



University of
Massachusetts
Amherst

The Proper Notion and C-command and the Binding Theory: Evidence from NPs

Item Type	article;article
Authors	Giorgi, Alessandra
Download date	2025-01-21 08:03:41
Link to Item	https://hdl.handle.net/20.500.14394/36464

The Proper Notion of C-command and the Binding Theory: Evidence from NPs

Alessandra Giorgi

Istituto di Psicologia del Consiglio Nazionale delle Ricerche, Roma

In this paper I will argue in favor of the following hypotheses:

1. One of the arguments specified by the θ -grid of a Noun is structurally prominent with respect to the others and behaves as the 'subject' of the NP. This hypothesis had already been suggested by Cinque (1980; 1981) on the ground of distributional properties of possessive elements in Italian. We will support his original idea with another kind of data which in a still clearer way point to the same conclusion .
2. An intermediate projection N' occurs between N and its maximal projection N'', containing the internal (i.e. non subject) arguments of the head and defining their c-domain, as if it were a VP. This speaks in favor of a stricter definition of c-command than Aoun and Sportiche's (1982), especially because other properties of N' confirm its non-maximality.
3. There is evidence in favor of the existence of ergative nouns, i.e. of nominalizations corresponding to ergative verbs, which therefore only assign internal θ -roles under N'.

My main testing field is the distribution of anaphors and pronouns , i.e. binding phenomena. Here I will consider data from

Italian, however most of the conclusions I will draw seem to be generalizable to other languages, provided that there are some parametric differences among languages both with respect to the internal structure of NPs (cfr. Giorgi and Longobardi, forthcoming a.) and with respect to the typology of anaphors (and pronouns) admitted by a given language.

1. Let me briefly summarize Cinque's argument in favor of the existence of a 'subject' of NP: he observes that only a given type of argument can be expressed by a possessive pronoun :

- (1)a. La descrizione degli avvenimenti di Gianni
lit: the description of the facts of Gianni
(meaning: Gianni described the facts)
- b. La sua descrizione degli avvenimenti
His description of the facts
- c. *La loro descrizione di Gianni
Their description of Gianni

(1)a. (partially) realizes the θ -grid of the Noun descrizione (description), i.e. the agent Gianni, and the theme, gli avvenimenti (the facts). The θ -roles expressed here are the same which can be realized as arguments of the corresponding verb descrivere (which identifies an internal θ -role (theme) and an external one (agent)); therefore we will adopt here for simplicity the same terminology adopted for sentences. Both the argument expressing the internal θ -role and the one expressing the external one are preceded by the preposition di (of), which we take as a semantically empty realization of Genitive (henceforth dummy di); (1)b. can have the same meaning as (1)a. showing that the external θ -role can be expressed also by means of a possessive pronoun. But (1)c. is ungrammatical in the same interpretation given to (1)a., showing that, on the contrary, the internal θ -role cannot be expressed by a possessive. Notice however that if the external θ -role is expressed with a by-phrase, the judgment reverses:

- (2) La loro descrizione da parte di Gianni
Their description by Gianni

In (2) the NP has undergone 'passivization', and as a consequence the theme θ -role can be expressed by a possessive. These data show that active and passive forms of NPs closely resemble active and passive forms of Sentences and that the element expressing the external θ -role is attributed in NPs, as well as in Ss, a peculiar prominence (i.e. in NPs it may always occur in the form of a possessive and its presence in the active form is sufficient to prevent any other argument from occurring as a possessive). Our data will provide evidence for Cinque's proposal that such prominence is not only thematic. Consider also that, if the external argument is expressed by a pronominal, not only can it be expressed by means of a possessive, but actually it must be so expressed:

- (3) *La descrizione degli avvenimenti di lui
The description of the facts of him

Consider now some binding phenomena:

- (4)a. L'opinione di se stessi di Gianni e Mario è troppo lusinghiera
The opinion of themselves of Gianni and Mario is too flattering
- b. La paura di se stesso di Gianni è preoccupante
The fear of himself of Gianni is upsetting
- c. La descrizione di se stesso di Gianni è troppo lusinghiera
The description of himself of Gianni is too flattering

In spite of the presence of the the preposition di, the R-expression Gianni e Mario in (4)a. can bind the anaphor se stessi (themselves), and, analogously, Gianni in (4)b. and c., showing that di does not prevent the governed element from c-commanding

outside. Moreover this property of di is not just an optional one , as shown by the ungrammaticality of the following sentences:

- (5)a. *L'opinione di loro_i di Gianni e Mario_j è troppo lusinghiera
The opinion of them of Gianni and Mario is too flattering
- b. *La paura di lui_i di Gianni_j è preoccupante
The fear of him of Gianni is upsetting
- c. *La descrizione di lui_i di Gianni_j è troppo lusinghiera
The description of him of Gianni is too flattering

In fact, if the extension of the c-domain beyond the PP headed by di, were just optional, we should expect no binding violation to arise in (5), contrary to fact. ² Consider now a noun derived from a verb like restituire, i.e. restituzione, which θ -marks three arguments: an agent, a theme and a goal:

- (6)a. La restituzione di Maria a se stessa (da parte dello psicoanalista)
The restitution of Maria to herself by the psychoanalyst
- b. *La restituzione di Maria_i a lei_j (da parte dello psicoanalista)
The restituion of Maria to her (by the psychoanalyst)

Even in this case, the argument Case marked by di, i.e. Maria, can bind an anaphor, and therefore must c-command it. Conversely, the structure is ungrammatical if the goal θ -role is expressed by a pronoun, as in (6)b.

2. Consider now what happens if we invert the roles of the anaphor/pronoun and the R-expression

- (7)a. La restituzione di se stessa a Maria (da parte dello psicoanalista)
The restitution of herself to Maria (by the psychoanalyst)

- b. *La restituzione di lei_i a Maria_j (da parte dello psicoanalista)

The restitution of her to Maria (by the psychoanalyst)

As in (6), (7)a. is grammatical; (7)b. is ungrammatical. The grammaticality of (7)a. raises two problems: the first is: which is the role of the preposition a? It seems that the role of a is very similar to the role of dummy di. In fact; its presence in (7)a. can not prevent Maria from c-commanding and binding the anaphor. Once again, this property is not an optional one, as shown by the ungrammaticality of (8)a. (compared with (8)b.), where the pronoun c-commands the R-expression violating principle C:

- (8)a. *La restituzione a lei_i del figlio di Maria_j (da parte dello psicoanalista)

The restitution to her of Maria's son (by the psychoanalyst)

- b. La restituzione a Maria_j di suo_i figlio (da parte dello psicoanalista)

The restitution to Maria of her son (by the psychoanalyst)

The second problem is the following: since both di and a obligatorily determine the extension of c-command beyond the PP, it follows that in (6)a. and (7)a. the R-expression and the anaphor c-command each other. Such sentences should then be excluded by principle C of the Binding Theory, but they are not. Moreover, by replacing the R-expression with a pronoun, we do not cause a violation of principle B either:

- (9)a. La restituzione a lei_i di se stessa_j (da parte dello psicoanalista)

The restitution to her of herself (by the psychoanalyst)

- b. La restituzione di lei_i ormai guarita a se stessa_j

The restitution of her now recovered to herself ³

This and similar facts arising in the corresponding verbal constructions are analyzed on a principled basis in a specific work (see Giorgi and Longobardi, forthcoming b.).⁴ Here we will simply state the basic regularity as a descriptive generalization:

(10) If an anaphor α c-commands its antecedent β no principle B or C violation arises.

3. Consider now the following examples:

(11)a. L'opinione di lui_i della madre di Gianni_j è troppo lusinghiera

The opinion of him of Gianni's mother is too flattering
(Gianni's mother has an opinion concerning him)

b. *La sua_i opinione della madre di Gianni_j è troppo lusinghiera

His opinion of Gianni's mother is too flattering
(Gianni has an opinion concerning his mother)

(12)a. La paura di lui_i della madre di Gianni_j

The fear of him of Gianni's mother is excessive
(Gianni's mother fears him)

b. *La sua_i paura della madre di Gianni_j è eccessiva

His fear of Gianni's mother is excessive
(Gianni fears his mother)

(13)a. La descrizione di lui_i della madre di Gianni_j è troppo lusinghiera

The description of him of Gianni's mother is too flattering
(Gianni's mother describes him)

b. * La sua_i descrizione della madre di Gianni_j è troppo lusinghiera

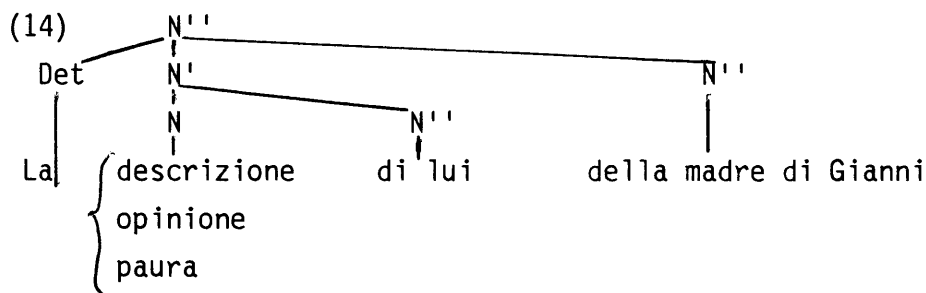
His description of Gianni's mother is too flattering
(Gianni describes his mother)

Linguistic theory, as is now, predicts no contrast between the a. and b. sentences of the pairs (11)-(13). In fact since di (of) is

obligatorily transparent to c-command, the most current definition of c-command (that of Aoun-Sportiche 1982) is such that lui (him) ends up c-commanding Gianni in all the a. sentences, which, therefore, should be ungrammatical.⁵

Our hypothesis in order to solve this problem is the following: there is an intermediate projection between N and its maximal one, i.e. N', which plays a crucial role with respect to c-command (at least as far as binding is concerned), inhibiting a phrase it dominates from c-commanding another one hanging from a higher projection; i.e. from N''.

Therefore the structure we assign to (11)-(13) is roughly the following:



where the NP di lui (of him), hanging from N' cannot c-command Gianni, which is embedded in an NP attached under N''. Conversely, in the b. sentences, the presence of a possessive pronoun causes a violation of principle C; such a violation is due to the fact that in this case the pronoun appears in the SPEC position of the NP, therefore presumably under N^{max} according to X' theory and it c-commands everything else in the NP. The notion of c-command we adopt here closely resembles the one of Reinhart's (1976; cf. also Chomsky 1981):

- (15) α c-commands β iff
 the first branching node (or maximal projection)
 dominating α also dominates β

Consider now the following evidence:

- (16)a. *La propria_i opinione di Gianni_i è troppo lusinghiera
Self's opinion of Gianni is too flattering
- b. *La propria_i paura di Gianni_i è eccessiva
Self's fear of Gianni is excessive
- c. *La propria_i descrizione di Gianni_i è troppo lusinghiera
Self's description of Gianni is too flattering
- (17)a. *La propria_i restituzione a Maria_i da parte dello
psicoanalista era improbabile
Self's restitution to Maria (by the psychoanalyst) was
unlikely
- b. La restituzione dei propri_i gioielli a Maria_i (da parte di
Gianni) era improbabile
The restitution of self's jewels to Maria (by Gianni) was
unlikely

In sentences (16) and (17) a 3rd person (singular or plural) possessive anaphor, proprio (self's), appears in the Spec position, and has to be bound by a c-commanding NP. Such a condition is actually satisfied in (17)b., where, as we predict, the NP governed by a c-commands another NP under N'.⁶ However, as shown by the ungrammaticality of the other examples, proprio cannot be bound by an argument of the same head N. The traditional explanation attributes this fact to a principle C violation. However, according to what we have argued above, in our opinion the binding violation must rather concern principle A. In fact, we have shown that di (of) is transparent to c-command and that if an anaphor c-commands its (intended) antecedent no principle C (or B) violation arises. However, if di Gianni hangs from N', it cannot c-command proprio in Spec. The same holds with respect to an NP governed by a, as shown by (17)a. which contrasts both with (17)b. and, minimally, with (7)a., where the anaphor is not a possessive in Spec.

4. Let us derive now, on principled grounds, the level of attachment of the arguments required by our explanation.

We have assumed that possessive elements appear under N^{max}

for reasons of X'-theory.⁷ Let us then crucially propose a 'Thematic Correspondence Hypothesis' i.e. that verbs and corresponding active nouns identify the same θ -role of their grid as the external one and that the latter is assigned outside N' in NPs as well as it is assigned outside VP in sentences. The other roles will be internal (assigned within N' and VP respectively). This way both our data concerning binding and Cinque's (1980;1981) observations on the distribution of possessive elements can easily follow. As for the latter, in fact, possessives can only be attached under N' and therefore they can only express the external θ -role (or an internal one if the NP has undergone passivization).

As for binding, then, notice that in all the grammatical examples of the paradigm (11)-(13) the pronoun (di) lui is obligatorily understood as the 'deep' object (theme) of the head noun and the di NP phrase containing Gianni as the 'deep' subject (experiencer or agent). Since all the NPs in question are 'active' it follows that the theme will always hang from N' and the other argument from N'', with the desired consequences for c-command.

Our theory can also predict the contrast between (18) and (19):

- (18) La descrizione di ogni_i ragazzo di sua_j madre è troppo lusinghiera
 i. *The description of every boy (theme) of his mother (agent) is too flattering
 ii. The description of every boy (agent) of his mother (theme) is too flattering
- (19) La descrizione di Mario_i di sua_j madre è troppo lusinghiera
 i. The description of Mario (theme) of his mother (agent) is too flattering
 ii. The description of Mario (agent) of his mother (theme) is too flattering

(19) is ambiguous, in that it can mean either 'his mother's

description of Mario' or 'Mario's description of his mother', given that in Italian there is a stylistic rule, which can freely invert the order of the postnominal arguments without affecting binding relations. In (18) there is no ambiguity, i.e. the presence of a quantified NP and a bound pronoun inhibits one of the two readings. In the only possible interpretation the quantified NP receives the external (agent) θ -role and the NP containing the bound pronoun the internal one. Under the assumption that a bound pronoun has to be c-commanded by the quantified antecedent in order to avoid a weak crossover violation (see Reinhart 1976; Koopman and Sportiche 1981) these data follow from our theory in the same way as those of (11)-(13). A similar reasoning holds in the case of the sloppy identity reading of a pronoun. Even in this case the sloppy pronoun has to be c-commanded by the element which binds it (see Reinhart, 1983):

- (20) Ti ho esposto l'opinione di Gianni di sua moglie, non quella di Franco
 I exposed you the opinion of Gianni of his wife, not that of Franco
 i. I exposed you Gianni_i's opinion about his_j wife, not Franco_j's opinion about his_j wife
 ii. *I exposed you his_j wife's opinion about Gianni_i, not his_j wife's opinion about Franco_j

Sentence (20) has several interpretations; here we are concerned only with the sloppy ones. The only possible reading is (20)i. and not (20)ii. Once again, if the intended antecedent receives the internal θ -role, i.e. hangs from N', it does not qualify as a possible binder, causing therefore ungrammaticality.

5. Despite their similarities, VP and N' still differ from the X' viewpoint: in fact VP is maximal, whereas N' is not. According to Williams' (1980) and Rothstein's (1983) predication theory, non argumental maximal projections require to be predicated of an

external argument, whereas non-maximal projections do not. Consequently VP requires a subject but N' does not. Let us consider the prediction of this theory in our framework:

- (21)(=7a.) La restituzione di se stessa a Maria da parte dello
 psicoanalista
 The restitution of herself to Maria by the psychoanalyst

In (21) the properties of passive are 'split'. On one hand, in fact, the external θ -role is expressed by means of a by-phrase (da parte dello psicoanalista); on the other, an argument bearing an internal θ -role, a Maria, binds an anaphor, se stessa; as a consequence, both the antecedent and the anaphor have to hang from N'. Therefore, passivization within NPs can also be only partially realized: that is, when the by-phrase is inserted it is not necessary to create a subject anew by raising an internal argument from N'. Consider also that (21) sharply contrasts with (22)a.:

- (22)a. *La telefonata di se stesso a Gianni
 The phone call of himself to Gianni
 b. La telefonata di Gianni a se stesso
 The phone call of Gianni to himself

In fact telefonata (phone call), an intransitive noun, does not provide on object θ -role; therefore, the anaphor in this case has to receive the external θ -role, assignable only under N' and Gianni receives the indirect object θ -role, assigned under N'. The situation predictably reverses in (22)b.

An interesting question concerns nominal heads derived from ergative verbs (Perlmutter 1978; Burzio, 1981). Let us consider the head N apparizione (appearance), which is derived from the ergative verb apparire (to appear). In a view of strict parallelism between verbs and the corresponding Nouns, we are led to predict that, since ergative verbs can only assign internal θ -roles, the same should be true also for the derived Nouns. Our preceding analysis

permits us to perform the relevant tests to this purpose. Consider for instance the following examples:

- (23)a. L'apparizione di Maria a se stessa, in sogno
The appearance of Maria to herself, in her dreams
b. L'apparizione di se stessa a Maria, in sogno
The appearance of herself to Maria, in her dreams

The grammaticality of (23)a. is not surprising, since di, as we have already discussed, does not block c-command of the governed element toward the anaphor, and, moreover, whichever the level of attachment of the phrase di Maria may be, we expect it to bind an anaphor in internal position. More interesting is the grammaticality of (23)b., which sharply contrasts with (22)a. and parallels, instead, (21). In (23)b. an R-expression, bearing an internal θ -role and therefore hanging from N', can bind the anaphor governed by di; given the properties of N', which we discussed before, we are led to the conclusion that the phrase containing the anaphor in this case hangs from N', as independently required by our Thematic Correspondance Hypothesis in conjunction with Burzio's ergative theory. Both (21) and (23) are grammatical for the same reason, i.e. that the internal position is the relevant one for the assignment of the theme θ -role, and that N' does not require a subject, so that the theme NP can appear in the position in which it is θ -marked. Notice also that nothing prevents such an argument from moving into subject position under N'', but that in such a case no coreference relation with other arguments holds:⁸

- (24)a. La sua_j/*_i restituzione a Maria_j da parte dello
psicoanalista
Her restitution to Maria by the psychoanalyst
b. La sua_j/*_i apparizione a Maria_j
Her appearance to Maria
(25)a. *La propria_j restituzione a Maria_j da parte dello
psicoanalista

Self's restitution to Maria by the psychoanalyst

- b. *La propria_j improvvisa apparizione a Maria_j
Self's sudden appearance to Maria

Consider also another piece of evidence pointing to the same conclusion. It is already known (Burzio, 1981) that the Italian specifier ciascuno (each) when used as floating quantifier has to be c-commanded by the NP it quantifies over, therefore we predict the following contrast:

- (26)a. *La telefonata di un professore ciascuno agli studenti
The phone call of a professor each to the students
b. La restituzione di un libro ciascuno agli studenti
The restitution of a book each to the students
c. L'apparizione di un fantasma ciascuno agli studenti
The appearance of a ghost each to the students

As we expect, the NP bearing the θ -role agent in telefonata (phone call) cannot be in a position such that ciascuno (each) is c-commanded by gli studenti (the students), whereas this is possible both with restituzione (restitution) and apparizione (appearance). Once again, apparizione patterns together with restituzione and not with telefonata, owing to the availability of the internal θ -position

FOOTNOTES

¹We are not considering here all the facts related to the assignment of a so called R-relation (see Higginbotham 1983), i.e. of a relation with the head which is not thematic, but something more generic and specified according to the context.

²Our hypothesis is that in these cases there is only a principle B violation and not also a principle C, i.e. in spite of the properties of the preposition di, the pronoun lui does not

c-command the R-expression. We will better illustrate this point in a while.

³Consider that in those cases where the patient θ -role is expressed with a pronoun and the agent with a by-phrase, one usually prefers the possessive form:

i. La sua restituzione a se stessa_i (da parte dello psicoanalista)

Her restitution to herself (by the psychoanalyst)

This fact is due to a more general property of Italian which strongly prefers the possessive instead of the form di+pronoun, wherever possible :

ii.a. *Il libro di lui (the book of him)

b. Il suo libro (his book)

However the form di+pronoun where an adjective is predicated of the pronoun, is accepted. For related phenomena and a possible explanation see Giorgi (1985) (see also Cinque 1980; 1981).

⁴The same kind of phenomena holds within sentences:

i.a. Gianni descrisse Maria_i a se stessa_i

Gianni described Maria o herself

b. Gianni descrisse lei_i a se stessa_i

Gianni described her to herself

ii.a. Gianni descrisse se stessa_i a Maria_i

Gianno described herself to Maria

b. Gianni descrisse se stessa_i a lei_i

Gianni described herself to her

iii.a. Una lunga terapia psicoanalitica restituì Maria a se stessa

A long psychoanalytic therapy brought Maria back to herself

b. Una lunga terapia psicoanalitica restituì lei_i a se stessa_i

A long psychoanalytic therapy brought her back to herself

iv.a. Una lunga terapia psicoanalitica restituì se stessa a Maria

A long psychoanalytic therapy brought herself back to Maria

b. Una lunga terapia psicoanalitica restituì se stessa_i a lei_i

A long psychoanalytic therapy brought herself back to her
 In sentences (ii) and (iv) the element governed by \underline{a} can bind an
 anaphor in direct object position and, on the other hand, an
 R-expression or a pronoun in direct object position can bind an
 anaphor governed by \underline{a} , as in (i) and (ii).

⁵Aoun and Sportiche (1982) define c-command as follows:

- i. α c-commands β iff
 the first maximal projection dominating α also
 dominates β

⁶According to Giorgi (1985), proprio (self's) can behave
 both as a long distance anaphor and as a strict one. As a long
 distance anaphor it has to be bound by an argument prominent from a
 thematic point of view, whereas, as a strict anaphor, it obeys the
 principles of the Binding Theory. Let me briefly summarize the
 principles concerning Long Distance Binding:

- i. A long distance anaphor has to be P-bound
 ii. α is P-bound by β iff α is in the P-domain of β
 iii. Given a lexical head γ which defines the θ -roles $\theta_1 \dots \theta_n$,
 and given θ_k , $1 \leq k \leq n$, assigned to β and prominent among
 $\theta_1 \dots \theta_n$, α is in the P-domain of β iff α is dominated by an
 argument bearing one of $\theta_1 \dots \theta_n$, different from θ_k
 iv. Prominence is defined according to the following hierarchy:
 1st Agent; 2nd Experiencer; 3rd Theme

In the sentences (16) and (17)a. there is no prominent argument
 such that (i)--(iv) can be satisfied, provided that the by-phrase
 does not participate in the hierarchy (iv), for reasons we will not
 discuss here. In this paper, however, we are interested in the
 strict strategy, which, as we will illustrate in the text, cannot
 be satisfied either.

⁷A peculiarity of Italian, with respect to English, is that
 the possessive can also appear to the right maintaining exactly the
 same lexical form and binding properties it has when it appears on

the left (see Giorgi and Longobardi, forthcoming a.)

⁸ From our reasoning it follows that in passive NPs, the possessive occupies the Spec position through movement, since the θ -position is in any case the one under N'.

REFERENCES

Aoun J., D. Sportiche (1982) On the formal Theory of Government, The Linguistic Review, 2, pp.211-236

Burzio L. (1981), Intransitive Verbs and Italian Auxiliaries, Doctoral Dissertation, MIT, Cambridge MA

Cinque G. (1980), On extraction from NP in Italian, Journal of Italian Linguistics, 5, 47-99

Cinque G. (1981), Sulla nozione di soggetto di sintagma nominale in Italiano, Cultura Neolatina, XLI, 555-570

Chomsky N. (1981), Lectures on Government and Binding, Foris Pub., Dordrecht

Giorgi A. (1985), On the Italian Anaphoric System, Doctoral Dissertation, Scuola Normale Superiore, Pisa

Giorgi A., G.Longobardi (forthcoming a.), NP Parameters

Giorgi A., G.Longobardi (forthcoming b.), On Coreference and Binding

Higginbotham J. (1983), Logical Form, Binding and Nominals, Linguistic Inquiry, 3, 395-420

Koopman H., D.Sportiche (1981), Variables and the Bijection

Principle, The Linguistic Review, 3

185

Perlmutter (1978) Perlmutter (1978), Impersonal Possessives and the Unaccusative Hypothesis, Proceedings of the IV Annual Meeting of the Berkeley Linguistics Society, UCLA

Reinhart T. (1976) Reinhart T. (1976), The Syntactic Domain of Anaphora, Doctoral Dissertation, MIT, Cambridge MA

Reinhart T. (1983), Coreference and Bound Anaphora, Linguistics and Philosophy, 2

Rothstein S. (1983), The Syntactic Form of Predication, Doctoral Dissertation, MIT, Cambridge MA

Williams E. (1980), Predication, Linguistic Inquiry, 11, 203-238