's syntactic representation is impoverished w.r.t. that of weak and strong pronouns (and similarly for the weak vs. strong distinction).

4.7. The unique and purely abstract primitive, γ, underlying all asymmetries linked to deficiency, across lexical categories is identified:

(80) *Structural Deficiency*
γ = lacking a set of functional heads

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43. This syntactic impoverishment may be due either to (a) some syntactic nodes of the reduced pronoun being (always) radically empty, or (b) the syntactic structure of the deficient pronoun containing less projections than that of the strong pronoun. Both implementations explain the syntactic asymmetry, and the choice between the two involves delicate questions about the nature of syntactic structure (must all projections always be projected?, what does it mean to be a radically empty projection?, etc.). As far as we can see, nothing below hinges upon the choice between the two implementations. The more radical version is however adopted in the text for simplicity of exposition: the more a pronoun is deficient, the less it has syntactic structure.

Structural deficiency is (potentially) capable of deriving all relevant asymmetries: it is uncontroversial that variation in syntactic structure triggers variation in morphology, prosody, semantics and distribution.

Structural deficiency is also the right notion to explain the fact that the deficient properties of weak elements are a subset of those of clitic elements, since these properties are to be imputed to the set of heads which is lacking in both clitic and weak elements (cf. the desideratum of the above "preliminary"). Finally, structural deficiency straighforwardly explains the general format of the relation between the three classes (x<y<z), since each class literally *is* a (syntactic) subset of the other, with the general relation:

(81) clitic = weak - γ'' = strong - γ' - γ''

4.8. What follows, is a discussion of how γ triggers the three remaining aspects of deficiency: (i) what is the structure missing in all deficient elements and how does it trigger the set of properties distinguishing strong forms on the one hand from weak and clitic forms on the other, §5 ?, (ii) what is the structure missing in severely deficient elements and how does it trigger the set of properties distinguishing strong and weak forms from clitics, §6 ?, and (iii) how does syntactic reduction trigger the choice preference, §7 ?

5. *Derivation: Mild Deficiency*

A large number of properties of the set γ' of syntactic heads lacking in both clitic and weak pronouns is already known, given the preceding reasoning and the discussion in §2-3:

(82) a. in transparent morphology, γ' is overtly realised as the morpheme(s) missing on the weak form, but appearing on the strong form (i.e. γ' = *Morph(strong) - Morph(weak)*, cf. (79), (81))
b. the absence of γ' forces the pronoun to occur in a functional projection at S-structure
c. the absence of γ' renders coordination and c-modification impossible
d. the absence of γ' correlates with the absence of a range-specification in the pronoun
e. the presence of γ' forces a +human interpretation
f. the absence of γ' legitimates prosodic restructuring and phonological reduction rules.

5.1. *The Missing Morpheme*

These properties now unambiguously identify γ', the surface morpheme which realises the syntactic structure present inside strong elements but missing in their deficient counterparts.

5.1.1. The vast majority of known <weak; strong> pairs are homophonous: this is the case in English <*him*; *him*>, German <*sie*, *sie*>, French <*elle*, *elle*>, etc. One pair with transparent morphology has however been discussed above: the Italian dative *(a) loro*. In this case, the above discussion entails (i) that the strong element *a loro* is literally constructed out of the weak pronoun *loro* plus the morpheme *a*, so that (ii) γ' = *a*.

(83)	a.	Non	regalerei mai	**loro**	tutto	**loro.*
	b.	Non	regalerei mai	**a loro*	tutto	**a loro.**
		no	I.would.give never	(to) them	everything	

This (surprising) conclusion is directly supported by two sets of facts:

5.1.2. The "dummy marker" *a* has exactly the right distributional property (82c): its presence/absence correlates with possibility of coordination and c-modification. The *loro* complement to *a* in (85) has properties similar to that of the weak pronoun in (84). Only the whole projection, containing *a*, can be coordinated and modified; the same is true for new referents under contrastive stress:

(84)	a.	* Ho parlato	[loro e loro].
	b.	* Ho parlato solo	[loro].
	c.	* Ho parlato	[LORO], non [loro].
(85)	a.	* Ho parlato **a**	[loro e loro].
	b.	* Ho parlato **a** solo	[loro].
	c.	* Ho parlato **a**	[LORO], non [loro].
(86)	a.	√ Ho parlato	[**a** loro] e [**a** loro].
	b.	√ Ho parlato solo	[**a** loro].
	c.	√ Ho parlato	[**a** LORO], non [**a** loro].
		I.have spoken *a* only	*a* {them and them; only them; THEM not them}

This is not an idiosyncratic property of *loro* or of pronouns in general. It is always true that the complement of *a* behaves as a weak element: the same paradigm is reproduced with strong nominal complements.

(87)	a.	* Ho parlato **a**	[tuo fratello] e [quel sindaco].
	b.	* Ho parlato **a** solo	[tuo fratello].
	c.	* Ho parlato **a**	[TUO FRATELLO], non [quel sindaco].
(88)	a.	√ Ho parlato	[**a** tuo fratello] e [**a** quel sindaco].
	b.	√ Ho parlato solo	[**a** tuo fratello].
	c.	√ Ho parlato	[**a** TUO FRATELLO], non [**a** quel sindaco].
		I.have spoken (only)	to your brother (and/not to that mayor)

More generally, the complement of dummy markers mirrors weak elements: it is a maximal projection which may not occur by itself in θ- and A'-positions, coordination, c-modification and introduce new referents (by contrastive stress).

5.1.3. Second, dummy markers like *a* have exactly the right semantic property, (82e): dummy markers such as the Spanish *a* and the Rumanian *pe* force a [+human] interpretation. This is replicated in Central and Southern Italian dialects, with the dummy marker *a* which appears on left-dislocated accusatives, (89), in exact parallel to the asymmetry found with dative *loro*, (90). [44]

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44. The dummy markers also have the correct morphophonological properties: that of being light morphemes. Comparison of morphological pairs across languages shows the morphological difference between weak and strong elements to be systematically tenuous though present.

(89) a. √ **A** quella bambina piccola, la metto in primo banco
a this small girl, her I.put in first row
b. * **A** quella tavola rossa, la metto vicino alla finestra
a that table red, her I.put near to.the window

(90) a. √ Ho parlato **a** loro.
I.have spoken to them
b. * Ho aggiunto i pezzi che mi hai consigliato **a** loro.
I.have added the pieces that to.me you.have recommended to them

5.1.4. That dummy markers like *a* realise the missing piece of deficient pronouns is strikingly confirmed by Central and Southern Italian dialects in which the above morphological similarity is widely generalised: a dummy marker appears on all strong objects, whether nominal or pronominal, but on *no* deficient objects. In the dialect spoken in the town of Senigallia, for instance, the dummy marker is spelled-out as *ma* and may appear on both dative and accusative objects in the base position (examples from Sellani (1988)).

(91) a. √ tutt l' ser arconta **ma**$_{DAT}$ i fiulini (p. 9)
all the evenings she. tells-tales *ma* the children
b. √ e po' s' sent urlà **ma**$_{ACC}$ i venditori (p. 39)
and then SI hears shout *ma* the venders
and then one hears the venders shout

The very same dummy marker appears on strong but is missing in deficient pronouns:

(92) a. √ Ho vist **ma**lu
b. √ **l'** ho vist
him I.have seen *ma*-him

This is the clearest possible evidence to the effect that the presence / absence of the dummy marker is correlated to deficiency. [45]

5.2. *Missing Structure*

Granted that the dummy markers realise the piece of structure missing in both weak and clitic pronouns w.r.t. normal strong pronouns, what is this piece of structure?

5.2.1. Given all the above argument, the missing structure must be some projection *inside* the nominal phrase, i.e. a functional projection associated to the noun (as first argued by Vergnaud (1974)):

(i) since γ' is a (set of) functional projection ***belonging to*** a strong element but lacking in weak and clitic elements, it follows that γ' is a member of the "extended projection" of the strong element. [46]

(ii) in complex prepositions, such as *instead of*, dummy markers typically appear as the

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45. Since the <lo ; malu> pair is a <clitic; strong> pair, it only shows that the dummy marker is correlated to some degree of deficiency, weak or severe. It is only in conjunction with the <loro ; a loro> pair that this argument bears precisely on mild deficiency.

46. The notion of Extended Projection is from Grimshaw (1991). It is used here in a loose sense, to refer to the unit formed by the lexical head and all the associated functional projection dominating it, where "associated to the lexical head" means "containing copies of features contained in the lexical head".

final element, and are syntactically independent of the first preposition. To capture the rigid ordering, constituency, etc., the only reasonable approach is to assume that the lexical prepositions are PPs taking a full nominal projection as complement, part of which is the dummy marker (Starke (1993a)).

(iii) The correlation between the +human interpretation of the head noun and the presence of the dummy marker *a* in Spanish or *pe* in Rumanian can only be (naturally) implemented if these dummy markers are functional projections of the noun. It is a minimal assumption that the functional projections associated to the lexical head L° contain features of L°. If this is the case, nothing need be said except that accusative markers are specified for +human feature, and are thus compatible only with nouns with human referents. On the other hand, if the dummy markers were not functional heads associated to the noun, they would need to *select for* a +human complement, a type of grammatical selection never attested otherwise (trivial cases of θ role assignment are irrelevant).

5.2.2. Since dummy markers like *a* always appear topmost (leftmost in the SVO languages discussed here) in nominal phrases, not only do they realise some functional projection of the noun, but they realise a high, or the highest, functional projection (where the "n" subscript on XP and YP indicates that they are functional projections of the noun):

(93)	*strong*:	... parlare	[XP_n a	[YP_n loro
	weak:	... parlare		[YP_n loro
		... to.speak	[a	[them

5.2.3. In naming the high nominal functional head realised by dummy markers, we follow Starke (1993a) and call it "complementiser", i.e. that which makes something become "complement of". The original rationale for this is the extensive syntactic similarity between the dummy markers appearing in "complex prepositions" (e.g. *instead of*) and the complementiser appearing in "complex complementisers" (e.g. *avant que* 'before that'). Several other reasons however point to the same direction:

(i) The numerous analyses exploring the path known as the DP-hypothesis arrive on the one hand at the conclusion that the D-node contains two distinct sets of features: ϕ-features (Brame (1981), Abney (1987), Giusti (1993) etc.), and referential features (Vergnaud & Zubizarreta (1990), (1992), Longobardi (1991) a.o.). On the other hand, it is widely concluded that a serious study of adjective placement and of prenominal modifiers (quantifiers, demonstratives, etc.) requires a large number of functional heads associated to the nominal head (Ritter (1990), Cinque (1993) a.o.).

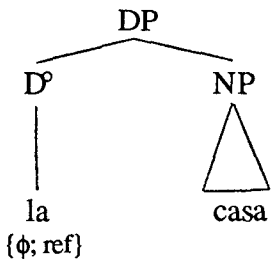
Putting these two trends together with the conclusion that dummy markers realise a high nominal functional head naturally leads to a "split-DP hypothesis": the two sets of features attributed to D° are realised in two distinct functional projections: one containing ϕ-features, Y°, and spelled out as such, and the other containing referential features, X°, and spelled out as a dummy marker, if at all.

Now the parallelism between the topmost functional projections associated to the verb, and those associated to the noun, (94), is too striking not to be captured. In both cases, the highest realised layer contains a dummy morpheme (e.g. *that, of*), in both cases this dummy morpheme is (paradoxically) realising a head associated to abstract referential information of the whole phrase (i.e. range, one of the properties which distinguishes deficient from strong elements), and further, in each case, the next morpheme down contains agreement-type information:

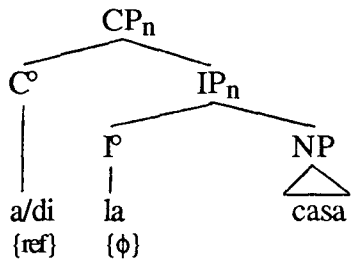
(94)	a.	[CP_V that	{±wh}	[IP_V {ϕ}	[... [VP]]]
	b.	[XP_n of / a	{±range, ±human }	[YP_n {ϕ}	[... [NP]]]

The most straighforward way to capture this parallelism is to assume that (94a-b) realise twice the same abstract structure: CP - IP - LexP. The traditional (95a) is split into (95b): [47]

(95) **a.**



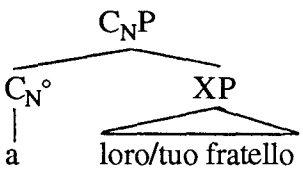
b.



(ii) *a* and *di*, the realisations of the "to be identified" high functional layer of nominal phrases, are standardly taken to realise the topmost functional projection of infinitival phrases in Romance, i.e. C° (Kayne (1984), Rizzi (1982)). The proposed analysis renders this a natural fact: these markers always realise C°.

5.2.4. A functional preposition such as *a* in the above examples is thus interpreted as a nominal complementiser, which closes off the extended projection of the noun, exactly like the complementizer closes off the extended projection of the verb. Any strong element will contain such a complementiser-like preposition, whether realised or not (the identity of X below is irrelevant here, cf. §6).

(96) a. strong



b. weak

Strong elements appearing without a lexically realised preposition, for instance nominative and accusative DPs in Italian, are attributed the structure (97), which differs minimally from that of dative DPs, (96a): [48]

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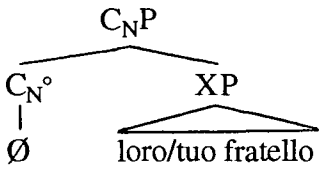
47. Here and in subsequent representations, IP is used as a cover term for the (large) series of functional projections argued for in the above references. This proposal also implies that the definite article is not expression of the highest functional category, but of a lower functional head of the IP system. For the implications concerning clitics, often considered homophonous with determiners, cf. fn. 65.
That the syntactic representation of noun-phrases is similar, or identical, to that of verbal clauses is a hypothesis which has generated much recent work: Abney (1987), Szabolsci (1989), Siloni (1990), Cinque (1993), among others.

48. The appearance of a functional preposition on accusative arguments (as in Spanish and Rumanian, cf. §5.1.3) also supports the above hypothesis that dummy prepositions are always associated to nominal extended projections, covertly or overtly.

(97) strong (e.g. nominative/ accusative)



Logically, the absence of the CP layer in deficient elements, must be the trigger of the remaining syntactic, semantic and prosodic asymmetries between deficient and strong elements: since absence of some XP (i.e. CP) is that which triggers the morphological reduction and the morphological reduction is correlated to all other asymmetries, all other asymmetries must be derived from the absence of XP (i.e. CP) in order to capture the correlation.

5.3. *Syntax*

The simple answer to distributional asymmetries between deficient and strong elements is that they are caused by the absence of CP in deficient but not in strong pronouns: because they lack CP, deficient pronouns must occur in some functional projection, cannot be coordinated, and cannot be modified.

(82) b. the absence of γ' forces the pronoun to occur in a functional projection at S-structure

c. the absence of γ' renders coordination and c-modification impossible

To go one step further, and explain why the absence of CP triggers these asymmetries, these asymmetries must be traced down either to the sheer absence of CP or to that of the content of C°. [49]

5.3.1. As earlier, morphology is an indicator of the solution: the morphological realisation of C°, the dummy marker, is commonly designated as a "(mere) case-marker". The distribution of noun-phrases with dummy-markers in one language largely corresponds to the distribution of case-marked noun phrases in other languages. [50]

We take this to indicate that the functional head which hosts the "reduplication" of the case feature of N° is C° (cf. fn. 46 for the assumed theory of functional heads). The distinction between, say, Italian and Slovak is that this case feature K is morphologically realised (if at all) on C° in Italian but on N° in Slovak (glossing over other differences, such as the relative richness of the distinctions morphologically expressed by K in the two languages).

Since deficient elements lack C°, they do not contain the (functional) case-feature. More

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49. This section is concerned only with mild deficiency, i.e. that what is common between weak and clitic pronouns, so (82b) requires some care. While it is evident that both weak and clitic pronouns must occur in some special derived position, the nature of this position seems substantially different in the two cases (X° vs XP). Accordingly, only that which is clearly weak deficiency will be addressed here, i.e. the placement of weak pronouns in a derived XP position, reserving discussion of placement of clitics for the next section, concerned with the derivation of severe deficiency.

50. As in §4 above, morphology is taken as an indicator of the underlying processes, not as the actual trigger of the surface asymmetries. This is not to be confused with so called morpho-syntactic accounts, which take morphology to be the "causal" factor.

precisely, *they cannot contain (functional) case-features*, the recipient of these features being absent.

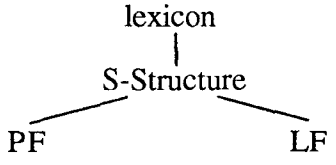
Assuming, vaguely for the time being, that every noun-phrase must be associated to a functional case-feature (as opposed to the one on N°), it follows that deficient, but not strong, elements must undergo some process allowing them to be associated to the functional case-feature. In this context, the natural (and usual) interpretation of "x is associated with α" is that either x contains α or x is in a local structural configuration with an element containing α. If, as is often assumed, Agr° is necessary for case-assignment, deficient elements now need to occur in a local structural configuration with Agr°. Furthermore, weak pronouns have no space to represent the case feature internally (the locus of case is absent) and thus cannot "acquire" the functional case feature. If a weak pronoun is further displaced, the displacement destroys the local configuration with Agr° and the deficient pronoun lacks case again. The local relation between the weak pronoun and Agr° must be maintained as long as the pronoun needs case. [51]

5.3.2. Why do deficient pronouns need functional case? The central hypothesis of the present research is that the structural reduction observed in clitic and weak pronouns w.r.t. usual noun-phrases, is a *deficiency*, not a mere difference. As a deficiency, it must be compensated. A first tentative formulation of this is that (cf. §8 for discussion):

(98) features missing in a deficient structure must be recoverable at all levels of representation

For deficient pronouns to be properly interpreted, the lack of functional case must thus be compensated. This can only be achieved through the establishment of an appropriate structural relation with Agr°. Given a model of grammar of the type, [52]

(99)



(98) entails that the relevant configuration must hold at S-structure (assuming there to be no displacement at PF).

Within a traditional X-bar model, "local configuration with X°" may mean one of two things: spec-head agreement with X°, or incorporation into X°. Weak pronouns being XPs, they establish a local relation with Agr° by appearing in specAgrP. It then follows from the above discussion that weak pronouns occur in a case specAgrP at S-structure, the generalisation to be derived. [53]

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51. Proviso: as implemented here, the case-account is immune to a (strong) objection: that there exist deficient elements for which case is irrelevant (such as weak adverbs, §9). In the present approach these elements lack the features corresponding to their highest functional projection, C°, and these trigger deficiency. The nature of the feature in C° such that it generalises over adverbs, nouns, etc. remains an open question though.

52. It is irrelevant whether "S-Structure" is taken to denote an actual level of representation, Surface Structure, or a point in a derivation to which spell out applies, Spellout-Structure, and similarly for the lexicon as insertion point vs. deep structure (cf. Chomksy (1981) vs. Kroch (1989), Chomsky (1992) for recent discussions).

53. It is apparently strange that case is realised in C° but assigned by Agr°: given the strong similarity between nominal and verbal element, the locus of case should be uniform. This is however a false problem:

5.3.3. The ban on modification of deficient element (**I saw only it*) is to be traced down to the sheer absence of CP: these modifiers always modify a full clause, nominal or verbal, and never a subpart of the clause (*[only that it is so cold down there] bothers me* versus **[that only it is so cold down there] bothers me*). Their impossibility with deficient pronouns is a trivial consequence of structural deficiency. [54]

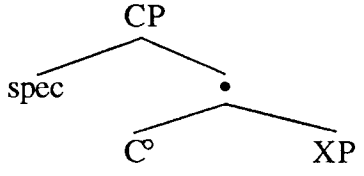
5.3.4. The ban on coordination of deficient pronouns could be treated similarly, given a theory of coordination of the type proposed by Wilder (1994): only CPs and DPs (i.e. only CPs, in our terms) can be coordinated.

In an approach to coordination in which any level of structure can be coordinated, one case is more delicate: that in which the conjunction (containing a deficient pronoun) occupies specAgrP (other cases are irrelevant: the pronoun is not in specAgrP and is thus ruled out exactly as dislocated or clefted pronouns). Nevertheless, the answer is straighforward enough: being embedded inside a coordination, the deficient pronoun is not in an adequate local configuration with Agr°, and is thus not associated to case, and, as a consequence, uninterpretable.

5.4. *Semantics*

5.4.1. The "referential" features usually attributed to the highest functional projection of noun phrases are referential indexes.

(100)



{index = ---}

Deficient but not strong pronouns lack the highest functional projection, CP, and thus lack referential index. Also:

(82) d. the absence of γ' correlates with the absence of a range-specification in the pronoun

e. the presence of γ' forces a +human interpretation

Again, the simplest solution seems adequate: nothing need be assumed beyond (100) to explain (82d-e). If "referential index" is given its full meaning, that of associating a linguistic element with a non-linguistic entity, (82d) follows: having an index implies having

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the case features are always in C°, both in nominal and verbal extended projections (case is attested on verbal clauses across languages). Agr° on the other hand does not contain any case feature, but there is rather a "rule" akin to redundancy rules, which interprets all XP in specAgrP as associated to case.

54. Whether c-modifiers are adjoined to CP, or they are in some higher position c-commanding the CP is not directly relevant. The second hypothesis is however favored by cases such as *seulement autour de la maison* versus **autour seulement de la maison* "only around of the house".
The exclusion of other modifiers, which occur neither with strong nor with deficient pronouns, (17a), must now be understood as a property of the L° lexical head of pronouns, the features of which must project onto functional categories that do not admit specifiers.

a range. [55]

5.4.2. The exclusion of strong pronouns from expletives, impersonals, non-referential datives is straightforward: strong pronouns always have a CP and therefore contain an index and a range. Their having a range, is incompatible with occurrence in these constructions. On the other hand, because they have a referential index and a range, strong pronouns have no trouble denoting, even without being associated to an antecedent. [56]

Deficient pronouns on the other hand, have no CP, and thus no index. Lacking index, nothing forces them to be referential: they may occur as expletives, impersonals, etc. But since they lack a referential index, they can be interpreted as referential only if they are associated to a (non-deficient) antecedent, through coreference. As a consequence, deficient pronouns can only be referential if they are "old information", or "specific". They are uninterpretable in and by themselves. [57]

5.4.3. The fact that dummy markers differ w.r.t. the ±human characteristic, §5.1.3, could be taken to reflect their lexical specifications. Thus *a* in (101b) is lexically specified [+human] and only compatible with a [+human] noun (since the features of the noun must be identical to those in the functional heads). On the other hand, *of* in (101a) is lexically specified [±human] and thus occurs with both types of nouns.

(101) a. $[_{CP_n}$ of $_{\{\pm human\}}$ $[_{IP_n}$ the ... $[_{NP}$ $\sqrt{}$car / $\sqrt{}${-human} / $\sqrt{}${+human}]]] (English)

b. $[_{CP_n}$ a $_{\{+human\}}$ $[_{IP_n}$ (e)l ... $[_{NP}$ *coche / $\sqrt{}$cartero]] (Spanish,accusative)
*{-human} / $\sqrt{}${+human}

The requirement that strong pronouns refer to a +human entity could be exactly identical to (101b): the zero C° contained in strong pronouns, on a par with the Rumanian *pe*, the

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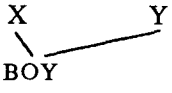
55. If there were reasons to keep the notions of range and index unrelated, only elegance would suffer: range would need to be postulated as an additional referential property of C° and some slight complication would be needed in the wording of §5.4.7. Similar remarks apply for human reference below.

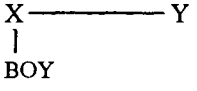
56. We assume a theory of syntactic structure in which heads are nothing but the features "in" them and the presence of a node entails the presence of the features that constitute it (cf. fn.43). A C° without an index is not a possible entity.

57. This entails that coreference may be as in [ib]. Not only can two elements corefer by *refering* independently of each other to one and the same entity, [ia], but they can also do so if only one of the two refers, and the second is associated to the first, [ib] (i.e. the referent of the second is a function of the referent of the first), cf. also Fiengo & May (1994) for similar views. From now on, the word "coreference" will be used only for [ib].

[i] a. Coreference as (special) reference



b. Coreference as a function of the antecedent



Deficient elements, such as the English *it*, are limited to the indirect path, [ib]. They never refer. (If coreference of the type [ib] did not exist, as is sometimes claimed, the "specificity" of deficient elements would be unformulable in any natural way which does not lose the correlation between (i) the asymmetry w.r.t. specificity and (ii) the asymmetry w.r.t. the capacity to be expletive).

Spanish and Central-Southern Italian accusative *a*, is lexically specified [+human].

(102) $[_{CP_n}$ Ø $[_{IP_n}$ strong ... $[_{NP}$ Ø]]] (universal?)
{+human} * {-human} / √{+human}

Finally, the fact that deficient pronouns are free to refer to non-human entities trivially follows from (102): having no C°, they contain no +human specification and are thus in principle free to corefer with any (prominent) antecedent. [58]

(103) $[_{IP_n}$ weak ... $[_{NP}$ Ø]]] (universal?)
√ {-human} / √{+human}

5.4.4. A still simpler, and more elegant account may however be closer to truth. It need not be postulated that C° contains two distinct (sets of) features (index/range and human). A range in C° is nothing but a set of features directly linked to interpretation. Since ±human is a feature in C° directly relevant to interpretation, it is best seen as *part* of the features which constitute a range, and not as a separate entity.

Now with respect to range, strong pronouns are in a contradictory situation: since they have a C°, the latter cannot be empty, and they must therefore contain some range-specification. On the other hand, they are associated to a dummy noun which does not provide any range-specification. To resolve the contradiction, a default range is inserted: +human.

There is substantial evidence that +human is indeed a default feature in natural language. Cf. fn. 59, and, among other, apparent "deadjectival nouns", such as *gli alti* ("the high", Italian), *the rich*. These can only be +human while the correponding adjectives are compatible with both human and non-human nouns (i.e. *the rich* may mean *the rich men* but not *the rich examples*). If such constructions include a null noun, the constraint on referents reduces to the fact that +human is a default range-feature.

As a result, only the accusative *a* in Spanish and Central-Southern Italian and *pe* in Rumanian need be lexically specified w.r.t. the ±human feature (i.e. +human only), all other complementisers are simply unspecified for this trait, and their behaviour follows from independent principles. [59]

5.4.5. An account in terms of default range is furthermore empirically superior to one in terms of lexical specification. The dummy marker appearing in the dative has distinct behaviour with nouns and pronouns: it is compatible with both human and non-human nouns, but only with +human pronouns:

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58. That the dummy nominal head is compatible with both values is attested by the zero noun of deficient pronouns and by overt realisations of the dummy noun, such as the English *one* (i.e. *the one I saw* may refer to both human and non-human entities). Nothing forces this though, cf. English, in which weak *it* is restricted to -human, and the weak version of *him/her* are restricted to +human. (cf. also fn. 15).

59. Impersonals are particularly interesting: their interpretation is always arbitrary, i.e. associated to a default set of features, cross-linguistically including [+human], a range in the present assumptions. The difference between arbitrary and expletive subjects, one having both range and θ-role and the other neither, suggests a simple account of arbitrary reading: in the interpretive component, bearing a θ-role necessarily implies having a range. If this is the case, then deficient pronouns have three possibilites: (i) deficient pronouns may be θ-less and rangeless (expletives, discourse particles (non-referential datives)), (ii) deficient pronouns may bear a θ-role and acquire range through coreference, cf. fn. 57 above, (iii) deficient pronouns may have a θ-role but no range in syntax, in which case a default range is inserted at the (post-syntactic) semantic interface: +human.
In other words, if having an index entails having a range, not having an index does not entail not having a range.

(104) a.	√ Ho tolto una nota	al	{manoscritto; bambino}	
	I.have removed a footnote/mark	to.the	{manuscript; pupil}	
b.	Ho tolto una nota	a	loro	(= *manoscritti; √bambini)
	I.have removed a mark	to	them	

A lexical account would need to stipulate two distinct dative dummy markers, with no explanation of why one specified ±human occurs with nouns and not pronouns.

On the other hand, the facts follow straighforwardly if no lexical specification is involved in dative *a* (or English *of*): these markers are simply underspecified for the human feature, and take it from the head noun, (104a). With pronouns, the head noun does not provide any range-specification, and the default range is inserted in C°, +human, (104b).

5.4.6. All the facts linked to the lack of range of deficient pronouns ("specificity", expletives, impersonals and non-referential datives), as well as the animacy asymmetry may thus reduce to the single fact that the highest functional head associated to nouns contains a referential index, (100).

Whatever the fate of such a strong reduction, it is an empirical fact that this projection is linked to humanness, and it is barely controversial that it encodes referential features such as range. The link between the lack of CP and the wide number of apparently disparate surface semantic asymmetries, regarding contrastive stress (i.e. prominent discourse referent), ostension (i.e. prominent discourse referent), expletives, impersonals, non-referential datives, and specificity (i.e. prominent discourse referent), is thus established without special assumptions, through the notion of index (and range) in C°.

5.4.7. Putting the account of syntactic displacement (cf. §5.3.1-2) and semantic "non-referentiality" together now causes an unwelcome clash (although each is coherent in isolation): C° now contains two types of features: index (which entails range), and functional case. But the lack of index provokes different effects from the lack of case: case must be recovered (thus provoking displacement) while index may stay absent altogether (as in the case of e.g. expletives).

But this problem stems from the redundant assumption that C° contains *both* case and index. All and only strong elements have an index (cf. §5.4.2) and it is also true that all and only strong elements have a functional case feature (§5.3.1). This reduncancy vanishes if index is not a features *besides* K in C°, but rather *index is the interpretation of K*.

This now solves the apparent contradiction: it is still the case that all and only strong elements have range (since all and only strong element have an index, in turn a consequence of the fact that all and only strong elements have a functional case feature) thus deriving all the semantic asymmetries. Deficient element can but are not constraint to, corefer with an antecedent (cf. fn. 57), thereby seemingly inheriting index and range. It now follows that all deficient elements must recover case, while not all deficient element inherit index/range.

In short, both the obligatory (overt) displacement of deficient element and the whole range of semantic asymmetries follows from the presence/absence of one single feature of C°: functional case. [60]

5.5. *Prosody*

Although not much is known about the positive interactions between prosody and

60. Cf. Bittner & Hale (1994) for a recent discussion of KP, independently arriving at the same structural conclusion: noun phrases have a topmost functional projection which contains case (but not phi-features). In a different structural proposal, Giusti (1993) also argues against referential features in the topmost nominal projection and substitutes them by case information.

syntax, it is a standard assumption that prosody is sensitive to "major syntactic constituents" and that CP is such a constituent.

(82) f. the absence of γ' legitimates prosodic restructuring and phonological reduction rules.

Tentatively, it may be assumed that in absence of CP, a deficient pronoun does not qualify as a "major constituent": it does not constitute an independent (above word-level) prosodic domain, and it is subject to phonological rules / processes characteristic of non-major categories, such as reduction rules or liaison. None of this is true of strong pronouns which do constitute a major constituent, CP.

5.6. *Summary*

The general morphological asymmetry between deficient and full pronouns, together with the assumption that morphemes correspond to syntactic heads, leads to the conclusion that deficient pronouns correspond to less syntactic structure than full pronouns, a conclusion evident in transparent morphology (where the deficient form is a proper subset of the strong form).

From this it follows that "the missing piece" can be identified by a systematic morphological comparison between strong pronouns and (mildly) deficient pronouns, comparison which points to dummy prepositional markers. In turn, this entails that such markers are a functional projection of the noun, a conclusion supported by several independent studies. The similarity between this highest functional projection of the noun, and that found in the verb, is then so obvious that they are best viewed as two instances of one abstract category, here called complementiser. Finally, this topmost functional category is standardly taken to contain referential features (i.e. the referential index), while the dummy morphemes are typically associated to case, due to extensive distributional similarities. From these two features, the integrality of the asymmetries between deficient and full forms follows:

(105) a. Because strong elements have a CP but deficient elements lack it:
- deficient elements are morphologically "lighter" (i.e. have less heads to realise)
- deficient elements cannot be modified by modifiers of CP (c-modifiers)
- deficient elements are not "major constituents", and are thus subject to reduction rules, etc.

c. Because strong elements have functional case-features but deficient elements lack it:
- deficient elements are necessarily in a case-assigning specAgrP at S-structure (to recover case).

b. Because strong, but not deficient, elements have an index (deriving from their functional case feature):
- strong elements cannot be expletive, impersonal, discourse-particles
- deficient elements cannot refer, they must associate to an antecedent prominent in the discourse (i.e. discourse-internal coreference: "specificity", "old information", etc., but also impossibility in most contrastive contexts, or with ostension)
- strong elements with dummy lexical heads (strong pronouns) are assigned a default range +human

6. *Derivation: severe Deficiency*

The properties of γ'', missing in clitics but present in both weak and strong pronouns, are:

(106) a. in transparent morphology, γ'' is overtly realised as the morpheme missing on clitics but realised on both weak and strong pronouns (i.e. γ'' = Morph(weak) – Morph(clitic)).
b. lack of γ'' causes X°-chain formation
c. lack of γ'' entails absence of word-stress

6.1. *The Missing Morpheme*

6.1.1. The single transparent <clitic; weak> minimal pair illustrated above, the <s; es> pair of Olang-Tirolese is not very informative. The Slovak <ho; je-ho> and <mu; je-mu> pairs discussed in §4.3 however provide valuable clues. First, the reduction is clearly not phonological, and second, the *je-* morpheme missing on the clitic is not plausibly assimilated to a dummy case-marker. As a consequence, the *je-* morpheme is not the realisation of γ' (C°) but rather of γ''.

6.1.2. A similar reasoning applies to a number of other cases, either closely related to Slovak, as in the Serbo-Croatian pair <ga, njega> "him", or more distant, the Spanish <los; el-los> "them", etc. (and maybe the Greek <tos; af-tos> "he", Joseph (1993)). To a certain extent, German provides the same type of clue: the distinction between forms such as the (ambiguous) weak form *ih-n* "him" and the corresponding (clitic) form *n*, found in dialects (cf. Abraham (1991)), results from the loss of a dummy morpheme *ih-*.

6.1.3. In each case what disappears is a semantically empty "dummy" morpheme which has no other apparent role than that of rendering an impoverished form stronger. To encode this into the terminology, we will refer to this dummy as a "syntactic support". [61]

6.2. *The Missing Structure*

6.2.1. The support morpheme attested in Slavic languages has the curious property of appearing as a support morpheme also outside of the realm of pronouns. The morpheme *je-* of Slovak pairs <ho; je-ho> and <mu; je-mu> also distinguishes, in one case, the clitic auxiliary from the strong copula: whereas the third person clitic is a null morpheme, the strong third person copula is realised as *je* (Toman (1981) discusses the difference between these verbal forms for quasi-identical Czech data).

This parallelism between nominal and verbal contexts is strongly illustrated in Serbo-Croatian: on a par with nominal pairs <ga; nje-ga> or <mu; nje-mu>, verbal pairs are

61. As noted by Davide Ricca (p.c.) an explanation in terms of phonological reduction is further not very plausible given the fact that the progressive phonological reduction of diacronic change systematically involve truncation of the ending of words, not of the initial part, while exactly the opposite holds of pairs of pronouns: it is systematically the initial phonemes/ morpheme which is deleted (while in many cases deficient pronouns still historically derive from full forms).
This strongly suggests that the diacronic process involved with deficient/ strong pairs is not an instance of the general reduction process but rather of the working of structural deficiency, maybe via the impetus of the choice principle (§2.3 , §7).

systematically distinguished by a support morpheme (Browne (1974)):

(107)	*clitic*	*strong*		*clitic*	*strong*	
	sam	je-sam	I.am	smo	je-smo	we.are
	si	je-si	you.are	ste	je-ste	you.are
	je	je-st	he.is	su	je-su	they.are

6.2.2. Given the parallelism between the support in the verbal domain and in the nominal domain, and the hypothesis that nominal CPs parallel verbal CPs, conclusions from the study of one system may carry over to the other. This permits an understanding of the mysterious nominal support on the basis of its better studied verbal counterpart.

In Serbo-Croatian, the verbal support *je-* is part of a tripartite system of support prefixes: a reduced form such as *sam* "I.am" has as strong counterparts both *jesam*, in which *je-* is either emphatic or a simple dummy marker, and *nisam*, in which the support morpheme is interpreted as negative. The complete paradigm is illustrated in the following examples which show both the opposition between reduced and full forms ((non) string-initial) and the interpretive possibilities of the full forms.

(108) a.	* sam	ga pio	("clitic")
b.	√ je-sam	ga pio	(emphatic, dummy)
c.	√ ni-sam	ga pio	(negative)
	yes/no-am	it drank ("I.have(n't) drunk it")	

6.2.3. Exactly the same system is found in Basque: the bare form of the auxiliary is clitic-like (in the same sense as Serbo-Croatian), and the complex forms are non-clitic entering the same tripartite semantic system. [62]

(109) a.	* da	etorri	("clitic")
b.	√ ba-da	etorri	(emphatic, dummy)
c.	√ ez-da	etorri	(negative)
	yes/no-has	arrived	

6.2.4. The virtual identity of the Basque and Serbo-Croatian verbal support paradigms not only imposes a unified analysis in terms of deep properties of natural language (the two languages being largely unrelated), but also provides an analysis of the phenomenon: Laka (1990) argues at length that the Basque support prefixes correspond to a functional category between C° and I°, which she calls Σ° and which contains both polarity features (assertion / negation) and focus features.

6.2.5. Extending Laka's analysis not only to Serbo-Croatian but to all occurrences of support morphemes, the nominal support morpheme realises a nominal Σ° in a structure of the type: [63]

(110) C_LP Σ_LP I_LP LP (with L = any lexical category)

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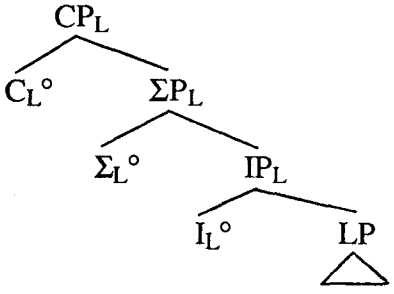
62. The English *do* corresponds to *je-* in Serbo-Croatian and *ba-* in Basque in being a support morpheme (prefix) which is either dummy or emphatic. The necessity of a unified analysis of *ba-* and *do* is argued by Laka (1990).

63. What is here called Σ° has recently received widely different names: PolarityP, FocusP, Agr1P, AgrcP, WackP, etc. all denoting essentially the same entity.

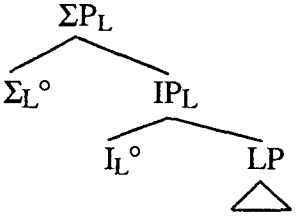
More generally, Σ° may be taken to be the locus of prosody-related features of L°. [64]

6.2.6. Such a phrase-structure provides a pristine model of Structural Deficiency: just as weak element lack the superior layer of strong elements, CP, clitic elements lack the superior layer of weak elements, ΣP. Weak elements are "peeled" strong elements, and clitics are "peeled" weak elements. The resulting structure of the three classes is: [65]

(111) a. Strong Pronouns



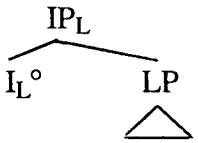
b. Weak Pronouns



64. One feature may suffice: in the usual case, its negative value corresponds to negative interpretation, while its positive value is default (and non-realised) and corresponds to positive readings. Finally, a realised default value provokes emphatic (contrastive) reading. In Basque and Serbo-Croatian the default value may be independently needed for pure grammatical constraints and the emphatic reading is provoked where the support is realised without it being independently forced.
The fact that Σ° apparently contains both polarity features and focus features reflects a general (surprising) fact about language: non-lexical accentuation is largely related to affirmation / negation (i.e. to emphatic and contrastive readings). It is an intriguing hypothesis that this link is a reflex of the fact that both polarity and accentuation features are realisation of one and the same set of features (i.e. one is derivative upon the other) realised in Σ°.

65. Although the structure in (111c) could express the claim often made on the basis of Romance languages that (3rd person) clitics ARE determiners (compare (111c) with (95b)), it does not necessarily do so. This claim is in fact undermined by the observation that some languages manifest one paradigm but not the other: Slavic languages have clitics but not determiners, Brazilian Portuguese has determiners but no corresponding clitics. It would not be an unwelcome result that clitics realise more heads than determiners, given the non perfect homophony between the two paradigms (e.g. in Italian: *il/lo* (det.) vs. *lo* (3rd sing. clitic), *i* (det.) vs. *li* (3rd pl. clitic)).

c. Clitic Pronouns



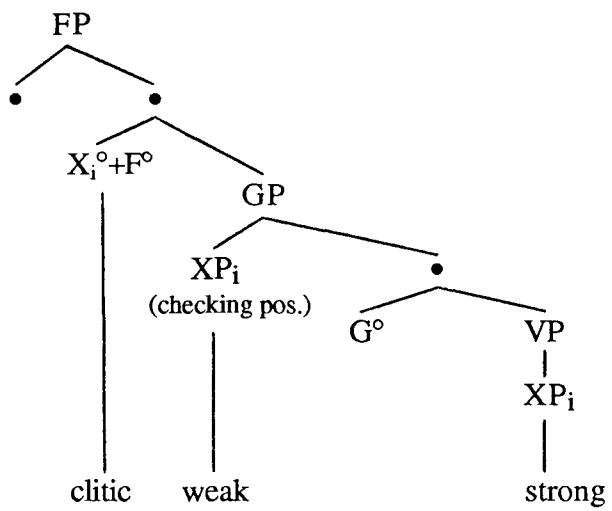
6.3. *Derivation: Syntax*

6.3.1. To recover the features missing due to the lack of Σ°, a clitic pronoun must associate with prosodic features, a consequence of (98) above. There being no syntactic head which assigns such features structurally, clitic pronouns must surface in a local relation to a c-commanding Σ° itself.

With respect to syntactic placement, a clitic pronoun is thus faced with an apparent contradiction: to compensate the absence of functional case-features, it must occur in a specAgrP at S-structure and to compensate the lack of Σ° it must simultaneously occur in a local relation with Σ°.

6.3.2. The only solution to this dilemma is to exploit both types of possible local configuration with an X°: specifier-head agreement and incorporation, through a derivation of the type:

(112)



Only through such a derivation is the clitic associated to both Agr° and X° at S-structure. [66]

66. A surprising result of this analysis is to *derive* the fact that there are three pronominal classes, and not two or four. This follows from the fact that there are only two possible (distinct) types of chains, XP and X° chains together with the strict locality condition on recoverability. In other words, the fact that there are two distinct types of chains entails that two elements at most may be recovered, and therefore that there can be only three classes of pronouns w.r.t. deficiency: non-deficient, deficients with one element to recover, and deficients with two elements to recover.

6.3.3. That (112) is an accurate representation of clitic-placement has been argued many times, on grounds totally independent from the present concerns (mainly linked to agreement found on past-participles), cf. among others Sportiche (1989).

6.3.4. Incorporation opens an unexpected possibility: what is F° above? Obviously a head associated to the adequate (prosodic) features missing in clitic pronouns (but not in weak and strong pronouns). But there are two such heads: Σ°, by hypothesis, and (the head containing) L°, by definition, since a lexical head contains all features of its associated functional projections. It thus follows from the above system that the X° chain of the clitic has its head either in the head hosting V° or in Σ°.

This is precisely what is needed: typologically, clitic pronouns pattern in two groups: they appear either around the second position of the clause (C2 clitics), i.e. in Σ°, or on the verb (ad-verbal clitics), i.e. in the functional head hosting V° (cf. Starke (1993b) for discussion of C2 clitics along these lines). [67]

6.4. *Derivation: Prosody*

The fact that weak and strong pronouns, but not clitic pronouns, have lexical word-accent (possibly later erased in weak elements through prosodic restructuring) derives from the hypothesis that all prosody related features of L° are realised in Σ°. Clitic pronouns have no prosody related features and are syntactically associated to them only *pro-forma* through an adequate configuration. Clitic-pronouns thus end-up in the prosodic domain of an adjacent non-clitic element. Again, this is a sketch of a path which seems plausible, rather than a full fledged proposal.

7. *Derivation: Choice of Pronouns*

All but one of the asymmetries between clitic, weak and strong pronouns are now reduced to a unique underlying primitive, lack of the highest functional projection. The remaining fact to explain is the choice preference. Given the existence of the three classes, every pronoun is potentially realised in three distinct ways; the profusion so created is regulated by a very strong, cross-linguistic generalisation:

(113) clitic < weak < strong

This generalisation captures asymmetries such as (115a-b) or (116a-b): the most deficient form must be chosen if it can be chosen (which is possible in (115b) but not in (116b) because deficient pronouns can refer to prominent but not non-prominent discourse referents, §2.4, §5.4). Similarly for (114b) vs. (115a): since there are no deficient nouns in French, *Jean* is the most deficient form possible in (114) and therefore allowed. In (115a) on the other hand, there exists a licit more deficient form, and the strong form is therefore not licit.

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67. None of these possibilities are open to weak pronouns: weak pronouns are not forced to incorporate, the simplest option of spec-to-spec displacement being open to them. But displacement into specVP is impossible, this being the position of the external argument, and displacement into specXP where X° contains the verb, i.e. $[_{specXP}$ *weak* $[_{X°}$ *[v] x]* ... is plausibly not local enough to establish the correct configuration with V° (cf. Cardinaletti & Starke (1994a) for discussion of this last point).

(114) a. A: Moi je vois Jean et Marie
b. B: Moi je vois Jean
I, I see Jean (and Marie)

(115) a. * Pierre voit lui_{odr} <odr = "old" (i.e. prominent) discourse referent>
b. √ Pierre le_{odr} voit

(116) a. √ Pierre voit lui_{ndr} <ndr = "new" (i.e. non-prominent) discourse referent>
b. * Pierre le_{ndr} voit
Pierre him sees him

7.1. *Minimise Structure*

Given the respective syntactic structures of the three classes, the generalisation (113) reduces to the statement that a "smaller structure" is obligatorily chosen, if possible:

(117) *Economy of Representations*
Minimise Structure

Only if the smaller structure is *independently* ruled out, is the bigger alternative possible. [68]

7.2. *Null Pronouns*

7.2.1. It is often held that a special filter, called "Avoid (lexical) Pronoun" in Chomsky (1981), applies to force the choice of null pronouns over their overt counterparts (in unmarked situations, i.e. where the referent is prominent in the discourse, as in the non-focussed coindexed embedded subjects):

(118) a. √ $Gianni_i$ partirà quando $\mathbf{pro}_i$ avrà finito il lavoro. (Italian)
b. * $Gianni_i$ partirà quando $\mathbf{lui}_i$ avrà finito il lavoro.
c. * $Gianni_i$ partirà quando $\mathbf{pro}_i$, non il suo capo, avrà finito il lavoro.
d. √ $Gianni_i$ partirà quando $\mathbf{lui}_i$, non il suo capo, avrà finito il lavoro.
Gianni will.leave when he (, not the his boss,) will.have finished the work

This filter reduces to Economy of Representations: the choice of *pro* over *lui* is a special case of Minimise Structure, *pro* being a weak pronoun and *lui* a strong pronoun.

Further, where the two proposals make different predictions, those of Minimise Structure, or Economy of Representations, are systematically favored over those of Avoid Pronoun. In languages which have two weak pronouns, one overt and one null, Avoid Pronoun requires that the null be chosen over the realised, where possible, exactly as in (118), while Minimise Structure leaves the choice free. The latter is correct: [69]

(119) a. √ $Gianni_i$ partirà quando $\mathbf{pro}_i$ avrà finito il lavoro. (Italian)

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68. Of course this may be translated as, or be derivative upon, "Minimise Features", cf. fn. 43. This holds of all subsequent discussion. See also Picallo (1994) for an "Avoid Features" view of Avoid Pronoun.

69. Although stylistic differences are involved, it is not the case that the two pronouns belong to disjoint registers, which would make the point irrelevant: at the stylistic level in which *egli* is possible, pro-drop is also allowed.

b. √ Gianni$_i$ partirà quando **egli**$_i$ avrà finito il lavoro. (Italian)
Gianni will.leave when he will.have finished the work

Conversely, if a language has two realised forms for one pronoun, one being deficient and the other strong, Avoid Pronoun, if anything, predicts a free choice, whereas Minimise Structure correctly requires the use of the deficient over the strong. I.e., only Minimise Structure captures the uniformity of the French (120), Italian (118), and Olang-Tirolese (121) paradigms:

(120) a. √ Jean$_i$ pense qu'**il**$_i$ est intelligent (French)
b. * Jean$_i$ pense que **lui**$_i$ est intelligent
c. * Jean$_i$ pense qu'**il**$_i$ est intelligent, pas son chef
d. √ Jean$_i$ pense que **lui**$_i$ est intelligent, pas son chef
John thinks that he is intelligent (, not his boss)

(121) a. √ Hans$_i$ denkt, daß **a**$_i$ intelligent isch (Olang Tirolese)
b. * Hans$_i$ denkt, daß **e:r**$_i$ intelligent isch
c. * Hans$_i$ denkt, daß **la a**$_i$ intelligent isch
d. √ Hans$_i$ denkt, daß **la e:r**$_i$ intelligent isch
Hans thinks that (only) he is intelligent

Similarly, Avoid Pronoun cannot explain the choice among objects pronouns across Romance, Slavic or Germanic: a realised object clitic or weak pronoun is chosen over an (equally realised) object strong pronoun, (115). Finally, Economy of Representations explains the noun-pronoun asymmetry, (114b) vs. (115a), while an approach in terms of Avoid (lexical) Pronoun would have nothing to say about this case.

In sum, Minimise Structure, but not the Avoid Pronoun Principle, captures the parallelism between the behaviour of subjects and objects, between null-subject languages and non-null-subject languages (and across categories, §9) while explaining the noun-pronoun asymmetry. Such a coverage gives retroactively strong credence to the primitive upon which it is based: the tripartition between clitic, weak and strong elements and Structural Deficiency.

7.2.2. Most other filters / principles which have been stated in terms of null vs realised pronouns are to be restated in terms of the interplay between Minimise Structure and the three classes of clitic, weak and strong pronouns. Montalbetti's Overt Pronoun Constraint is a good illustration of this. Montalbetti (1984) observes that *if mild focalisation is ignored*, the following paradigm holds (the paradigm is slightly adapted and transposed from Spanish to Italian):

(122) a. √Gianni ha ammesso che ***pro*** ha bevuto tutto il vino.
b. √Nessuno ha ammesso che ***pro*** ha bevuto tutto il vino.
c. √Nessuno ha ammesso che ***pro*** ha detto che ***pro*** ha bevuto tutto il vino.

(123) a. √Gianni ha ammesso che **lui** ha bevuto tutto il vino.
b. * Nessuno ha ammesso che **lui** ha bevuto tutto il vino.
c. √Nessuno ha ammesso che ***pro*** ha detto che **lui** ha bevuto tutto il vino.
Nobody has admitted (that he has said that) he has drunk all the wine

and concludes that an overt pronoun cannot be directly Q(uantifier)-bound: an intermediate *pro* is necessary. Unfortunately, when focus is taken into account, as it must be given the

preceding paradigms, judgments become very delicate: every example in (123) varies from inacceptable to fully acceptable, depending on the amount of focus on *lui*. To obviate this difficulty, it suffices to observe pairs of overt/ null examples, which do not involve focus. This is the case of coordination for instance (to be compared with (122)):

(124) a. √Gianni ha ammesso che **lui** e i suoi amici hanno bevuto tutto il vino.
b. ? Nessuno ha ammesso che **lui** e i suoi amici hanno bevuto tutto il vino.
c. √Nessuno ha ammesso che ***pro*** ha detto che **lui** e i suoi amici hanno bevuto tutto il vino.
Nobody has admitted (that he has said that) he and his friends have drunk all the wine

The same contrast obtains, although significantly weaker (judgments are somewhat unclear). Now the same argument as above holds: non-pro-drop languages which have two distinct realised pronouns, have the same (weak) contrast. The French paradigms (125a-b) reproduce the Italian (122)-(124), and the same holds of Germanic dialects with two forms for nominative pronouns, as St-Galler Swiss German for instance (M. Schoenenberger, p.c.) :

(125) a. √ Jean a admis qu' **il** a fini la bouteille.
√ Personne a admis qu' **il** a fini la bouteille.
√ Personne a admis qu'**il** a dit qu **il** a fini la bouteille.
b. √ Jean a admis que **lui** et ses amis ont fini la bouteille.
? Personne a admis que **lui** et ses amis ont fini la bouteille.
√ Personne a admis qu'**il** a dit que **lui** et ses amis ont fini la bouteille.
Nobody has admitted (that he has said that) he (and his friends) has/have finished the bottle

Since one and the same paradigm obtains in pro-drop (here Italian, but the same holds of Slovak) and non-pro-drop (here French and St-Galler German) contexts, the Overt Pronoun Constraint should not refer to the overt/ non-overt distinction, but to the strong/deficient distinction, i.e. it should become the Strong Pronoun Constraint.

7.3. *Up to Crash*

7.3.1. Stronger (i.e. bigger) pronouns are possible only where smaller ones are impossible. But what renders the smaller one impossible? Intuitively, a bigger pronoun is possible only if generating a smaller pronoun in its place yields an impossible derivation, i.e. "crashes". *Minimise Structure* thus means "minimise up to crash".

Generating a deficient pronoun instead of a strong pronoun does not result in an acceptable derivation in coordination (because the deficient pronoun would not be in a local relation to Agr° at S-structure), with c-modification, with dislocation (considering the latter to be base-generation, Cinque (1990)), etc., i.e. exactly in the cases in which strong pronouns are allowed.

7.3.2. Adding a clause to Economy of Representations, (117), in order to incorporate its "up to crash" nature ("minimise structure, unless it leads to ungrammaticality") would not be an optimal solution: all other "economy" principles (Pesetsky (1989), Chomsky (1991, 1992)) would repeat the same clause.

Take chain-formation: a "longer (bigger) chain" is impossible where a "shorter one" is possible, and the longer is possible only if the shorter would lead to a crash (Rizzi (1990), Chomsky (1992)). The "up to crash" property is inherent to all principles of the "economy" type, among which Minimise Structure (typically resulting in informal modal renderings such as "if you *can* x, you *must* x", or "do the smallest *possible* x").

Ideally, the "up to crash" nature of all these principles should be stated only once, and not repeated in each principle.

7.3.3. Since all "economy" principles are of the "minimise α" format, where α = structure, chains, links, overt movement, etc.", an elegant solution is thus to postulate a unique general principle covering all economy-type constraints:

(126) Minimise α

of which Economy of Representations, Derivation , etc. are only special cases. This general principle must now be understood as incorporating the "up to crash" clause (*minimise α up to crash*). Of course, to limit the scope of α is then non-trivial. [70]

7.4. *Level of Application*

The preceding discussion presupposes that Economy of Derivations applies at the point where the pronouns are generated, i.e. at tails of chains. It need not be stipulated however that (core) lexical insertion is the place where Economy of Derivations applies. Optimally, Minimise α applies everywhere. It just so happens that Minimise α as Minimise Structure can apply at lexical insertion, while other instantiations of Minimise α cannot (such as Minimise chains), for purely independent reasons (i.e. there are not chains at core lexical insertion).

This also answers another curious observation: apparently Minimise α *qua* structure is contradictory with Minimise α *qua* chains: minimising structure leads to bigger (overt) chains. From this it could be inferred that there is a ranking among economy principles, to ensure that one takes precedence over the other in case of contradictory outcome. But no such thing is necessary in the present case: due to independent reasons, Minimise α *qua* structure applies prior to Minimise α *qua* chains.

8. *Refinments*

8.1. *Results and Problems*

8.1.1. Each of the asymmetries between clitic, weak and strong pronouns noted in (75) has now been derived, and this through a theory which meets the *a priory* standards set in the *preambule* to the second part.

The unique primitive is structural deficiency: lacking (the features of) the highest functional projection. Structural Deficiency is either directly responsible of the asymmetries

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70. By definition, all principles of the economy type, including Minimise Structure (and its precedessor Avoid Pronoun), are transderivational, albeit in a limited way (sometimes so limited as to be trivial): by definition, these principles allow a derivation *only if the "next more economical" is not possible*. In more intuitive terms: "how do you know whether to further minimise alpha, or stop there?", only by knowing that further minimalisation will trigger ungrammaticality. This is inherently transderivational.
Phrasing derivation in filtering terms (i.e. allowing derivations to crash) does not resolve this problem: the outcome of some derivations (crash or not) is determined by reference to the outcome of another derivation. (We thank Riny Huybregts for concentrating our attention on this issue).

(as with morphology, range, prosody, modification), or indirectly through its interplay with two conditions: Economy of Representation (deriving the choice-generalisation) and Recoverability (deriving displacement of a minimised element).

8.1.2. Although this may seem like a minimal account of the rich set of asymmetries (75) several background assumptions are built into the system. For instance:

(i) recoverability applies to deficient pronouns. Intuitive as it may be, this is an odd fact as things stand: nothing requires recoverability to apply at all. Why cannot a weak or clitic pronoun be base generated with nothing to recover since nothing is *lost* in the first place?

(ii) deficient pronouns must recover features that are lacking *with respect to a corresponding strong pronoun.* Again, as it stands, the Economy of Representations does not express this primacy of strong pronouns (just as *minimise* α does not encode any putative primacy of non-minimal forms). Why are not weak pronouns, or some arbitrary dummy noun, the reference point, for instance? It surely would be a logical possibility. [71]

(iii) nominal (extended) projections have the same structure (and labels) as verbal (extended) projections.

These assumptions need not be primitives. A particular implementation of Minimise Structure derives them all, significantly simplifying the overall profile of the theory (section 8.3.).

8.1.3. Furthermore, as things stand at least one major misprediction occurs: if the possibility of deficient pronouns always blocks the use of strong pronouns (*Minimise Structure*), how can strong pronouns be used to refer to new discourse elements?

8.2. *Indexes and Reference Sets*

Superficially, the latter problem is trivial: deficient pronouns cannot bear an index, occasions where an index is needed will thus force a strong pronoun to be present, the correct result:

(127) a. √ Jean a vu **lui**$_{ndr}$.
b. Jean **l'**a vu **t** √$_{odr}$ / *$_{ndr}$.
Jean him has seen him

The trouble is to give a coherent interpretation to "deficient pronouns cannot bear an index".

One possibility would be that indexes occupy C° and thus require the occurrence of a strong pronoun in order to appear (§5.4.2). This was rejected in §5.4.7 in view of the asymmetry between case and index: lack of case in C° always triggers Recoverability effects (i.e. displacement), so that lack of putative-index in C° should have the same effect. This is however not true (cf. expletives, impersonals, non-referential datives). Unless the recoverability requirement can be made selectively blind to the index, this asymmetry indicates that the index is not in lost in the first place.

It was thus concluded that the index is absent from syntax altogether: all falls into place if

71. The primacy of strong pronouns is also shown by acquisition data. In Cardinaletti & Starke's (1994c) interpretation, asymmetries linked to acquisition of principle B of binding theory (Jakubowicz (1984), Wexler & Chien (1985)) reduce to the fact that, confronted to a pair of <deficient; strong> ambiguous pronouns, a child always resolves ambiguity by postulating only one form, the strong one.

indexes are the interpretation of the "functional case-features" by post-LF interpretive systems. To explain (127) it is now necessary that a post-syntactic process (index assignment) influences an intra-syntactic process (non-application of Minimise Structure in (127a)). If we follow Chomsky (1994), as we did in assuming the inexistence of indexes in syntax, this is a typical situation: post-PF filters on possible words for instance force larger displacement than would have otherwise been required.

But the external filter responsible for (127) is particularly delicate: contrary to the usual case in which such filters systematically rule out one possibility, allowing the other, both (127a) and (127b) have a well formed interpretation. What seems to be the case, is that the nature of the index contributes to the definition of the reference-set (the set determining which derivations are to be compared): compared LF-representations not only should share their building blocks (Deep Structure, Enumeration) but their interpretation must also be identical (the interpretation of two pronouns cannot be identical if one has a new index, "read off" from functional case-feature, while the other inherits it from an antecedent). Thus given "object = ndr" in (127), the strong pronoun is the minimal possible element, while the reverse obtains if the object is "odr".

Ultimately, Minimise α should integrate this requirement and become: Minimise α, up to crash, *given a particular choice of interpretation.*

8.3. *Implementing Economy of Representations and Recoverability*

8.3.1. The puzzles of recoverability raised in §8.1.2. (why does it apply at all, why is there a primacy of strong pronouns) are answered at once by a particular implementation of Minimise Structure: only strong elements are ever generated in base.

8.3.2. As a consequence, *minimise* α, where α = structure (or features), can only be *erase* α: if only full (strong) structures are generable, deficient elements can only be obtained through deletion. [72]

Strong elements define which features there are to be recovered *because* deficient elements are obtained by erasing part of strong elements; recoverability applies to Economy of Representations *because* the latter involves actual deletion.

8.3.3. Deficient pronouns being a result of a syntactic process, it is a necessary consequence of this model that the morphophonological form of (these) lexical items is accessed only after (some) syntactic derivation. Access to the (morphophonological) lexicon must therefore take place after (some) syntactic derivation (cf. also den Besten (1976), Otero (1976), Halle & Marantz (1993), Jackendoff (1994)). In turn, this implies the existence of a presyntactic lexicon, providing the necessary features for syntactic derivations:

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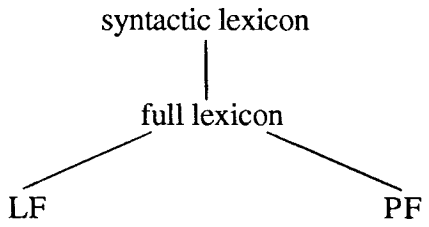
72. An erasing-implementation was first proposed to us by Dominique Sportiche (p.c.). The particular use we have made of it is however not to be blamed upon him.
Such an implementation opposes the one in which structures are simply built in parallel and then compared w.r.t. economy. This conclusion that "starting from the most uneconomical and stripping down" is to be preferred over "parallel generation and choice" is not automatically transposable to other instances of minimise α: in the case of minimise structure, such a course of events is forced by the properties of the syntactic lexicon (cf. below). Nothing seems to force this in the case of chains, to the opposite.
Finally, such an implementation presupposes the (standard) view that "there cannot be holes in structure", i.e. *erase* α can only erase the *highest* functional projection, and not some intermediate layer.

(128)



8.3.4. Post-lexical insertion is independently needed: only through such an account can the existence of functional fused forms be explained. Forms such as *du* or *des* (of.the) in French and many other cases are portemanteau morphemes realising two distinct functional heads.

First, such forms cannot be base-generated since doing so would require generating features in the wrong head, i.e. phi-features under C° or referential and case features under I°. But this is highly unsatisfactory, and incoherent with the very idea of distinct functional projections, since the latter are distinct only to the extent that they encode distinct features.[73]

Second, such a base generation account is also empirically inadequate: the occurrence of some fused forms, such as French *du*, is dependent upon syntactic configuration. If a high nominal modifier occurs, the two heads remain distinct ... *de tout le monde*... "of all the people" versus ... *du beau monde* ... "of.the nice people". The choice between the morphophonological *de le* and *du* cannot be performed prior to syntax, or forms such as *... *de le monde*... (and maybe *... *du tout monde*...) would not be filtered out.

8.3.5. What are the properties of such a "split lexicon" ?

First, given that functional heads are nothing but reduplications of features contained in lexical heads, it would be redundant to postulate them in the syntactic lexicon. All information they contain is already contained in the lexical element, and the syntactic tree may be constructed on the sole basis of the latter.

Second, it is not the case that the full lexicon contains morphophonological information and that the syntactic lexicon is simply its syntactic counterpart: several entries exist in the full but not in the syntactic lexicon. Minimally, deficient pronouns and fused forms exist only in the full lexicon. More generally, if the first point above is correct, all function words exist only in the full lexicon.

The (pre)syntactic lexicon is thus a type of "abstract" or "core" lexicon, containing only grammatical features for a subset of lexemes, sometimes designed as a "functional lexicon" (an adequate though slightly misleading term in the present approach). The type of derivation intended here is that, first, (abstract) lexical items are selected from the syntactic lexicon, (cf. fn. 74 on abstractness), the features of these are then projected onto a set of functional projections, each reduplicating features of the lexical element, in a one-step operation (somewhat in the spirit of (a restricted view of) *Elementary Trees* of Frank & Kroch (1993), cf. also Kroch & Joshi (1985)). Those full phrases (extended projections) then combine to form the (deep structure) syntactic representation. Only after (some) syntactic derivation is the full lexicon accessed.

8.3.6. The fact that nominal phrases (C_nP) and verbal clauses (C_vP) are associated to identical functional projections, as well as the fact that only strong pronouns may be generated in the base, now comes down to a restriction on the syntactic lexicon. Given that

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73. These arguments do not apply to cases in which one of the heads is lexical, since by definition all functional features also occur in the lexical head. The alternation between *does not sing* and *sings* is thus immune to the above discussion (unless *do* is taken to realise both phi and tense features simultaneously, in which case the same problem arises again).

functional heads reduplicate features of lexical heads, the identity of strong pronouns, noun-phrases and verbal clauses implies that all three realise an identical array/ set of (underspecified) features (this also holds of other categories, cf. §9). This may now be derived from a property of the pre-derivational lexicon: all entries of the syntactic lexicon realise one, and only one, array/ set of features, $\alpha_1 \ldots \alpha_n$,. These features then project onto what invariably becomes the {verbal, nominal, adjectival, etc.} complementiser phrases, agreement phrases, etc. (cf. also Starke (1993a), (to appear)). [74]

(129) entries of the syntactic lexicon all realise a fixed array of (underspecified) features, $\alpha_1 \ldots \alpha_n$,

The primacy of strong pronouns (§8.1.2), and the common format of verbal and nominal phrases (§5.2.3) are reflexes of this strong restriction on the entries of the syntactic lexicon.

8.3.7. If, given (128)-(129), *minimise* α is instantiated as *erase* α, what is the status of Recoverability ? Supposing that the latter should not be integrated into *minimise* α but is an independent principle, a radical though natural reformulation of the Projection Principle yields exactly the correct result:

(130) *Projection Principle*
All information contained at level R must be present at level R+n.

8.3.8. The account proposed in §4-6 can now be significantly simplified, through the interplay of three independent constraints (i) the rigidity of the syntactic lexicon, (129), which is only capable of generating what corresponds to full CPs, (ii) the generalised economy principle, (126), understood as integrating an "up to crash" clause, and (iii) the projection principle, (130), forcing to recover erased features.

Full pronouns are always inserted in what corresponds to tails of chains. On the one hand the interplay of *minimise* α and of the Projection Principle determine which type of pronoun will be chosen: by *minimise* α pronouns are reduced as much as possible ("up to crash"), and by the Projection Principle erasing of unrecoverable feature leads to ungrammaticality. This entails that pronouns referring to non-prominent discourse entities, coordinated, dislocated, isolated pronouns, etc. will always be strong, and that in all other cases, the deficient counterpart will be obligatorily used. [75]

On the other hand, once the choice is made, if a deficient form is produced, the

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74. A posteriori, it is unsurprising that such a strong, universal condition holds of the core lexicon. Many of its properties are largely universal: classes such as ergative/transitive, noun/pronoun, psych verbs/ perception verbs etc., i.e. most syntactically relevant classes (which must therefore feed syntax), are attested in widely different and unrelated languages, and are thus optimally attributed to a fix core of language.
Both this observation and the text-conclusion that only one format is available for all entries of the syntactic lexicon suggest that the latter is a highly constrained, strongly UG-driven lexicon. An intriguing possibility is that this lexicon contains entries only for types (i.e. classes) of lexical elements (perception verbs, ergative adjectives, pronouns, etc.) but not for each individual lexical item. In such a case, entries of this lexicon are learned only to the limited extent of "parameter setting", i.e. fixing the value of features associated to word-classes. The fact that in some language verbs and nouns, say, have different surface orders w.r.t. their arguments (SOV vs. SNO) may thus reduces to the distinct feature-content of the abstract verb and noun in the syntactic lexicon.

75. Unless, of course, no such a form exists in the full lexicon of the language. It is worthwhile noting, however, that we have never encountered a language which does not have two series of pronouns, possibly a non-existent state of affairs.

Projection Principle forces a peculiar derivation: recovery of the erased features implies that the deficient pronoun must be displaced at S-structure to establish a local relation with the relevant head, to respect the Projection Principle both at PF and LF. [76]

8.3.9. The initial question, i.e. what makes the class 1 / class 2 distinction (i.e. deficient vs. strong pronouns) so radically different from usual lexical classes (verbs/adjectives, transitives/ergatives, etc.) now receives a simple answer. While lexical classes arise from difference in feature composition of the lexical item (possibly in the core syntactic lexicon), class 1 / class 2 distinctions arise through syntactic processes (deletion). Class 2 (deficient elements) is a structural subset of class 1 (strong elements). This entails, among others, that the nature of lexical classes may slightly vary from language to language, but that the deficient/strong distinction is uniform, being due to an abstract grammatical process, *minimise* α, universal by hypothesis.

9. *Beyond Pronouns*

The preceding remarks focus on a narrow class of grammatical elements, personal pronouns. Ideally, this should not be so: the same tripartition (strong, weak, and clitic), revolving around the same set of asymmetries, obtains outside the realm of personal pronouns.

Unfortunately, while intensive work has been concentrated on pronominal clitics in the last two decades, scarcely any material is available on the differing properties of clitic, weak and strong adjectives, nouns, etc. Compensating for this asymmetry here would have been impossible without both exceeding space-limits of an article and provoking an unwelcome disbalance between description and analysis.

The approach developed above however naturally extends beyond the realm of personal pronouns to derive all major (known) aspects of non-pronominal deficient categories. In what follows, such an extention is illustrated through a few chosen pieces from adverb-syntax, a preliminary sample of a forthcoming more thorough treatment (cf. also (9), (61)).

9.1. *An example: Description of Deficient Adverbs*

9.1.1. A subset of Greek adverbs transparently illustrate the interplay between morphology, distribution and sensitivity to constructions such as coordination (cf. Rivero (1992), Alexiadou (1994), a.o.).

(131)	a.	To	***sigá**	évrasa	**√sigá.**
	b.	To	**√sigo-**	évrasa	***sigo.**
		it	slowly	I.boiled	slowly

The unaccented form *sigo* necessarily occurs in high derived position to the left of the verbal element in (131) while the full accented form *sigá* has no such restriction, and appears in the usual postverbal position. As with personal pronouns, the deficient form cannot be coordinated, or c-modified.

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76. The asymmetry between case and index (§5.4.7) entails that case but not index is part of the fixed array of features constitutive of entries of the syntactic lexicon.

(132) a. √To évrasa **sigá** ke **kalà**.
b. *To **sigo** ke **kalo**-évrasa.
it slowly and well-I.boiled

The triple correlation between morphology, necessary displacement and sensitivity to coordination and c-modification is exactly identical to that found amidst personal pronouns.[77]

9.1.2. Similar paradigms holds in Romance (cf. Starke (1994), see also Lonzi (1991)). The French *bien*, for instance, obligatorily appears before the past participle in compound tenses (all judgments hold for flat intonation):

(133) a. √ Il a **bien** essuyé la vaisselle.
b. * Il a essuyé la vaisselle **bien.**
he has well dryed the dishes well

unless it is coordinated, c-modified or focussed:

(134) a. √ Il a essuyé la vaisselle **bien** et rapidement.
b. √ Il a essuyé la vaisselle vraiment **bien.**
c. √ Il a essuyé la vaisselle **BIEN**, pas longuement.
he has dryed the dishes well and quickly / really well / well but not at-length.

This is a typical Economy of Representation paradigm: if the deficient (pre-participial) element can be used, it must, in formal identity to:

(135) a. √ Il **nous** a vu.
b. * Il a vu **nous.**
c. √ Il a vu **nous** et nos amis / que **nous** / **NOUS**, pas les autres.
he us saw us and our friends/ only us / US, not the others

To *explain* these paradigms, and to also capture the parallelism with personal pronouns, the postulation of a deficient *bien* in French is necessary. The same paradigm holds of other adverbs, both within French and across Romance.

9.1.3. But adverbs do not merely classify into deficient and strong. Both cross-linguistic and language internal differences require two types of deficient adverbs: maximal projections (weak adverbs) and heads (clitic adverbs).

Exactly as the clearest case of X° pronouns was provided by Italian I-to-C contexts, in which the pronoun is displaced over the subject along with the verb, resulting in a *[pron.-V]$_i$ Subject t_i ...* configuration, the clearest case of X° adverbs is given by Old Rumanian I-to-C constructions in which the adverb is displaced along with the verb over the subject, resulting in an *[adv-V]$_i$ Subject t_i ...* configuration (C. Dobrovie-Sorin (p.c.); for discussion of Rumanian clitic adverbs, cf. Motapanyane (1991), Dobrovie-Sorin (1992) a.o.). Greek examples such as (131b) provide another argument: given that *to* 'it' is analysed as an ad-verbal clitic incorporated into the (head hosting the) verb, the intervention of the adverb between the two entails the clitic status of the adverb (in compliance with the general observation that only clitics may break the adjacency between ad-verbal clitics and

77. It is irrelevant if the morphological difference between the two forms may be phonologically defined: what matters, is that this difference strictly correlates with displacement, capacity to enter coordination, and other typical properties of deficient elements, as semantic deficiency (see below).

the verb).

On the other hand, the French *bien* neither attaches to the verb (contrary to Rumanian deficient adverbs), nor blocks verb-displacement (contrary to English negation). It is a weak adverb in a specifier position: [78]

(136) √ Pierre cuisine$_i$ **bien** t$_i$
Pierre cooks well

The contrast between (133b) and (136) reduces to difference in French verb-placement in tensed and untensed verbs (Pollock (1989)). To give a more minimal pair, along with its underlying configuration: [79]

(137) a. Pierre [cuisine$_i$ √**bien** t$_i$
b. Pierre [a √**bien** cuisiné ***bien / √bien mais peu**
Pierre has well cooked well / well but little

9.1.4. Not only do adverbial asymmetries mimick pronominal contrasts in morphology, distribution, choice and sensitivity to coordination/ c-modification, but semantic and prosodic properties are also reproduced. Just as deficient but not strong pronouns may be rangeless (loosely "non-referential"), deficient but not strong adverbs may be "non-referential": in all above examples of deficient *bien*, it is ambiguous between a literal reading (the manner adverb corresponding to English *well*) and a discourse-particle meaning "certainly/ indeed, Pierre cooks" (cf. also Belletti (1990)). This is most clear in weak-climbing contexts:

(138) Il a **bien** du [parler t
he has well "must" speak = "he certainly/ indeed/ etc. has been obliged to speak"

This reading is never available with strong adverbs (i.e. post-participial *bien*, in coordination, etc.)

9.1.5. Finally, weak but not strong adverb trigger sandhi rules such as liaison. Whereas it is true of all adverbs that no liaison obtains before an adjunct (judgments hold of spoken Geneva French):

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78 That French adverbs belong to the class of weak elements and not clitic elements is further confirmed by their undergoing weak-climbing in modal constructions, a phenomenon found in French with weak elements such as *tout* 'everything', [ia], but never with clitics, [ib] (Kayne (1975)):

[i] a. Il a **tout** du [faire t ('he has everything must do' = he has been obliged to do everything)
Il a **bien** du [se comporter t ('he has well must to.behave' = he must have behaved well)
b. * Il l'a du [faire t ('he it has must do')

Finally, it would not be convincing to argue that French deficient adverbs are heads (clitics) but do not interfere with verb-displacement because they do not contain features related to the verb, which is thus free to skip them. The same effect is found with aspectual adverbs, the features of which are clearly linked to the verbal-features.

79. This example further shows that motivation for deficient-adverb placement cannot be prosodic in a simple sense: from the preceding text-examples it could have been inferred that (deficient) adverbs can simply not be clause-final, maybe for prosodic reasons. This is however not the case: all versions of *bien* , for instance, may perfectly be clause-final, whenever verb-displacement (Pollock (1989)) has taken place, as in (136).

(139) a. * Je m'entends bien avec Marie.
I me hear well with Mary ("we get along well")
b. * Il aboie beaucoup après le dinner.
he barks lot after dinner
c. * Il avance lentement en ville.
he advances slowly in city
d. * On avance jamais avant une conférence.
one progresses never before a conference

a subset of adverbs, exactly those which qualify as weak, undergo liaison in front of past-participles:

(140) a. √ Je me suis bien entendu avec Marie.
I me heared well with Mary ("we get along well")
b. √? Il a beaucoup aboyé après le dinner.
he has a.lot barked after dinner
c. *? Il a lentement avancé.
he has slowly advanced
d. *? On a jamais avancé le travail avant une conférence.
one progresses never the work before a conference

The conditions on adverb-liaison may now be significantly simplified. Apart from usual locality conditions and segmental prerequisites, the list of adverbs which undergo liaison now reduces to a simple statement: weak but not strong adverbs undergo liaison. In the absence of such a distinction, a list of adverbs would have to be stipulated.

9.1.6. In sum, all of morphological, distributional, prosodic, choice, and construction-sensitive asymmetries are found with adverbs, exactly as with personal pronouns: [80]

(141) Deficient adverbs, contrary to strong adverbs
a. must occur in a derived position at S-structure
b. cannot enter coordination, c-modification
c. are preferably chosen
d. may be morphologically reduced w.r.t. the other series
e. may be "non-referential"
f. undergo prosodic restructuring

9.2. *An example of Derivation: Deficient Adverbs*

9.2.1. The derivation of the differing properties of the two classes of adverbs by and large mirrors that of the different classes of pronouns: lack of the highest functional layer, CP, triggers mild deficiency, and the additional absence of a second layer, SigmaP, triggers severe deficiency, i.e. clitichood.

9.2.2. First, that the high functional layers of adverbs are similar to that of nouns and pronouns, is suggested by the Senigallia dialect discussed above: not only does the dummy morpheme *ma* appear on strong noun-phrases and strong pronouns, (142), but also on

80. As with pronouns, the simultaneous existence of semantic and prosodic correlates to the deficient/strong distinction indicates that the primitive underlying the class-distinction is not restricted to one or the other component, i.e. not purely prosodic, nor purely semantic.

strong adverbs, (143) (examples from Sellani (1988)): [81]

(142) a. √ tutt l' ser arconta **ma**$_{DAT}$ i fiulini (p. 9)
all the evenings she. tells-tales *ma* the children
b. √ e po' s' sent urlà **ma**$_{ACC}$ i venditori (p. 39)
and then SI hears shout *ma* the venders
and then one hears the venders shout
c. √ Ho vist **ma**lu
I.have seen ma.him

(143) a. √ so v.nuta **maquà** (p. 9) (cf. the Italian counterpart: qua)
I.am came here
b. √ che s' magn.n anch'ogg **ma**lagiù (p. 9) (cf. the Italian counterpart: laggiù)
which SI eat also today there
c. √ **ma**lì dietra l' Cumun (p. 34) (cf. the Italian counterpart: lì)
there behind the town hall

9.2.3. Exactly as with personal pronouns, the full lexicon may contain both strong and reduced adverbs, but only full (strong) forms are generable by the syntactic lexicon. By *minimise* α, these full forms are then reduced as much as possible.

This already entails (i) the morphological asymmetry (deficient adverbs are reduced), (ii) the prosodic asymmetry (deficient adverbs do not count as major constituents), (iii) the choice asymmetry (having less structure, the more deficient version is preferred) (iv) the c-modification asymmetry (having no C° they cannot be modified by CP-modifiers).

Furthermore, since the highest layer (C°), when present, necessarily contains *some* feature (or it would not be projected), its absence entails the absence of some feature. To compensate for this absence, the deficient adverb must occur in the checking position of this feature at S-structure (and similarly for clitic adverbs with the additional incorporation, exactly as with pronouns). [82]

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81. A similar point holds of adjectives: in a number of languages a dummy morpheme appears on adjectival phrases which exactly parallels the dummy morpheme appearing on noun-phrases.

82. The existence of lexical clitics, as the above adverbs, but also nouns, adjectives, etc. provides a strong argument against an alternative approach to deficient-placement proposed in Sportiche (1992). Sportiche suggests that the only analysis of clitics open to the learner is that in which the clitic realises a functional head (his §1.1), and provokes displacement of a silent argument into its specifier, due (roughly) to a clitic-criterion (his §1.3) (but cf. his fn. 27).
Such an analysis entails that all clitics are functional, in contradiction with the existence of lexical clitics, if a meaningful generalisation englobes pronominal and lexical deficient clitics. A criterion-based analysis is further open to several less important objections, to which a deficiency analysis is immune, among which (it should be noted that irrespectively of these problems with clitics, Sportiche's approach can be made compatible with everything we have presented on weak pronouns):
(i) the distinction between ad-verbal clitics and C2 clitics is not readily explained by criteria: C2 clitics are apparently much higher than the ad-verbal clitics, although there is no trigger to clitic-displacement beyond the base-generation site, in a criteria-approach. The sole solution would seem to be that C2 clitics are NOT much higher, i.e. that both types of clitics are generated in the same place, and remain there, modulo verb-movement. But such an analysis would entail a range of severe difficulties w.r.t the respective clause-structures of Slavic and Romance, w.r.t. verb-movement, and w.r.t. the general parallelism between V2 and C2 structures (which would be mostly obliterated).
(ii) the reduced auxiliaries of Slavic, illustrated in §6.2 for Serbo-Croatian, distributionally and prosodically pattern with pronominal clitics. Accordingly, it is traditionally assumed that a strong generalisation relates the two. To the extent that this is correct, it is a counterexample to the criterion approach, there being no plausible XP counterpart to auxiliaries (in the present framework this is not a strong objection: since verbal clitics do not provoke deficiency of their whole CP, they cannot be clitics in the present sense of the term,

Finally, since the syntactic lexicon is limited to one array of features, if referential features, α_i, occur in C° in one type of phrase, they occur in C° in all phrases. It follows that only deficient adverbs lack referential features and may act as "non-referential discourse-particles". [83]

Obviously, many details are left untouched here, and the existence of deficient adverbs would force a modification of several points of the preceding account, but no principled problem seems to arise. The theory developed on the basis of personal pronouns carries over *in toto* to deficient adverbs, dealing with all major asymmetries described above. By and large the same holds of tripartitions of adjectives, nouns, quantifiers, wh-words, etc., the topic of forthcoming work.

10. *Summary and Conclusion*

10.1. *Prerequisites*

10.1.1. The central thrust of the present proposal is that an adequate theory of clitic pronouns, i.e. oppositions between clitic and strong pronouns, such as:

(144)	a.	Gianni	**la**	vede		con piacere.
	b.	Gianni		vede	**lei**	con piacere.
		Gianni	her	sees	her	with pleasure

should be a theory of a considerably enlarged paradigm.

10.1.2. It should be a theory of tripartitions (not bipartitions) of clitic, weak and strong elements, tripartition into which pronominal systems consistently divide, across languages.

(145)	a.	Non	**gli**	dirò mai	*gli*	tutto	*gli.
	b.	Non	*loro	dirò mai	**loro**	tutto	*loro.
	c.	Non	*a lui	dirò mai	*a lui	tutto	**a lui.**
		no	to.him/to.them	I.will.say never		everything	

Cross-linguistically, each class shares the same properties, which oppose it to both other classes, with a regularity that indicates the presence of three abstract underlying classes, rather than idiosyncratic lexical accidents.

Most notably, both weak and strong elements cross-linguistically occupy XP positions at S-structure, contrary to clitics found only in X° positions, while, on the other hand, clitic

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but rather auxiliaries which move very high for independent reasons).
(iii) a criterion approach would be at pains to explain the regular precedence of clitics over weak and weak over strong, given that it considers clitic and weak as two fundamentally distinct elements. To explain the clitic-over-weak precedence, it would presumably require a principle akin to Avoid Pronoun, but the preference of weak over strong (as in the English particle-constructions or the German adverb-pronoun combinations, cf. fn. 35) is then left unexplained.
(iv) it was argued above, fn. 19, that explanation of the semantic contrasts between the deficient and strong pronouns requires the *absence* of a property, and not the *presence* of a special feature, a state of affairs contradictory with the criterion approach.

83. This system makes the prediction that while weak elements of diverse categories (i.e. weak adverbs, weak pronouns) occur in distinct positions, having distinct (maybe θ) features to "check", all clitics occur in the same position within a given construction of a given language. The rare available observations confirm this prediction, but again, this remains an open issue until more data is gathered.

and weak are both *deficient*, i.e. restricted with respect to a large set of constructions, among which coordination (neither of them is coordinable, while strong elements are).

These two properties further illustrate the intermediate status of weak elements (identical to strong w.r.t. x-bar, but like clitics w.r.t. coordination (deficiency)), resulting in a typical *clitic* < *weak* < *strong* relationship across the three classes. This is most strikingly illustrated by the fact that all properties differentiating weak elements from strong elements also differentiate clitic elements from strong elements. Deficient characteristics of weak are a *proper subset* of deficient characteristics of clitics, again *clitic* < *weak* < *strong*.

10.1.3. A theory of clitic pronouns should also handle morphological, as well as distributional, semantic, prosodic, and phonological contrasts. The rich net of asymmetries distinguishing the three classes, cuts across all these components: morphology (clitic ≤ weak ≤ strong), distribution (clitic and weak pronoun must be in a derived position, contrary to strong; clitics are heads at S-structure, contrary to weak and strong, etc.), semantics (clitic and weak lack range, strong always have one), prosody (clitic and weak restructure prosodically, contrary to strong; weak and strong may have word-accent, contrary to clitics) and phonology (liaison and contraction rules are restricted to clitic and weak elements).

Surprisingly, while these asymmetries seem to be absolute universal, none of the interpretive asymmetry is systematic: it is not the case that there is a strict covariation between being of one class, and having one type of semantic/ phonetic interpretation. The interpretational characteristics are asymmetric but overlapping: the three classes are purely abstract (both deficient and strong elements can for instance refer to human entities and to prominent discourse referents, although an asymmetry holds w.r.t. non-human entities and non-prominent referents).

10.1.4. Finally, a theory of clitic elements should be applicable across lexical classes: just as personal pronouns may be either clitic, weak or strong, all of adverbs, adjectives, quantifiers, wh-pronouns, nouns, etc. are found in all three format. Furthermore, the characteristics of clitic, weak and strong elements are largely *identical across categories*. A clitic pronoun differs from a strong pronoun *in the same way* as a clitic adverb differs from a strong adverb.

10.2. *Summary*

10.2.1. The morphological asymmetry between the three classes (clitic ≤ weak ≤ strong), together with the *Principle and Parameters* framework as it stands, indicates a simple analyis complying with all the above prerequisites. Since deficient elements are systematically morphologically reduced w.r.t. the strong elements, and since morphemes are syntactic terminals, deficient elements realise less syntactic structure than strong elements. This is particularly clear in transparent morphology, where one class is a morphological subset of the other.

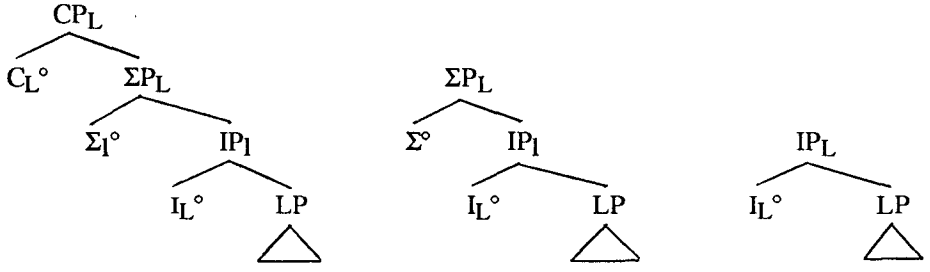
10.2.2. Based on surface morphological forms (which are taken as indicators of the underlying trigger and not as actual triggers) the missing structure is systematically identified as a high functional morpheme: while strong pronouns are full nominal projections, weak pronouns lack the highest functional layer, and clitic pronouns further lack both of the two highest functional layers.

The uniformity of these layers across classes has then led to the hypothesis that there is one and only one format for all syntactic structure, across languages, constructions and lexical items. Deviation from this basic format, an extremely rare fact, leads to *deficiency*, triggering strong consequences for the deficient element.

Based on the nature of the interpretive properties involved, and on the most widely

accepted labelling, that attributed to verbal (extended) projections, the labels adopted are (where IP is a cover term for a set of functional projections, and L refers to any lexical category):

(146) a. Strong Pronouns b. Weak Pronouns c. Clitic Pronouns



From this, most aspects of deficiency directly follow: morphological reduction is a direct reflex of lack of structure, impossibility of modification follows from the observation that those modifiers that can modify strong but not deficient elements only modify full CPs, the choice preference follows from the diverse structures in combination with a general principle *minimise* α, the prosodic asymmetries comply with the observation that "major constituents" (i.e. CP) are treated differently from non-major constituents w.r.t. prosodic processes. Other distributional and semantic asymmetries follow not from the sheer absence of structure, but from the absence of features contained in those structures: case features in C° (and consequently, referential information) and polarity and prosodic features in Σ°.

10.2.3. An attentive observation of the choice preference shows that strong elements are treated as *prior* to deficient elements: a deficient element must be chosen but only if it is associated to the same features as *those which would have been contained in the strong counterpart.*

This primacy, together with the whole general theory of deficiency, may be implemented through three general assumptions, two of which are hardly more than expressions of what is generally assumed:

(147) a. minimise α (Economy Principle)
b. information of level R must be present at R+n. (Projection Principle)
c. all entries of the syntactic lexicon are limited to one array of features, $\alpha_1 \ldots \alpha_n$

The identity of all (extended) projections now follows from (147c): features $\alpha_1 \ldots \alpha_n$ invariably project onto what becomes CP, IP, etc. It also follows that only strong pronouns are generable. The (generalised) economy principle then forces to reduce structure as much as possible, α being in this case structure (strictly speaking, *minimise* α is forced to operate as *erase* α in this case), thus deriving both the choice asymmetry and the primacy of strong elements.

Finally, the projection principle forces recovery of features erased by *minimise* α. This recovery is possible only through a local relation between the deficient element and an adequate head at S-structure (assuming there to be no displacement at PF), thus deriving the distributional asymmetries.

10.2.4. The relevant set of properties now all follow, independently from the nature of the lexical head (across verbs, nouns, adjectives, etc.), with the desired morphological,

semantic, prosodic and syntactic consequences:

(148) a. From the sheer absence of highest projections in deficient elements (clitic and weak), it follows that:
- the more an element is deficient, the more it tends to be morphologically reduced
- deficient elements cannot be modified by modifiers of (elements selecting) CPs
- deficient elements are not "major constituents", a central notion in prosody
- the most deficient element possible is preferred (by *minimise* α)

b. From the absence of C-features in deficient elements it follows that:
- deficient elements never have their own range (and are thus always either expletive or coreferent)
- deficient elements must be displaced to recover missing (case-)features
(Projection Principle)

c. From the absence of Σ-features in clitic elements it follows that:
- clitic elements do not have word-accent
- clitic elements must be displaced to recover missing (prosodic) features.
To not destroy the effect of the recovery of the C-feature, a X°-chain must be created. (Projection Principle)

10.3. *Conclusion*

The present investigation, we hope, illustrates the interplay of abstract theoretical constructs and empirical generalisations. The first part seeks to establish that what is to be explained by a theory of simple oppositions between clitic and strong pronouns, arriving at several new conclusions. Most prominently, that the relevant opposition is between three distinct classes: clitic, weak and strong; but also that these classes are separated by a regular range of semantic (referential) oppositions. The global picture then becomes uniform: clitic pronouns are deficient w.r.t weak pronouns which are in turn deficient w.r.t. strong pronouns, both distributionally, morphologically, semantically and prosodically.

This generalisation, (75), then indicates a simple abstract primitive: *structural deficiency*. Some pronouns are deficient in that they have a deficient syntactic structure. For the first time, to our knowledge, this opens a (tentative) road towards a unified derivation of the whole range of syntactic, morphological, semantic and prosodic effects involved, but also of the similar properties of pronominal, adverbial, adjectival, etc. clitic, weak and strong elements.

The postulation of diverse structures then entails a set of constraints which regulate the generation and derivation of syntactic structure, further constraining the general model of grammar upon which it is based. Precedence patterns among distinct classes of pronouns indicate that only full, i.e. strong, structures are generable. The existence of deficient structure must then be attributed to a reduction process in syntax, traced down to a general *Minimise Structure* principle, subsumed under a global economy principle *minimise* α (cf. Chomsky's (1992) economy guidelines). Finally, this entails a split lexicon, with post-syntactic access to morpho-phonological information (cf. Halle & Marantz (1993), Jackendoff (1994)).

The "theory of clitics" thus developed, is a general theory of arguments and adjuncts, and of their syntactic structure; thereby defining a novel set of central questions, which we hope to be productive avenues of research.

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"Pseudo-extraction" and problems of binding: a case study in the syntax of predicative nominals *

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1. *Introduction: when noun phrases are predicates*

If we consider the development of generative grammar since the beginning the fact can be noticed that although the syntax of Noun Phrases, in the broad sense of the distribution of such constituents and their internal architecture, received much attention, the study of Noun Phrases as playing the role of predicates has been mostly neglected.

This is not only true for most introductory texts but also for a leading specific treatise like *The Syntax of Noun Phrases* by Giorgi and Longobardi (1991), where the term "predicative nominal" is not even listed as an entry in the index.[1] Of course, such a major gap with respect to traditional grammars where predicative nominals played a central role cannot be accidental. One could think of many reasons for this gap. Arguably, this state of affairs is deeply related to a constitutive assumption of generative grammar (in fact, an assumption which is common to distributionalism), namely that linguistics should avoid "semantic" notions as predication. [2] In other words, it can plausibly be that the scarcity of studies in the field of predicative nominals is due to the effort of deriving their status from more general properties (government, binding, control, etc.). However, although such an approach might eventually turn out to be correct, it seems to me that current models suffer from a more primitive lack at the very superficial level of descriptive adequacy.

Of course, this paper will not even attempt to remedy such a gap. Its very limited aim is just that of highlighting that two modules of grammar, namely θ-theory and Binding theory cannot be immediately employed to understand the syntax of predicative nominals and that they deserve some refinements.

By anticipating some central piece of data, let's see how this paper is organized: in the first part, we will see that there exist a striking similarity between passive structures and a class of copular sentences with predicative nominals, like the following:

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1. Of course, this is not to say that there are no references to predicative nominals in this and other texts. What I am remarking here is that the class of predicative nominals is at best marginally taken into account, if not just considered as a mere taxonomical label.

2. For an historical survey of the relevance of the notion of predication within generative grammar one can see the Appendix of Moro (1993) and references cited there.

(1) a. Beatrice è desiderata da Dante
"Beatrice is desired by Dante"
b. Beatrice è il desiderio di Dante
"Beatrice is the desire of Dante"

It will be shown that this similarity might be misleading. The canonical treatment of passives as involving extraction of the object cannot be plausibly extended to the case of predicative nominals, unless one wants to run against some major and powerful generalization. [3]

In the second part, we will approach the identification of the local domain for binding. In particular, it will be shown that there are contexts where an anaphor contained in a predicative nominal can refer to the subject of the matrix clause skipping the subject of predication of the embedded clause it is contained, like in the following sharp case:

(2) Gianni$_i$ ritiene [$_{SC}$ queste$_j$ [$_{DP}$ le migliori foto di se stesso$_i$]$_j$]

Again, this paper will not try to provide solutions but just show what kind of problems one has to face whith predicative nominals.

2. *On θ-role assignment: the phenomenon of "pseudo-extraction"*

Traditionally, θ-role assignment has been studied in relation to VP predicates. Picking up from the lexicon the verbal head *desider-* (desire), we can project the following maximal projection:

(3) a. [$_{VP}$ [$_{DP}$ Dante]$_{+\theta 1}$[$_{V'}$ [$_{V°}$ desider-] [$_{DP}$ Beatrice]$_{+\theta 2}$]]
b. θ_1 (experiencer) ≠ θ_2 (goal)

As indicated here, this verb is compatible with the presence of two distinct arguments: the DP adjacent to the head (the object), and the DP in spec-VP (the subject; as nowadays widely assumed following Koopman-Sportische (1980)). The lexical entry of *desiderare* contains two distinct θ-roles, call them the <experiencer> and the <goal>, labeled here as θ_1 and θ_2. These θ-roles are rigidly assigned to specific structural positions (see references in Moro (1993) chapter IV for a synthetic presentation of a new approach to θ-theory).

What happens to these two DPs and to their θ-roles when the VP is combined with other phrases to yield a clausal structure is a well known fact. For example, we can produce a full inflected sentence like the following:

(4) [$_{IP}$ [$_{DP}$ Dante]$_{+\theta 1}$ [$_{V°}$ desider]$_i$-a [$_{VP}$ t$_i$ [$_{DP}$ Beatrice]$_{+\theta 2}$]]
"Dante desire-s Beatrice"

In this simple case, the subject DP is raised from spec-VP to spec-IP preserving its θ-role (i.e. the <experiencer> θ_1); the other θ-role (i.e. the <goal> θ_2) is maintained by the

3. I am referring in particular to the so called "Cinque's Generalization" after the original paper by Guglielmo Cinque (here, Cinque (1980)) was published. See also Giorgi and Longobardi (1991) for a detailed discussion about this issue.

object DP. [4]

Another common possibility is given by passive sentences:

(5) [IP [DP Beatrice]+θ2 è [V° desider]i-ata [VP ti da [DP Dante]+θ1]]
"Beatrice is desired by Dante"

Interestingly, by no means can θ_2 be assigned to the DP in preverbal position if the verb is not passivized nor can θ_1 be assigned to the DP in preverbal position if the verb is passive. [5] Compare (6a) with (4) and (6b) with (5):

(6) a. * [IP [DP Dante]+θ2 [V° desider]i-a [VP ti [DP Beatrice]+θ1]]
b. * [IP [DP Beatrice]+θ1 è [V° desider]i-ata [VP ti da [DP Dante]+θ2]]

The next step is to see what happens when the maximal projection playing the role of a predicate is a DP rather than a VP.

First of all, let's now construe a DP headed by the N° *desiderio* (desire), paralleling what we did with V° when construing the VP:

(7) [DP il [NP [N° desiderio] di [DP Dante]+θ1 per [DP Beatrice]+θ2]]
"the desire of Dante for Beatrice"

As indicated in (7), the N° *desiderio*, preserves the same θ-role pattern as the corresponding V°, that is both the <experiencer> θ_1 and the <goal> θ_2 can be assigned to the arguments of the biargumental nominal head). [6]

This DP can occur as an argument like in the following cases:

(8) a. [DP il [N° desiderio] di [DP Dante]+θ1 per [DP Beatrice]+θ2] stupì Bonifacio
"the desire of Dante for Beatrice astonished Bonifacio"
b. Virgilio conobbe [DP il [N°desiderio] di [DP Dante]+θ1 per [DP Beatrice]+θ2]
"Virgilio knew the desire of Dante for Beatrice"

The central question that I would like to address here is the following: what happens to θ-role assignment when this DP occurs as a predicative element ? There are two major contexts to consider here: a small clause complement of a *believe*-type verb like *ritenere* (believe) and the most typical context for predicative nominals, i.e. a copular sentence.

To avoid confusion for the case of copular sentences notice that the liner order of a DP with respect to the copula is not sufficient to identify its grammatical function. In other words, the mere fact that a DP precedes or follows the copula is not sufficient to know whether this DP is a predicate or a subject. This is due to the existence of a class of copular sentences which I called "inverse" (to be opposed to the canonical variety). We

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4. For the sake of simplicity we avoid indicating the trace of the arguments within VP.

5. In fact, the rigid assignation of θ-roles is generally assumed to already hold at the more primitive level of d-structure.

6. We indicated both arguments within the NP to the right of the head N°. This contrasts with the case of VPs, where the subject is on the left (in spec-VP) while the object is on the right (adjacent to V°). For the linear and hierarchical order of arguments within NPs see Giorgi and Longobardi (1991)): to our purpose, this assumption will have no empirical effects.

will leave a detailed treatment of such constructs aside (see for example Moro (1993) chapter I), the following pair will suffice to illustrate the point:

(9) a. [DP il desiderio di [DP Dante]+θ1 per [DP Beatrice]+θ2]i è [SC ti [DP la vera novità]]]
"the desire of Dante for Beatrice is the true novelty"
b. [IP [DP la vera novità]i è [SC [DP il desiderio di [DP Dante]+θ1 per [DP Beatrice]+θ2] ti]]
"the true novelty is the desire of Dante for Beatrice"

In (9a), a canonical sentence, the DP under discussion precedes the copula and plays the role of a subject of predication. On the other hand, in (9b), the same DP still plays the role of a subject of predication although it does follow the copula. The new structure, thus, is (9b) in that spec-IP is occupied by a predicate while the subject is left in situ within the small clause.

Let's now focus on the context where the DP we are considering here does play the role of a predicate, namely on a small clause complement of a *believe*-type verb and a copular sentence.

We have a first result: apparently, in both contexts, this DP cannot occur in a predicative position if a third argument, say *Laura*, occurs in the sentence:

(10) a. * ritengo [SC [DP Laura] [DP il desiderio di [DP Dante]+θ1 per [DP Beatrice]+θ2]]
"*pro* believe Laura the desire of Dante for Beatrice"
b. * [IP [DP Laura] è [SC t [DP il desiderio di [DP Dante]+θ1 per [DP Beatrice]+θ2]]]
"Laura is the desire of Dante for Beatrice"

Shall we conclude that this DP cannot play the role of predicate ? The answer cannot be straightforward. Consider first the following contrast:

(11) a. * ritengo [SC [DP Dante]+θ1 [DP il desiderio per [DP Beatrice]+θ2]]
"*pro* believe Dante the desire for Beatrice"
b. ritengo [SC [DP Beatrice]+θ2 [DP il desiderio di [DP Dante]+θ1]]
"*pro* believe Beatrice the desire of Dante"
c. * [IP [DP Dante]+θ2 è [SC t [DP il desiderio per [DP Beatrice]+θ1]]
"Dante is the desire for Beatrice"
d. [IP [DP Beatrice]+θ2 è [SC t [DP il desiderio di [DP Dante]+θ1]]
"Beatrice is the desire of Dante"

This shows that if the predicative DP under discussion is deprived of one argument, specifically the one assigned θ_2, it can play the role of a predicative nominal and the subject of predication is assigned θ_2. This is precisely what happens in (11b-d). A first major question suggests itself: why can only one θ-role be assigned outside the predicative DP to the subject DP in spec-IP ? In fact, this pair of sentences, offers a further interesting piece of data. It is easy to realize that the sentence in (11d) has the same meaning as the passive sentence in (5). That is, the subject is assigned what in general is considered to be the "internal θ-role" of the corresponding transitive verb. How can we explain this analogy ?

At this point we are not in a position to offer a structural interpretation of this rather striking fact and we will leave it as an open question. What I would like to show here is that a very appealing analysis that naturally comes to mind must be refuted. I am referring

to the idea of reproducing the classic analysis given for passive structure to this case involving a predicative nominal. More explicitly, we cannot hypothesize that the subject *Beatrice* in (11b-d) is extracted from an internal DP position as represented in (12a) paralleling what we normally say for passives structure like (12b): [7]

(12) a. ... [DP Beatrice]$_{+\theta 2j}$ ... [DP il [NP [N° desiderio] di [DP Dante]$_{+\theta 1}$ t_j]]
b. ... [DP Beatrice]$_{+\theta 2j}$ ... [VP [V' desiderata t_j] [PP da [DP Dante]$_{+\theta 1}$]]

The reason of this refusal lies in the fact that this analysis involving extraction from a DP would run against a rather well established generalization stemming from Cinque's (1980) original observation . This generalization requires that a constituent be extracted from a DP only if it can be possessivized (see Giorgi and Longobardi (1990) for an updated discussion and a new derivation of this phenomenon). Unfortunately, if we apply this to the DP under discussion, we happen to obtain just the opposite result we need to support the analysis in (12):

(13) a. * [DP il suo$_{+\theta 2}$ desiderio di [DP Dante]$_{+\theta 1}$ t]
"the his desire of Dante"
b. [DP il suo$_{+\theta 1}$ desiderio t per [DP Beatrice]$_{+\theta 2}$]
"the his desire for Beatrice"

This contrast shows that the only argument that can undergo possessivization is *Dante*, bearing θ_1 role, exactly the one which cannot occur as a subject in (11a-c). [8] Thus, the hypothesis that *Beatrice* is extracted from the predicative nominal in (11b-d) cannot be consistently maintained. At this point, as I already remarked earlier, I cannot give an interpretation to this fact. By the moment, it seems to me that it would be useful to label this phenomenon as "pseudo-extraction", aiming to both emphasize the similarity with the case of passive and the distance.

In fact, before attempt any solution to the puzzle of pseudo-extraction, the preliminary step should be made of verifying the extension of such a phenomenon within the class of noun phrases. Even this would go far beyond our limits, however, we can at least attempt a first survey, checking some other noun heads which are compatible with two arguments (henceforth, biargumental nouns).

Thus, it is easy to notice that along with *desiderio*, other nouns like *paura* (fear), *timore* (fear), *preoccupazione* (worry), *piacere* (pleasure) do allow pseudo-extraction:

(14) a. l'inferno è la paura di Dante
"the Inferno is the fear of Dante"
b. la città di Dite è il timore di Dante
"the city of Dite is the fear of Dante"
c. Cerbero è il timore di Dante
"Cerbero is the fear of Dante"
d. la luce è il piacere di Dante
"the light is the pleasure of Dante"

On the contrary, not all biargumental nouns do allow pseudo-extraction: for example, *descrizione* (description), *racconto* (narration), *fotografia* (photograph), *apparizione*

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7. For the sake of clarity we do not indicate verb movement to the I°-system in (12b).

8. To avoid confusions, notice that the string *il suo desiderio di Dante* is grammatical, but with the reading "he or she desires Dante"), that is with *Dante* bearing θ_2 and *suo* θ_1.

(apparition) yield ungrammatical sentences:

(15) a. * l'inferno è la descrizione di Dante
"the inferno is the description of Dante"
b. * la città di Dite è il racconto di Dante
"the city of Dite is the narration of Dante"
c. * Cerbero è la foto di Dante
"Cerbero is the photograph of Dante"
d. * la luce è l'apparizione di Dante
"the light is the apparition of Dante"

A first rough generalization suggests itself here. It seems that pseudo-extraction is allowed only for those noun phrases expressing psychological attitudes but not for those "extentional" verbs expressing activities like describe, narrate, etc. Thus, paralleling the terminology proposed for VPs by Belletti and Rizzi (1988), it is tempting to call this class of noun phrases "psych-nouns". The provisory generalization can be formulated as (16):

(16) Only psych-nouns allow pseudo-extraction

By maintaining the discussion at a descriptive level, we can even push this generalization to the limit asking whether it can be turned into an "if-and-only-if" clause. In other words, we can check whether all (and only) psych-nouns do allow pseudo-extraction. In fact, it seems that the answer is on the negative. For example, there are cases like *cruccio* (worry) that are psych-nouns from a semantic point of view but that have a different pattern with respect to elements like *desiderio* (desire): [9]

(17) a. Beatrice è il cruccio di Dante
"Beatrice is the worry of Dante"
b. [$_{DP}$ il cruccio di Dante (*per Beatrice)] è noto a tutti
"the worry of Dante for Beatrice is known to everybody"

On the one hand, they allow construct like (17a) strongly resembling the pseudo-extraction cases. On the other, they are not biargumental, thus the very idea of extraction is to be refused in principle.

This (and other possible cases) suggest that (16) is too strong, if not wrong.

Summarizing, we have already highlighted three major questions: first, why can only one θ-role be assigned to the subject of predication when the predicate is a DP ? Second, why is there a difference between psych-nouns and those nouns indicating activity ? Third, what is the subclass of psych-nouns that allows pseudo-extraction? [10] Our limited

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9. I am indebted to Guglielmo Cinque for this example.

10. Although I will not pursue this idea here, one can explore the possibility that the class of nouns allowing pseudo-extraction is that one corresponding to those verbs allowing internal object constructions. Thus, we could distinguish *desiderio* (desire) from *foto* (photograph) because the corresponding verbs behave differently:

(i) a. desidero un desiderio impossibile
"*pro* desire a desire impossible"
b. * fotografo una foto impossibile
"*pro* photograph a photograph impossible"

I am grateful to Liliane Haegeman and Luigi Rizzi for a discussion about this topic.

purpose here so far successful. As we see here, as soon as predicative nominals come into the arena many specific problems are raised that do not seem to allow immediate solutions. We can now shift to a different but closely related topic.

So far, we have seen cases where for a DP to become a predicate one of its arguments must be absent within its maximal projection. The relevant minimal pair is represented by two previous examples (i.e.: (10b) and (11d)) reproduced here:

(18) a. * [IP [DP Laura] è [SC t [DP il desiderio di [DP Dante]$_{+\theta 1}$ per [DP Beatrice]$_{+\theta 2}$]]]
"Laura is the desire of Dante for Beatrice"
b. [IP [DP Beatrice]$_{+\theta 2}$ è [SC t [DP il desiderio di [DP Dante]$_{+\theta 1}$]]
"Beatrice is the desire of Dante"

Shall we conclude that a biargumental noun phrase must always be deprived [11] of one argument to play the role of a predicate ? Apparently, this seems to be the natural prediction. Whether or not the subject is literally extracted from the DP, it is clear that its θ-role belongs to the θ-grid of the nominal head N°. Thus, if both arguments are present within the maximal projection of N°, one should expect that any DP in spec-IP would lack such a θ-role since there are no other θ-role assigner around and a violation of the θ-criterion would be produced. [12]

Surprisingly enough, there are contexts where this prediction fails to hold:

(19) a. ritengo [SC [DP questo] [DP il desiderio di [DP Dante]$_{+\theta 1}$ per [DP Beatrice]$_{+\theta 2}$]]
"*pro* believe this the fear of Dante for Beatrice"
b. [IP [questo] è [SC t [DP il desiderio di [DP Dante]$_{+\theta 1}$ per [DP Beatrice]$_{+\theta 2}$]]]
"this is the fear of Dante for Beatrice"

In both sentences, the DP under discussion can indeed play the role of a predicate without missing any argument. In other words, both *Beatrice* and *Dante* can stay within the DP without preventing it to play the role of a predicative nominal.

Notice that we have an indirect test to support the idea that the DP under discussion is playing the role of a predicate. We can reproduce in synthesis an argument developed in detail in Moro (1993).

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11. I say "deprived" to be neutral with respect to the hypothesis of extraction. In a certain sense, the idea the a noun phrase should be deprived of one argument in order to play the role of a predicate could be considered as indirect evidence in favour of the theory of predication as saturation. The kernel assumption of this theory is that predication is in fact established whenever an argument saturates the empty slots contained in a maximal projection. This theory developed in Fregean-style analysis was adopted in modern grammatical models; in Montague grammar (see for example Montague (1973)) as well as in generative grammar (see Williams (1980), Rothstein (1983) and Chomsky (1986); for a critical approach to this topic see also Moro (1983)).

12. I am maintaining the canonical assumption that the copula cannot assign any θ-role, it being just the support (or the spell out) of the I°-system. Weren't it so, a sentence like:

(i) Beatrice è il desiderio di Dante
"Beatrice is the desire of Dante

would now violate the θ-criterion, for *Beatrice* would receive two θ-roles, one from the N° and one from the copula.

In a construct like (19b), the DP *il desiderio di Dante per Beatrice* can be cliticized by *lo* yielding:

(20) [IP [DP questo]$_i$ [lo$_j$ è] [SC t_i t_j]]
"this *lo* is"

This is sufficient to allow us to say that the DP *il desiderio di Dante per Beatrice* is playing the role of a predicative nominal. We independently know that this cliticization in a copular sentence is possible only if the corresponding DP plays the role of a predicative nominal. [13]

Although we are not going to offer an explanation to these phenomena, notice that the sentence in (19b) has a quite non-trivial implication. The only θ-role assigner here is the N° *desiderio*. Now, since the two arguments of the N° are *Dante* and *Beatrice* and since the role of the subject of predication is played by *questo* (this), the immediate conclusion is that predication here is disconnected from θ-role assignment.

It is interesting to notice that this state of affairs is not uniquely instantiated in syntax. In fact, unaccusative constructs involving expletives of the subject of predication share this same property with cases like (19b). [14] Consider for example the following simplified analysis of a classic unaccusative construct:

(21) [IP [DP there]$_{-\theta}$ [VP arrived [DP many girls]$_{+\theta}$]]

Paralleling (19b), the head of the predicate, here the V° *arrive*, assigns its θ-role to its argument within its maximal projection; the position of the subject of predication is held here by an expletive DP, namely *there*, which doesn't receive any θ-role. The resemblance between (19b) and unaccusatives stops here, though: by no means should one say that *questo* (this) is an expletive. On the contrary, it is a fully referential element, it being a deictic. Moreover, current models (after Chomsky (1986)) assume that at LF the DP *many girls* in the unaccusative construct raise to spec-IP to replace the expletive.[15] There is no way to propose replacement of *questo* (this) in the example involving the predicative nominal.

Let's now shift to a different topic.

2. *On the identification of the minimal domain for Binding*

The possibility for the subject of a predicative nominal to occur without being assigned

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13. In fact, it can only be cliticized by the invariant form *lo* as opposed to the other cases of cliticization of argumental DPs which can be associated to a range of full inflected clitics. In Moro (1993) I proposed that *lo* is to be associated to the inner NP as opposed to the other clitics which are to be associated to the D°-system (possibly extended to include AGR°, Num° etc. as proposed by many authors like, for example Cinque (1992)). Since this assumption does not affect our argument we will leave the issue aside.
For unclear reasons, the predicative nominal cannot be cliticized in (19a) yielding *lo ritengo questo*. Again, this doesn't seem to have any empirical effect on our argument.

14. For a different approach to unacussativity see Moro (1993), chapter IV°.

15. Since Chomsky (1988) replacement has been substituted by affixation. This does not affect our argument here.

a θ-role, suggests a further inquiry concerning Binding theory. Again, recall we are not going to offer a solution here, but rather single out a potential problem for the current theory.

In general, a minimal requirement that any version of Binding theory is expected to fulfill is that an anaphor can never escape the subject of the clause it occurs in. From an abstract point of view, one wants that for any anaphor α in a structure like:

(22) ... DP_i ... [S DP_j ... α ...

the index assigned to α cannot be the same as the one of the first DP. [16] This is generally expressed by saying that a clausal structure is a local domain for an anaphor and that an anaphor must be bound within its local domain (Condition A of Binding theory).

There have been several attempts to capture this fact. Efforts have been specifically devoted to deriving the identification of the minimal domain from independent structural properties. An influential approach was proposed by Chomsky (1980). The local domain for an anaphor or a pronoun α is defined as the least Complete Functional Complex (CFC) containing a lexical governor for α (see Chomsky (1986):169). Let's reproduce the more refined definition of CFC given in Giorgi and Longobardi (1991): 54-55):

(23) β is a Complete Functional Complex iff it meets at least one of the following requirements:

a. it is the domain in which all the θ-roles pertaining to a lexical head are assigned

b. it is the domain in which all the grammatical functions pertaining to that head are realized (where the R-relation counts as the structural subject of the NP)

The principal aim of this section is to show that predicative nominals challenge the theory of the CFC in quite a sharp way. To do so, let's consider the following example:

(24) Gianni$_i$ ritiene [SC [DP queste]$_f$ [DP $PRO_{i,j}$ le migliori foto di se stesso$_i$ /*se stesse$_f$]]
"Gianni-mas.sing. believes these-fem.plur pictures of himself mas.sing./ themselves fem.plur."

This example is close to the ones we examined in the end of the first part. Namely, the subject of predication of the embedded clause, namely *queste* (these), does not receive any θ-role from the predicative nominal. In fact the θ-grid of *foto* (including, say, <agent> and <patient>) is completed within the maximal projection of the N° itself.

The question now is: does the definition of CFC given in (23) individuate the local domain for the anaphor ? It doesn't seems so; let's see why.

The anaphor contained in the predicative nominal can in fact refer to the subject of the matrix clause, i.e. *Gianni*, as indicated by the agreement features of *se stesso* which is masculine singular. Notice that the subject of the predicate headed by *foto* (pictures) is

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16. We are implicitly assuming that *i* is different from *j*. That is we exclude cases like:

(i) John$_i$ thinks that hé$_j$ loves himself$_j$

where *i* can be interpreted a equal to *j*.

queste (these). If we apply the definition of CFC given in (23), the prediction is that the subject of predication *queste* creates opacity for the anaphoric linking (23b). In fact, the anaphor cannot be bound by *queste*, as shown by the impossibility to have *se stesse* bearing feminine and plural features. Assuming that DPs can contain a *PRO* subject will not be much helpful. In fact, it might be that the anaphor is rather bound by *PRO* controlled by *Gianni*, but the sentence can also be interpreted with an arbitrary *PRO*, as if someone else shot a picture of *Gianni*. In this case, (23a) should block the coreference between the anaphor and *Gianni*, because *PRO* completes the functional complex of the head *foto*, it being assigned the agent θ-role. [17]

Interestingly, if the subject of the predicative nominal is an overt DP (as opposed to *PRO*) there is no possibility for the anaphor to be bound by *Gianni*:

(25) Gianni$_i$ ritiene [$_{SC}$ [$_{DP}$ queste]$_f$ [$_{DP}$ le migliori foto di Maria$_j$ di se stessa$_j$/ *se stesso$_i$]]
"Gianni-mas.sing. believes these the best pictures of Maria-fem. sing. of herself/himself"

In this case, the anaphor must be bound by *Maria* within the projection of the predicative nominal.

This latter case deserve more attention. In general, Binding theory never makes any difference between lexical DPs and pronominal empty categories (i.e. *PRO* and *pro*). In particular, any version based on the notion of CFC does in principle avoid any recourse to phonological features. The only relevant notions seems to be that of θ-role assignment and that of Grammatical Function (cf. (23a-b)). This seems to be implicit in the scope of Binding theory: this module is devoted to explaining referential dependencies. Why should overt phonological realization be relevant, since pronominal empty category can play the role of fully referential elements ? [18]

Again I do not see any immediate solution to this problem but, indeed, this was not the

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17. For an example that doesn't involve *PRO* consider the following English case:

(i) [John and Mary]$_i$ considered [$_{SC}$ [these]$_k$ [[each other]$_i$'s best performances]]

The anaphor *each other* is bound by *John and Mary* crossing over the subject of predication (I am indebted to David Pesetsky for having suggested this example to me).

18. That predicative nominals behave differently with respect to argumental DPs is a rather well known fact. In Moro (1988), for example, the following asymmetries were reported (see also Giorgi and Longobardi (1991) among others for references and discussion):

(i) a. Gianni$_i$ conosce [$_{DP}$ un suo$_i$ ammiratore]
"Gianni knows a his admirer"
b. * Gianni$_i$ è [$_{DP}$ un suo$_i$ ammiratore]
"Gianni is a his admirer)"
c. * Gianni$_i$ conosce [$_{DP}$ un ammiratore di se stesso$_i$]
"Gianni knows an admirer of himself"
d. * Maria$_i$ conosce [$_{DP}$ un ammiratore di se stessa$_i$]
"Maria knows an admirer of herself"
e. Gianni$_i$ è [$_{DP}$ un ammiratore di se stesso$_i$]
"Gianni is an admirer of himself"

These contrasts show that the predicative nominal extend its CFC to include the subject of the matrix clause (as opposed to the argumental DP). Unfortunately, these asymmetries do not seems to be much helpful in understanding the problem of Binding theory which is presented here.

goal of this paper.

3. *Conclusion*

In this paper we have seen that when predicative nominals come into the arena the current framework doesn't seem well adapted to derive the whole range of empirical facts. We have explored facts concerning θ-role assignment and Binding theory and we have shown why some traditional assumptions are challenged in a rather sharp and puzzling way.

Let's briefly summarize the main issues explored here:

(I) There is a class of predicative nominals we called "psych-nouns" like *desiderio* (desire) which can be construed in such a way that one of the θ-roles assigned by the head N° can be assigned to the subject of predication they occur with. Three questions are raised by this fact: first, why only one θ-role can be assigned to the subject of predication? Second, why other nouns expressing non psychological activities, like *descrizione* (description), do not allow such a process? Third, what is the subclass of psych-nouns displaying such a phenomenon?

Moreover, we have seen that in spite of the similarity with passive constructs an explanation involving extraction cannot be pursued unless we undermine "Cinque's Generalization".

All in all, we called this phenomenon "pseudo-extraction" aiming at highlighting the similarities and the differences with object extraction in passive constructs.

(II) Whatever is the version of the theory of Binding one adopts, it is commonly assumed that a clausal subject creates opacity for anaphoric binding. Predicative nominals challenge this assumption by showing a context where the anaphor contained in an embedded clause may be bound by the subject of a matrix clause, while skipping the subject of the embedded clause.

This happens when the subject of the predicative nominal does not receive a θ-role from the head of the predicative nominal itself. Equivalently, when the θ-grid of the nominal head is completed within the maximal projection of the nominal itself.

Interestingly, this phenomenon occurs only if the internal subject of the predicative nominal is either absent or realized as PRO but not if it is realized as an overt DP. This seems even more puzzling since Binding theory should not in principle distinguish between null or overt lexical realization, PRO being fully referential.

Whether or not these facts can be explained without distinguishing predicative DPs from argumental DPs is a question which lies far beyond the purpose of this paper. It might turn out that the specific properties of predicative nominals are just the reflex of the specific structural position they occur in. However, even from this brief survey it is clear that this field of inquiry will deserve a specific attention.

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